Updated August 2023

2023-2024 FCH Quiz Bowl Resources

NEW FOR 2024

We will be adding current event resources (ie magazines, journals, etc) to each topic area. Those sources will be released after January 2024 and questions from these sources will appear in the State Contest only along with the questions from the main resources noted above.

CONSUMER EDUCATION

CDM Contest Categories https://texas4-h.tamu.edu/events/roundup/

FTC Facts for Consumers – Need Credit or Insurance? https://fcsagents.tamu.edu/resources/ins-and-outs-of-credit-reports-and-credit-scoring/credit-score.pdf

Appendix. Glossary of Financial Terms https://fcsagents.tamu.edu/resources/wiseup/handbook/appendix-glossary-of-financial-terms.pdf

FASHION & INTERIOR DESIGN

Laundry on Your Own https://texas4-h.tamu.edu/wp-content/uploads/fashion_laundry_on_your_own.pdf

Clothing Quality Standards https://texas4-h.tamu.edu/wp-content/uploads/Resources_Fashion_Show_clothing_quality_standards.pdf

FOOD & NUTRITION

- **Preparation Principles** https://texas4-h.tamu.edu/wp-content/uploads/Preparation-Principles-and-Function-of-Ingredients.pdf
- **Quick Ingredient Substitutions** https://texas4-h.tamu.edu/wp-content/uploads/project_food_nutrition_quick_ingredient_subs-1.pdf
- **Safe Home Food Storage** https://texas4-h.tamu.edu/wp-content/uploads/food_safe_home_food_storage.pdf
- **Nutrition Guide Fueling for Performance** https://www.usada.org/wp-content/uploads/Nutrition-Guide.pdf
- **Know Your Nutrients** https://texas4-h.tamu.edu/wp-content/uploads/Know-Your-Nutrients_FINAL.pdf
- **Kitchen & Food Safety Fact Sheet** https://texas4-h.tamu.edu/wp-content/uploads/food_kitchen_safety_fact_sheet.pdf
- **Fight BAC** https://texas4-h.tamu.edu/wp-content/uploads/national_food_challenge_fight_back_brochure.pdf
- **MyPlate** https://texas4-h.tamu.edu/wp-content/uploads/MyPlate-Mini-Poster.pdf
- **Foodborne Illness-Causing Organisms in the U.S. Get the Facts**
- https://fcsagents.tamu.edu/fpm/VIII_Forms/foodborne-illness-handout-2011.pdf
- **Dietary Guidelines Executive Summary** https://www.dietaryguidelines.gov/sites/default/files/2021-03/DGA_2020- 2025_ExecutiveSummary_English.pdf

2023-2024 FCH Quiz Bowl Resources

HEALTH & PERSONAL SAFETY

Texans, Get Ready – Be Prepared to Survive and Recover from a Disaster https://texashelp.tamu.edu/wp-content/uploads/2017/01/texans-get-ready.pdf

E-cigarettes and Youth: What Parents Need to Know https://www.cdc.gov/tobacco/basic_information/e-cigarettes/pdfs/OSH-E-Cigarettes-and-Youth-What-Parents-Need-to-Know-508.pdf

Appendix. Glossary of Financial Terms

401(k) Plan – A tax deferred retirement plan that some private corporations offer their employees. Contributions to the plan may be made through payroll deduction. The money you place into the account lowers your taxable income. The employer usually matches a portion of your contribution. (See also "Defined Contribution [Pension] Plan.")

403(b) Plan – A retirement plan similar to a 401(k) plan that is offered by certain tax-exempt organizations; public schools, such as universities; certain ministers; and some charitable organizations rather than corporations. (See also "Defined Contribution [Pension] Plan.")

529 Plan – A Qualified Tuition Program (QTP), also called a "529 Plan," is a program established and maintained by a state or agency or instrumentality of a state to allow either prepaying or contributing to an account established for paying a student's qualified higher education expenses at an eligible educational institution.

A

Account Theft – Occurs when thieves use stolen personal information to access an individual's existing accounts, such as bank and credit card accounts.

Accumulation Period – The time prior to a deferred annuity's payout period when money builds up in the annuity contract.

Adjustable Rate Mortgage (ARM) – A mortgage loan that does not have a fixed interest rate. During the life of the loan, the interest rate will change based on the index rate. Also referred to as adjustable mortgage loans (AMLs) or variable-rate mortgages.

Adjusted Balance Method – A calculation used by the credit card company to determine finance charges. Any payments and credits received during the current billing period are subtracted from the balance at the beginning of the current billing period. The resulting total is used to compute finance charges.

Alimony – Court-ordered support paid by one spouse to another after they are separated.

Amortization – The process of fully paying off indebtedness by installments of principal and earned interest over a definite time.

Annual Fee – An amount charged to a credit card holder regardless of whether the card is used or not. Not all credit card companies charge an annual fee.

Annual Percentage Rate (APR) – A measure of the cost of credit, expressed as a yearly rate. It includes interest as well as other charges. Because all lenders, by federal law, follow the same rules to ensure the accuracy of the annual percentage rate, it provides consumers with a good basis for comparing the cost of loans, including mortgage plans. APR is a higher rate than the simple interest of the mortgage.

Annuity – When you pay money to an insurance company in return for its agreement to pay either a regular fixed amount when you retire or an amount based on how much your investment earns.

Asset Allocation – Involves dividing an investment portfolio among different asset categories, such as stocks, bonds, and cash.

Assets – Refers to everything that you OWN. Assets include cash and cash equivalents, invested assets, and use assets. *Cash or cash equivalents* include checking accounts, savings accounts, money market accounts, and the cash value of life insurance.

ATM (Automated Teller Machine) – An unattended, self-service electronic machine that enables consumers to withdraw paper money or conduct other banking procedures upon insertion of an encoded plastic card, such as a debit or credit card, and entry of a personal identification number (PIN).

Automatic Enrollment 401(k) Plan – A 401(k) defined contribution pension plan whereby employees are automatically enrolled in the plan and a specific percentage is deducted from each participant's salary unless the participant opts out or chooses a different percentage.

Automobile Collision Protection – Insurance that covers damage to your car from a collision or roll over, regardless of who is at fault.

Automobile Comprehensive Coverage – Insurance coverage for damage/loss to your vehicle caused by something other than a collision or roll over. It could include fire, theft, vandalism, windshield cracking, or hail damage.

Automobile Liability Coverage – Insurance that pays for someone else's financial loss when you are held responsible for damage to someone else's vehicle.

Average Daily Balance Method – A calculation used by credit card companies to determine finance charges. The total unpaid balance for each day in a billing period is divided by the number of days in the billing period. The finance charge is figured on this average balance.

B

Bad Debt – Credit used to purchase items that lose value or are no longer around when the bill arrives. These items include clothing, food, gasoline, and other goods or services that do not retain their value.

Balance Sheet – A financial statement showing a "snapshot" of the assets, liabilities, and net worth of an individual or organization on a given date.

Balloon Loan or Mortgage – A mortgage that typically offers low rates for an initial period of time (usually 5, 7, or 10 years), after which the balance is due or is refinanced by the borrower.

Balloon Payment – A large extra payment that may be charged at the end of a loan or lease.

**Ballpark E$timate®** – An on-line calculator found at www.choosetosave.org/. The Ballpark E$timate takes complicated issues like projected Social Security benefits and earnings assumptions on savings and turns them into language and mathematics that are easy to understand.

Bankruptcy (Personal) – A legal proceeding declaring that an individual is unable to pay debts. Chapters 7 and 13 of the federal bankruptcy code govern personal bankruptcy.

Assets may be liquidated to pay creditors, depending on the type of bankruptcy filed. Both types of bankruptcy may remove unsecured debts and stop foreclosures, repossessions, garnishments, utility shut-offs, and debt collection activities. Both types provide exemptions that vary by state and allow people to keep certain assets. Generally considered the option of last resort, a bankruptcy stays on an individual's credit report for 10 years.

> **Chapter 7 Bankruptcy** – Liquidation of all assets that are not exempt. Exempt property may include automobiles, work-related tools, and basic household furnishings. Some of the property may be sold by a court-appointed official – a trustee – or turned over to creditors. Debts can be discharged through Chapter 7 only once every six years. Also known as straight bankruptcy.
>
> **Chapter 13 Bankruptcy** – The court approves a repayment plan that allows the individual to pay off a default during a three-to-five year period, rather than surrender any property.

Beneficiary – The person or financial entity (for instance, a trust fund) named in a life insurance policy or annuity contract as the recipient of policy proceeds in the event of the policyholder's death.

Benefits – Nonwage compensation provided to employees. The National Compensation Survey groups benefits into five categories: paid leave (vacations, holidays, sick leave); supplementary pay (premium pay for overtime and work on holidays and weekends, shift differentials, nonproduction bonuses); retirement (defined benefit and defined contribution plans); insurance (life insurance, health benefits, short-term disability, and long-term disability insurance); and legally required benefits (Social Security and Medicare, federal and state unemployment insurance taxes, and workers' compensation).

Bond – A debt instrument or IOU issued by corporations or units of government.

Bond Funds – A term, along with "income funds," that is used to describe a type of investment company (mutual fund, closed-end fund, or unit investment trust [UIT]) that invests primarily in bonds or other types of debt securities. Depending on its investment objectives and policies, a bond fund may concentrate its investments in a particular type of bond or debt security – such as government bonds, municipal bonds, corporate bonds, convertible bonds, mortgage-backed securities, zero-coupon bonds – or a mixture of types. The securities that bond funds hold will vary in terms of risk, return, duration, volatility, and other features.

Budget – A plan developed by an individual for directing and controlling his or her money.

C

Capital Gain – The profit received based on the difference between the original purchase price and the total sale price.

Cash Balance Plan – A new type of defined benefit plan that has become more prevalent in recent years. Under this type of plan, benefits are computed as a percentage of each employee's account balance. Employers specify a contribution – usually based on a percentage of the employee's earnings – and a rate of interest on that contribution that will provide a predetermined amount at retirement, usually in the form of a lump sum.

Cash Flow – Money coming to an individual or business less the money being paid out during a given period.

Cash Surrender Value – The amount available in cash upon surrender of a permanent life insurance policy. Also known as cash surrender value.

Caveat Emptor – Let the buyer beware.

Certificate of Deposit (CD) – A special type of deposit account with a bank or thrift institution that typically offers a higher rate of interest than a regular savings account. Unlike other investments, CDs feature federal deposit insurance up to $250,000.

When you purchase a CD, you invest a fixed sum of money for fixed periods of time – six months, one year, five years, or more – and, in exchange, the issuing bank pays you interest, typically at regular intervals. When you cash in or redeem your CD, you receive the money you originally invested plus any accrued interest.

A CD bears a maturity date and can be issued in any denomination. The term of a CD generally ranges from one month to five years. There is generally a penalty for early withdrawal.

At one time, most CDs paid a fixed interest rate until they reached maturity. But, like many other products in today's markets, CDs have become more complicated. Investors may now choose among variable-rate CDs, long-term CDs, and CDs with other special features.

Some long-term, high-yield CDs have "call" features, meaning that the issuing bank may choose to terminate – or call – the CD after only one year or some other fixed period of time.

Checkbook Method – A method that works well for people who make most transactions by check or debit card. The checkbook register is the primary data-entry tool. Code each transaction for the budget expense category to which it belongs. Each week or at the end of the month, tally up the results by budget category.

Checking Account – An account that allows the holder to write checks against deposited funds. Some checking accounts pay interest.

Civil Service Retirement System (CSRS) – A defined benefit, contributory retirement system for certain federal employees. Employees share in the expense of the annuities to which they become entitled. CSRS-covered employees contribute 7, 7.5, or 8 percent of their pay to CSRS. While they generally pay no Social Security retirement or survivor and disability (OASDI) tax, they must pay the Medicare tax (currently 1.45 percent of pay). The employing agency matches the employee's CSRS contributions.

Civil Service Retirement System Offset (CSRS Offset) – If you are covered by CSRS Offset, you pay into the CSRS retirement fund and Social Security. Your contribution to the retirement system is very little – .80 percent – when compared to that of employees covered under regular CSRS who pay 7 percent.

The Social Security Amendments Act of 1983 mandated that federal employees first hired after December 31, 1983, be subject to Social Security. Employees who are rehired after that date who meet certain conditions remain in the Civil Service Retirement System but are also subject to Social Security.

We now have the Federal Employees Retirement System (FERS), CSRS Offset, and the old CSRS system.

Your CSRS Offset annuity is reduced by the portion of your total Social Security benefit that is payable based on federal service performed after 1983 while covered by both the CSRS and Social Security. Your annuity will not be reduced by any portion of your Social Security benefit that is based on service other than CSRS Offset employment.

COBRA (Consolidated Omnibus Budget Reconciliation Act of 1985) – A federal law that lets you extend your job-based health coverage if you lose your job or run into other qualifying events that cause you to lose your health insurance.

Co-insurance – A co-sharing agreement between the insured and the insurer under a health insurance policy that provides that the insured will cover a set percentage of the covered costs after the deductible has been paid. It is

similar to co-pay insurance plans except co-pays require the insured to pay a set dollar amount at the time the service is rendered.

Collateral – Property that is offered to secure a loan or other credit and that becomes subject to seizure on default. Also called security.

Commercial Bank – A bank that offers a broad range of deposit accounts, including checking, savings, and time deposits and extends loans to individuals and businesses. Commercial banks can be contrasted with investment banking firms, such as brokerage firms, which generally are involved in arranging for the sale of corporate or municipal securities.

Common Stock – A security that provides voting rights in a corporation and pays a dividend after preferred stock holders have been paid. It is the most common form of stock held within a company.

Compensation – A term used to encompass the entire range of wages and benefits, both current and deferred, that employees receive in return for their work.

Compound Interest – Interest computed on the sum of the original principal and accrued interest.

Computerized Financial Recordkeeping Systems – Systems used by individuals to tailor their income and expense categories to meet the person's needs and can effortlessly produce summary reports. Some people prefer the commercial software packages; others who know how to use electronic spreadsheets create their own financial recordkeeping systems. Others keep their financial information at special financial recordkeeping websites. The latest innovations involve web-based systems that bring together all of your financial transactions and allow access by computer, cell phone, or personal digital assistants (PDAs).

Consumer Price Index (CPI) – A measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services. The CPI is developed from detailed expenditure information provided to the Bureau of Labor Statistics, U.S. Department of Labor, by families and individuals on what they actually bought.

Co-signer – A person, other than the principal borrower, who signs for a loan. The co-signer(s) assumes equal liability for the loan.

Cost of Living Index – A measure of differences in the price of goods and services that allows for substitutions to other items as prices change.

Coverdell Education Savings Account – Named after Senator Paul Coverdell (GA), this account allows parents to make a contribution into the account with an annual limit. The contributions are taxed, but the earnings used to pay education expenses are not. Internal Revenue rules and guidelines apply to this account.

Credit – The ability of a person to borrow money or buy goods by paying over time. Credit is extended based on a lender's opinion of the person's financial situation and reliability, among other factors.

Credit Bureau – Most credit-reporting agencies are credit bureaus that gather and sell credit-related information about individuals to creditors, employers, landlords, and other businesses. The information includes whether the individual pays bills on time or has filed bankruptcy.

Credit Counseling Service – An organization that administers debt repayment plans for individuals seeking assistance with their credit. Credit counseling services may charge a fee that can range from nominal to high and may be either not-for-profit or for-profit organizations.

Credit File Disclosure (Credit Report) – A credit file disclosure, commonly called a credit report, provides you with all of the information in your credit file maintained by a consumer-reporting company that could be provided by the consumer-reporting company in a consumer report about you to a third party, such as a lender. A credit file disclosure also includes a record of everyone who has received a consumer report about you from the consumer-reporting company within a certain period of time ("inquiries"). The credit file disclosure includes certain information that is not included in a consumer report about you to a third party, such as the inquiries of companies for pre-approved offers of credit or insurance and account reviews, and any medical account information, which is suppressed for third party users of consumer reports. You are entitled to receive a disclosure copy of your credit file from a consumer-reporting company under federal law and the laws of various states.

Credit History – An individual's record of paying loans, credit cards, and other bills.

Credit Report – A record of an individual's credit history that is compiled by credit-reporting agencies. The history contains a listing of debts, bills submitted to collection agencies, bills paid late, public information such as tax liens and bankruptcies, and a listing of who has requested a copy of the credit report. Negative information can remain in a credit report for seven years, except for bankruptcy, which remains for 10 years.

Credit-Reporting Agency (CRA) – Organization that collects information for credit reports and in turn sells the reports to individuals or companies with a legitimate business need as defined by the Fair Credit Reporting Act. Examples of legitimate business needs are applications for employment, insurance, or to rent an apartment. Companies that lend money and issue credit regularly report payment behaviors to credit-reporting agencies.

Credit Score – Computer-generated number indicating the likelihood an individual will repay credit received. The most common credit scores are developed by the Fair, Isaac and Company and are referred to as FICO scores. Scores range from 300 to 850. Higher scores indicate a higher likelihood of repaying debt.

Credit Union – A non-profit financial institution federally regulated and owned by the members or people who use their services. Credit unions serve groups that hold a common interest. You must become a member to use the available services.

Creditor – A person who extends credit and to whom you owe money.

Creditworthiness – A creditor's measure of a consumer's past and future ability and willingness to repay debts.

D

Debit Card – Cards issued to pay for goods and services or to make transactions at an automated teller machine (ATM) and for which the cardholder is accessing funds from a personal checking or savings account rather than drawing on credit. As such, they are a "pay-as-you-go" function (compared to credit cards, which are a "pay later" function).

Debt – Money owed from one person or institution to another person or institution.

Debt Repayment Plans – Plans that are often set up by a credit counseling service. You deposit money each month with the credit counseling service, and your deposits are used to pay your creditors according to a payment schedule developed by the counselor.

Debt Service – Periodic payment of the principal and interest on a loan.

Debt Settlement Company – Among the many different kinds of services that claim to help people with debt problems. These [for-profit] companies negotiate with your creditors to reduce the amount you owe.

Debt-to-Income Ratio – The percentage of net income that pays for non-mortgage debt such as auto loans, student loans, and credit cards.

Deductible – With regard to insurance, the amount of loss paid by the policyholder. A deductible may be either a specified dollar amount, a percentage of the claim amount, or a specified amount of time that must elapse before benefits are paid. The larger the deductible, the lower the premium charged for the same coverage.

Default – Failure to meet the terms of a credit agreement.

Deficit – The amount each year by which government spending is greater than government income.

Defined Benefit (Pension) Plan – A plan that uses a specific, predetermined formula to calculate the amount of an employee's future benefit. The most common type of formula is based on the employee's terminal earnings. Under this formula, benefits are based on a percentage of average earnings during a specified number of years at the end of a worker's career – for example, the highest 5 out of the last 10 years – multiplied by the maximum number of years of credited service under the plan. In the private sector, defined benefit plans are typically funded exclusively by employer contributions. In the public sector, defined benefit plans often require employee contributions.

Defined Contribution (Pension) Plan – A retirement plan in which the amount of the employer's annual contribution is specified. Individual accounts are set up for participants, and benefits are based on the amounts credited to these accounts (through employer contributions and, if applicable, employee contributions) plus any investment earnings on the money in the account. Only employer contributions to the account are guaranteed, not the future benefits. In defined contribution plans, future benefits fluctuate on the basis of investment earnings. The most common type of defined contribution plan is a savings and thrift plan. Under this type of plan, the employee contributes a predetermined portion of his or her earnings (usually pretax) to an individual account, all or part of which is matched by the employer.

Delinquency – The failure to make timely payments under a loan or other credit agreement.

Depository Institution – A financial institution that obtains its funds mainly through deposits from the public. This includes commercial banks, savings and loan associations, savings banks, and credit unions.

Direct Deposit – A method of payment that electronically credits your checking or savings account.

Direct Stock Purchase Plans (DPPs) – Allows you to buy stock directly from a company.

Disability Insurance – Insurance that provides a weekly or monthly income benefit if you are disabled due to a covered injury or sickness.

Discharge – For people who follow the bankruptcy rules, a court order that says they do not have to repay certain debts. An individual who has sought bankruptcy receives a discharge of their debts after they have made all the payments under the repayment plan.

Diversification – The practice of spreading money among different investments to reduce risk.

Dividend – A share of profits paid to a stockholder.

Dividend Reinvestment Plans (DRIPS) – Dividends are reinvested to buy more company stock instead of being issued to you as a dividend check.

Dollar-Cost-Averaging – A strategy where a fixed dollar amount is invested at regular intervals, resulting in more shares purchased when the price per share is low and fewer shares when the price is high.

Down Payment – A portion of the price of a home, usually between 3 and 20 percent, not borrowed and paid up front in cash. Some loans are offered with a zero down payment.

E

Earned Income Tax Credit (EITC) – A tax credit for certain people who work and have low wages. A tax credit usually means more money in your pocket. It reduces the amount of tax you owe. The EITC may also give you a refund.

Electronic Banking – Conducted by automated teller machines (ATMs), telephones, or debit cards.

Electronic Funds Transfer – Transfer of funds electronically rather than by check or cash.

Electronic Fund Transfer Act – Provides consumer protection for all transactions using a debit card or electronic means to debit or credit an account. It also limits a consumer's liability for unauthorized electronic fund transfers.

Employee Benefits Security Administration (EBSA) – An agency of the U.S. Department of Labor (DOL) whose mission is to assure the security of the retirement, health, and other workplace-related benefits of American workers and their families. EBSA accomplishes its mission by developing effective regulations; assisting and educating workers, plan sponsors, fiduciaries, and service providers; and vigorously enforcing the law.

Entrepreneur – A person who organizes and manages an enterprise, especially a business, usually with considerable initiative.

Equity – Anything of value earned through the provision or investment of something of value. In real estate, equity is the interest or value an owner has in real estate over and above the mortgage against it.[1]

Estate – The sum total of all property, real and personal, owned by a person.

Estate Plan – A plan for the disposition of resources and property after death or during crisis.

A will is one component of an estate plan. Although necessary to direct the distribution of assets after death, almost 70 percent of U.S. adults do not have wills. Many people think they do not need a will because they do not have many assets, or they think that preparing a will costs too much. Dying without a will is called dying "intestate" and means that state and federal regulations will determine the distribution of assets. A carefully written legal will, however, provides for family and others in a manner consistent with a person's desires.

In addition, a variety of other important legal documents make up an estate plan and can protect assets and ensure that financial strategies and health-care decisions are made prior to death. These documents include: General Durable Power of Attorney, Health Care Power of Attorney, and a Living Will. These documents are best completed before a crisis occurs.

F

Face Value – The amount stated on the face of a life insurance policy that will be paid upon death or policy maturity. The amount excludes dividend additions or additional amounts payable under accidental death or other special provisions.

Fair Credit Billing Act – Establishes procedures for resolving billing errors on your credit card accounts. It also limits a consumer's liability for fraudulent credit card charges.

Fair Credit Reporting Act (FCRA) – Establishes procedures for correcting mistakes on your credit record and requires that your record only be provided for legitimate business needs.

Fair Debt Collection Practices Act – Prohibits debt collectors from using unfair or deceptive practices to collect overdue bills that your creditor has forwarded for collection.

Fair Market Value – The price a use asset would fetch if sold on the market today. Homes and real estate typically increase in value while automobiles and some personal property, such as computers and appliances, usually decrease in value over time.

Federal Deposit Insurance Corporation (FDIC) – An independent agency of the U.S. government that protects the funds depositors place in banks and savings associations. FDIC insurance is backed by the full faith and credit of the United States government. Since the FDIC was established in 1933, no depositor has ever lost a single penny of FDIC-insured funds. The standard insurance amount currently is $250,000 per depositor, per insured bank.

FICO Score – The most commonly known and used credit bureau scores. FICO scores stem from modeling pioneered by Fair, Isaac and Company (now known as Fair Isaac Corporation) (Fair Isaac), hence the label "FICO" score. Fair Isaac devised mathematical modeling to predict the credit risk of consumers based on information in the consumer's credit report.

Finance Charge – The sum of the cardholder's interest charges, annual membership fees, cash advance fees, transaction fees, and any other fees charged or incurred by the cardholder(s) in connection with the use of the credit card.

Financial Industry Regulatory Authority (FINRA) – Created in July 2007 and is the largest independent regulator for all securities firms doing business in the U.S. All told, FINRA oversees nearly 4,700 brokerage firms, about 167,000 branch offices, and approximately 635,000 registered securities representatives. FINRA is dedicated to investor protection and market integrity through effective and efficient regulation and complementary compliance and technology-based services.

Fixed Annual Percentage Rate (APR) – Traditional approach to determining the finance charge payable on an extension of credit. A predetermined and certain rate of interest is applied to the principal.

Fixed Expenses – A cost that remains relatively constant. Examples include savings, investments, retirement contributions, taxes, mortgage or rent, debt payments, and insurance.

Fixed Rate (Mortgage) Loan – Generally have repayment terms of 15, 20, or 30 years. Both the interest rate and the monthly payments (for principal and interest) stay the same during the life of the loan.

Flexible Benefits – A type of plan under Section 125 of the Internal Revenue Code that provides employees a choice between permissible taxable benefits, including cash, and nontaxable benefits, such as life and health insurance, vacations, retirement plans, and child care. Although a common core of benefits may be required, the employee can determine how his or her remaining benefit dollars are to be allocated for each type of benefit from the total amount promised by the employer.

Flexible Expenses – Expenses that are flexible because they vary in amount, such as food. Or they are "discretionary," that is, what you spend for them is at your discretion, in contrast to fixed expenses that must be paid and are usually the same amount each month.

Flexible Spending Arrangements (FSA) – A health FSA allows employees to be reimbursed for medical expenses. FSAs are usually funded through voluntary salary reduction agreements with your employer. No employment or federal income taxes are deducted from your contribution. The employer may also contribute.

Foreclosure – A legal action that ends all ownership rights in a home when the homebuyer fails to make the mortgage payments or is otherwise in default under the terms of the mortgage.

Front-end Load – An upfront sales charge investors pay when they purchase mutual fund shares, generally used by the fund to compensate brokers. A front-end load reduces the amount available to purchase fund shares.

Fund Prospectus – Describes a mutual fund to prospective investors. Every mutual fund has a prospectus. The prospectus contains information about the mutual fund's costs, investment objectives, risks, and performance. You can get a prospectus from the mutual fund company (through its website or by phone or mail). Your financial professional or broker can also provide you with a copy.

G

Garnishments – Money withheld from an individual's paycheck and remitted to another party – usually a creditor.

Good Credit Risk – People with a high credit score who are very likely to pay back their debts in a timely fashion.

Good Debt – Credit used to purchase items that retain or increase in value over time. These items include homes, education loans, and cars. Purchases that gain value over time are viewed as an investment (e.g., a car enables one to get to school or work).

Government Pension Offset (GPO) – If you receive a pension from a federal, state, or local government based on work where you did not pay Social Security taxes, your Social Security spouse's or widow's/widower's benefits may be reduced.

Benefits paid to wives, husbands, widows, and widowers are "dependent's" benefits. These benefits were established in the 1930s to compensate spouses who stayed home to raise a family and who were financially dependent on the working spouse. But as it has become more common for both spouses in a married couple to work, each earned his or her own Social Security retirement benefit. The law has always required that a person's benefit as a spouse, widow, or widower be offset dollar for dollar by the amount of his or her own retirement benefit.

Government Securities – Securities issued by the U.S. Treasury or federal agencies.

Government Thrift Savings Plan (TSP) – Congress established the TSP in the Federal Employees' Retirement System Act of 1986. The purpose of the TSP is to provide retirement income.

Grace Period – The time between the billing date and when finance charges will begin to accrue. Grace periods now range from 15 to 25 days. Under most credit card plans, the grace period applies only if you pay your balance in full each month. The grace period does not apply if you carry a balance forward, nor does it apply to cash advances.

Gross Income – Money earned before taxes and other deductions. Sometimes it may include income from self-employment, rental property, alimony, child support, public assistance payments, and retirement benefits.

H

Health Insurance – Offers protection from financial losses that could result from injury, illness, or disability.

Health Maintenance Organization (HMO) – A form of health insurance. An HMO is an organization of health-care professionals that provide health-care services to members on a prepaid basis. Some HMOs have their own clinic and hospital facilities; others contract with doctors and hospitals to provide care to members.

Hedge Funds – Like mutual funds, hedge funds pool investors' money and invest those funds in financial instruments in an effort to make a positive return. Many hedge funds seek to profit in all kinds of markets by pursuing leveraging and other speculative investment practices that may increase the risk of investment loss.

Unlike mutual funds, however, hedge funds are not required to register with the U.S. Securities and Exchange Commission (SEC). Hedge funds typically issue securities in "private offerings" that are not registered with the SEC under the Securities Act of 1933. In addition, hedge funds are not required to make periodic reports under the Securities Exchange Act of 1934. But hedge funds are subject to the same prohibitions against fraud as are other market participants, and their managers have the same fiduciary duties as other investment advisers.

High-deductible Health Plan – A health insurance policy that requires the policy holder to pay more out-of-pocket medical expenses but usually has lower premiums than traditional health insurance plans.

High Risk Investments – Investments where your entire principal is potentially at risk. Examples of high risk investments are futures contracts and collectibles.

High Risk Pool – Subsidized health insurance pools that are organized by some states. High risk pools offer health insurance to individuals who have been denied health insurance because of a medical condition or to individuals whose premiums are rated significantly higher than average due to health status or claims experience.

Home Equity Line of Credit – A mortgage loan, usually in a second mortgage, allowing a borrower to obtain cash against the equity of a home, up to a predetermined amount.

Home Equity Loan – A loan backed by the value of a home (real estate). If the borrower defaults or does not pay the loan, the lender has some rights to the property. The borrower can usually claim a home equity loan as a tax deduction.

Homeowner's Insurance – A policy that protects you and the lender from a fire or flood that damages the structure of the house; a liability, such as an injury to a visitor to your home; or damage to your personal property, such as your furniture, clothes, or appliances.

I

Identity Theft – An individual's personal information is used by another person without permission to open fraudulent accounts or commit other crimes.

Index Fund – A type of mutual fund or Unit Investment Trust (UIT) whose investment objective typically is to achieve the same return as a particular market index, such as the S&P 500 Composite Stock Price Index, the Russell 2000 Index, or the Wilshire 5000 Total Market Index.

Individual Development Account – A type of savings account, offered in some communities, for people whose income is below a certain level.

Individual Health Plan – An individual policy for a single person or family. This coverage is usually provided under a contract purchased through an insurance company, agent, or broker. It is not health insurance provided through a company or union.

Individual Retirement Account (IRA) – A retirement plan offered by banks, brokerage firms, and insurance companies to which individuals can contribute each year on a tax-deferred basis.

Inflation – A process of continuously rising prices, or equivalently, of a continuously falling value of money.

Inflation Assumption – How much you think the cost of living will rise each year, on average (see also "Cost of Living Index").

Inflation Rate – The rate at which prices of goods and services rise or fall.

Inheritance Tax – A tax on the right to receive property by inheritance; to be distinguished from an estate tax.

Installment Plan – A plan requiring a borrower to make payments at specified intervals over the life of a loan.

Insurance – The management of risks that have financial consequences. A promise of compensation for specific potential future losses in exchange for a periodic payment. Insurance is designed to protect the financial well being of an individual, company, or other entity in the case of unexpected loss.

Insurance Premium – The payment you or your employer make for insurance coverage.

Insured Deposit – Deposit in a Federal Deposit Insurance Corporation (FDIC)-insured commercial bank, savings bank, or savings association that is fully protected by FDIC deposit insurance. Savings, checking, and other deposit accounts, when combined, are generally insured up to $250,000 per depositor in each financial institution insured by the FDIC. Deposits held in different ownership categories, such as single or joint accounts, are separately insured. Also, separate $250,000 coverage is usually provided for retirement accounts, such as individual retirement accounts.

Interest – A fee charged for the use of borrowed money. Also, money earned on a savings account.

Interest Rate – The rate charged to borrow funds, usually from banks or other lending institutions.

Internet Banking – Usually conducted through a personal computer (PC) that connects to a banking website via the Internet. Internet banking can also be conducted via wireless technology through both personal digital assistants (PDAs) and cellular phones.

Investment – The act of investing means to place money into stocks, bonds, mutual funds, real estate, or other choices with the expectation that the value of the money invested will grow beyond the original amount invested.

Investment Clubs – A group of people who pool their money to make investments. Usually, investment clubs are organized as partnerships and, after the members study different investments, the group decides to buy or sell based on a majority vote of the members. Club meetings may be educational, and each member may actively participate in investment decisions.

Investment clubs have existed in the United States for nearly 100 years and are generally developed by a group of people who share social interests plus a desire to learn more about investing. The investment club is not for those who want to get rich quick but for those who want to be better off financially in five to 10 years and also learn the basics of investing in the stock market. Investment clubs encourage you to invest regularly and knowledgeably and to understand the various associated risks.

IRA (Individual Retirement Account) – A tax-deferred retirement account for an individual that permits individuals to set aside a set income amount per year, with earnings tax-deferred until withdrawals begin at age 59½ or later. Investors withdrawing money earlier than age 59½ may be subject to penalties for early withdrawals.

J

Joint Tenancy (with Rights of Survivorship) – Two or more owners share equal ownership and rights to the property. If a joint owner dies, his or her share of the property passes to the other owners, without probate. In joint tenancy, ownership of the property cannot be willed to someone who is not a joint owner.

Junk Bond – High-yield, high-risk debt that, in many cases, was issued to finance corporate takeovers.

L

Letter of Last Instruction – A letter that includes information about your funeral plans/preferences, obituary information, insurance policy contact information, a list of your financial accounts and debts, the location of important papers, keys/combinations for lockboxes and other locked containers, and a list of persons to be contacted in the event of death.

Liabilities – Anything that an individual owes. It includes credit card balances, college loan balances, automobile note balances, mortgage balances, and any other type of personal loan.

Lien – A creditor's claim against a property, which may entitle the creditor to seize the property if a debt is not repaid.

Life Insurance – A contract that pays the beneficiary a set sum of money upon the death of the policyholder. These plans usually pay benefits in the form of a lump sum, but they may be distributed as an annuity.

Liquid Assets – A cash asset or an asset that is easily converted into cash.

Liquidation – The process of converting securities or assets (property) into cash.

Living Will – An individual's written declaration of what life-sustaining medical treatments are allowable in case of incapacitation or terminal illness.

Long-term Care (LTC) Insurance – Provides for your "long-term care" if you become unable to take care of yourself because of the loss of functional capacity or cognitive impairment.

Long-term Disability Insurance – Provides a monthly benefit to employees who, due to a non-work-related injury or illness, are unable to perform the duties of their normal occupation or any other, for periods of time extending beyond their short-term disability or sickness and accident insurance.

Low Risk Investments – Investments, such as government savings bonds, where your principal – the money you invested – has a low potential of being at risk.

M

Margin – Borrowing money from your broker to buy a stock and using your investment as collateral. Investors generally use margin to increase their purchasing power so that they can own more stock without fully paying for it. However, margin exposes investors to the potential for higher losses.

Market Value – The amount a seller can expect to receive on the open market for merchandise, services, or securities.

Medicaid – Provides health coverage for low-income people who cannot afford it. Each state operates its own Medicaid program and, therefore, determines who is eligible and the scope of health services offered.

Medical Durable Power of Attorney – Authorizes your representative to make medical decisions based on what you have specified in your living will.

Medical Payments Coverage – Insurance that covers all injured occupants of your car, regardless of fault. It also covers members of your family if they are pedestrians struck by a car.

Medicare – A health insurance program for people age 65 or older, people under age 65 with certain disabilities, and people of all ages with end-stage renal disease (permanent kidney failure requiring dialysis or a kidney transplant).

Medium Risk – Your principal investment has a medium potential of being at risk. Examples of medium risk investments include high-quality stocks, bonds, and mutual funds; real estate; and aggressive growth stocks, bonds, and mutual funds.

Money Market Deposit Account – A type of savings account offered by a financial institution. The federal government insures money market deposit accounts. They are liquid investments with a rate of interest that is lower than most other investments.

Money Market Mutual Fund – A highly liquid mutual fund that invests in short-term obligations such as commercial paper, government securities, and certificates of deposit.

Mortgage-backed Security (MBS) – An ordinary bond backed by an interest in a pool of mortgages or trust deeds. The interest and principal payments collected on the underlying mortgages are the source of income to the bondholders. The Resolution Trust Corporation (RTC), which began issuing one-to-four family residential mortgage-backed securities in June 1991, was instrumental in developing the MBS market in the early 1990s. Most mortgage-backed securities have AA or AAA bond ratings.

Mortgage Insurance – A policy that protects lenders against some or most of the losses that can occur when a borrower defaults on a mortgage loan. Mortgage insurance is required primarily for borrowers with a down payment of less than 20 percent of the home's purchase price. The cost of mortgage insurance is usually added to the monthly payment. Mortgage insurance is maintained on conventional loans until the outstanding amount of the loan is less than 80 percent of the value of the house or for a set period of time (seven years is common). Mortgage insurance is also available through a government agency, such as the Federal Housing Administration (FHA) or through companies (Private Mortgage Insurance or PMI).

Mortgage Loan – A temporary and conditional pledge of property to a creditor as security for the repayment of debt.

Municipal Bond – A bond issued by cities, counties, states, and local governmental agencies to finance public projects, such as construction of bridges, schools, and highways. Municipal bonds are exempt from federal taxes and from most state and local taxes, especially if you live in the state in which the bond is issued. "Munis" are bought for their favorable tax implications and are popular with people in high income tax brackets.

Mutual Fund – A pool of money managed by an investment company. The funds are invested in a variety of securities, including stocks, bonds, and money market securities.

N

Negative Amortization – An increase in the principal of a loan, when the loan payments are insufficient to pay the interest due. The unpaid interest is added to the outstanding loan balance, causing the principal to increase rather than decrease as payments are made. This situation typically occurs in an adjustable mortgage with an annual cap limiting any increases in the interest rate, and also in a graduated payment mortgage, which has low initial payments so moderate-income borrowers can afford to make the loan payments.

Net Asset Value (NAV) – The value of a fund's assets minus its liabilities. To calculate the NAV per share, simply subtract the fund's liabilities from its assets and then divide the result by the number of shares outstanding.

Net Income – Amount of money remaining after deducting income taxes, Social Security, Medicare, insurance (health, life, disability, etc.), flexible spending plan contributions, retirement savings, and other items. Also known as take-home pay.

Net Worth – The difference between the total assets and total liabilities of an individual.

Net Worth Statement – See "Statement of Financial Position."

No Load Mutual Fund – A mutual fund whose shares are sold without a commission or sales charge. The shares are distributed directly by the investment company.

O

Office of the Comptroller of the Currency (OCC) – A bureau within the U.S. Department of the Treasury, established in 1863. The OCC charters, regulates, and supervises national banks, which can usually be identified because they have the word "national" or "national association" in their names. The OCC also supervises and regulates the federally licensed branches and agencies of foreign banks doing business in the United States.

The Comptroller of the Currency, who is appointed by the president of the United States, with Senate confirmation, and who is one of the Federal Deposit Insurance Corporation's (FDIC's) five directors, heads the OCC.

Office of Thrift Supervision (OTS) – An organization within the U.S. Department of the Treasury, established on August 9, 1989. The OTS, with five regional offices located in Jersey City, Atlanta, Chicago, Dallas, and San Francisco, is the primary regulator of all federal and many state-chartered thrift institutions. A director, who is appointed by the president, with Senate confirmation, for a five-year term and who is one of the five FDIC directors, heads the OTS.

On-line Banking – Access by personal computer or terminal to bank information, accounts, and certain transactions via the financial institution's website on the Internet.

P

Passbook Savings Account – An account that a bank or savings institution issues to keep record of deposits, withdrawals, and interest earned in the savings account. Usually pays a very low interest rate.

Payday Loan – A transaction in which a short-term cash advance is made to a consumer in exchange for a customer's post-dated check in the amount of the advance plus a fee, or in exchange for a consumer's authorization to debit a transaction account in the amount of the advance plus a fee at a designated future date.

Payroll Deduction Plan – A plan in which an employee authorizes an employer to deduct a specified amount from the employee's pay and put the funds toward insurance, health care, or an investment account. For example, it is common for employees to deduct a set percentage of income and contribute it to their Traditional or Roth IRAs.

Perils – For homeowner's insurance, an event that can damage the property. Homeowner's insurance may cover the property for a wide variety of perils caused by accidents, nature, or people.

Personal Income – The dollar value of income received from all sources by individuals.

PITI – The four elements of a monthly mortgage payment (principal, interest, taxes, and insurance). Payments of principal and interest go directly towards repaying the loan, while the portion that covers property taxes and insurance (homeowner's and mortgage [see "Private Mortgage Insurance" for further explanation], if applicable) goes into an escrow account to cover the fees when they are due.

Points – In reference to a loan, points consist of a lump sum payment made by the borrower at the outset of the loan period. Generally, each point equals 1 percent of the loan amount.

Portfolio – An individual's or entity's combined holdings of stocks, bonds, or other securities and assets.

Predatory Lending – Targeting loans to elderly, low-income, and other people to take advantage of their financial status or lack of financial knowledge.

Preexisting Condition – Any physical or mental condition that an individual has before health coverage begins.

Preferred Provider Organization (PPO) – A form of health insurance. A PPO is made up of a group of medical care providers (doctors, hospitals, etc.) who contract with a health insurance company to provide services at an agreed upon discounted price.

Preferred Stock – A form of ownership interest in a bank or other company that entitles its holders to some preference or priority over the owners of common stock, usually with respect to dividends or asset distributions in a liquidation.

Premium – The payment, or one of the regular periodic payments, that a policyholder makes to own an insurance policy or annuity.

Prepayment Penalty – A provision in some loans that charge a fee to a borrower who pays off a loan before it is due.

Principal – The unpaid balance on a loan, not including interest; the amount of money invested.

Private Mortgage Insurance (PMI) – Insurance purchased by a buyer to protect the lender in the event of default. The cost of mortgage insurance is usually added to the monthly payment. Mortgage insurance is generally maintained until over 20 percent of the outstanding amount of the loan is paid or for a set period of time – seven years is normal. Mortgage insurance may be available through a government agency, such as the Federal Housing Administration (FHA) or the Veterans Administration (VA), or through private mortgage insurance companies.

Prospectus – See "Fund Prospectus."

Q

Qualified Tuition Program – See "529 Plan."

R

Redlining – A practice in which certain areas of a community are eliminated from eligibility for mortgages or other loans, either intentionally or unintentionally, allegedly because the area is considered a poor investment risk.

Refinancing – Paying off one loan by obtaining another; generally done to secure better loan terms (like a lower interest rate).

Replacement Level – The percentage of your income you wish to replace at retirement. One rule of thumb frequently used in projecting retirement income needs is an easy one to remember: *plan to replace about 70 to 90 percent of your pre-retirement income to maintain your same pre-retirement level of living*. Some experts suggest a replacement level close to 100 percent, while others may suggest different levels.

Replacement Rate – The percentage of total salary you will need to save from now until retirement age to achieve your desired income during retirement.

Repossession – To reclaim possession of goods or property, for failure to pay installments due.

Retirement Confidence Survey (RCS) – The country's most established and comprehensive study of the attitudes and behavior of American workers and retirees towards all aspects of saving, retirement planning, and long-term financial security. Sponsored by the Employee Benefit Research Institute (EBRI), the American Savings Education Council (ASEC), and Mathew Greenwald & Associates (Greenwald), the annual RCS is a random, nationally representative survey of 1,000 individuals age 25 and over.

Retirement Plan – A plan for setting aside funds from current income in appropriate investments with the expectation that money will accumulate and grow so that period withdrawals may be made during retirement. The term can also refer to the individual investment options offered to employees by employers.

Retirement Portfolio – See "Retirement Plan" and "Portfolio."

Reverse Mortgage – A type of mortgage used by senior homeowners age 62 and older to convert the equity in their home into monthly streams of income and/or a line of credit to be repaid when they no longer occupy the home.

Roth IRA – Unlike a traditional IRA, you cannot deduct contributions to a Roth IRA from your taxes; however, if you satisfy the requirements, qualified distributions are tax free. Contributions can be made to your Roth IRA after you reach age 70½, and you can leave amounts in your Roth IRA as long as you live.

Rule of 72 – Used to determine how many years it will take your money to double. Divide 72 by the annual interest rate.

S

Savers [Tax] Credit (formally known as the Retirement Savings Contributions Credit) – Low and moderate income workers who contributed to a retirement plan, such as an IRA or 401(k) may be able to take the savers credit.

Savings and Loan Association – A state or federally chartered financial institution that accepts savings and checkable deposits from the public and invests them primarily in mortgage loans. A savings and loan association may be either a mutual or capital stock institution and may also make loans to businesses and consumers.

Savings Bank – Depository institution historically engaged primarily in accepting consumer savings deposits and in originating and investing in securities and residential mortgage loans; now may offer checking-type deposits and make a wider range of loans.

Savings Bond – Non-marketable, registered securities issued by the U.S. Treasury Department. Non-marketable means they cannot be sold to or bought from anyone except an issuing and paying agent authorized by the Treasury Department. Registered means they are owned exclusively by the person or persons named on them. Savings bonds are backed by the full faith and credit of the United States.

SCHIP (State Children's Health Insurance Program) – Administered by the Federal Centers for Medicare and Medicaid Services, SCHIP makes funds available to states that have programs providing health insurance coverage to uninsured children. Each state sets its own guidelines for eligibility and services.

Section 8 – A program of the Department of Housing and Urban Development (HUD) that provides rental assistance to low- and very low-income families. HUD pays the difference between the market rent of a unit and the amount that the tenant is able to pay.

Secured Debt – Debt backed or secured by collateral to reduce the risk associated with lending.

Securities – Paper certificates (definitive securities) or electronic records (book-entry securities) evidencing ownership of equity (stocks) or debt obligations (bonds).

Series EE/E Savings Bond – A secure savings product that pays interest based on current market rates for up to 30 years on Treasury securities. Interest is calculated semiannually but paid at maturity and is exempt from state and local taxes.

Series I Savings Bonds – A low-risk, liquid savings product that while you own them, earn interest and help protect your savings from inflation. They pay a fixed rate that is lower than traditional savings bonds, but they also pay a variable rate that increases with inflation.

Set-Aside Account – A place to put money that you know you will need for expenses that occur periodically.

Short-Term Disability Insurance – Provides short-term (typically 26 weeks) income protection to employees who are unable to work due to a non-work-related accident or illness.

Simple Interest – Interest that is paid only on the original amount borrowed for the length of time the borrower has use of the credit. The amount borrowed is referred to as the principal. In the simple interest rate calculation, interest is calculated only on that portion of the original principal still owed.

SIMPLE Plan – A tax-favored retirement plan that certain small employers (including self-employed individuals) can set up for the benefit of their employees. A SIMPLE plan is a written agreement (salary reduction agreement) between you and your employer that allows you, if you are an eligible employee (including a self-employed individual), to choose to reduce your compensation (salary) by a certain percentage each pay period and have your employer contribute the salary reductions to a SIMPLE IRA on your behalf. These contributions are called salary reduction contributions.

Simplified Employee Pension (SEP) Plan – Provides a simplified method for small businesses to make contributions to a retirement plan for themselves and their employees. Instead of setting up a profit-sharing or money purchase plan with a trust, they can adopt a SEP agreement and make contributions directly to a traditional individual retirement account or a traditional individual retirement annuity (SEP-IRA) set up for themselves and each eligible employee.

Social Security – A United States government program of social insurance and benefits enacted in 1935. The Social Security program's benefits include retirement income, disability income, Medicare and Medicaid, and death and survivorship benefits. Social Security is one of the largest government programs in the world, paying out hundreds of billions of dollars per year.

Based on the year someone was born, retirement benefits may begin as early as age 62 and as late as age 67. The amount of income received is based on the average wages earned over the worker's lifetime, with a maximum calculable amount of $102,000 as of 2008.

Spouses are also eligible to receive Social Security benefits, even if they have limited or non-existent work histories. If your spouse is eligible for retirement benefits on his or her own earnings record, Social Security will pay that amount first. But if the benefit on your record is a higher amount, he or she will get a combination of benefits that equals that higher amount (reduced for age).

Social Security Number (SSN) – A federal taxpayer identification number for Americans. An SSN number is required to get a job and claim taxes or other tax benefits.

Speculation – The practice of buying or selling stocks, commodities, land, or other types of assets hoping to take advantage of an expected rise or fall in price.

Statement of Financial Position – An inventory of an individual's assets and liabilities at a particular moment in time. It includes a net worth calculation, which subtracts the liabilities from the assets. Also known as a Net Worth Statement.

Statement of Income and Expense – A time-specific document that summarizes income received and expenses paid for a full, 12-month year. The overall format is flexible. Expenses are categorized as fixed or variable.

Stock – Security or instrument that represents a unit of ownership in a corporation.

Stockholder – A person who owns stock in a company and is eligible to share in profits and losses; same as shareholder.

Sub-Prime Loan – An industry term used to describe loans with less stringent lending and underwriting terms and conditions. Due to the higher risk, sub-prime loans charge higher interest rates and fees.

Supplemental Security Income (SSI) – A federal income supplement program funded by general tax revenues (not Social Security taxes). It is designed to help aged, blind, and disabled people, who have little or no income; and it provides cash to meet basic needs for food, clothing, and shelter.

T

Take-home Pay – See "Net Income."

Temporary Assistance for Needy Families (TANF) – A program that is designed to help needy families achieve self-sufficiency. It replaced the welfare programs known as Aid to Families with Dependent Children (AFDC), the Job Opportunities and Basic Skills Training (JOBS) program, and the Emergency Assistance (EA) program. The TANF Bureau within the U.S. Department of Health and Human Services provides assistance and work opportunities to needy families by granting states, territories, and tribes the federal funds and wide flexibility to develop and implement their own welfare programs. The assistance is time-limited and promotes work, responsibility, and self-sufficiency.

Term – The period from when a loan is made until it is fully paid.

Term Life – A type of life insurance that provides insurance protection for a set period of time. Term policies are written for 1, 5, 10, or 20 years. If you die before the time period ends, your beneficiaries receive the death benefit.

Thrift Institution (Bank) – A financial institution that ordinarily possesses the same depository, credit, financial intermediary, and account transactional functions as a bank but that is chiefly organized and primarily operates to promote savings and home mortgage lending rather than commercial lending. Also known as a savings bank, a savings association, a savings and loan association, or an S & L.

Thrift Savings Plan (TSP) – A retirement plan similar to a 401(k) plan that is offered to federal government employees.

Time Value of Money – The idea that a dollar now is worth more than a dollar in the future, even after adjusting for inflation, because a dollar now can earn interest or other appreciation until the time the dollar in the future would be received.

Total Disability – The definitions of "total" disability vary from policy to policy. Some define it as being unable to perform *your own* occupation, while a more comprehensive definition would require that you are unable to perform *any* occupation.

Traditional IRA (Individual Retirement Account) – An IRA that allows individuals to direct pretax income, up to specific annual limits, toward investments that can grow tax-deferred (no capital gains or dividend income is taxed). Individual taxpayers are allowed to contribute 100 percent of compensation up to a specified maximum dollar amount to their Traditional IRA. Contributions to the Traditional IRA may be tax-deductible depending on the taxpayer's income, tax-filing status, and other factors.

Treasury Bill (T-Bill) – Short-term U.S. Treasury security having a maturity of up to one year and issued in denominations of $10,000 to $1 million. T-bills are sold at a discount. Investors purchase a bill at a price lower than the face value (for example, the investor might buy a $10,000 bill for $9,700). The return is the difference between the price paid and the amount received when the bill is sold or it matures (if held to maturity, the return on the T-bill in the example would be $300).

Treasury Bond – Long-term security having a maturity of 10 years or longer; issued in denominations of $1,000 or more. Treasury bonds pay interest semiannually, and the principal is payable at maturity.

Treasury Inflation-Protected Securities (TIPS) – Marketable U.S. Treasury securities whose principal is adjusted by changes in the Consumer Price Index. TIPS pay interest every six months and are issued with maturities of 5, 10, and 30 years.

Treasury Note – Intermediate-term security having a maturity of 1 to 10 years and issued in denominations of $1,000 or more. Notes pay interest semiannually, and the principal is payable at maturity. When you purchase a treasury note, you are lending money to the government. Treasury notes are backed by the full faith and credit of the U. S. government.

Treasury Securities – Interest-bearing obligations of the U.S. government issued by the Treasury as a means of borrowing; money to meet government expenditures not covered by tax revenues. Marketable Treasury securities fall into three categories: bills, notes, and bonds.

Trust – A fiduciary relationship in which one person (the trustee) is the holder of the legal title to property (the trust property) subject to an equitable obligation (an obligation enforceable in a court of equity) to keep or use the property for the benefit of another person (the beneficiary).

Two-cycle Daily Balance Method – A calculation used by a credit card company to determine finance charges using two months of credit transactions. An average daily balance is calculated for the current billing period and the previous billing period, with the total being divided by the total number of days in both billing periods.

U

Unemployment Insurance – In general, the federal-state Unemployment Insurance Program provides unemployment benefits to eligible workers who are unemployed through no fault of their own (as determined under state law) and meet other eligibility requirements of state law. Each state administers a separate unemployment insurance program within the guidelines established by federal law. Eligibility for unemployment insurance, benefit amounts, and the length of time benefits are available are determined by the state law under which unemployment insurance claims are established.

Unsecured Debt – Debt issued and supported only by the borrower's creditworthiness rather than by some sort of collateral.

U.S. Securities and Exchange Commission (SEC) – The mission of the U.S. Securities and Exchange Commission is to protect investors; maintain fair, orderly, and efficient markets; and facilitate capital formation. It is the responsibility of the Commission to: interpret federal securities laws; issue new rules and amend existing rules; oversee the inspection of securities firms, brokers, investment advisers, and ratings agencies; oversee private regulatory organizations in the securities, accounting, and auditing fields; and coordinate U.S. securities regulation with federal, state, and foreign authorities.

V

Variable Annuities – With a variable annuity, money is placed in subaccounts invested in stock and bond funds. Overall, the return on a variable annuity is subject to market fluctuation. The total value depends on how much risk the annuity owner assumes, performance of the subaccounts, and what charges and fees are deducted. Over the long term, variable annuities reflect performance and growth in the economy and can serve as an effective hedge against inflation. However, it is possible to lose money in a variable annuity.

Variable Expenses – Costs that change in proportion to an activity or use. Examples include food, transportation, clothing, education, medical, and utilities.

Vested – The amount of time you must work before earning a non-forfeitable right to your accrued pension benefit funded by employer contributions. When you are fully "vested," your accrued benefit will be yours, even if you leave the company before reaching retirement age.

Employees always have a non-forfeitable right to their own contributions. There are changes to the two basic vesting schedules. Under the three-year schedule, workers are 100 percent vested after five years of service under the plan. The six-year graduated schedule allows workers to become 20 percent vested after two years and to vest at a rate of 20 percent each year thereafter until they are 100 percent vested after six years of service. Plans may have faster vesting schedules.

W

Wage Growth Assumption – How much you think your paycheck will increase each year, on average.

Whole Life Insurance – The most common type of permanent life insurance. Generally, the premiums remain constant over the life of the policy. The cash value grows based on a fixed interest rate.

Will – A legal document that names the person you have designated as executor of your estate, specifies how you want the assets of your estate to be distributed after any debts and taxes are paid, and states who will care for your minor children. The will goes into effect upon the death of the signer.

Windfall Elimination Provision – Affects how the amount of your retirement or disability benefit is calculated if you receive a pension from work where Social Security taxes were not taken out of your pay. A modified formula is used to calculate your benefit amount, resulting in a lower Social Security benefit than you otherwise would receive.

Wraparound – A financing device that permits an existing loan to be refinanced and new money to be advanced at an interest rate between the rate charged on the old loan and the current market interest rate. The creditor combines or "wraps" the remainder of the old loan with the new loan at the intermediate rate.

Y

Yield – The effective annual rate of return on an investment expressed as a percentage.

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FTC Facts
For Consumers

focus on CREDIT

Federal Trade Commission
For The Consumer

www.ftc.gov ■ 1-877-ftc-help

July 2007

Need Credit or Insurance?

Your Credit Score Helps Determine What You'll Pay

Ever wonder how a lender decides whether to grant you credit? For years, creditors have been using credit scoring systems to determine if you'd be a good risk for credit cards, auto loans, and mortgages. These days, many more types of businesses — including insurance companies and phone companies — are using credit scores to decide whether to approve you for a loan or service and on what terms. Auto and homeowners insurance companies are among the businesses that are using credit scores to help decide if you'd be a good risk for insurance. A higher credit score means you are likely less of a risk, and in turn, means you will be more likely to get credit or insurance — or pay less for it.

The FTC wants you to know how credit scoring works.

The Federal Trade Commission (FTC), the nation's consumer protection agency, wants you to know how credit scoring works.

What is credit scoring?

Credit scoring is a system creditors use to help determine whether to give you credit. It also may be used to help decide the terms you are offered or the rate you will pay for the loan.

Information about you and your credit experiences, like your bill-paying history, the number and type of accounts you have, whether you pay your bills by the date they're due, collection actions, outstanding debt, and the age of your accounts, is collected from your credit report. Using a statistical program, creditors compare this information to the loan repayment history of consumers with similar profiles. For example, a credit scoring system awards points for each factor that helps predict who is most likely to repay a debt. A total number of points — a credit score — helps predict how creditworthy you are — how likely it is that you will repay a loan and make the payments when they're due.

Some insurance companies also use credit report information, along with other factors, to help predict your likelihood of filing an insurance claim and the amount of the claim. They may consider these factors when they decide whether to grant you insurance and the amount of the premium they charge. The credit scores insurance companies use sometimes are called "insurance scores" or "credit-based insurance scores."

Credit scores and credit reports

Your credit report is a key part of many credit scoring systems. That's why it is critical to make sure your credit report is accurate. Federal law gives you the right to get a free copy of your credit reports from each of the three national consumer reporting companies once every 12 months.

The Fair Credit Reporting Act (FCRA) also gives you the right to get your credit score from the national consumer reporting companies. They are allowed to charge a reasonable fee, generally around $8, for the score. When you buy your score, often you get information on how you can improve it.

Your credit report is a key part of many credit scoring systems.

To order your free annual report from one or all the national consumer reporting companies, and to purchase your credit score, visit www.annualcreditreport.com, call toll-free 1-877-322-8228, or complete the Annual Credit Report Request Form and mail it to: Annual Credit Report Request Service, P. O. Box 105281, Atlanta, GA 30348-5281. The form is at the back of this brochure; or you can print it from www.ftc.gov/credit. For more information, see *Your Access to Free Credit Reports* at www.ftc.gov/credit.

How is a credit scoring system developed?

To develop a credit scoring system or model, a creditor or insurance company selects a random sample of its customers, or a sample of similar customers, and analyzes it statistically to identify characteristics that relate to risk. Each of the characteristics then is assigned a weight based on how strong a predictor it is of who would be a good risk. Each company may use its own scoring model, different scoring models for different types of credit or insurance, or a generic model developed by a scoring company.

Under the Equal Credit Opportunity Act (ECOA), a creditor's scoring system may not use certain characteristics — for example, race, sex, marital status, national origin, or religion — as factors. The law allows creditors to use age in properly designed scoring systems. But any credit scoring system that includes age must give equal treatment to elderly applicants.

What can I do to improve my score?

Credit scoring systems are complex and vary among creditors or insurance companies and for different types of credit or insurance. If one factor changes, your score may change — but improvement generally depends on how that factor relates to others the system considers. Only the business using the scoring knows what might improve your score under the particular model they use to evaluate your application.

Nevertheless, scoring models usually consider the following types of information in your credit report to help compute your credit score:

- Have you paid your bills on time? You can count on payment history to be a significant factor. If your credit report indicates that you have paid bills late, had an account referred to collections, or declared bankruptcy, it is likely to affect your score negatively.

- Are you maxed out? Many scoring systems evaluate the amount of debt you have compared to your credit limits. If the amount you owe is close to your credit limit, it's likely to have a negative effect on your score.

- How long have you had credit? Generally, scoring systems consider the length of your credit track record. An insufficient credit history may affect your score negatively, but factors like timely payments and low balances can offset that.

- Have you applied for new credit lately? Many scoring systems consider whether you have applied for credit recently by looking at "inquiries" on your credit report. If you have applied for too many new accounts recently, it could have a negative effect on your score. Every inquiry isn't counted: for example, inquiries by creditors who are monitoring your account or looking at credit reports to make "prescreened" credit offers are not considered liabilities.

- How many credit accounts do you have and what kinds of accounts are they? Although it is generally considered a plus to have established credit accounts, too many credit card accounts may have a negative effect on your score. In addition, many scoring systems consider the type of credit accounts you have. For example, under some scoring models, loans from finance companies may have a negative effect on your credit score.

Scoring models may be based on more than the information in your credit report. When you are applying for a mortgage loan, for example, the system may consider the amount of your down payment, your total debt, and your income, among other things.

Improving your score significantly is likely to take some time, but it can be done. To improve your credit score under most systems, focus on paying your bills in a timely way, paying down any outstanding balances, and staying away from new debt.

Are credit scoring systems reliable?

Credit scoring systems enable creditors or insurance companies to evaluate millions of applicants consistently on many different characteristics. To be statistically valid, these systems must be based on a big enough sample. They generally vary among businesses that use them.

Scoring models may be based on more than the information in your credit report.

Properly designed, credit scoring systems generally enable faster, more accurate, and more impartial decisions than individual people can make. And some creditors design their systems so that some applicants — those with scores not high enough to pass easily or low enough to fail absolutely — are referred to a credit manager who decides whether the company or lender will extend credit. Referrals can result in discussion and negotiation between the credit manager and the would-be borrower.

What if I am denied credit or insurance, or don't get the terms I want?

If you are denied credit, the ECOA requires that the creditor give you a notice with the specific reasons

your application was rejected or the news that you have the right to learn the reasons if you ask within 60 days. Ask the creditor to be specific: Indefinite and vague reasons for denial are illegal. Acceptable reasons might be "your income was low" or "you haven't been employed long enough." Unacceptable reasons include "you didn't meet our minimum standards" or "you didn't receive enough points on our credit scoring system."

Sometimes you can be denied credit or insurance — or initially be charged a higher premium — because of information in your credit report. In that case, the FCRA requires the creditor or insurance company to give you the name, address, and phone number of the consumer reporting company that supplied the information. Contact the company to find out what your report said. This information is free if you ask for it within 60 days of being turned down for credit or insurance. The consumer reporting company can tell you what's in your report; only the creditor or insurance company can tell you why your application was denied.

If a creditor or insurance company says you were denied credit or insurance because you are too near your credit limits on your credit cards, you may want to reapply after paying down your balances. Because credit scores are based on credit report information, a score often changes when the information in the credit report changes.

If you've been denied credit or insurance or didn't get the rate or terms you want, ask questions:

- Ask the creditor or insurance company if a credit scoring system was used. If it was, ask what characteristics or factors were used in the system, and how you can improve your application.
- If you get the credit or insurance, ask the creditor or insurance company whether you are getting the best rate and terms available. If you're not, ask why.
- If you are denied credit or not offered the best rate available because of inaccuracies in your credit report, be sure to dispute the inaccurate information with the consumer reporting company. To learn more about this right, see *How to Dispute Credit Report Errors* at www.ftc.gov/credit.

The FTC works for the consumer to prevent fraudulent, deceptive and unfair business practices in the marketplace and to provide information to help consumers spot, stop, and avoid them. To file a complaint or to get free information on consumer issues, visit www.ftc.gov or call toll-free, 1-877-FTC-HELP (1-877-382-4357); TTY: 1-866-653-4261. The FTC enters Internet, telemarketing, identity theft, and other fraud-related complaints into Consumer Sentinel , a secure online database available to hundreds of civil and criminal law enforcement agencies in the U.S. and abroad.

EQUIFAX® experian® TransUnion®

Annual Credit Report Request Form

You have the right to get a free copy of your credit file disclosure, commonly called a credit report, once every 12 months, from each of the nationwide consumer credit reporting companies - Equifax, Experian and TransUnion.

For instant access to your free credit report, visit www.annualcreditreport.com.

For more information on obtaining your free credit report, visit www.annualcreditreport.com or call 1-877-322-8228.

Use this form if you prefer to write to request your credit report from any, or all, of the nationwide consumer credit reporting companies. The following information is required to process your request. **Omission of any information may delay your request.**

Once complete, fold (do not staple or tape), place into a #10 envelope, affix required postage and mail to:

Annual Credit Report Request Service P.O. Box 105281 Atlanta, GA 30348-5281.

Please use a Black or Blue Pen and write your responses in PRINTED CAPITAL LETTERS without touching the sides of the boxes like the examples listed below:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z 0 1 2 3 4 5 6 7 8 9

Social Security Number: ___ - ___ - ____

Date of Birth: ___ / ___ / ____

Month / Day / Year

Fold Here

Fold Here

First Name | **M.I.**

Last Name | **JR, SR, III, etc.**

Current Mailing Address:

House Number | **Street Name**

Apartment Number / Private Mailbox | **For Puerto Rico Only: Print Urbanization Name**

City | **State** | **ZipCode**

Previous Mailing Address (complete only if at current mailing address for less than two years):

House Number | **Street Name**

Fold Here

Fold Here

Apartment Number / Private Mailbox | **For Puerto Rico Only: Print Urbanization Name**

City | **State** | **ZipCode**

Shade Circle Like This → ●

Not Like This → ⊗ ✓

I want a credit report from (shade each that you would like to receive):

- ◯ **Equifax**
- ◯ **Experian**
- ◯ **TransUnion**

◯ **Shade here if, for security reasons, you want your credit report to include no more than the last four digits of your Social Security Number.**

If additional information is needed to process your request, the consumer credit reporting company will contact you by mail.

Your request will be processed within 15 days of receipt and then mailed to you.

31238

General Tips

The Federal Trade Commission (FTC) is the nation's consumer protection agency. Here are some tips from the FTC to help you be a more savvy consumer.

1. **Know who you're dealing with.** Do business only with companies that clearly provide their name, street address, and phone number.

2. **Protect your personal information.** Share credit card or other personal information only when buying from a company you know and trust.

3. **Take your time.** Resist the urge to "act now." Most any offer that's good today will be good tomorrow, too.

4. **Rate the risks.** Every potentially high-profit investment is a high-risk investment. That means you could lose your investment — all of it.

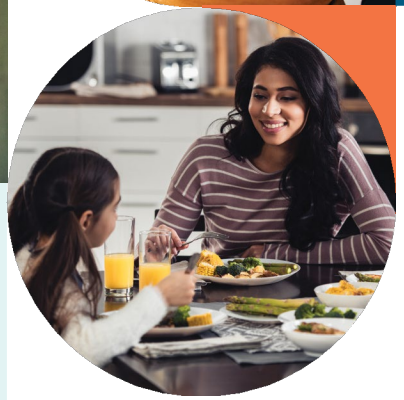
5. **Read the small print.** Get all promises in writing and read all paperwork before making any payments or signing any contracts. Pay special attention to the small print.

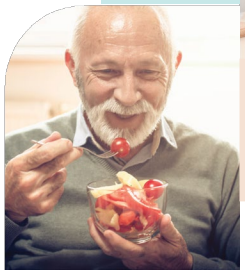
6. **"Free" means free.** Throw out any offer that says you have to pay to get a gift or a "free" gift. If something is free or a gift, you don't have to pay for it. Period.

7. **Report fraud.** If you think you've been a victim of fraud, report it. It's one way to get even with a scam artist who cheated you. By reporting your complaint to 1-877-FTC-HELP or ftc.gov, you are providing important information to help law enforcement officials track down scam artists and stop them!

Federal Trade Commission
Bureau of Consumer Protection
Division of Consumer and Business Education

Make Every Bite Count With the *Dietary Guidelines*





DGA Dietary Guidelines for Americans 2020 - 2025

DietaryGuidelines.gov

Executive Summary

The foods and beverages that people consume have **a profound impact on their health. The scientific** connection between food and health has been well documented for many decades, with substantial and increasingly robust evidence showing that a healthy lifestyle—including following a healthy dietary pattern—can help people achieve and maintain good health and reduce the risk of chronic diseases throughout all stages of the lifespan: infancy and toddlerhood, childhood and adolescence, adulthood, pregnancy and lactation, and older adulthood. The core elements of a healthy dietary pattern are remarkably consistent across the lifespan and across health outcomes.

Since the first edition was published in 1980, the *Dietary Guidelines for Americans* have provided science-based advice on what to eat and drink to promote health, reduce risk of chronic disease, and meet nutrient needs. **Publication of the** *Dietary Guidelines* **is required under the 1990 National Nutrition Monitoring and Related Research Act, which states that at least every 5 years,** the U.S. Departments of Agriculture (USDA) and of Health and Human Services (HHS) must jointly publish a report containing nutritional and dietary information and guidelines for the general public. The statute (Public Law 101-445, 7 United States Code 5341 et **seq.) requires that the** *Dietary Guidelines* **be based on the preponderance of current scientific and medical knowledge. The 2020-2025 edition of the** *Dietary Guidelines* builds from the 2015 edition, with revisions **grounded in the** *Scientific Report of the 2020 Dietary Guidelines Advisory Committee* and consideration of Federal agency and public comments.

The *Dietary Guidelines* is designed for policymakers and nutrition and health professionals to help all individuals and their families consume a healthy, **nutritionally adequate diet. The information in the** *Dietary Guidelines* **is used to develop, implement,** and evaluate Federal food, nutrition, and health policies

and programs. It also is the basis for Federal nutrition education materials designed for the public and for the nutrition education components of USDA and HHS nutrition programs. State and local governments, schools, the food industry, other businesses, community groups, and media also use *Dietary Guidelines* **information to develop programs, policies,** and communication for the general public.

The aim of the *Dietary Guidelines* is to promote health and prevent disease. Because of this public health orientation, the *Dietary Guidelines* is not intended to contain clinical guidelines for treating chronic diseases. Chronic diseases result from a complex mix of genetic, biological, behavioral, socioeconomic, and environmental factors, and people with these **conditions have unique health care requirements that require careful oversight by a health professional. The body of scientific evidence on diet and health reviewed** to inform the *Dietary Guidelines* is representative of the U.S. population—it includes people who are healthy, people at risk for diet-related chronic conditions and diseases, such as cardiovascular disease, type 2 diabetes, and obesity, and some people who are living with one or more of these diet-related chronic illnesses. At the same time, it is essential that Federal agencies, medical organizations, and health professionals adapt the *Dietary Guidelines* **to meet the specific needs of** their patients as part of an individual, multifaceted **treatment plan for the specific chronic disease.**

Consistent and Evolving

Although many recommendations have remained relatively consistent over time, the *Dietary Guidelines* also has built upon previous editions and evolved as **scientific knowledge has grown. The** *Dietary Guidelines for Americans, 2020-2025* **reflects this in three** important ways:

The first is its recognition that diet-related chronic diseases, such as cardiovascular disease, type 2 diabetes, obesity, and some types of cancer, are very prevalent among Americans and pose a major public health problem. Today, more than half of adults have one or more diet-related chronic diseases. As a result, recent editions of the *Dietary Guidelines* have focused on healthy individuals, as well as those with overweight or obesity and those who are at risk of chronic disease. A fundamental premise of the *2020-2025 Dietary Guidelines* is that just about everyone, **no matter their health status, can benefit from shifting** food and beverage choices to better support healthy dietary patterns.

The second is its focus on dietary patterns. **Researchers and public health experts, including** registered dietitians, understand that nutrients and **foods are not consumed in isolation. Rather, people** consume them in various combinations over time—a dietary pattern—and these foods and beverages act synergistically to affect health. The *Dietary Guidelines for Americans, 2015-2020* puts this understanding into action by focusing its recommendations on consuming a healthy dietary pattern. The *2020-2025 Dietary Guidelines* carries forward this emphasis on the importance of a healthy dietary pattern as a whole—rather than on individual nutrients, foods, or food groups in isolation.

The third is its focus on a lifespan approach. This edition of the *Dietary Guidelines* highlights the importance of encouraging healthy dietary patterns at every life stage from infancy through older adulthood. It provides recommendations for healthy dietary patterns **by life stage, identifying needs specific to each life stage** and considering healthy dietary pattern characteristics that should be carried forward into the next stage of **life. For the first time since the 1985 edition, the** *2020-2025 Dietary Guidelines* includes recommendations for healthy dietary patterns for infants and toddlers.

The Guidelines

The *2020-2025 Dietary Guidelines* **provides four** overarching Guidelines that encourage healthy eating patterns at each stage of life and recognize that individuals will need to make shifts in their food and beverage choices to achieve a healthy pattern. The Guidelines also explicitly emphasize that a healthy **dietary pattern is not a rigid prescription. Rather, the** Guidelines are a customizable framework of core elements within which individuals make tailored and affordable choices that meet their personal, cultural, and traditional preferences. Several examples of healthy dietary patterns that translate and integrate the recommendations in overall healthy ways to eat are provided. The Guidelines are supported by Key **Recommendations that provide further guidance on** healthy eating across the lifespan.

The Guidelines

Make every bite count with the *Dietary Guidelines for Americans*. Here's how:

1 Follow a healthy dietary pattern at every life stage.

At every life stage—infancy, toddlerhood, childhood, adolescence, adulthood, pregnancy, lactation, and older adulthood—it is never too early or too late to eat healthfully.

- **For about the first 6 months of life,** exclusively feed infants human milk. Continue to feed infants **human milk through at least the first year of life, and longer if desired. Feed infants iron-fortified infant formula during the first year of life when human milk is unavailable. Provide infants with supplemental** vitamin D beginning soon after birth.
- **At about 6 months,** introduce infants to nutrient-dense complementary foods. Introduce infants to potentially allergenic foods along with other complementary foods. Encourage infants and toddlers to consume a variety of foods from all food groups. Include foods rich in iron and zinc, particularly for infants fed human milk.
- **From 12 months through older adulthood,** follow a healthy dietary pattern across the lifespan to meet nutrient needs, help achieve a healthy body weight, and reduce the risk of chronic disease.

2 Customize and enjoy nutrient-dense food and beverage choices to reflect personal preferences, cultural traditions, and budgetary considerations.

A healthy dietary pattern can benefit all individuals regardless of age, race, or ethnicity, or current health status. The *Dietary Guidelines* provides a framework intended to be customized to individual needs and preferences, as well as the foodways of the diverse cultures in the United States.

3 Focus on meeting food group needs with nutrient-dense foods and beverages, and stay within calorie limits.

An underlying premise of the *Dietary Guidelines* is that nutritional needs should be met primarily from **foods and beverages—specifically, nutrient-dense foods and beverages. Nutrient-dense foods provide** vitamins, minerals, and other health-promoting components and have no or little added sugars, saturated fat, and sodium. A healthy dietary pattern consists of nutrient-dense forms of foods and beverages across all food groups, in recommended amounts, and within calorie limits.

The core elements that make up a healthy dietary pattern include:

- **Vegetables of all types**—dark green; red and orange; beans, peas, and lentils; starchy; and other vegetables
- **Fruits,** especially whole fruit
- **Grains,** at least half of which are whole grain
- Dairy, **including fat-free or low-fat milk, yogurt, and cheese, and/or lactose-free versions and fortified** soy beverages and yogurt as alternatives
- **Protein foods,** including lean meats, poultry, and eggs; seafood; beans, peas, and lentils; and nuts, seeds, and soy products
- **Oils,** including vegetable oils and oils in food, such as seafood and nuts

4 Limit foods and beverages higher in added sugars, saturated fat, and sodium, and limit alcoholic beverages.

At every life stage, meeting food group recommendations—even with nutrient-dense choices—requires most of a person's daily calorie needs and sodium limits. A healthy dietary pattern doesn't have much room for extra added sugars, saturated fat, or sodium—or for alcoholic beverages. A small amount of added sugars, saturated fat, or sodium can be added to nutrient-dense foods and beverages to help meet food group recommendations, but foods and beverages high in these components should be limited. Limits are:

- **Added sugars**—Less than 10 percent of calories per day starting at age 2. Avoid foods and beverages with added sugars for those younger than age 2.
- **Saturated fat**—Less than 10 percent of calories per day starting at age 2.
- **Sodium**—Less than 2,300 milligrams per day—and even less for children younger than age 14.
- **Alcoholic beverages**—Adults of legal drinking age can choose not to drink, or to drink in moderation by limiting intake to 2 drinks or less in a day for men and 1 drink or less in a day for women, when alcohol is consumed. Drinking less is better for health than drinking more. There are some adults who should not drink alcohol, such as women who are pregnant.

Terms to Know

Several terms are used throughout the *Dietary Guidelines* and are essential to understanding the Guidelines and putting them into **action. These terms are defined here:**

- **Dietary pattern:** It is the combination of foods and beverages that constitutes an individual's complete dietary intake over time. This may be a description of a customary way of eating or a description of a combination of foods recommended for consumption.
- Nutrient dense: **Nutrient-dense foods** and beverages provide vitamins, minerals, and other health-promoting components and have little added sugars, saturated fat, and sodium. Vegetables, fruits, whole grains, seafood, eggs, beans, peas, and lentils, unsalted nuts and seeds, fat-free and low-fat dairy products, and lean meats and poultry—when prepared with no or little added sugars, saturated fat, and sodium—are nutrient-dense foods.

For most individuals, no matter their age or health status, **achieving a healthy dietary pattern will require changes in** food and beverage choices. Some of these changes can be accomplished by making simple substitutions, while **others will require greater effort to accomplish. This edition of the** *Dietary Guidelines* **presents overall guidance on** choosing nutrient-dense foods and beverages in place of less healthy choices and also discusses special nutrition considerations for individuals at each life stage—infants and toddlers, children and adolescents, adults, women who are pregnant or lactating, and older adults.

Although individuals ultimately decide what and how much to consume, their personal relationships; the settings in which they live, learn, work, play, and gather; and other contextual factors—including their ability to consistently **access healthy and affordable food—strongly influence** their choices. Health professionals, communities, businesses and industries, organizations, government, and other segments of society all have a role to play in supporting individuals and families in making choices **that align with the** *Dietary Guidelines* and ensuring that all people have access to a healthy and affordable food **supply. Resources, including Federal programs that support** households, regardless of size and make-up, in choosing a healthy diet and improving access to healthy food, are highlighted throughout this edition of the *Dietary Guidelines for Americans.*

LAUNDRY ON YOUR OWN

DOING YOUR OWN LAUNDRY FOR THE FIRST TIME? NOT SURE WHAT TO DO WITH THE PILE OF LAUNDRY ON YOUR FLOOR?

Hang on! Help is here. Learning how to do your laundry is an important life skill that will help you look (and smell) your best. Learning how to do laundry is not difficult, and when done correctly can save you time and money.

Although the latest in washers, dryers and laundry products make cleaning easier, for reliable results, follow these basic procedures:

- Hang up your clothes when you take them off.
- Read the care labels and follow instructions.
- Treat stains before laundering.
- Sort clothes before washing and drying.
- Follow the instructions on laundry products.

LAUNDRY IS MUCH LESS OVERWHELMING IF YOU DO IT FREQUENTLY AND AVOID A MOUNTAIN OF DIRTY CLOTHES. USE THESE SIMPLE INSTRUCTIONS TO KEEP ON TOP OF YOUR LAUNDRY PILE AND ALWAYS LOOK (AND SMELLING) YOUR BEST.

HANG UP YOUR CLOTHES

The last thing that you need is a pile of stinky, dirty laundry in your room. You can save hours of washing and ironing if you just take a few minutes to hang your clothes on hangers rather than leaving them piled in a corner of your room. Hanging shirts, dresses and slacks can also help eliminate major wrinkles. Some fabrics like those made with wool aren't meant to be washed frequently, but instead can be hung to aerate the garment and get rid of any odors.

READ CARE LABELS

Following the manufacturer's recommended instructions can mean the difference between a garment that lasts and one that is ruined easily. Read the care labels in your garments. They contain clothing care procedures that are recommended by the clothing manufacturer. Symbols now appear on garment labels. It may seem like a secret code at first glance, but these universal washing symbols will let you know which cycle to use, how to dry and even the heat setting on an iron. By law, manufacturers must attach care labels permanently. They are usually on the inside of the collar, neckline or waist seam, but can be on other inside seams, as well. Although you can remove the labels, it is best to leave them attached to know how to care for your clothing.

REMOVING STAINS

Spots and stains are easier to remove if they are treated quickly – not a few days after the stain appeared. If you wait, you may ruin your favorite shirt or jeans!

Before treating a stain, check the garment's care label for helpful information on fiber content and recommended care. Do not cut out the care label! To remove a stain, start by blotting the stain with a clean cloth; do not rub the stain. Work from the outer edge to the center of the stain. Be patient when following stain-removal directions.

One way to remove a stain is to pre-treat before laundering, using a stain remover. Pre-soak stain removers usually come in pump sprays, liquid soaps, or sticks. Follow the product label for instructions. Another pre-treatment alternative is to rub in a liquid detergent or make a paste of water and granular detergent, and then apply to the stain. Stain removers work best on tough, oily stains.

Chlorine bleach is a stain remover. Use it only on white and colorfast clothes. Although bleach can also improve the cleaning power of the laundry detergents, it weakens fibers (especially cotton) when used repeatedly. That makes clothes wear out quicker. ***Do not use bleach on silk, wool, spandex, non-colorfast fabrics, or fabrics with a flame-retardant finish.*** Oxygen bleach is safe for colored fabrics and is most effective in brightening colors and whites when used regularly. Once a clothing item is laundered, check for stain removal before putting items into the dryer. Re-treat stains that are not completely gone before drying; some stains must be treated several times. The heat of the dryer can set the stain and make a stain permanent.

SORTING

Sort clothes before washing to keep colors from fading onto other colors, to prevent transfer of lint and soil, and to make it easier to choose the best water temperature and detergent for your clothes. Be sure to empty pockets; shake off loose dirt; close zippers, hooks, and eyes; and remove belts, pins, and buckles.

Then sort the clothes by:

Color: Separate whites from colors, and light colors from dark.
Fiber content of fabric: Fibers that can be washed together include cotton and linen; wool and acrylic; and manufactured fibers (polyester and blends). Remember that some fabrics should be dry-cleaned only.
Texture: Separate smooth fabrics (such as polyester) from pile fabrics (corduroy). Wash fabrics that shed lint, such as towels made of terry cloth, separately from those that attract it, such as corduroy, velveteen and most permanent-press fabrics.
Construction: Wash delicate items separately, such as loose knits, lace, or any item requiring hand washing.
Soil: Separate heavily soiled from lightly soiled clothes.

SELECT LAUNDRY PRODUCTS AND WASHING TECHNIQUES.

SOAPS AND DETERGENTS

Read laundry labels and directions to choose the right detergent. Soaps are designed for light, gentle washing; detergents work to remove a variety of soil amounts. Use the recommended amounts.

Liquids	All-purpose laundry detergents that are especially effective on food, greasy and oily soils. Since in liquid form, they are also good for pre-treating spots and stains.
Powders	All-purpose laundry detergents which are ideal for general laundering. Effective on lifting out clay and ground-in dirt.
Ultra-Detergents	Most liquid and powder detergents are now concentrated and in smaller packaging, yet offer the same amount of cleaning power as larger packages. You need less ultra-detergent than un-concentrated product. Read package instructions for use.
Combination Detergents	One detergent that does two jobs. Designed with built-in fabric softeners in liquid or powder detergents, or powder detergent with color-safe bleach.
Fragrance or Dye-free detergents	Many detergent products are now fragrance-free and/or dye-free.
Detergent Packets	Single-load liquid laundry packets containing highly concentrated detergent.
High-Efficiency Detergents	Detergents (both liquid and powder forms designed for use in both front and top-loading HE washers. These products are formulated for use in low-water volume.

Remember:

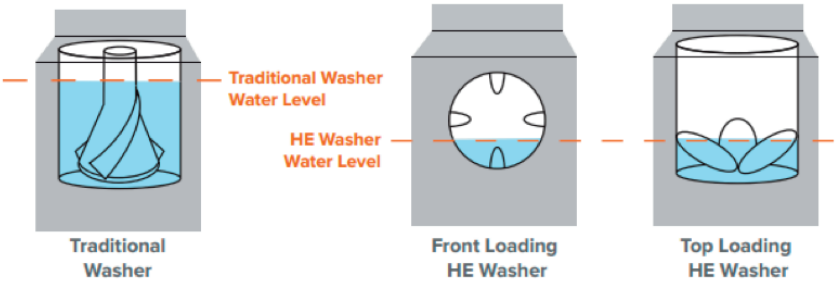
- Every load of laundry needs detergent to get clean.
- Follow the manufacturer's instructions for amounts to use. Measure the detergent before adding it to the water.
- More detergent may be needed for extra-large loads and less for very small loads.
- High efficiency machines, which use significantly less water than top loaders, use detergent marked HE. Regular detergent produces too many suds in low water levels and makes it difficult to remove all of the soap for the load.

WASHING MACHINES

Washing machines come in two basic categories, ***traditional*** and ***high-efficiency (HE)***. They also come in front-loading or top loading styles.

Traditional washers have an agitator which moves back and forth or up and down. Clothing in the washer will be completely submerged in water.

High-efficiency washers use a tumbler system with low-water wash and rinse cycles. They do not have an agitator. These washers also use about 50 percent less water and 20-50 percent less energy than traditional models.



WATER TEMPERATURE

Washing machines are now designed to minimize the need for hot water. All detergents work better in water temperatures above 65 degrees. Check the care label instructions and fiber content for temperature guidelines.

Hot water is best to remove germs and heavy soil and is typically used for whites, bedding, towels, dirty clothing, and diapers. However, hot water can shrink, fade, and damage some fabrics.

Warm water is designed for man-made fiber, knits, and jeans. Most of your clothes can be washed in warm water without significant fading or shrinking.

Cold Water is for dark or bright colors that bleed or delicate fabrics. Washing with cold water saves energy.

LOADING THE WASHER

Fill the washer with water, add detergent, and then clothes. ***Do not pack clothes into a washer.*** Overloading washers can create extra lint, leave detergent on clothes, and shorten their life. Place them loosely and unfolded, so that water and detergent can circulate freely through the clothes. Vary the size of articles in loads. For example, wash large towels and wash cloths together, or jeans and dark shirts, or two sheets and smaller items requiring similar water temperatures. Never wind, wrap, or drape clothing over the washer agitator. This could tear and damage your clothes.

DRYING

Choose a dry cycle that fits the care label instruction. If items can be washed together, generally they can be dried together. Some items may shrink when dried. Again, read the label. You may want to remove such items from the washer and hang them to dry rather than drying in the dryer. Shake damp clothes to loosen them before placing them in the dryer. ***Do not overload the dryer.*** If you are using a dryer with a removable lint filter, clean it before starting the next dryer cycle. If you do not clean the filter regularly, your apartment or house may be at risk of fire. Regular cycles are intended for all-cotton fabrics. Use the permanent press cycle for clothes made of manmade fibers, such as polyester, nylon and acrylic. Avoid wrinkles by removing clothes from the dryer as soon as the cycle ends. Leaving them in the dryer will create more wrinkles.

Do not over dry clothing. Remove items with elastic bands, such as shorts, socks, and bras, while slightly damp. Some touch-up ironing may be necessary on some items.

Air drying. Read the garment care label. Some items should not be dried in the dryer but should be dried on a flat surface or hung to dry.

CHOOSING A LAUNDROMAT

If you are living in a dorm or apartment, you may not have a washer and dryer on the premises. Though less expensive than dry cleaning, a coin-operated laundry can be costly. Sorting clothing correctly can save your money and your clothes.

Choose a laundromat that is clean, well maintained and well lit. Look for businesses that provide tables for folding, hanging racks, and baskets for moving laundry from washers to dryers.

Before using any type of commercial laundry machine; check for left behind clothing, wipe down the inside of the machine with a disinfectant wipe to kill any germs left behind and smell inside the drum for bleach – some people overuse bleach, and you do not want to have any clothing ruined by bleach residue.

Be prepared to pay by the load. Washers and dryers are equipped to pay either by a card or coin operated. It is less expensive to bring your own laundry detergent. Be sure to bring hangers.

Adapted from *Laundry on your own*, by Pamela Brown, 1998, Texas Agricultural Extension Service with permission.

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https://www.textileaffairs.com/

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Best Practices

KITCHEN & FOOD SAFETY FACT SHEET

Texas A&M AgriLife Extension

BASIC GUIDELINES

- No running around the preparation area
- Keep trash off the floor and counters
- Sanitize all work surfaces prior to starting food preparation
- Start with clean utensils, totes, and equipment/supplies
- Place eggs in a small bowl to prevent them from rolling onto the floor before you can use them
- Before preheating an oven, move oven racks to the needed positions
- Keep raw foods separate from ready to eat foods
- Be sure an appliance is in the "off" position before plugging it in.
- Keep portable appliances unplugged when not in use
- Avoid using any appliance with a frayed or worn cord
- Use a barrier when handling foods if possible. (Gloves, spoons, spatulas, tongs, deli tissue, wax paper etc.) Both gloves and a utensil are not necessary when serving/preparing food, only one barrier is needed.
- Gloves may only be used for one task and must be changed if damaged or anytime they become contaminated. This includes if a participant touches a part of their exposed skin, raw meats and unwashed foods, or if they perform a task such as touching trash, cords, cleaning tools, etc.
- Hold by the edges to put on hands, do not blow into them or roll them up your hands
- Have gloves that fit, and are not too big
- Wipe up all spills immediately with paper towel, cloth or mop
- Keep cupboard doors and drawers closed unless in use
- Turn handles of sauce pans away from the walk area when being used
- Clean and sanitize utensils between uses
- Dry hands well before using electric cords or appliances
- Use only dry hot pads or oven mitts, damp ones conduct heat
- Always open oven, stove or microwave door/lid a crack to vent some steam before looking and tilt lid away from you so steam is released away from your face
- Use a thermometer to determine doneness of foods, clean and sanitize after each use.
- Insert thermometer at least two inches into the thickest part of the food avoiding fat and bones.
- For thinner foods, place the thermometer through the side of the food or between two pieces.
- Thermometers are not designed to remain in the food while it is cooking but should be used near the end of the estimated cooking time to check for final cooking temperatures.
- Color and texture are not indicators of doneness.
- Have a plan for where you'll go with a pan when you take it out of the oven or off the stovetop,
- Have cooling racks and counter savers in place
- Always turn the burners/skillets off when finished
- Disconnect appliances by pulling out the plug, not by tugging on the cord
- Unplug small appliances before cleaning
- Always use a cutting board to protect yourself and the counter
- Do not hold the food in your hand to cut it, even if it is only an apple
- Wash knives and sharp objects separately
- Never place knives in sink filled with soapy dish water
- Store knives in a special compartment or holder

PERSONAL HYGIENE

Have hair restraint cap, chef's hat, bandana, visor, or hair net etc. (keeps hair from contacting exposed food)

No jewelry or big ear rings (risk of contamination)

Do not wear clothing that is loose or drapes below your wrists

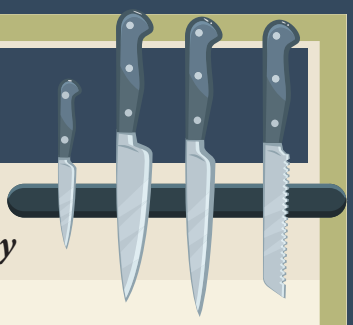
No chewing gum or eating while prepping or presenting

Open cuts/sores MUST be completely covered with waterproof bandage AND covered with a glove if on the hand

Do not compete if you have persistent discharge from eyes, nose and mouth or are exhibiting symptoms of a foodborne illness (ie. vomiting and/or diarrhea)

Use clean aprons/clothing and closed toed shoes

KNIFE SAFETY



Select the correct knife for the job and cut into the cutting board away from your body

CHEF'S KNIFE

A chef's knife is usually the largest knife in the kitchen, with a wide blade that is 8" to 10" long. Choose a knife that feels good and balanced in your hand. The knife should have a full tang. This means that the blade should go all the way through the handle for the best wear and stability.

PARING KNIFE

Paring knives are generally 2-1/2-4" in length. The most often used knife in the kitchen. It is ideal for peeling and coring fruits and vegetables, cutting small objects, slicing, and other hand tasks.

UTILITY KNIFE

Utility knives are longer than paring knives but smaller than chef's knives, usually around 5-8" long. They are also called sandwich knives because they are just the right size for slicing meats and cheeses.

BONING KNIFE

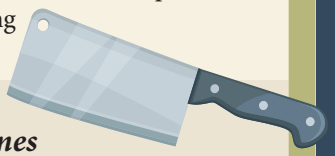
This knife has a more flexible blade to curve around meat and bone. Generally 4-5" long.

BREAD KNIFE

Bread knives are usually serrated. Most experts recommend a serrated knife that has pointed serrations instead of wavy serrations for better control and longer knife life. You must use a sawing motion when using a serrated knife.

CAN OPENER

Used to open sealed metal cans. Hold the handle of the can opener, not the sharp edge. After the lid has been cut off the can, pick it up carefully and discard. Look for pieces of the label or metal shavings from the can in the food after opening (physical contamination)



Keep Knives sharp!
Sharp knives are safer than dull ones

PREVENTATIVE MEASURES

PREVENTING FIRE

Keep a fire extinguisher in the kitchen & know how to use it

Avoid leaving the kitchen if you have food cooking or baking, if you must leave, carry a timer with you to remind you to return on time

Always turn the oven or stove top to off when finished

Smother a grease fire with a tight-fitting lid, never use water it will spread

Clothing on fire: remember stop, drop, roll to smother it

ELECTRIC SHOCK

Avoid using any appliance with a frayed or worn cord

Keep portable appliances unplugged when not in use

Be sure an appliance is in the "off" position before plugging it in

Never insert metal utensils in electrical appliances that are plugged in

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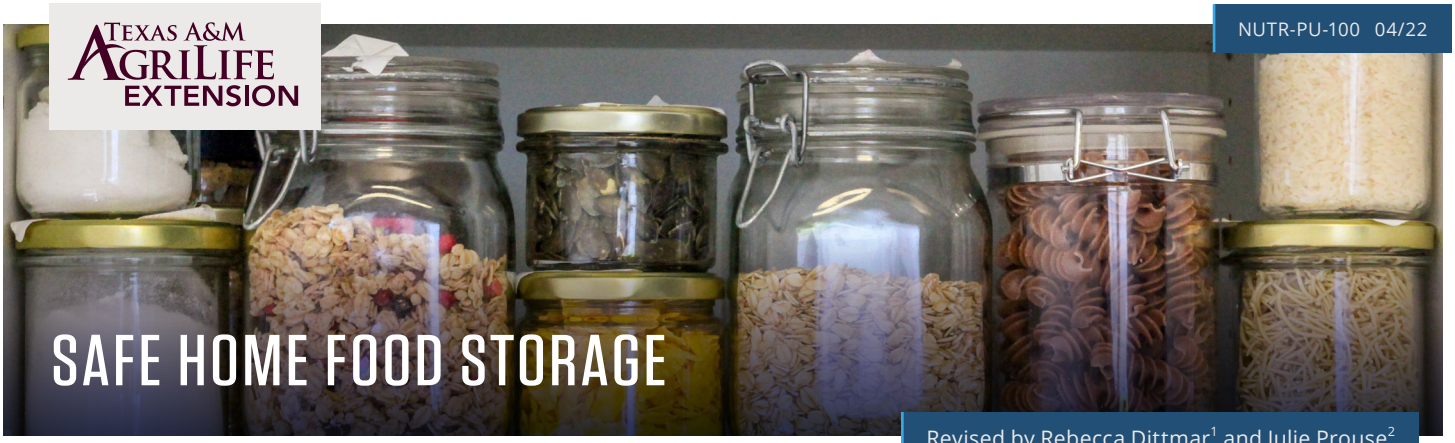

SAFE HOME FOOD STORAGE

Revised by Rebecca Dittmar[1] and Julie Prouse[2]

HOW IMPORTANT IS PROPER FOOD STORAGE?

It can help you:

- Preserve food quality, including nutrients, flavor, and texture.
- Make the most of your food dollar by preventing spoilage.
- Prevent foodborne illness caused by harmful bacteria.

To store food properly, you need to know both how to store foods and how long they will be safe and of high quality.

The quality of fresh meat or produce when it is acquired greatly affects how long it can be stored without spoilage or loss of quality. The storage times in this publication assume that foods are fresh and desirable when acquired. Remember that stored foods are never fresher than when first put into storage.

When grocery shopping, choose perishable items last, go straight home, and store them properly in the refrigerator or freezer.

A good policy to follow is "first in, first out," meaning that you rotate items so that you use the older items first. Also, buy foods in reasonable amounts so that you can use them while they are still of good quality. Excess food may become waste.

Here are some general guidelines for proper food storage.

PANTRY

Pantry storage conditions should be dry, cool, and dark. Ideally, the temperature in the pantry should be 50 to 70 degrees Fahrenheit (F). Higher temperatures speed up deterioration. Always store foods in the coolest cabinets away from the range, oven, water heater, dishwasher, or any hot pipes. For example, the area under the sink is not a good place to store potatoes or onions.

Although many staples and pantry items have a long shelf life and may be advertised at special prices, buy only what you expect to use within the recommended storage times.

To prevent foods from deteriorating in the pantry, store them in metal, glass, or plastic containers. Keep these containers, as well as commercially canned foods, clean and free of dust, which can drop into them when opened. Store foods off the floor and away from walls to allow for proper circulation and keep them away from the light and heat as much as possible. Treat storage areas for pests and clean the pantry periodically to remove food particles.

REFRIGERATOR

Maintain the refrigerator temperature at 32 to 40 degrees F. Use an appliance thermometer at various points in the refrigerator to monitor temperatures. Always store the most perishable items, including meats, poultry, fish, eggs, and dairy products, in the coldest sections of the refrigerator.

Do not overload the refrigerator, which can reduce the temperature inside. Air must be able to circulate freely to cool foods adequately.

Clean the refrigerator to remove spills and spoiled foods. These provide a medium for bacteria to grow in and possibly contaminate other foods. Refrigerator temperatures only slow bacterial growth—they do not prevent it.

To maintain the quality of refrigerated foods, store them in airtight wraps or containers. This prevents foods

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from drying out, and odors or flavors from transferring from one food to another. Avoid using plastic bags or containers not made for storage. Do not reuse plastic bags that originally contained raw meats, poultry, or fish.

Store raw meats, poultry, and fish so that juices do not drip onto and contaminate other foods. Wrap them securely. Therefore, it's also a good idea to set them on a plate or other container.

FREEZER

Maintain a freezer temperature of 0 degrees F or below. Food quality deteriorates at temperatures above 0 degrees F. Monitor the temperature with an appliance thermometer. A good rule of thumb is that if the freezer can't keep ice cream brick-solid, the temperature is not cold enough.

Remember: freezer temperatures stop or prevent bacteria from growing, but do not kill them. Thus, as foods thaw, they can become unsafe because bacteria that cause foodborne illness may be able to grow. Therefore, it's best to thaw foods in the refrigerator.

Package items for the freezer in moisture- and vapor-proof wraps or containers. Use only freezer-grade foil, plastic wrap, or bags, or use freezer paper or freezer containers. If necessary, use freezer tape to make sure the package is airtight. If the packaging is torn or develops holes, freezer burn may result.

Label all freezer foods with the date, type of food, and weight or number of servings.

Partially thawed food may be refrozen as long as it still has ice crystals. Refreezing, however, may lower the quality. Do not refreeze combination dishes such as stews, soups, and casseroles.

FOOD FRESHNESS—CHECK THE LABEL

Consumers can judge the freshness of food when the manufacturer uses "open dating" on food packages. "Open dating" means that the manufacturer uses a calendar date (for example, Mar 12) to help store managers determine the length of time a food should be offered for sale. These dates are usually found on perishable foods.

With "open dating," there are four types of dates that may be found on a food package:

"Sell by" or "Pull date" — This date tells the store how long to display the food for sale. Foods eaten after this date are usually safe to eat, as long as they are stored for no longer than the recommended time and handled and prepared safely. See the Food Storage Timetable for recommendations.

"Best if used by (before) date" — This date means that the food will be of its highest quality or flavor if consumed before the date on the package. Foods may be safely consumed after the date indicated on the package, if they are stored for no longer than recommended, are handled and prepared properly, and show no signs of spoilage.

"Expiration date" — This is the last day the food should be eaten. Except for eggs, discard foods not consumed by this date.

Eggs: The expiration date is the last date a store can sell the eggs and still refer to them as "fresh." Buy eggs before the expiration date and use them within 30 days. After 30 days, discard the eggs. Do not buy eggs if the expiration date on the package has passed.

"Pack date" — This is the date the food was packaged or processed. Consumers may be able to determine the age of the product by looking at this date.

WHAT ABOUT LEFTOVERS?

The charts in this publication give storage times for many leftover foods. Planning and using leftovers carefully can save money and time. To prevent foodborne illness, it is important to prepare and handle foods properly:

- Wash your hands before handling foods and use clean utensils and surfaces.
- Refrigerate or freeze foods in covered, shallow (less than 3 inches deep) containers within 2 hours after cooking. Leave air space around the containers or packages to allow cold air to circulate and to help ensure rapid, even cooling.
- Label food storage containers with the date so that the foods can be used within a safe amount of time. Avoid tasting old leftovers. Plan to use any cooked foods within safe refrigerator or freezer storage times.
- Before serving, cover and reheat leftovers to 165 degrees Fahrenheit. Reheat soups, sauces, and gravies to a rolling boil.
- If in doubt, throw it out. To prevent outdated, obviously spoiled, or possibly unsafe leftovers from being eaten by people or animals, discard them in the garbage disposal or in tightly wrapped packages.

A NEW GENERATION OF FOODS—CONVENIENT, PREPARED, AND PACKAGED

New food-packaging techniques are making it possible for processors to offer prepared foods that have extended refrigeration times. These longer storage times are made possible by vacuum packaging or modified atmosphere packaging, which replaces oxygen in the package with gases such as carbon dioxide or nitrogen. These packaging techniques slow spoilage, discoloration, and bacterial growth.

The packaging is being used for many products, including fully cooked roast chicken, tuna spread, and ravioli. Although the packaging offers many advantages to consumers, the foods must be handled properly because:

- Foods may be processed 4 to 6 weeks before the "sell by" or "use by" date. These dates assume that the product is refrigerated properly throughout its shelf life.
- Some bacteria that cause foodborne illness, such as *Listeria* and *Yersinia*, can grow slowly under refrigeration.
- Many of these foods require little or no additional cooking or heating before they are eaten. Therefore, any bacteria that may have been introduced before or during packaging would not be destroyed.

Take these precautions when using refrigerated, prepared foods:

- Make sure the food is cold before you buy it.
- Check the package thoroughly to be sure that the packaging materials are intact.
- Check the "sell by" or "use by" date on the package.
- Read the label and carefully follow the storage, cooking, and heating instructions.
- Use these foods within the recommended length of time.
- When freezing these products, do so as soon as possible after purchase.

The recommendations in this publication are for maintaining the maximum safety and quality of foods that are stored when of high quality. Quality or safety will not be improved by storage.

REFERENCES AND ADDITIONAL RESOURCES

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"Cold Food Storage Chart," 2021. *https://www.foodsafety.gov/food-safety-charts/cold-food-storage-charts*

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Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Breads/Cereals/Grains: In general, keep cool and dry. For maximum storage time once opened, store in airtight containers. Refrigeration may increase shelf life for some items.				
Bread, rolls (commercial)	7–18 days	2–4 days	2–3 months	Homemade breads may have a shorter shelf life due to lack of preservatives.
Biscuit, muffin mixes		9 months		
Cereals Ready-to-eat (unopened) (opened) Ready-to-cook oatmeal, etc.		 6–12 months 1–3 months 12 months		
Cornmeal		12 months		Keep tightly closed. Refrigeration may prolong shelf life.
Flour White Whole wheat Almond Coconut		 6–8 months 3–6 months 12 months 12–18 months		
Yeast (dry)	4 months	date on package		Keep dry and cool.
Grits		12 months		
Pancake mixes opened unopened		 2–3 month 6–9 months		
Pasta		1–2 years		
Rice White Brown Mixes		 2 years 1 year 6 months		
Refrigerated biscuit roll, Pastry, and cookie dough	Expiration date on label			
Tortillas Corn Flour	 2 weeks 2 weeks	 1–2 weeks 1–2 weeks		Storage times may vary depending on ingredients. Best if refrigerated once opened. May be frozen.
Dairy Products: Store in coldest part of refrigerator (40°F), never on door.				
Butter	2–3 weeks		6–9 months	Wrap or cover tightly. Hold only 2-day supply in keeper.
Buttermilk	10–14 days		3 months	Cover tightly. Flavor not affected if buttermilk separates.
Cheese Cottage Cream, Neufchatel Hard and wax coated Cheddar, Edam, Gouda, Gruyere, Swiss, brick, etc. (unopened) (opened)	 10–15 days 2 weeks 3–6 months 2 months		 6 months	Keep all cheese tightly packaged in moisture-proof wrap. If outside of hard cheese gets moldy, trim off mold and ½ inch below mold. Do not eat moldy cottage or ricotta cheese. Hard cheese may be frozen but becomes crumbly. Better if grated. Cottage cheese becomes mushy.

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Cheese *continued*				
Parmesan, Romano				
(unopened)		10 months		Refrigerate after opening for prolonged storage. If cheese picks up moisture, mold may develop.
(opened)	2–4 months			
Ricotta	5 days			
Process cheese products	3–4 weeks		4 months	Refrigerate after opening. Close or wrap tightly.
Cream				
Half and half	3–4 days			Cover tightly. Don't return leftover cream to original container. This may spread bacteria to remaining cream. Frozen cream may not whip. Use for cooking.
Whipping	1 month		4 months	
(ultra-pasteurized, unopened)				
Sour	2 weeks			
Dips (commercial)	2 weeks			
Ice cream, ice milk, sherbet			1–4 months	
Milk				
Fresh pasteurized and reconstituted nonfat dry milk	1 week (or a few days after sell-by date)		1 month	Keep tightly covered. Don't return leftover milk to original container. This may spread bacteria to remaining milk. Frozen milk may undergo some quality change.
Evaporated or condensed				
(unopened)		12 months		Invert can every 2 months.
(opened)	1 week			Cover tightly.
Nonfat dry, not reconstituted				
(unopened)		12 months		Refrigeration may prolong quality.
(opened)		6 months		
Almond, oat, coconut, etc.				
(commercial, opened	7–10 days			
(commercial, unopened)		1 week after date		
(homemade)	3–4 days			
Whipped topping				
In aerosol can (non-dairy)	3 months			
From prepared mix	3 days			
Yogurt				
Refrigerated	10–14 days			Keep covered
Frozen			2 months	
Note: Thaw all frozen dairy products in the refrigerator. Some products may lose emulsion and separate but are still adequate for cooking.				
Eggs				
Fresh				Store eggs in original carton in coldest part of refrigerator. Uncooked whites can be frozen as they are. To freeze uncooked yolks or whole eggs, add ⅛ teaspoon salt or 1½ teaspoons corn syrup per ¼ cup (4 yolks or 2 whole eggs). Thaw in refrigerator.
In shell	3–4 weeks			
Whites	3 days		12 months	
Yolks (unbroken and covered with water)	2 days		12 months	
Hard-cooked	1 week			
Deviled	2–3 days			

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Leftover egg dishes	3–4 days			
Egg Substitutes				
Frozen			12 months	After thawing, use within 3 days. Store in refrigerator.
Liquid				
(unopened)	10 days			
(opened)	3 days			
Fish and Shellfish: Refrigerator storage times are for an optimum temperature of 32° to 38° F. Higher temperatures may decrease safe storage times.				
Fish				
Fatty fish	1–2 days		2–3 months	For refrigerator, keep wrapped in original wrap. Store in coldest part of refrigerator (32° to 38°F). Package for freezer in moisture- and vapor-proof wrap. Keep solidly frozen at 0°F. Thaw in refrigerator or under cold running water.
mackerel, trout, salmon, etc.				
Lean fish	1–2 days		6 months	
cod, flounder, etc.				
Breaded, frozen			3 months	
Shellfish				
Clams				Refrigerate live clams, scallops and oysters in container covered with clean, damp cloth—not airtight. Shells will gape naturally, but close when tapped if alive. If not alive, discard.
shucked	1 day		3 months	
in shell	2 days			
Crab				
in shell	2 days			
meat (cooked)	3–5 days		10 months	
Crawfish				Cook only live crawfish. Do not keep airtight. To prolong freezer storage, remove fat to prevent rancidity.
in shell			6 months	
tail meat (cooked)	3–5 days		6 months	
Lobster				Cook lobster only if still alive.
in shell (live)	2 days			
tail meat (cooked)	4–5 days		6 months	
Oysters (shucked)	1 day		4 months	To freeze any uncooked shellfish, pack in moisture- and vapor-proof container. Freeze shucked product in its own “liquor” (liquid) to which water has been added to cover meat.
Scallops	1 day		3 months	
Shrimp (uncooked)	1–2 days		12 months	Remove heads and freeze shrimp tails in shell. Freeze in water in an airtight container of appropriate size for one meal.
Cooked fish or shellfish	2–3 days		3 months	
Canned fish or shellfish				
(unopened)		12 months		
(opened)	1 day			
Surimi seafood	2 weeks		9 months	

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Fruits				
Fresh				Do not wash fruit before storing—moisture encourages spoilage—but wash before eating. Store in crisper or in moisture-resistant bags or wraps. Wrap cut fruits to prevent vitamin loss.
Apples	1 month			
Apricots, avocados, kiwis, mangoes, melons, nectarines, peaches, pears	5 days			
Bananas		2–3 days (until ripened, then refrigerate)		
Berries, cherries	3 days			
Citrus fruit	2 weeks			
Grapes, plums	5 days			
Pineapple	2 days			
Canned (all kinds and juices)				Keep tightly covered. Transfer canned fruit to glass or plastic container.
(unopened)		12 months		
(opened)	1 week			
Juices				Keep tightly covered once open to prevent vitamin loss. Transfer canned juice to glass or plastic container.
Fresh	6 days			
Canned (after opening)	6 days			
Frozen				
(concentrated)			12 months	
(reconstituted)	6 days			
Frozen				Freeze in moisture- and vapor-proof container.
(Home frozen or purchased frozen)			12 months	
Dried		6 months		Keep cool in airtight container. If foods gain moisture, they may become unsafe and allow bacterial growth. Best if refrigerated after opening.
Meats: Beef, pork, lamb, veal, and game				
***Fresh, uncooked**				Store in colder part of refrigerator (36° to 40°F). Freeze immediately if not planning to use in a day or two. Wrap in moisture- and vapor-proof wrap for freezing. Label with date and freeze rapidly at 0°F. Freezer storage times for veal may be less. Pork is best if used within 6 months after freezing. Actual storage time of meat depends on the freshness of meat when purchased. *Vacuum-packed fresh meats have a recommended storage time of 2 weeks in the refrigerator.
Chops	3–5 days		4–6 months	
Steaks	3–5 days		6–9 months	
Ground	1–2 days		2–3 months	
Roast	3–5 days		6–12 months	
Sausage	1–2 days		1–2 months	
Stew meat	1–2 days		2–3 months	
Variety meats	1–2 days		1–2 months	
Pre-stuffed products (chops, breasts)	1 day			
Casseroles, meat pies, TV dinners, stews (frozen)			2–3 months	Keep frozen until ready to heat.
Cooked meats (including leftovers)				
Cooked meat and meat dishes	3–4 days		2–3 months	
Gravy, broths	1–2 days		1–2 months	

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Cured and smoked meats (including lunch meats)				Keep wrapped. Store in coldest part of refrigerator or in meat keeper. Freezing cured or smoked meats is generally not recommended because salty meats will rapidly turn rancid and lunch meats and frankfurters will weep. However, it is possible, so limited freezer storage times are given. If meats are vacuum packaged, check manufacturer's date.
Bacon	5–7 days		1 month	
Frankfurters				
(unopened)	2 weeks**		1–2 months	
(opened)	1 week			
Ham (fully cooked)				
Whole	5–7 days		1–2 months	
Slices	3–4 days			
Canned (unopened) (labeled keep refrigerated)	6–9 months			Do not freeze canned hams.
Canned (shelf stable, unopened)		2 years		Refrigerate after opening.
Country style (unsliced)		1 year		Refrigerate once sliced. Maximum refrigerator storage time is 2 to 3 months.
(cooked, sliced)	7 days		1 month	
Lunch meats, packaged				
(unopened)	2 weeks**		1–2 months	
(opened)	3–5 days			
Lunch meats, deli (store sliced)	3–5 days			
Sausage				Freezing alters sausage flavor. Leave frozen no more than 1 month.
smoked links	7 days		1 month	
dry and semi-dry (like salami)	2–3 weeks			
				**Unopened lunch meats and frankfurters should not be kept more than 1 week after "sell by" date.
Game birds (cranes, geese, ducks, doves, etc.)	1–2 days		6 months	
Venison	3–5 days		6–9 months	
Poultry				
Chicken or turkey				Store in coldest part of refrigerator. Do not let raw juices drip onto other foods. For freezing, use moisture- and vapor-proof wrap or container.
Fresh				
whole	1–2 days		12 months	
pieces	1–2 days		6–9 months	
giblets	1–2 days		3–4 months	
ground	1–2 days		3–4 months	
Cooked				
leftover pieces	3–4 days		4–6 months	
covered with broth, gravy	1–2 days		6 months	
Canned				
(unopened)		12 months		
(opened)	1 day			
Casseroles, TV dinners			3 months	
Duck, goose	2 days		6 months	
Common pantry items				
Baking powder, soda		8–12 months		Keep dry and covered.
Bouillon cubes, granules		1 year		Keep dry and covered.

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Ketchup, chili sauce, barbecue sauce (unopened)		12 months		Refrigerate after opening for longer storage time. Will keep for several months.
Chocolate Pre-melted Semi-sweet Unsweetened		12 months 2 years 18 months		Keep cool.
Chocolate syrup (unopened) (opened)	6 months	2 years		
Cocoa mixes		8 months		
Coffee Cans (unopened) (opened) Instant (unopened) (opened)	4–6 weeks	2 years 1–2 years 2 weeks		Coffee may remain fresher if refrigerated after opening. May also be frozen.
Coffee creamers, nondairy (unopened) (opened)		9 months 6 months		Keep tightly closed to keep out moisture.
Cornstarch		18 months		
Gelatin		18 months		
Honey commercial, home processed (raw, processed)		12 months		Cover tightly. If it crystallizes, warm the jar in pan of hot water or heat on low in microwave.
Jams, jellies Commercial Homemade	1–3 months	12 months		Cover tightly; refrigerate after opening.
Margarine	4–6 months			Use airtight container.
Marshmallows Creme		2–3 months 2–3 months		Refrigerate after opening.
Mayonnaise (unopened) (opened)	3 months	3–4 months		Refrigerate after opening.
Molasses (unopened) (opened)		12 months 6 months		Refrigerate to extend storage life.
Mustard, prepared yellow (unopened) (opened)		1 year 6–8 months		Refrigerate for best storage.
Oils (unopened) (opened)		6–12 months 6–8 months		Store in cool place away from heat source to prevent deterioration. May refrigerate to delay rancidity.
Pectin				Use by expiration date.
Peanut butter (unopened) (opened)		6–9 months 2–3 months		Refrigeration prolongs storage time and helps prevent rancidity.

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Salad dressing				
Bottled (unopened)		10–12 months		
Bottled (opened)	3 months			
Made from mix	2 weeks			
Shortening		8–12 months		Store away from heat source to prevent rancidity.
Spices and herbs				Store in airtight containers in dry place away from heat or light. Replace if aroma fades. May be refrigerated or frozen for longer storage.
Whole spices		1 year		
Ground spices		6 months		
Herbs		6 months		
Sugar				For best storage, keep in airtight container.
Brown		4 months		
Confectioner's/powdered		18 months		
Granulated		2 years		
Sweetener, artificial		2 years		
Syrup		12 months		Keep tightly closed. Refrigerate to extend life.
Tea				Keep in airtight containers.
Bags		18 months		
Instant		3 years		
Loose		2 years		
Vanilla				Keep tightly closed; volatile oils escape.
(unopened)		2 years		
(opened)		12 months		
Other extracts (opened)		12 months		
Vinegar				Keep tightly closed. Distilled vinegar lasts longer than cider vinegar. Vinegar in glass containers has a longer storage time. If "mother" develops (refers to appearance of cloudy mass) in opened vinegar, do not use.
(unopened)		2 years		
(opened)		12 months		
Vegetables: In general, keep in crisper or moisture-proof wrapping.				
Fresh				
Artichokes	2–3 days			Refrigerate in plastic. Wrap base of stalks with damp cloth or paper towel.
Asparagus	2–3 days			Refrigerate in plastic. Wrap base of stalks with damp cloth or paper towel.
Beans				Do not wash green beans until just before use.
green or waxed	3–4 days			
lima (unshelled)	3–5 days		8 months	
Beets	1–2 weeks			
Broccoli	5 days			
Brussel sprouts	5 days			
Cabbage	1 week			
Carrots	1 week			
Celery	1 week			Celery may keep longer if wrapped with moist towel.
Corn (in husks)	1–2 days			
Cucumbers	1 week			
Eggplant	2–3 days			

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Fresh *continued*				
Garlic		5-8 months		Keep in cool, dry, ventilated area.
Greens, spinach, leafy greens, etc.	1–2 days			Rinse and drain greens before refrigerating. Do not allow to freeze.
Lettuce, iceberg	5–7 days			
vacuum packed	2–3 weeks (if unopened)			
Mushrooms	1–2 days			Do not wash mushrooms before refrigerating. Do not store in air-tight container.
Okra	2–3 days			
Onions				Store at room temperature in cool, ventilated area. Keep dry.
dry		2–4 weeks		
green	5 days			Keep refrigerated in plastic bag.
Parsley	2–4 weeks			Store with stems in water and covered with plastic wrap.
Peas (unshelled)	3–5 days			
Peppers				
chile	7–10 days			Keep chile peppers refrigerated in paper bag.
bell	3–4 days		6 months	Freeze for extended use.
Potatoes				Keep fresh potatoes dry and away from sun. For longer storage keep at 50° to 60°F. Warmer temperatures encourage sprouting. **Don't refrigerate fresh potatoes.**
white, fresh		1 week		
sweet, fresh		2–3 weeks		
white, instant (unopened)		6–12 months		
Radishes	1–2 weeks			
Rhubarb	2 weeks			
Rutabagas	2 weeks	1 week		
Squash				Summer varieties of squash include zucchini and yellow crookneck. Winter or hard-shelled squash include pumpkin, acorn, spaghetti and butternut squash.
summer varieties	2–4 days			
winter varieties	2 weeks	1 week		
Tomatoes, ripe	2–3 days			
Turnips	2 weeks			Do not refrigerate until ripe.
Canned				
All kinds		1 year		
Dried				Keep cool and dry in airtight container. If possible, refrigerate. If moisture is present, foods may become unsafe because moisture allows bacterial growth.
All kinds		6–12 months		
Frozen				
Commercially frozen			8 months	
Home frozen			1 year	
Miscellaneous: Snacks, condiments, mixes, prepared foods, etc. Refrigeration may increase shelf life for some baked items.				
Baby food, canned				
(unopened)		1 year		
(opened)	2 days			

Food Storage Timetable				
Food	**Refrigerator**	**Pantry**	**Freezer**	**Special handling**
Cakes, purchased		1–2 days		If cake contains butter cream, whipped cream, cream cheese or custard frosting or filling, refrigerate.
Angel food			2 months	
Chiffon sponge			2 months	
Cheese			2–3 months	
Chocolate			4 months	
Fruit cake			12 months	
Yellow pound			6 months	
Frosted			8–12 months	
Home frozen			3 months	
Cake, cookie mixes		1 year		
Canned goods (miscellaneous, unopened)		1 year		
Cookies				
(commercial, unopened)		4 months		
(homemade)		2–3 weeks		
Crackers				
Unopened		3–6 months		
Opened		2 weeks		
Nuts				Refrigerate or freeze nuts for longer storage to delay rancidity.
In shell (unopened)		4 months		
Nut meats, packaged (unopened)		6 months	3 months	
Nuts (jars or cans)		2 weeks		
(unopened)		1 year	6–8 months	
(opened)		4–6 months	9–12 months	
Pickles, olives (canned, unopened)		1 year		Refrigerate once opened for 1 to 2 months.
Pies and pastries		2–3 days		Those with whipped cream, custard or chiffon fillings should be refrigerated.
Fruit				
baked	a few days		1–2 months	
unbaked			8 months	
Pumpkin or pecan	3–4 days		1–2 months	
Custard, cream or chiffon	3–4 days			
Pastries, cream filled	2–3 days			
Popcorn (unpopped)				
Dry kernels		2 years		
Microwave products		1 year		
Prepared, packaged shelf stable foods (unopened)		1 year		
Sauces, condiments, etc. (commercial)				
Hot sauce, Worcestershire, etc.		1 year		
Salsa				
(unopened)		12–18 months		
(opened)	1–2 months			Fresh homemade salsa has a shorter refrigerator storage time depending upon ingredients (4 to 7 days). Homemade canned products have a shelf life of up to 1 year, unopened, if adequately processed.

Foodborne Illness-Causing Organisms in the U.S.

Get the Facts

Every year, there are more than **48 million cases of foodborne illness** in the U.S., resulting in nearly **128,000 hospitalizations** and **3,000 deaths**. This means that approximately 8 people die each day from foodborne illness. Highly susceptible populations, such as the very young, the elderly, and persons with weakened immune systems, are at the greatest risk. However, **anyone can get a foodborne illness!** Look at the chart below to learn about the foodborne disease-causing organisms that frequently cause illness in the United States.

Organism	Common Name of Illness	Onset After Time of Ingesting	Signs & Symptoms	Duration	Food Sources
Bacillus cereus	B. cereus food poisoning	10-16 hrs	Abdominal cramps, watery diarrhea, nausea	24-48 hrs	Meats, stews, gravies, vanilla sauce
Campylobacter jejuni	Campylobacteriosis	2-5 days	Diarrhea, cramps, fever, and vomiting; diarrhea may be bloody	2-10 days	Raw and undercooked poultry, unpasteurized milk, contaminated water
Clostridium botulinum	Botulism	12-72 hrs	Vomiting, diarrhea, blurred vision, double vision, difficulty in swallowing, muscle weakness. Can result in respiratory failure and death	Variable	Improperly canned foods, especially home-canned vegetables, fermented fish, baked potatoes in aluminum foil, bottled garlic
Escherichi coli producing toxin	E. coli infection	1-3 days	Watery diarrhea, abdominal cramps, some vomiting	3-7 or more days	Water or food contaminated with human feces
E. coli O157:H7	Hemorrhagic colitis or E. coli O157:H7 infection	1-8 days	Severe (often bloody) diarrhea, abdominal pain and vomiting. Usually, little or no fever is present. More common in children 4 years or younger. Can lead to kidney failure	5-10 days	Undercooked beef (especially hamburger), unpasteurized milk and juice, raw fruits and vegetables (e.g. sprouts), and contaminated water
Hepatitis A	Hepatitis	28 days average (15-50 days)	Diarrhea, dark urine, jaundice, and flu-like symptoms, i.e. fever headache, nausea, and abdominal pain	Variable, 2 weeks-3 months	Raw produce, contaminated drinking water, uncooked foods and cooked foods that are not reheated after contact with an infected food handler; shellfish from contaminated waters
Listerica monocytogenes	Listeriosis	9-48 hrs for gastrointestinal symptoms, 2-6 weeks for invasive disease	Fever, muscle aches, and nausea or diarrhea. Pregnant women may have mild flu-like symptoms, and infection can lead to premature delivery or stillbirth. The elderly or immunocompromised patients may develop bacteremia or meningitis	Variable	Unpasteurized milk, soft cheeses made with unpasteurized milk, ready-to-eat deli meats
Norovirus	Variously called viral gastroenteritis, winter diarrhea, acute non-bacterial gastroenteritis, food poisoning, and food infection	12-48 hrs	Nausea, vomiting, abdominal cramping, diarrhea, fever, headache. Diarrhea is more prevalent in adults, vomiting more common in children	12-60 hrs	Raw produce, contaminated drinking water, uncooked foods and cooked foods that are not reheated after contact with an infected food handler; shellfish from contaminated waters
Salmonella	Salmonellosis	6-48 hrs	Diarrhea, fever, abdominal cramps, vomiting	4-7 days	Eggs, poultry meat, unpasteurized milk or juice, cheese, contaminated raw fruits and vegetables
Shigella	Shigellosis or Bacillary dysentery	4-7 days	Abdominal cramps, fever, and diarrhea. Stools may contain blood and mucus	24-48 hrs	Raw produce, contaminated drinking water, uncooked foods and cooked foods that are not reheated after contact with an infected food handler
Staphylococcus aureus	Staphylococcal food poisoning	1-6 hrs	Sudden onset of severe nausea and vomiting, abdominal cramps. Diarrhea and fever may be present	24-48 hrs	Unrefrigerated or improperly refrigerated meats, potato and egg salads, cream pastries
Vibrio parahaemolyticus	V. parahaemolyticus infection	4-96 hrs	Watery (occasionally bloody) diarrhea, abdominal cramps, nausea, vomiting, fever	2-5 days	Undercooked or raw seafood, such as shellfish
Vibrio vulnificus	V. vulnificus infection	1-7 days	Vomiting, diarrhea, abdominal pain, bloodborne infection, fever, bleeding within skin, ulcers requiring surgical removal. Can be fatal to persons with liver disease or weakened immune symptoms	2-8 days	Undercooked or raw seafood, such as shellfish (especially oysters)

Source: Food and Drug Administration. Foodborne illness-Causing Organisms in the U.S.: What You Need to Know. October 2008.

Know Your Nutrients

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Minerals

Calcium
Chromium
Copper
Flouride
Iodine
Iron
Magnesium
Phosphorus
Selenium
Zinc

Electrolytes

Sodium
Chloride
Potassium
Water

Macro Nutrients

Protein
Fat
Carbohydrates
Fiber

Fat Soluble Vitamins

Vitamin A
Vitamin D
Vitamin E
Vitamin K

Water Soluble Vitamins

Vitamin C
Vitamin B1 (Thiamin)
Vitamin B2 (Riboflavin)
Vitamin B6
Vitamin B12
Niacin
Folate

Texas A&M AgriLife Extension

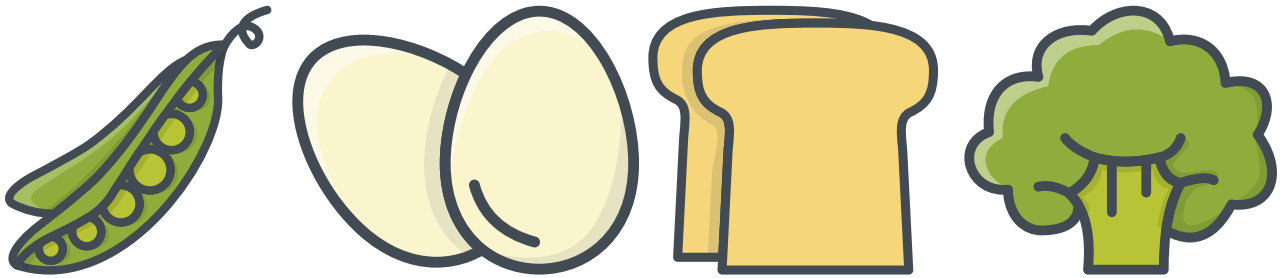
MACRO NUTRIENTS

PROTEIN
FAT
CARBOHYDRATE
FIBER

LET'S TAKE A CLOSER LOOK...

PROTEIN		FIBER	
AMINO ACIDS Protein is found in plant and animal foods. Protein is made up of units called amino acids, which are linked to one another in long chains. The sequence of amino acids determines each protein's unique structure and function. There are 20 different amino acids in two categories:		**DIETARY FIBER** Dietary fiber, or fiber, is a type of carbohydrate found in plant foods. Dietary fiber is bound together in such a way that it cannot be readily digested in the small intestine. There are two classifications of dietary fiber:	
ESSENTIAL AMINO ACIDS are required for normal body functioning, but cannot be made by the body. They must be obtained from food. Nine are considered essential.	**NONESSENTIAL AMINO ACIDS** can be made by the body from essential amino acids consumed in food or in the normal breakdown of body proteins. Eleven are considered nonessential.	**SOLUBLE FIBER** dissolves in water to form a thick gel-like substance in the stomach. It is broken down by bacteria in the large intestine and provides some calories.	**INSOLUBLE FIBER** does not dissolve in water and passes through the gastrointestinal tract relatively intact and, therefore, is not a source of calories.

FOOD SOURCES



MACRO NUTRIENTS	**FUNCTION:** *What does it do?*	**SOURCES:** *Where is it found?*	**DEFICIENCY:** *What happens if I don't get enough?*
Protein	• Builds and repairs all body tissue • Helps build blood • Helps form antibodies to fight infection • Supplies energy at 4 calories per gram	• Animal Protein: meat, fish, poultry, eggs, milk, cheese, yogurt • Nuts and nut butters • Soy • Vegetable Protein: legumes (peas, beans), whole grain breads and cereals	• Fatigue • Loss of appetite • Edema • Poor growth
Fat	• Transports fat-soluble vitamins (A,D,E,K) and essential fatty acids needed for body's proper use and storage of fat • Supplies energy at 9 calories per gram	• Butter or Margarine • Egg yolk • Meat with fat • Shortening or oil • Palm and coconut oil • Salad dressing • Whole milk dairy products	• Eczema • Stunted growth • Diarrhea • Loss of hair
Carbohydrate	• Supply glucose to spare protein • Help the body use other nutrients • Good source of energy • Supplies energy at 4 calories per gram to all body cells	• Bananas • Breads and cereals • Corn • Dried fruits • Flours and cornmeal • Honey • Pasta • Potatoes and sweet potatoes • Sugar, syrup, jam, and jellies • Rice	• Loss of energy • Fatigue • Ketosis
Fiber	• May help lower cholesterol • Improves bowel motility (moves food through digestive tract) • Gives feeling of fullness without extra calories, promoting satiety and weight loss	• Beans • Broccoli • Carrots • Enriched grain products such as: cereals, bread, noodles, tortillas, brown rice, oatmeal • Peas • Spinach • Whole grains	• Diarrhea

WATER SOLUBLE VITAMINS

VITAMIN C
VITAMIN B1
(THIAMIN)
VITAMIN B2
(RIBOFLAVIN)
NIACIN
VITAMIN B6
VITAMIN B12
FOLATE

LET'S TAKE A CLOSER LOOK...

Vitamins

Vitamins are essential substances that the human body needs for proper growth, development, and function. Vitamins are organic substances which are made by plants and animals and then eaten by humans..

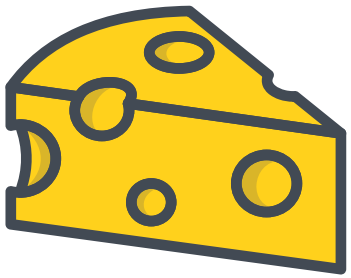
There are 13 known vitamins:
A,C,D,E,K, and the B vitamins (thiamin (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), pyridoxal (B6), cobalamin (B12), biotin, and folate/folic acid.
Vitamins are classified as water soluble and fat-soluble.

Water Soluble Vitamins

Water Soluble vitamins require water for absorption into the body.
The body flushes out excess water soluble vitamins in the urine.

FOOD SOURCES






WATER SOLUBLE VITAMINS	FUNCTION: *What does it do?*	SOURCES: *Where is it found?*	DEFICIENCY: *What happens if I don't get enough?*
Vitamin C	• Antioxidant • Collagen and connective tissue formation • Immune function • Wound healing • Promotes iron absorption	• Broccoli and brussels sprouts • Citrus fruits and juices • Green leafy vegetables • Green or red peppers • Kiwifruit or strawberries • Tomatoes	• Sore or bleeding gums • Poor wound healing • Pain in joints, bones, & muscles • Bruising easily • Hair and tooth loss
Vitamin B1 (Thiamin)	• Helps produce energy from carbohydrates in all cells • Nervous system function	• Beans, Peas and Lentils • Nuts and seeds • Pork • Whole and enriched grain products	• Poor appetite • Constipation • Depression • Cardiac failure
Vitamin B2 (Riboflavin)	• Helps produce energy from carbohydrates in all cells • Growth and development • Red blood cell formation	• Eggs • Enriched grain products • Meats, poultry, and seafood • Milk and Yogurt • Mushrooms	• Sore tongue and mouth, swelling also • Burning and itching eyes
Niacin	• Cholesterol production • Helps produce energy from carbohydrates in all cells • Digestion • Nervous system function • Promotes normal appetite	• Beans • Beef • Nuts • Pork, poultry, and seafood • Whole and enriched grain products	• Loss of appetite • Diarrhea • Dermatitis (skin irritations) • Confusion and Disorientation • Anxiety
Vitamin B6	• Immune function • Nervous system function • Protein, carbohydrate, and fat metabolism • Red blood cell formation • Turns tryptophan into niacin	• Chickpeas • Fruits (other than citrus) • Potatoes • Salmon • Tuna	• Anemia • Nervous irritability • Dermatitis (skin irritations) • Convulsions • Weakness • Abdominal pain
Vitamin B12	• Conversion of food into energy • Nervous system function • Red blood cell formation • Regeneration of folate	• Dairy Products • Eggs • Fortified cereals • Meats, poultry, and seafood	• Anemia • Nerve damage
Folate	• Prevents neural tube defects (birth defects) • Red blood cell formation	• Asparagus • Avocado • Beans and peas • Green leafy vegetables • Orange juice	• Anemia • Fatigue • Brain and Spinal cord defects in infants due to mother's deficiency during pregnancyw

FAT SOLUBLE VITAMINS

VITAMIN A
VITAMIN D
VITAMIN E
VITAMIN K

LET'S TAKE A CLOSER LOOK...

Vitamins

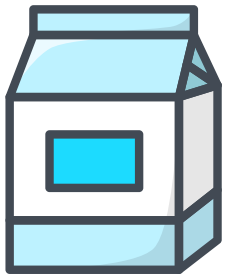
Vitamins are essential substances that the human body needs for proper growth, development, and function. Vitamins are organic substances which are made by plants and animals; they are then eaten by humans.

There are 13 known vitamins:
A,C,D,E,K, and the B vitamins (thiamin (B1), riboflavin (B2), niacin (B3), pantothenic acid (B5), pyridoxal (B6), cobalamin (B12), biotin, and folate/folic acid.
Vitamins are classified as water soluble and fat-soluble.

Fat Soluble Vitamins

Fat soluble vitamins require fat for absorption and are stored in the liver and adipose (fatty tissue) of the body. By storing fat soluble vitamins in fatty tissues, the body can tap into these reserves when needed. Fat soluble vitamins are not excreted easily and when eating excess amounts levels can build up and become toxic.

FOOD SOURCES

FAT SOLUBLE VITAMINS	FUNCTION: *What does it do?*	SOURCES: *Where is it found?*	DEFICIENCY: *What happens if I don't get enough?*
Vitamin A	• Normal cell growth and development • required for immune function • supports reproduction • Promotes vision • Protects from infections • Red blood cell formation • Skin and bone formation • Helps keep skin healthy	• Cantaloupe • Carrots • Dairy products • Eggs • Fortified cereals • Green leafy vegetables • Pumpkin • Red peppers • Sweet potatoes	• Faulty bone and tooth development in infants • Poor growth • Night blindness
Vitamin D	• Promotes absorption of calcium and phosphorus • Helps keep bones and teeth strong • Helps cell growth • Immune function • Nervous system function	• Eggs • Exposure to sunlight • Fish • Fish liver oil • Fortified cereals and dairy products • Fortified orange juice • Fortified soy beverages	• Rickets (soft, fragile bones, enlarged joints, bowed legs) • Chest, spinal and pelvic bone deformities • Convulsions
Vitamin E	• Formation of red clood cells • Acts as an antioxidant to protect essential fatty acids and vitamin A	• Fortified cereals and juices • Green vegetables • Nuts and seeds • Peanuts and peanut butter • Vegetable oils	• Anemia in premature infants • Problems of nervous system
Vitamin K	• Assists in blood clotting • Regulates calcium metabolism	• Butterfat (is synthesized in intestine by beneficial bacteria) • Deep green leaves (alfalfa, spinach, cabbage) • Egg yolk • Liver	• Impairs blood clotting • May reduce bone strength

MINERALS

CALCIUM
CHROMIUM
COPPER
FLOURIDE
IODINE
IRON
MAGNESIUM
PHOSPHORUS
SELENIUM
ZINC

LET'S TAKE A CLOSER LOOK...

MINERALS

Minerals are essential substances that the human body needs for proper growth, development, and function. Minerals are inorganic substances that are not made by living things, but rather are found naturally in soil and water.
Minerals are absorbed by plants which are then eaten by humans or other animals. Humans can obtain minerals through plants or by eating animal products.

Only some minerals (listed below) are essential for body processes and functions. The other trace minerals not listed are not essential for the body and fuctions.
Minerals can be broken down into two categories:

MAJOR MINERALS
(needed in 100 milligrams per day or more)

calcium
phosphorus
magnesium
sulfur

TRACE MINERALS
(required in much smaller amounts by the body)

iron
iodine
zinc
chromium
maganese
selenium
fluoride
copper

FOOD SOURCES




MINERALS	FUNCTION: *What does it do?*	SOURCES: *Where is it found?*	DEFICIENCY: *What happens if I don't get enough?*
Calcium	• Blood clotting • Bone and teeth formation • Muscle and heart contraction • Nervous system function	• Dried peas and beans • Fortified juice and soy milk • Greens (kale, broccoli, collards, etc.) • Milk and dairy products	• Abnormal heart rhythms • Fragile bones • Osteoporosis
Chromium	• Insulin function • Protein, carbohydrate, and fat metabolism	• Broccoli • Fruits and fruit juices • Meats and turkey • Whole grains	• Inability of cells to use glucose for energy
Copper	• Collagen and connective tissue formation • Aids in red blood cell formation from iron stores • Nervous system function	• Crustaceans and shellfish • Nuts and Seeds • Organ meats such as liver • Whole grains and Lentils	• Anemia
Flouride	• Makes teeth resistant to decay; most effective in young children	• Water (1 part per million is added to some municipal water supplies)	• None known
Iodine	• Growth and development • Metabolism • Thyroid hormone production	• Iodized table salt (76 ug/g of salt) • Seafood	• Stunted growth • Endemic goiter
Iron	• Growth and development • Immune function • Red blood cell formation • Helps change beta carotene to vitamin A • Produces collagen	• Beans and peas • Dark green vegetables • Meats, poultry, and seafood • Raisins • Whole grain, enriched, and fortified breads	• Anemia
Magnesium	• Immune function • Muscle contraction • Normal heart rhythm • Aids in making body proteins • Structural component of bones and teeth • Regulates blood glucose levels and blood pressure	• Avocados and Potatoes • Bananas • Beans and peas • Dairy products • Green leafy vegetables • Nuts and seeds • Wheat bran and whole grains	• Tremors • Growth failure
Phosphorus	• Builds strong bones and teeth • Energy production and storage	• Beans and peas • Dairy products • Meats, poultry, and seafood • Nuts and seeds • Whole grain, enriched, and fortified breads	• Bone loss • Pain
Selenium	• Antioxidant • Promotes immune function • Promotes thyroid function	• Eggs • Enriched pasta and rice • Meats, poultry, and seafood • Nuts and seeds • Whole grains	• Brittle hair and nails • Hair loss
Zinc	• Promotes tissue growth and development • Immune function • Nervous system function • Protein formation • Wound healing	• Beans and peas • Beef, poultry, and seafood • Dairy products and fortified cereals • Nuts • Whole grains	• Poor wound healing • Decresed taste ability

ELECTROLYTES

SODIUM
CHLORIDE
POTASSIUM
WATER

LET'S TAKE A CLOSER LOOK...

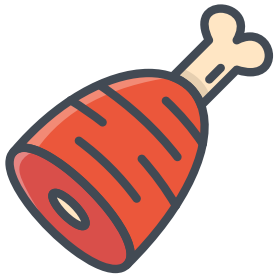
Electrolytes

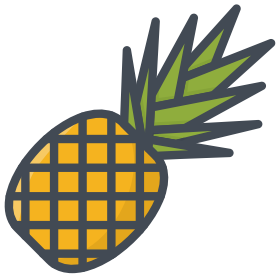
Electrolytes are minerals in body fluids such as blood, tissues, sweat and urine.
Electrolytes help to transmit nerve impulses in your body.
Electrolytes include sodium, potassium, and chloride.
When dehydrated, the body does not have enough fluid and electrolytes to function properly.

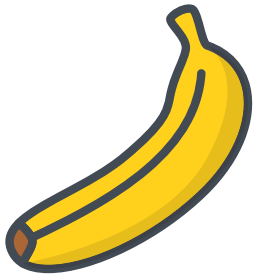
Electrolytes help:

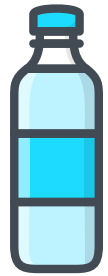
- Balance the amount of water in the body
- Balance the body's acid/base (pH) level
- Move nutrients to cells
- Move wastes out of cells
- Help nerves, muscles, the heart, and brain function properly

FOOD SOURCES









ELECTROLYTES	FUNCTION: *What does it do?*	SOURCES: *Where is it found?*	DEFICIENCY: *What happens if I don't get enough?*
Sodium	• Regulates fluid balance • Influences blood pressure and blood volume • Muscle contraction • Nervous system function	• Breads and rolls • Cheese • Cold cuts and cured meats • Mixed meat dishes • Mixed pasta dishes • Pizza • Poultry • Sandwiches • Savory snacks • Soups • Table Salt	• Fatigue • Profuse sweating • Muscle cramps • Dizziness • Nausea • Diarrhea
Chloride	• Regulates fluid balance • Helps nerve transmission.	• Celery • Green leafy vegetables • Lettuce • Olives • Pineapple • Rye • Table salt and sea salt • Tomatoes	• Heat cramps • Hair loss • Tooth loss • Muscle cramps
Potassium	• Normalizes blood pressure regulation • Regulates fluid balance • Muscle contraction • Nervous system function	• Bananas and most fruits • Dairy products • Dried peas • Meats • Orange juice • Peanuts and other nuts • Potatoes • Spinach • Yogurt	• Weakness • Poor muscle tone • Heart abnormalities • Muscle cramps • Loss of appetite
Water	• Transports nutrients • Transports waste • Lubricates joints • Regulates body temperature • Cell hydration	• High-moisture solid foods such as: soups, watermelon, and meats • Juices • Water	• Dehydration • Constipation

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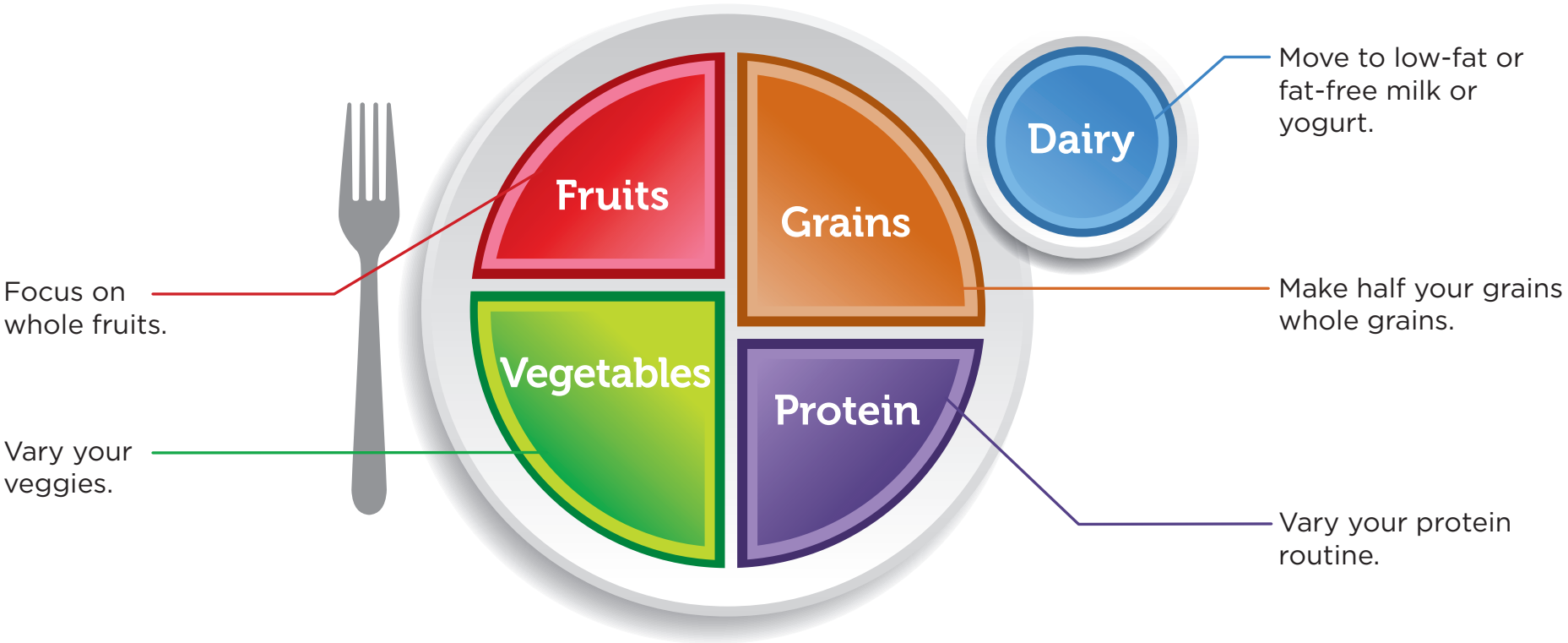
USDA United States Department of Agriculture

MyPlate, MyWins: Make it yours

Find your healthy eating style. Everything you eat and drink over time matters and can help you be healthier now and in the future.



ChooseMyPlate.gov

Limit

Limit the extras.

Drink and eat beverages and food with less sodium, saturated fat, and added sugars.

MyWins

Create 'MyWins' that fit your healthy eating style.

Start with small changes that you can enjoy, like having an extra piece of fruit today.

Fruits

Focus on whole fruits and select 100% fruit juice when choosing juices.

Buy fruits that are dried, frozen, canned, or fresh, so that you can always have a supply on hand.

Vegetables

Eat a variety of vegetables and add them to mixed dishes like casseroles, sandwiches, and wraps.

Fresh, frozen, and canned count, too. Look for "reduced sodium" or "no-salt-added" on the label.

Grains

Choose whole-grain versions of common foods such as bread, pasta, and tortillas.

Not sure if it's whole grain? Check the ingredients list for the words "whole" or "whole grain."

Dairy

Choose low-fat (1%) or fat-free (skim) dairy. Get the same amount of calcium and other nutrients as whole milk, but with less saturated fat and calories.

Lactose intolerant? Try lactose-free milk or a fortified soy beverage.

Protein

Eat a variety of protein foods such as beans, soy, seafood, lean meats, poultry, and unsalted nuts and seeds.

Select seafood twice a week. Choose lean cuts of meat and ground beef that is at least 93% lean.

Daily Food Group Targets — Based on a 2,000 Calorie Plan

Visit SuperTracker.usda.gov for a personalized plan.

Fruits	Vegetables	Grains	Dairy	Protein
2 cups	**2½ cups**	**6 ounces**	**3 cups**	**5½ ounces**
1 cup counts as:	*1 cup counts as:*	*1 ounce counts as:*	*1 cup counts as:*	*1 ounce counts as:*
1 large banana	2 cups raw spinach	1 slice of bread	1 cup milk	1 ounce tuna fish
1 cup mandarin oranges	1 large bell pepper	½ cup cooked oatmeal	1 cup yogurt	¼ cup cooked beans
½ cup raisins	1 cup baby carrots	1 small tortilla	2 ounces processed cheese	1 Tbsp peanut butter
1 cup 100% grapefruit juice	1 cup green peas	½ cup cooked brown rice		1 egg
	1 cup mushrooms	½ cup cooked grits		

Water

Drink water instead of sugary drinks.

Regular soda, energy or sports drinks, and other sweet drinks usually contain a lot of added sugar, which provides more calories than needed.

Activity

Don't forget physical activity!

Being active can help you prevent disease and manage your weight.

Kids ≥ 60 min/day | Adults ≥ 150 min/week

MyPlate, MyWins

Healthy Eating Solutions for Everyday Life

ChooseMyPlate.gov/MyWins

Center for Nutrition Policy and Promotion
May 2016
CNPP-29

Fight harmful BAC(teria) at Home!

Make the meals and snacks from your kitchen as safe as possible. **CLEAN:** wash hands and surfaces often; **SEPARATE:** don't cross-contaminate; **COOK:** to safe internal temperatures; and **CHILL:** refrigerate promptly. Follow these food safety steps when cooking at home to keep your family safe from food poisoning!

ADDITIONAL RESOURCES

FoodSafety.gov is the gateway to food safety information provided by government agencies.

USDA Meat & Poultry Hotline:
1-888-MPHotline (1-888-674-6854)

FDA Food Information Line:
1-888-SAFEFOOD (1-888-723-3366)

The Partnership for Food Safety Education develops and promotes effective education programs to reduce food poisoning risk for families.

Downloadable brochures, fact sheets and kids' activities are available for free at **www.fightbac.org.**

Partnership for Food Safety Education

Apply the heat... and Fight BAC!®

Cooking food to the safe internal temperature kills harmful bacteria. So Fight BAC!® by thoroughly cooking your food as follows:

SAFE MINIMUM INTERNAL TEMPERATURES as measured with a food thermometer	
Beef, pork, veal and lamb (roast, steaks and chops)	**145°F** with a three-minute "rest time" after removal from the heat source
Ground meats	**160°F**
Poultry (whole, parts or ground)	**165°F**
Eggs and egg dishes	**160°F**, but cook eggs until both the yolk and the white are firm; scrambled eggs should not be runny
Leftovers	**165°F**
Finfish	**145°F**
GUIDELINES FOR SEAFOOD	
Shrimp, lobster, crabs	Flesh pearly and opaque
Clams, oysters and mussels	Shells open during cooking
Scallops	Milky white, opaque and firm

Fight BAC!

Fight Foodborne Bacteria

Four Simple Steps to Food Safety

www.fightbac.org

Foodborne bacteria could make you and those you care about sick. In fact, even though you can't see, smell or taste harmful bacteria, it could have already invaded the food you eat. But you have the power to Fight BAC!®

Food poisoning can strike anyone. Some people are at a higher risk for developing serious foodborne illness, including pregnant women, young children, older adults and people with weakened immune systems. For these people, the following four simple steps are very important.

CLEAN

Wash hands and surfaces often. Bacteria can be spread throughout the kitchen and get onto hands, cutting boards, utensils, countertops, and food. To help prevent food poisoning, always use food safety practices.

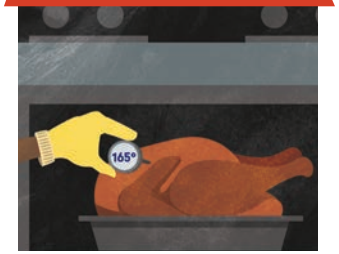
- Wash your hands with soap and warm water for 20 seconds before and after handling food as well as after using the bathroom, changing diapers and handling pets.
- Wash your cutting boards, dishes, utensils and countertops with hot soapy water after preparing each food item and before you go on to the next food.
- Consider using paper towels to clean up kitchen surfaces. If you use cloth towels, wash them often in the hot cycle of your washing machine.
- Rinse fresh fruits and vegetables under running tap water, including those with skins and rinds that are not eaten.
- Scrub firm-skinned fruits and vegetables with a clean vegetable brush under running water.

SEPARATE

Don't cross-contaminate. Cross-contamination is how bacteria can be spread. When handling raw meat, poultry, seafood and eggs, keep these foods and their juices away from ready-to-eat foods. Always start with a clean scene: wash hands with soap and warm water, and wash cutting boards, dishes, countertops and utensils with hot soapy water.

- Separate raw meat, poultry, seafood and eggs from other foods in your grocery shopping cart, grocery bags and in your refrigerator.
- Use one cutting board for fresh produce and a separate one for raw meat, poultry and seafood.
- Never place cooked food on a plate that previously held raw meat, poultry, seafood or eggs.

COOK



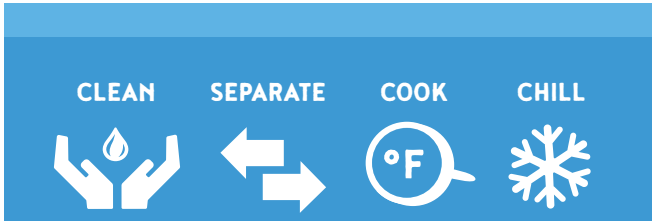
Cook to safe temperatures. Food is cooked safely when it reaches a high enough internal temperature to kill the harmful bacteria that cause illness. Refer to the chart on the back of this brochure for the proper internal temperatures.

- Use a food thermometer to measure the internal temperature of cooked foods. Make sure meat, poultry, egg dishes, casseroles and other foods are cooked to the internal temperature shown in the chart on the back of this brochure.
- Cook ground meat or ground poultry until it reaches a safe internal temperature. Color is not a reliable indicator of doneness.
- When cooking in a microwave oven, cover food, stir and rotate for even cooking. Food is done when it reaches the safe internal temperature as measured with a food thermometer.
- Bring sauces, soups and gravy to a boil when reheating.

CHILL

Refrigerate promptly. Refrigerate foods quickly because cold temperatures slow the growth of harmful bacteria. Do not over-stuff the refrigerator. Cold air must circulate to help keep food safe. Keeping a constant refrigerator temperature of 40 °F or below is one of the most effective ways to reduce the risk of food poisoning. Use an appliance thermometer to be sure the temperature is consistently 40 °F or below. The freezer temperature should be 0 °F or below.

- Refrigerate or freeze meat, poultry, eggs and other perishables as soon as you get them home from the store.
- Never let raw meat, poultry, eggs, cooked food or cut fresh fruits or vegetables sit at room temperature more than two hours before putting them in the refrigerator or freezer (one hour when the temperature is above 90 °F).
- Never defrost food at room temperature. Food must be kept at a safe temperature during thawing. There are three safe ways to defrost food: in the refrigerator, in cold water, and in the microwave. Food thawed in cold water or in the microwave should be cooked immediately.
- Always marinate food in the refrigerator.
- Divide large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.
- Use or discard refrigerated food on a regular basis.



E-cigarettes and Youth: What Parents Need to Know

WHAT ARE E-CIGARETTES?

Electronic cigarettes (e-cigarettes) are battery-powered devices that deliver nicotine, flavorings, and other ingredients to the user. Using e-cigarettes is sometimes called "vaping." E-cigarettes do not create harmless "water vapor" – they create an aerosol that can contain harmful chemicals.

HOW MANY YOUTH ARE USING E-CIGARETTES?

- E-cigarettes have been the most commonly used tobacco product among U.S. youth since 2014.
- In 2020, CDC and FDA data showed that at least 3.6 million U.S. youth, including about 1 in 5 high school students and about 1 in 20 middle school students, used e-cigarettes in the past 30 days.

WHAT ARE THE RISKS FOR YOUTH?

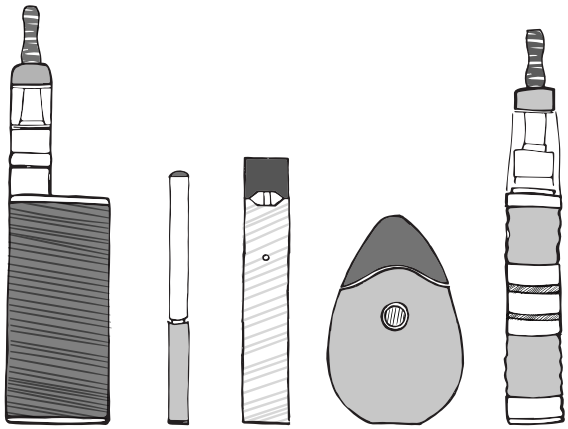
- Most e-cigarettes contain nicotine, which is highly addictive. Nicotine exposure during adolescence can:
  - » Harm brain development, which continues until about age 25.
  - » Impact learning, memory, and attention.
  - » Increase risk for future addiction to other drugs.
- Young people who use e-cigarettes may be more likely to go on to use regular cigarettes.
- Many e-cigarettes come in kid-friendly flavors – including mango, fruit, and crème – which make e-cigarettes more appealing to young people.
- E-cigarette aerosol is not harmless. It can contain harmful substances, including:
  - » Nicotine
  - » Cancer-causing chemicals
  - » Volatile organic compounds
  - » Ultrafine particles
  - » Flavorings that have been linked to lung disease
  - » Heavy metals such as nickel, tin, and lead

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

CDC.gov/e-cigarettes

WHAT DO E-CIGARETTES LOOK LIKE?

- E-cigarettes come in many shapes and sizes. Some look like regular cigarettes, cigars, or pipes. Larger e-cigarettes such as tank systems – or "mods" – do not look like other tobacco products.
- Some e-cigarettes look like other items commonly used by youth, such as pens and other everyday items. New e-cigarettes shaped like USB flash drives are popular among youth, including JUUL and the PAX Era, which looks like JUUL and delivers marijuana.



WHAT CAN YOU DO AS A PARENT OR CAREGIVER?

As a parent or caregiver, you have an important role in protecting children from e-cigarettes.

» Talk to your child or teen about why e-cigarettes are harmful for them. It's never too late.

» Set a good example by being tobacco-free.

» Learn about the different shapes and types of e-cigarettes and the risks of e-cigarette use for young people at **CDC.gov/e-cigarettes**.

ABOUT USB FLASH DRIVE-SHAPED E-CIGARETTES

As a parent or caregiver, you may have heard about the use of USB flash drive-shaped e-cigarettes, including JUUL (pronounced "jewel"). JUUL is the top-selling e-cigarette brand in the United States.

JUUL is being used by students in schools, including in classrooms and bathrooms. JUUL's nicotine liquid refills are called "pods." According to the manufacturer, a single JUUL pod can contain as much nicotine as a pack of 20 regular cigarettes.

JUUL delivers nicotine in a new form called "nicotine salts," which can make it less harsh on the throat and easier to use by youth. JUUL also comes in flavors that can appeal to youth.

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Preparation Principles

Listed below for your information are some basic preparation principles. Items listed are certainly not all inclusive but touch on some of the common principles.

Meats
- Overcooking results in dry meat and loss of flavor.
- Select proper cooking method - less tender cuts use moist heat method; tender cuts use dry heat method.
- Grinding cuts the meat fibers and tenderizes the meat.
- For dishes that include ground meat (casseroles, etc.), brown meat lightly and spoon off excess fat to reduce excess calories.

Milk
- Use low to medium temperatures and avoid prolonged heating.
- High temperature causes protein to coagulate with a film covering the top of the milk and A coating on sides of the pan.
- Prolonged high heat causes off flavors and sometimes scorching.
- Milk mixtures thickened with flour or cornstarch need constant stirring during cooking to prevent lumping.

Cheese
- Heat briefly at low to moderate temperature. High temperatures and long cooking makes cheese tough and stringy and causes fat to separate.
- Blends more readily with other ingredients and melts more quickly if it is shredded or diced first.

Egg Cookery
- Cooking time and temperature important in egg cookery as over cooking shrinks the protein and makes egg white tough and yellow mealy.
- Cool hard cooked eggs in cold water for 15 minutes to prevent yolk. Turning green.
- Use care when adding raw egg before putting egg into container of hot food.

Breads
- Quick breads - Correct oven temperature important - not hot enough causes muffins to have flat top; too hot causes muffins to be lopsided.
- Important to avoid over - mixing - mixing too long develops the gluten in the flour resulting in quick bread being tough. Over - mixing also causes texture to have large air holes and irregular shape.
- Yeast Breads -Yeast needs to be exposed to lukewarm temperatures only as high temperatures will kill action of yeast.
- The purpose of kneading the dough is to develop the gluten which is desirable with breads.

Fresh Fruit
- Some fruits - apples, peaches, pears, banana - turn brown if allowed to stand after being cut or peeled. To minimize discoloration, dip these fruits into citrus juice or use ascorbic acid or a commercial product to limit discoloration.
- Sugar - fruits placed in sugar syrup will not turn brown as air cannot reach fruit. Sugar syrup helps fruit hold shape. Too much sugar causes fruit to shrink as sugar draws moisture out of fruit.
- To maintain shape, cook fruits slowly.
- Rapid cooking causes fruit to lose its natural shape.

Vegetables
- Take care to prevent loss of nutrients, especially Vitamin C.

1) Use small amount of cooking water or liquid.
2) Do not overcook.
3) Cover most vegetables while cooking - so can use small amount of liquid and still cook quickly. Green vegetables such as broccoli, Brussel sprouts, cabbage should be cooked a few minutes uncovered to allow acids in vegetable to vaporize into air. If lid is used, the acid drips off the lid and turns the vegetables a dull olive green. Baking, steaming, cooking in the skins - good method to preserve nutrients.

Function of Ingredient

Ingredient	In Baking	In Frying	How to Measure
Eggs	add flavor; yolk helps emulsifying oil and liquid elements of batter; provide moisture and help bind other ingredients together; aid in browning; serve as thickening agent; serve as leavening agent.	Help coating to adhere to surface of food for proper frying.	Unless another size is designated in the recipe, use large eggs for cooking.
Fats and Oils **butter** **margarine** **shortening vegetable oil** **olive oil**	tenderize; add moisture; maintain freshness and extend keeping quality; shortening is a carrier of emulsifiers which help the oil and water in a batter to combine to make a smooth, creamy solution; help produce a tender and/or flaky product; add flavor. Fat is added to a recipe for richness, flavor, and tenderness to baked products. Fats come in two forms solid and liquid. Oils are Liquid Fats and shortening, lard and butter are Solid Fats. Solid and liquid fats cannot be substituted for each other.	prevent foods from sticking; help transfer heat; add flavor; moisture and a degree of brownness.	Solid fats - use nested cups - scoop fat from container with rubber scraper; press into cup firmly; level off with spatula; or, pour cold water into a cup up to the measure which will equal one cup when the desired amount of shortening is added. Drain off the water. Liquid - pour into proper measuring spoon.
Flour **regular or all - purpose** **enriched flour** **cake flour** **self-rising** **pre-sifted** **whole grain**	provides framework or structure; starch in flour absorbs and holds liquid; serves as a thickening agent; adds flavor	helps thicken products because starch particles absorb and hold liquid and then swell; used to coat food before frying; aids in developing a crust.	If instructed, sift by passing flour through a sieve or fine mesh to add air which was forced out as flour settled or packed during storage,; sifting insures accurate measurements; next scoop gently into nested cup of designated size; level off top with spatula.
Leavening Agents **baking powder** **baking soda** **eggs**	react with moisture or with sweetening agents to produce carbon dioxide which causes small bubbles to form within the product and make it rise or increase in volume. Air beaten into eggs acts as leavening agent. provide air, steam or gas to help baked products rise. This makes the baked product less compact and gives it a softer texture.	Same function as in baking for specialty fried items such as doughnuts.	Scoop with correct size measuring spoon; level off top with spatula.
Liquids water milk - whole evaporated, skim, dried, condensed juices - fruit, vegetable	add moisture; helps ingredients to react with each other; bind ingredients together.	Used to coat foods for frying	pour into a graduated measuring cup; read at eye level; scrape cup with a rubber spatula after pouring.
Sweetening granulated sugar, white brown sugar, light or dark confectioners or powdered sugar corn syrup honey molasses	adds flavor; provides tenderness, crispness and brownness as it melts during cooking due to caramelizing.	None	granulated sugar - spoon into nested measuring cup; level off with spatula. brown sugar - pack firmly in a nested measuring cup; level with a spatula. confectioners or powdered sugar - sift, then spoon into nested measuring cup; level off with a spatula. syrups - (liquids) - pour into a graduated measuring cup.

Texas A&M AgriLife Extension

Quick Ingredient Substitutions

DON'T HAVE	USE THIS
1 teaspoon baking powder	¼ teaspoon baking soda + 5/8 teaspoon cream of tartar
¼ cup bread crumbs	1 slice bread
1 tablespoon cornstarch	2 tablespoons flour
1 cup self-rising flour	1 cup all-purpose flour + 1 ½ teaspoons baking powder + ¼ teaspoon salt
1 fresh garlic clove	1/8 teaspoon garlic powder
1 tablespoon, fresh herbs diced	½ teaspoon ground, dried herbs
1 cup mayonnaise	1 cup sour cream OR 1 cup yogurt OR 1 cup cottage cheese that is pureed in a blender
1 cup skim milk	1/3 dried/powdered milk + water to make 1 cup
1 cup whole milk	½ cup evaporated milk + ½ cup water
1 small or ¼ cup chopped onion	1 tablespoon minced onion OR 1 ½ teaspoons onion powder
½ cup, packed brown sugar	2 tablespoons molasses + ½ cup granulated (white) sugar
1 cup powdered sugar	1 cup granulated (white) sugar + 1 teaspoon cornstarch**
1 cup vegetable oil	1 cup unsweetened applesauce or other pureed fruit ***
1 cup butter	1 cup regular margarine * OR 1 cup vegetable shortening (for baking) OR Equal amount of oil if the recipe uses melted butter
1 cup buttermilk	1 cup yogurt OR 1 tablespoon of vinegar OR lemon juice plus enough milk to make 1 cup. Let stand for 5 minutes before using
1 whole egg	¼ cup egg substitute OR 2 tablespoons mayonnaise (for cakes) OR ½ teaspoon baking powder + 1 tablespoon vinegar + 1 tablespoon liquid (only for baking)

The Texas A&M AgriLife Extension Service provides equal opportunities in its programs and employment to all persons, regardless of race, color, sex, religion, national origin, disability, age, genetic information, veteran status, sexual orientation, or gender identity.

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Rombauer and Becker, The Joy of Cooking
Compiled by Jenna Anding, PhD, RDN, LD, Professor and Extension Specialist, March 2020.

* Regular margarine has 100 calories per teaspoon; if you use low-fat, fat-free, reduced-calorie, or vegetable oil spreads, the final product will likely be a lower quality

** Process the ingredients in a food processor until the ingredients are blended and powdery.

***May need to adjust the amount of sugar in the recipe. If you are short the full amount of vegetable oil needed for a baked good, you can substitute the amount of applesauce or other pureed fruit to make the amount needed.

E-403
05-06

Clothing Quality Standards

Texas A&M AgriLife Extension

Extension Family Development
and Resource Management Specialists

Clothing construction is a creative skill; it can become an art with time, practice, and the ability to make wise sewing decisions. Many techniques can be used to produce the same end result. The technique chosen should be compatible with the garment style, the fabric, the sewing equipment available, and the individual's skill.

Changing trends in sewing equipment and fabrics can influence the techniques that are appropriate for creating garments. Time-saving construction methods are in tune with busy lifestyles and, when used appropriately, can result in high-quality garments. Even though fabrics and sewing techniques may change, quality standards do not. Garments worn often should be of higher quality than those seldom worn. Only you can decide what quality, price and wearability you want for a particular garment. In general, a high-quality garment looks professionally made, holds up through wear and care, fits well, and is becoming to the individual.

The following quality standards apply to the general appearance and construction of home-sewn garments.

Appearance Standards

Fabric, trim and construction techniques must work together to create a professional-looking garment. The fabric should have the correct weight and drape for the design. Finishing details should complement the fabric and the garment.

The garment should look attractive, even and appropriate, both on and off the body. The garment fit should be becoming and reflect current fashion trends. Construction techniques should not be obvious nor distract from the total garment.

Fabric Coordination and Selection

Fabric(s) should:

- Be suited to the pattern design. (Read the pattern envelope for information concerning one-way designs, napped fabric, knits, etc. Inexperienced sewers should use the fabrics recommended on the pattern envelope.)
- Have the same care characteristics or be easily removed for laundering/dry-cleaning. (This applies to trims also.)
- Be flattering to the personal characteristics, style and coloring of the individual.
- Coordinate with one another in terms of design, color, weight and texture.
- Have balanced grain. (In woven fabrics the lengthwise and crosswise threads will be at right angles unless cut on the bias. In knit fabrics the courses and ribs will be at right angles.)
- Have a fiber content and texture suited to apparel design.
- Have a design that is matched, centered or balanced.
- Be used so that the nap runs in the same direction on all parts of a garment.

Fabric Preparation

Fabrics properly prepared should be:

- Preshrunk (laundered or dry-cleaned) using the recommended method of care, including inner fabrics.
- "Thread perfect," with lengthwise and crosswise threads at right angles to one another. To determine this, pull a thread on woven fabrics and cut along a wale or course on knits.
- Made "piece perfect," with lengthwise and crosswise ends at right angles, if at all possible.

Fit

A properly fitted garment should:

- Be fashionable and have an attractive fit. The amount of ease and fullness changes from year to year according to fashion trends.
- Fit smoothly over undergarments.
- Have the appropriate amount of ease for body movement.
- Have proper waistline length and fit.
- Have darts and design details that are properly placed.
- Have correct and properly placed shoulder length unless the design dictates otherwise.
- Have neckline and armholes that fit the body without gapping or straining.
- Have skirt or pant length appropriate for the style and individual.
- Have sleeve fullness and length appropriate for the style and individual.
- Hang straight and parallel.

Construction Standards

There are many sewing techniques that can be used. We each have techniques we prefer—and some that we don't. Some standards apply to almost all techniques. For example, almost all construction techniques should result in a finish or detail that is inconspicuous, functional and durable.

Armholes and Neckline Facings

Well-constructed armholes and necklines should:

- Fit smoothly. Neither the neckline seam nor the facing should show from the outside of the finished garment (unless it is designed to be stitched to the outside as a decorative, functional piece).
- Be the same shape and grain as the edge to be faced (usually 2½ to 3 inches wide and even in width throughout).
- Be flat, smooth and free from bulk.
- Have appropriately finished outside edges (according to fabric type/weight) to prevent raveling.
- Be securely held in place by understitching and tacking at seams or by top stitching. A professional looking facing will never be hand stitched all the way around the outside edge of the facing.
- Be interfaced to prevent stretching and sagging, to cushion the enclosed seam, to reinforce the area, to support the facing and garment, and to provide shape.

Buttons and Buttonholes

Well-constructed buttons should:

- Fit the purpose to which they are intended—functional or decorative.
- Be neat in appearance on the right and wrong sides of the garment.
- Be securely fastened with double thread and neat stitches.
- Have a shank (thread or part of the button) to accommodate the thickness of the fabric it will button through.
- Be reinforced, according to use and fabric type, with interfacing and/or another button.
- Be spaced in good proportion between top and bottom opening and in relation to the other buttons.
- Be placed in relation to the buttonhole on the center line or lap line. The placket should be smooth and flat so there is no gaping or pulling when buttons are secured in buttonholes.
- Be the appropriate size and style for the garment design and fabric.
- Have no rough edges.
- Be smooth when covered with fabric and have no "shine" or off-color visible from the base.

Well-constructed buttonholes should be:

- Neat in appearance on the right and wrong sides of the garment.
- Flat and attractive.
- Made with the grain of the fabric unless a bias-cut garment or unusual design dictates otherwise.
- An equal distance apart, unless spaced for special design effects.
- An even distance from the garment edge and aligned with the center line or lap line.
- Sized in relation to the button size and thickness.
- Applied to an area that has been properly interfaced.
- The same length and width when the same size/shape button has been used.
- Spaced according to the size of the button and garment design/function. Buttons and buttonholes should hold a garment securely closed without strain or stress.
- Positioned so that the button can be secured and will ride slightly toward the garment edge in a horizontal buttonhole and toward the top in a vertical buttonhole.
- Neatly slashed and unsightly threads removed.
- Made with secure stitching and have uniform "lips."

Casing

A well-formed casing should:

- Be flat, uniform and of even width.
- Have a row of stitching at the top (head) and lower edge of the casing.
- Be slightly wider than the elastic drawstring.

Collar

A well-applied collar should:

- Be smooth and free from wrinkles. The outer edge seam should not be visible from the right side.
- Have smooth curves or sharp points (the same shape and length) depending on the type and style of collar.
- Have bulk properly distributed through grading/layering, notching, clipping and/or trimming.
- Fit the neckline area without unsightly gaps or wrinkles.
- Be interfaced properly to maintain shape.
- Be understitched on the outer seam edge to roll under the seam.
- Be well pressed.

Darts, Ease, Gathers, Pleats, Shirring, Tucks

A well-constructed fitting dart should:

- Be directed toward the body curve.
- Usually end ½ to 1 inch from the fullest part of the body curve.
- Be tapered so it is smooth and free of puckers.
- Be even and smooth in appearance.
- Be pressed before being crossed by another line of stitching.
- Have threads secured at both ends by tying a knot, lock stitching or back-stitching (use only on medium to heavy fabric or in a seam line).

Well-constructed gathers, pleats, shirring and tucks should:

- Be distributed evenly and/or in accordance with the garment design.
- Be even and smooth in appearance.
- Hang straight without pulling.
- Have ease for comfort but appear as a straight silhouette (pleats).
- Provide relaxed but defined fullness. They may be used in place of gathers or fitting darts (tucks).

Fasteners (Hooks and Eyes, Snaps, Self-Gripping)

Well-constructed, well-applied fasteners should be:

- Appropriate for the garment design and fabric being used.
- Applied to an area that has been reinforced with interfacing.
- Secured so that stitches do not show on the right side of the garment/fabric.
- Appropriately placed so edges are held together smoothly and evenly.
- Used appropriately. Use a straight eye when edges lap, round eye when edges meet, hooks and eyes for strain openings, and snaps for areas with little stress. The ball side of a snap and the loop side of a self-gripping fastener are placed on the overlap side.

Hand Stitching

A well-made hand stitch will:

- Be composed of a thread type, weight/thickness and color suitable to the situation for which it is used. Buttonhole twist is used for hand-worked buttonholes and can be used for sewing on buttons and for top stitching. Heavier and decorative threads, such as embroidery and metallic, can be used for decorative stitching. Use the same color, or slightly darker, when permanently stitching.
- Have a uniform stitch formation that is appropriate to the fabric and garment for which it is used.
- Have thread ends appropriately secured at the beginning and ending of the stitching. If a knot is used in permanent stitching, it should be out of sight against an inside layer of fabric.
- Usually use a single thread for hand-worked hems and basting and a double thread to secure hook and eyes, snaps and buttons, and to tack seams.
- Be neat and well formed, appropriately spaced, and secured with no thread ends showing or unsightly thread "mess" visible.
- Be invisible on the right side when hemming or tacking seams.

Hems

A well-made hem should:

- Be inconspicuous on the right side, except when it is a decorative part of the garment design.
- Be an appropriate distance from the floor.
- Be even in width and an appropriate depth for the fabric and garment design.
- Be free from bulk in seams that fall within the hem area.
- Have fullness eased in and evenly distributed for a smooth, flat appearance.
- Have an edge appropriately finished for the type and weight of fabric and hem stitch to be used.
- Be firmly secured with a hem stitch appropriate for the fabric and the hem edge finish.
- Be neat with evenly spaced hand stitches ½ inch apart and with about ⅛ inch give (or have even machine stitching).
- Be lightly pressed.

Interfacing

A suitable, well-applied interfacing should:

- Be appropriate for the outer fabric's fiber content, care and construction type (knit, woven, non-woven) and for the manner in which it is applied (sew-in versus fusible). Interfacing fabrics range from commercially designed fabrics to self-fabric.
- Be, or have, the same "grain" or "give" as the outer fabric with which it is used.
- Coordinate in color as closely as possible. Use a light color with light-colored fashion fabrics and dark with dark.
- Provide the appropriate support or reinforcement needed to improve the shape of the garment or area. Interfacing is used in the appropriate locations in a garment.

- Not alter the color or hand of the outer fabric. If an appropriate weight cannot be found, it is best to use a lighter interfacing than a heavier one.
- Appear flat and smooth with no bubbles, wrinkles or folds.
- Not be visible or noticeable from the outside/right side of the garment.
- Suit the design, so it may vary in type and weight within the same garment. Multiple types and weights of interfacing could be used depending on the area and function.

Markings

Markings should:

- Be appropriate for the fabric.
- Not show on the right side of the fabric.
- Not leave holes or discoloration in the fabric.

Machine Stitching

A well-made stitch will:

- Use a thread type and needle size appropriate to the fabric and situation for which it is used. Generally, the finer the fabric, the finer the needle and thread. (Thread expands to or takes up the entire area created by the needle.) There should be no excessive holes created by the needle.
- Be a controlled, consistent length appropriate to the fabric and situation for which it is used. As a general rule, the heavier the fabric, the longer the stitch; the lighter weight the fabric, the shorter the stitch. Within this rule adjustments are made according to fabric texture and structure.
- Have equally balanced top and bottom threads that look the same on both sides of the fabric (appropriate thread tension).
- Be the type of stitching (regular sewing machine or overcast/serger) or stitch pattern (standard or decorative) appropriate to the fabric and situation for which it is used.
- Be appropriately secured at the beginning and end of the line of stitching.
- Be spaced an appropriate distance from the edge of the fabric according to the function of the stitching.
- Be neat, straight, and fit the purpose for which it was done (functional or decorative).

Pressing

A well-pressed garment should:

- Maintain the original texture of the fabric.
- Show no shine or press marks on the right side of the fabric.
- Have no wrinkles or crinkled areas.
- Have seams and darts pressed smoothly on the stitching line, so that the fabric does not fold over the stitching line or look bubbled. Edges of seam allowances and fold edges of darts do not form ridges on the right side of the garment.
- Have no water-spot or steam marks.
- Help create and maintain the proper shape and curve to the garment and the various garment segments (collar, sleeve, etc.).

Seams, Seam Finishes, Seam Treatments

A well-constructed seam should:

- Be smooth and even in appearance on the inside and outside of garment. Machine tension, stitch length and presser foot pressure are properly adjusted to suit the fabric and thread.
- Be even in width throughout.
- Be secure.
- Be pressed open (and with no puckers) or pressed properly according to the type of seam it is and the way it is used in garment construction.
- Be stitched with thread appropriate to the fabric type, fabric content and color. (Thread color should match or be slightly darker than the fabric.)
- Have consistent stitch length.
- Be flat and trimmed and/or graded, if needed, to reduce bulk.
- Match fabric designs such as plaids and stripes.

A well-applied seam finish:

- Is appropriate to the type and weight of fabric.
- Is smooth and neat in appearance inside and out.
- Does not create excess bulk.
- Is not visible from the right side of the garment.
- Is even in width throughout.
- Uses understitching to "roll under" an enclosed seam and is not visible on the right side.
- Uses reinforcement stitches on areas of stress.

Sleeves

A well-constructed and correctly fitted set-in sleeve should:

- Have a smooth, rounded cap with no pleats or gathers unless they are a garment design feature.
- Be applied so that there is ease in the underarm area and in the sleeve cap area.
- Have a good armhole line resulting from straight, even stitching, and well-matched seam lines that conform to the body.
- Have a crosswise grain parallel to the floor, a lengthwise grain perpendicular to the floor, and no diagonal wrinkles.
- Have evenly distributed gathers in gathered set-in sleeves.
- Have seams finished appropriately for the fabric.
- Be comfortable with no binding.

A well-constructed shirt sleeve should:

- Be correctly positioned on the body.
- Be shaped properly and on-grain.
- Not have gathers or puckers.

A well-constructed sleeveless garment should:

- Hug the body without binding.
- Fit the curve of the arm accurately.
- Have a facing seam that is graded, understitched, free from bulk, smooth and flat.
- Have the facing tacked loosely at seams.
- Be ½ inch from the underarm.

Topstitching

Topstitching should:

- Be a straight line or smooth curve, whichever is appropriate.
- Have stitch length (usually longer) and tension (usually looser on top) appropriate for the fabric.
- Have the ends of the stitching pulled to the wrong side to secure appropriately.

Waistband

A well-constructed waistband should:

- Be smooth, flat, and free from bulk and wrinkles.
- Be even in width according to the garment style.
- Be on-grain and reinforced or interfaced to maintain shape.
- Have underlap under the waistband and extend beyond the placket unless the pattern indicates differently; overlap should be even with the placket unless the pattern indicates differently.
- Have the skirt or pants eased slightly on the waistband.
- Have square corners at the ends of the waistband.
- Be securely stitched with smooth, even stitching.
- Have appropriate fasteners that are properly located and secured in place.

Zippers and Zipper Plackets

A well-constructed zipper placket and well-applied zipper should:

- Be flat when closed and neat in appearance. The zipper should lie smooth without stretching or puckering of the fabric.
- Have smooth, even stitches, evenly spaced from the placket edge.
- Have stitching across the bottom opening ⅛ inch beyond the zipper stop.
- Have thread ends secured and hidden in folds of fabric so that they will not be caught in the zipper teeth.
- Be a weight compatible with the fabric (light with light, heavy with heavy).
- Have seam lines matching, if the zipper crosses a seam.
- Have matching fabric design, if needed, such as stripes and plaids.

A well-constructed zipper placket should:

- Be properly prepared and pressed before the zipper is inserted.
- Be sized to the zipper length.
- Leave ¼ inch at the top of a neckline zipper for a fastener.
- Be the same length on both sides.

A zipper should be:

- Suited in terms of weight, size and length to the garment design, the fabric and the opening location on the garment. Its color should match or coordinate with the fabric color.
- Concealed beneath the edge of a placket overlap from top to bottom.
- Positioned to fit the placket opening. The placket should open to the end of the zipper teeth and close at the top of the zipper. (There should not be a "hole" above a skirt/pant or neckline zipper placement.)

This publication was adapted from "Clothing Quality Standards," developed by Cynthia Klumpp, Master Clothing Volunteer Coordinator with the Cooperative Extension Service at the University of Arkansas.

Texas A&M AgriLife Extension

E-627
11/12

Texans, Get Ready!

Be Prepared to Survive and Recover from a Disaster

Josefa Peña and Joyce Cavanagh

You can help protect yourself and your household during and immediately after a catastrophe by making a disaster plan and a disaster kit. You and all members of your household need to be able to take care of yourselves without outside help for at least 3 days.

Special considerations include keeping food safe to eat, sheltering-in-place, and discussing a disaster with children.

Make a disaster plan

Create a disaster plan that fits your household's needs. Make sure that everyone knows how to respond to severe weather or any disaster that could occur in your area.

The plan should address escape routes, communications, utility shutoff and safety, important records, people with special needs, safety skills, and pet care.

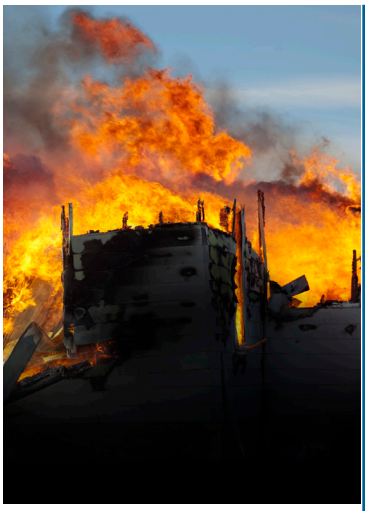
Escape routes: Map out escape routes from each room in your house or apartment. Each room should have at least two exit points.

Conduct a practice session with all members of the household to make sure they know the escape routes. Choose a site outside the home for everyone to meet.

For neighborhood escape routes, keep a map on hand that shows the local streets. You can use it when the authorities provide evacuation instructions.

Communications: Designate a person for everyone to contact if the group is separated during a disaster. Each person should have the names and phone numbers for the designated person as well as all other household members. Have everyone carry this information in a cell phone, wallet, purse, or backpack at all times.

*Extension Program Specialist–Health, Extension Family Economics Specialist, The Texas A&M University System



Communicating with emergency personnel: If you are injured in an accident or disaster, you may be unable to speak with emergency medical technicians. To help them determine your identity and contact your loved ones, add an ICE *(In Case of Emergency)* entry in your cell phone. Enter the name and phone number of the person whom the emergency services should call on your behalf.

Utility shutoff and safety: Teach all responsible household members how to turn off the gas, electricity, and water supplies. Ask the local utility company for proper shutoff procedures.

Caution: Never turn gas service back on by yourself. Service should be restored only by a trained professional.

Important records: Make copies of your important documents and keep them in a safe place away from home. Such documents could include:

- List of medications
- Insurance policies
- Driver's license or other photo ID
- Bank account information
- Credit card information
- Financial records
- Inventory of home possessions

People with special needs: Take additional steps to help people who are disabled, elderly, or chronically ill (such as those who are on dialysis), as well as those who do not speak English. Determine how to overcome the challenges of those who are hearing or visually impaired.

Well before any disaster, call 211 to ask about services that are available for people with special needs and to register for evacuation and transportation assistance.

Safety skills: Family members should know how to administer first aid and cardiopulmonary resuscitation (CPR) and how to use a fire extinguisher.

Pet care: Because emergency shelters generally do not accept pets, designate a safe place to take yours. Most animal control shelters accommodate lost and stray pets first. They will probably be unable to take your pets.

When creating a disaster plan for pets, consider these tips:

- Ask hotels about their policies concerning pets and whether they would waive a "no pets" policy in an emergency.
- Make a list of pet-friendly places.
- Make a list of phone numbers and addresses of veterinarians and pet-boarding facilities.
- Ask friends outside the area if they would be willing to care for your pets.

Create a disaster supplies kit

A disaster supplies kit contains the basic items that members of a household will need during and immediately after a disaster. Every household should assemble a kit and keep it up to date. The kit should contain enough supplies to enable you and your family to take care of yourselves without outside help for at least 3 days.

Individual disaster kits can be packaged in backpacks. Larger kits can be stored in a portable trunk or sealable plastic trash can.

Store the kits in a portable, airtight plastic container or rubber trash can, and make sure they are easy to reach.

A basic disaster supplies kit will contain:

- **Water:** Pack enough bottled water to last for 3 days. Each person will need 1 gallon of water each day.

- Food: Choose foods that you know your family will eat; that need no refrigeration, preparation, or cooking; and that can be eaten cold or heated on an outdoor grill. Examples are crackers, canned juices, dried fruit, nuts, peanut butter, and protein or fruit bars. Also pack a hand-operated can opener and disposable eating utensils and plates.
- Clean air items: If there is an explosion, you may need to create a barrier between yourself and the airborne contaminants. Pack nose and mouth protection masks (N-95 rating), plastic sheeting, and duct tape.
- Extra clothes: Pack one complete change of clothes, a pair of shoes, and a blanket for each person.
- First aid kit: Include antibiotic ointment, antibiotic towelettes, adhesive bandages, burn ointment, over-the-counter medications, prescribed medications and medical supplies, soap, sterile gauze, two pairs of sterile gloves, and a thermometer.
- Emergency items: Pack a battery-powered radio, flashlights, extra batteries, a whistle, shovel, basic tools, baby wipes, garbage bags, toilet paper and a state map.
- For infants: Pack bottles, baby wipes, diapers, formula, medications, powdered milk, and diaper rash ointment.
- For adults with special needs: Ask the doctor about storing prescription medications such as heart and high blood pressure medicines, insulin and other prescription drugs. Include supplies for dentures and contact lenses.
- Important documents: In addition to the set of important document kept offsite, you may also want to keep an extra set of copies in your disaster supply kit.
- Cash and change in a waterproof container: Cash can come in handy if ATMs or credit card machines aren't working in the days immediately after the disaster.
- *After a Disaster: How to Recover:* This publication offers advice on disaster recovery, including keeping safe, living without power, disinfecting water, clearing debris, and obtaining assistance. It is available from https://agrilifebookstore or an electronic version downloadable to your mobile device at http://texashelp.tamu.edu.

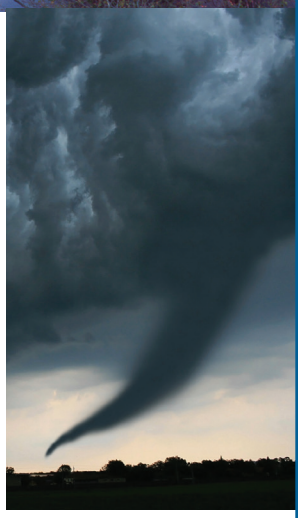
Pet care

A pet emergency kit can include:

- Medical and current vaccination records
- Pet medications
- First aid kit
- Leash and carrier/crate
- 3-day supply of food and water
- Current photos of your pet in case you are separated
- Pet beds and toys
- Hand-operated can opener
- Cat litter and box
- Paper towels, plastic bags and disinfectant to clean up pet waste.

Maintain your kit!

Replace flashlight and radio batteries every 6 months and replace foods according to their expiration dates. Store the kit indoors in an easily accessible spot, such as a closet. Don't store it in the garage because hot summer weather can ruin food and medicines.



Food safety

Food can become unsafe after a flood, fire, disaster, or an extended loss of power. Here's how to save as much food as possible and reduce the risk of foodborne illness.

Keep meat, poultry, fish, and eggs refrigerated at or below 40°F and frozen food at or below 0°F. Keep thermometers in the refrigerator and freezer at all times to indicate whether the food is at safe temperatures.

Keep coolers and frozen gel packs on hand to help keep food cold if the power is out for more than 4 hours. If you live in a flood-prone area, store your food on shelves that will be safely away from contaminated water.

Deciding to stay or go

You may have to decide whether to evacuate or shelter-in-place. Evacuation means moving from an unsafe place to a safe place in a hurry. Sheltering-in-place is staying exactly where you are during a disaster; it may be at home, school, work, or a friend's house.

Evacuation: The authorities will not ask you to leave unless they determine that lives may be in danger. If local officials ask you to evacuate, do so immediately.

If you do not own or drive a car, make arrangements for transportation. Call 2-1-1 to register for transportation assistance during an evacuation as part of your family disaster plan.

Follow these guidelines during an evacuation:

- Listen to a local radio or TV station for news.
- Obey the instructions of local emergency officials.
- Wear long pants, a long-sleeved shirt, and sturdy shoes.
- Take your pets with you.
- Grab your disaster supplies kit.
- Use the travel routes specified by local authorities.

Sheltering-in-place

Some conditions may require that you shelter-in-place. Listen to local officials on how to shelter-in-place, and remain there until they tell you that it is safe to leave.

The directions for sheltering-in-place depend on the type of emergency situation:

- Tornado warning: Go to an interior, underground, or wind-safe room without windows.
- Chemical attack: If possible, take shelter on an upper floor in an interior space without windows, and seal the space using plastic sheeting and duct tape. If you do not have a second floor, choose a room with few or no windows and few doors. Arrange for access to a bathroom if possible.
- Nuclear attack: Take shelter below ground in an interior space without windows. If you do not have such a shelter, listen to local authorities for the next best option.

Discussing a disaster with children

During emergencies, children often feel afraid, confused, and worried. To help them feel more secure, discuss the disaster with them.

Assume that the children know about the disaster. Children know more than you think. They are often exposed to the events as soon as they are able to watch television and interact with others.

Reassure them. Help your children feel safe by giving them reassurance. Be realistic—although you try to support and protect them, you cannot prevent all bad things from happening. Tell them that you love them, no matter what happens.

Be available. Stay in close contact with your children and let them know that it's OK to talk about unpleasant events.

Talk about how you feel. Sharing your feelings can let children know that others also are upset by the events.

Recognize their fears. Support your children's concern for people they do not know. Children often are afraid not only for themselves, their families, and their friends, but also for people they do not know.

Be aware of other emotions. Look for feelings beyond fear, such as anxiety or confusion. Let the children express all of their emotions.

Find emotional outlets. Help your children use creative outlets such as art and music to express their feelings.

Help them take action. Children may want to take action. The action can be very simple, such as writing a letter or getting involved with a disaster preparedness organization.

For more information

Preparing Your Evacuation Grab and Go Box, located on the Texas EDEN website at http://texashelp.tamu.edu, gives tips on creating a disaster kit.

Personal and Family Financial Records Inventory is a checklist of documents that can be downloaded from the Texas AgriLife Extension Bookstore at http://agrilife-bookstore.org.

Get Prepared at www.ready.gov offers information on family disaster plans.

For local training courses on how to administer first aid and CPR or how to use a fire extinguisher, visit www.redcross.org.

For advice on when to save food and when to throw it out, visit the U.S. Department of Agriculture website at www.fsis.usda.gov/fact_sheets/.

Acknowledgments

The original manuscript for this publication was written by Janie Harris, Extension Housing and Environment Specialist, retired, and Lisa Norman, former Extension Assistant. The advice on discussing a disaster with children is from Judith A. Myers-Walls of Purdue University.

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AgriLifeExtension.tamu.edu

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The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

Produced by Texas A&M AgriLife Communications

NUTRITION GUIDE

FUELING FOR PERFORMANCE

TrueSport®

contents

THE PURPOSE OF THIS BOOK

This nutrition guide provides general guidelines to help optimize dietary intake for sports competitors. Fueling requirements can vary depending upon an individual's energy expenditure, metabolism, state of health, sport, etc.

Now more than ever, athletes need accurate sports nutrition information. Optimal nutrition is an integral part of peak performance while an inadequate diet and lack of fuel can limit an athlete's potential for maximum performance. Unfortunately, there is a lot of misinformation available regarding a proper diet for athletes.

In the quest for success, many athletes will try any dietary regimen or nutritional supplementation promising a new level of physical performance. However, an evaluation and modification of current dietary intake can typically be employed to help maximize peak performance.

The human body must be supplied with energy to perform its many complex functions. As an athlete's training and competition level increases, the body's energy demands also increase. Several energy systems in the body can provide athletes with fuel as long as they are consuming the proper foods. One energy system relies totally on carbohydrates while another uses carbohydrates as well as fats. When an athlete works near or at maximal intensities, carbohydrates are the prime fuel the body can use. During prolonged exercise, such as cycling, triathlons, and long-distance swimming, the amount of fats and carbohydrates used may rise and fall depending upon:

- *Duration and intensity of the exercise*
- *An individual's fitness level*
- *Food and drink consumed prior to and during the exercise*

Carbohydrates – The Master Fuel

A diet rich in carbohydrates can support optimal performance of both endurance and intermittent high intensity activity through fueling and refueling internal carbohydrate stores, or glycogen, found in the muscles and liver. It is well documented that during times of intense training or competition, such as during tournaments or with two-a-day practices, replenishing muscle glycogen is essential to maintaining a high level of performance. Consuming carbohydrates during workouts lasting more than one hour can also benefit performance and delay onset of fatigue. Studies have shown that athletes who participate in intermittent sports, such as basketball and soccer, should also focus on consuming more carbohydrates during training and competition. This is not surprising since it is well-known that carbohydrates, when compared to protein and dietary fat, are the most efficiently broken down and metabolized form of energy for the body.

Recommended Intake of Carbohydrates

Depending upon the training routine, athletes should consume anywhere from 3-12 grams of carbohydrates per kilogram of bodyweight throughout the day. This percentage is only a guideline for estimating carbohydrate needs. Depending upon the length and type of training sessions, an athlete's carbohydrate intake should adjust, with longer times and more intense trainings reflecting the higher number of grams needed. See Table 1 to calculate grams of carbohydrates needed.

Table 1: *DETERMINING GRAMS OF CARBOHYDRATE FOR ATHLETES' NEEDS*

The following example shows how to calculate the recommended grams of carbohydrate needed per pound of body weight.

Weight in Kilograms		Carbohydrates in Grams		Daily Carbohydrate Intake
68 (150 lbs.)	x	4	=	272 grams

Now calculate your own needs. Remember to divide your body weight in pounds by 2.2 to get your weight in kilograms. Then multiply your body weight by a number of carbohydrate grams (from the 3-12 range) based on the time and intensity of the training. For example, an hour per day of moderate intensity exercise may warrant using 5 grams.

Weight in Kilograms		Carbohydrates in Grams		Daily Carbohydrate Intake
	x		=	

Carbohydrate Intake Before, During, and After Exercise

Before Exercise: The pre-exercise or pre-training meal serves two purposes:

- *It keeps the athlete from feeling hungry before and during exercise.*
- *It maintains optimal levels of energy for the exercising muscles.*

Consuming a small, well-tolerated carbohydrate rich snack like a granola bar, pretzels, or dried fruit within about 30 minutes of activity can help top off carbohydrate stores to enter training or competition with optimal muscle glycogen.

Because the pre-event meal plays a key role in optimizing glycogen stores, managing satiety entering the activity, and minimizing any gastrointestinal upset from foods, it is important to be strategic about types and amounts of foods in this meal.

The following are guidelines for the pre-event meal:

- *The meal should be eaten 3-4 hours before an event.*
- *It should provide 3-4 grams of carbohydrate per kilogram of body weight.*
- *To avoid stomach upset, the carbohydrate content of meals should be reduced the closer the meals are to the event (1-2 grams per kilogram 1-2 hours before the event).*
- *Include a small to moderate portion of lean protein. Protein takes longer to be digested, which increases satiety after eating. It also supports energy regulation, as protein can slow absorption of carbohydrates for a more steady energy release from a meal.*
- *If competing in hot/humid climates, or if an athlete is a salty sweater, be sure food is well seasoned with salt and/or include a beverage containing sodium, like a sports drink.*
- *Avoid high fiber and high fat foods and preparations. Too much of these foods can lead to gastrointestinal upset during an event or training.*

[For example, four hours before the event, it is suggested that the athlete consume 1.5 grams of carbohydrates per pound of body weight, whereas one hour before the competition, the athlete would consume 0.5 grams of carbohydrates per pound of body weight.]

Table 2: *SUGGESTED MEALS FOR PRE-EVENT EATING*

Use these meal and snack ideas to fuel appropriately with carbohydrates based on the time between eating and the event.

1 hour or less	Serving size	Grams of carbohydrates
Fresh fruit (chopped apple)	1 cup	19 g
Dried mango	3 oz	28 g
Raisins	small box (2.5 oz)	34 g
Banana	7 oz	31 g
Granola bar	2 bar pack	29 g
Pretzels	20 pieces	22 g
Fig bar (2)	1 oz	20 g
Applesauce	4 oz	14 g
Sports drink*	8 oz	14 g
Toast	1 slice	14 g
Crackers	5 crackers	10 g

SUGGESTED MEALS FOR PRE-EVENT EATING (continued)

2-3 hours before	Serving size	Grams of carbohydrates
Cereal (whole grain)/ low-fat milk (1%)	cereal: 1 cup milk: 1/2 cup	cereal: 47 g milk: 6 g
Bagel (whole grain) with peanut butter	1 bagel peanut butter: 2 tbsp	bagel: 47 g peanut butter: 8 g
Fruit smoothie	12 fl oz	47 g
Fruit and nut food bar	1 bar	43 g
Oatmeal (instant)/ low-fat milk (1%)	oatmeal: 1/2 cup milk: 1 cup	oatmeal: 13 g milk: 12 g
Flavored Greek yogurt (nonfat)	1 cup	27 g
Pancakes/waffles	2 pancakes (5" diameter)	20 g

4 or more hours before	Serving size	Grams of carbohydrates
Spaghetti with meat sauce	2-3 cups	75-100 g
Pasta/ Chicken/ Vegetables	pasta: 1 cup chicken: 4 oz vegetables: 1 cup	pasta: 40 g chicken: 0 g vegetables: 6 g
Salmon, halibut, or shrimp/ rice/ fruit (grapes)	chicken: 3 oz rice: 6 oz fruit: 1 cup	chicken: 0 g rice: 44 g fruit: 25 g
Snack bar (oatmeal raisin walnut)/ sports drink*	1 bar drink: 8 oz	bar: 25-45 g drink: 14 g
Ready-to-drink high protein shake	12 fl oz	40 g
Turkey sandwich made with deli turkey, whole wheat bread, light mayo, tomato, and lettuce, baby carrots on the side	turkey: 3 oz. or slices mayo: 1 tbsp bread: 2 slices 7 carrots	turkey: 0 g mayo: 0 g bread: 30 g carrots: 3 g
Tuna sandwich (2 slices whole wheat bread)/ nonfat mayo	tuna: 2 oz drained bread: 2 slices mayo: 1 tbsp	tuna: 0 g bread: 30 g mayo: 0 g
Fruit and nut trail mix	1/3 cup	20 g

**Remember that sports drinks are beverages that contain electrolytes and carbohydrates, not caffeine and other stimulants. For more information on sports drinks and hydration, read the Fluids and Hydration section.*

Eating At All-Day Events:

It is important that athletes eat after competing to make sure that they will have enough energy in the muscles for the next race or competition, whether it be in the same day or the following days. The same dietary intake principles used to plan the pre-exercise meal can also apply to foods eaten at all-day events. If an athlete races at 10 a.m. and again after 2 hours, foods that are high in protein and fat will more than likely still be in the stomach, potentially causing stomach or gastrointestinal (GI) distress. The following guidelines have been recommended to help athletes make wise food choices at all-day events.

One hour or less between events or heats:

- *Stick with carbohydrates that are in liquid form, such as sports drinks.*
- *If something solid needs to be eaten, try fruits like oranges, watermelon, cantaloupe, peaches, pears, applesauce, or bananas.*

These foods consist of mostly carbohydrates and water. They are digested very fast and therefore, will not cause as much of a problem with stomach cramping or GI distress.

Along with types of foods, amount of food consumed is important to consider in this situation. It is wise to consume a small, well-tolerated portion of food when little time is available to allow for digestion. The more an athlete eats, the longer it will take to digest, especially with any pre-competition nerves or stress.

Two to three hours between events or heats:

- *Foods containing carbohydrates and some protein can be eaten, as there is enough time to digest them before competition.*
- *Easy carbohydrate and protein containing combinations include cereal with low-fat milk, a granola bar, jerky and fruit, pretzels and a cheese stick, chocolate milk, or an English muffin with a little nut butter.*
- *Be sure to drink plenty of fluids, like water or a sports drink, for hydration, electrolyte replacement, and restoration of glycogen stores. Avoid drinks that contain caffeine, carbonation, and other stimulants.*

Four or more hours between events or heats:

It may be necessary to have a meal when four or more hours exist between events. Use the same guidelines for a pre-event meal in this situation. Choose a meal that is higher in carbohydrates, moderate in protein, and low to moderate in fat. Meal examples include:

- *A turkey sandwich on two slices of whole wheat bread, Greek yogurt with fruit, and water or a sports (fluid replacement) drink*
- *Spaghetti with lean meatballs, bread, salad with dressing, and water or a sports (fluid replacement) drink*

If there is a certain meal pattern before competition that an athlete thinks is a winning combination, then they should stick to it.

Athletes who make food choices at concession stands need to know how to make the best choices. *Most concession stands are filled with high-fat, high-calorie foods that are not designed to maximize performance.* It is always wiser for athletes to pack a cooler from home with winning combinations, than to rely on the food at a concession stand. Table 3 has a list of nutrient-dense foods that are easy to pack in a cooler and will help supply energy throughout the day.

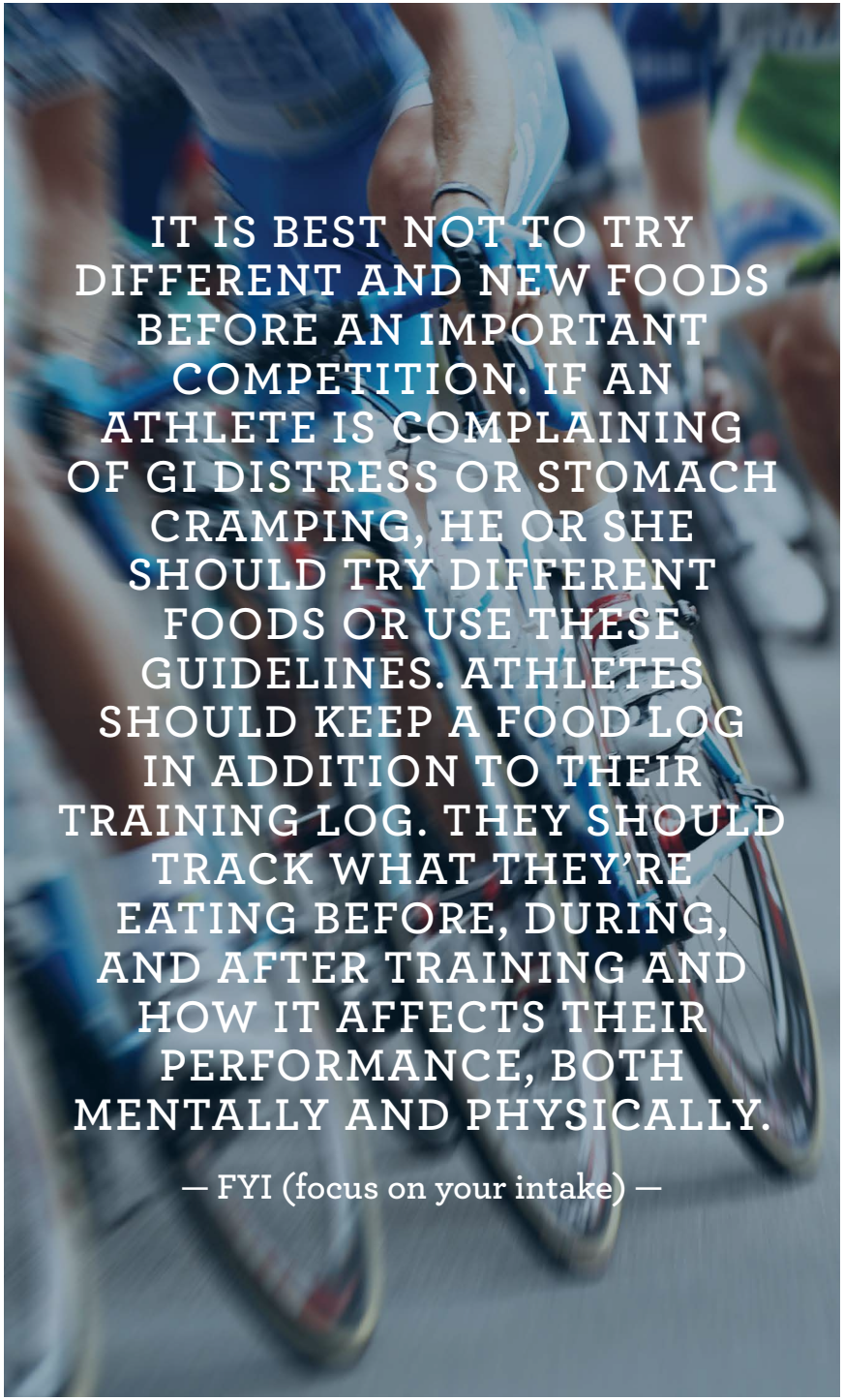
During Exercise:

Consuming carbohydrates during exercise lasting longer than 60 minutes ensures that the muscles receive adequate amounts of energy, especially during the later stages of the competition or workout. This has also been found to improve performance. The form of carbohydrates consumed does matter. Some athletes prefer to use a sports drink, whereas others prefer to eat solid or gel forms of carbohydrates. Use the following guidelines when consuming sports drinks with carbohydrates.

- *Consume 6-12 ounces of a sports drink with 6-8% carbohydrate concentration every 15-30 minutes during exercise (see Table 4). One gulp is about 2 ounces.*
- *Water is needed to aid in absorption of the carbohydrate. Drinks with a concentration greater than 10% are often associated with abdominal cramps, nausea, and diarrhea.*
- *For high intensity activities, sports drinks and gels containing multiple forms of sugar can increase absorption and delivery of carbohydrates.*

Note: Sports drinks should not be confused with "energy" drinks. "Energy" drinks typically contain one or more stimulants and their carbohydrate concentration is usually greater than 10%.

**Sports drinks are beverages that contain electrolytes and carbohydrates, not caffeine and other stimulants.*



IT IS BEST NOT TO TRY DIFFERENT AND NEW FOODS BEFORE AN IMPORTANT COMPETITION. IF AN ATHLETE IS COMPLAINING OF GI DISTRESS OR STOMACH CRAMPING, HE OR SHE SHOULD TRY DIFFERENT FOODS OR USE THESE GUIDELINES. ATHLETES SHOULD KEEP A FOOD LOG IN ADDITION TO THEIR TRAINING LOG. THEY SHOULD TRACK WHAT THEY'RE EATING BEFORE, DURING, AND AFTER TRAINING AND HOW IT AFFECTS THEIR PERFORMANCE, BOTH MENTALLY AND PHYSICALLY.

— FYI (focus on your intake) —

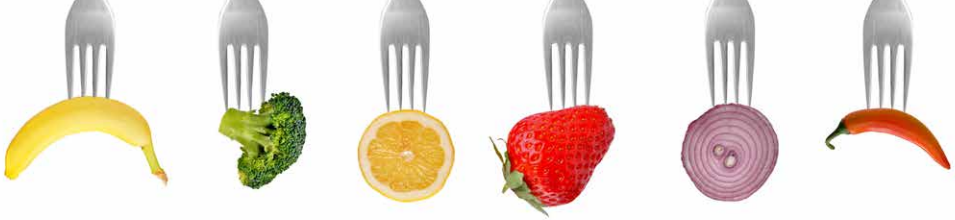


Table 3: *COOLER FUELERS*

Food	Serving Size	Fat	Carbohydrates	Protein
Baby carrots	7 carrots	0 g	3 g	0 g
Peanut butter pretzels	8 pieces	7 g	15 g	5 g
Celery	1 large stalk	0 g	2 g	0 g
Cherry tomatoes	1/2 cup	0 g	7 g	1 g
Chocolate milk (lowfat)	1 cup	2 g	26 g	8 g
String cheese	2 sticks	12 g	2 g	16 g
Dried mango	1 package	0 g	56 g	4 g
Sports drink*	8 oz	0 g	14 g	0 g
Snack bar (oatmeal raisin walnut)	1 bar	5 g	43 g	10 g
Fresh fruit	1 piece or 1 cup	<1 g	19 g	.3 g
Hummus	1/4 cup	5 g	13 g	3 g
High protein milk shake	1 bottle (12 fl oz)	4.5 g	40 g	20 g
Nuts (mixed)	1/4 cup	15 g	7 g	5 g
Peanut butter	2 tbsp	16 g	7 g	8 g
Pita bread (whole wheat large pita)	1 pita	2 g	35 g	6 g
Pretzels	1 cup	X g	X g	X g
Turkey sandwich (3 slices deli meat, mustard, wheat bread), baby carrots	turkey: 1 slice mustard: 1 tbsp 2 slices whole 7 carrots	1 g per slice 0 g bread: 1 slice 0 g	0 g per slice 0 g 5 g 3 g	5 g per slice 0 g 24 g 2 g <1 g
Vanilla wafers	4 wafers	10 g	19 g	<1 g
Whole grain bagel	1 bagel (4 oz)	1.5 g	47 g	11 g
Whole grain cereal	1 cup	1 g	47 g	7 g
Whole grain crackers	5 crackers	15 g	11 g	1 g
Pretzels	1 cup	1.2 g	32 g	4g

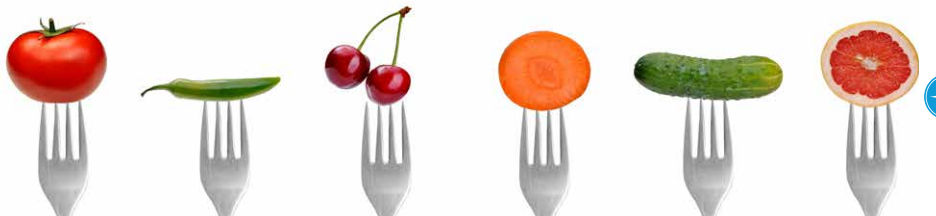


Table 4: *CALCULATING CARBOHYDRATE CONCENTRATIONS IN BEVERAGES*

To assess the concentration of a fluid replacement drink or any beverage, use the following calculations:

$$\frac{\text{Amount of carbohydrate in grams (from the label)}}{\text{The volume in one serving (use 240 ml per cup)}} \times 100 = \text{percentage}$$

Example: $\frac{15 \text{ grams}}{240 \text{ ml}} = .0625 \times 100 = 6\%$

**Remember that sports drinks are beverages that contain electrolytes and carbohydrates, not caffeine and other stimulants. For more information on sports drinks and hydration, read the Fluids and Hydration section.*

After Exercise:

Recovery nutrition is beneficial for all athletes to help them recover more quickly in preparation for the next event or training session and to maximize the adaptive benefits of exercise. Carbohydrates and protein are the two main macronutrients to focus on for optimal recovery. Consuming a carbohydrate snack as soon as possible after training will allow the body to start replenishing glycogen stores in the body. Additionally, consuming a couple of mixed meals high in carbohydrates within six hours after training or a competition ensures that the muscles continue with glycogen restoration.

- *Maximize muscle glycogen recovery after an intense or long training session or event with 1-1.2 g carbs per kilogram of body weight per hour for the first 4 hours following the activity. This refueling strategy is most important after a very hard training session and with another important session or event in the next 24 hours.*
- *Include a moderate amount of protein (15-30 g) in the recovery meal or snack to best support muscle repair and adaptation to exercise. Continue to include protein in meals and snacks spaced out about every 3-4 hours following the activity.*
- *Table 5 and 6 list recovery tips and examples of recovery snacks.*

Table 5: *POST-EXERCISE RECOVERY TIPS*

To refill energy in the muscle with trainings less than 8 hours apart, eat as soon as possible after exercise and then every 15-30 minutes for up to 4 hours.
Choose higher-carbohydrate foods, such as bagels, pasta, fruits, yogurts, cereal with low-fat milk, peanut butter, sports drinks, granola bars, french toast, sub sandwiches, baked potatoes with chili, smoothie made with fruit, fruit juice, yogurt, and frozen yogurt.
Include protein to aid in muscle recovery and promote muscle growth.
If you can't consume solid foods as soon as possible after exercise, try 2-4 cups of a sports drink, then consume solid food within 4 hours post-exercise.
Consume 1-1.2 g of carbohydrates per kilogram of body weight per hour for the first 4 hours after glycogen-depleting exercise. Be sure to rehydrate as well (see Table 12).

Table 6: *RECOVERY SNACK IDEAS*

Fruit and yogurt smoothie
Cheese sticks and fruit
Hard boiled eggs and whole grain crackers
Cereal with milk
Fruit and Greek yogurt
Pita and hummus
Chocolate milk (lowfat)

Protein's Role As A Team Player

Protein has always been a particularly popular nutrient with athletes because of its role in building and maintaining muscles. Indeed, athletes need to consume a wide variety of high-quality protein foods in their diets. However, while protein is necessary for rebuilding and repairing muscles, it is not the primary fuel, and consuming more protein than what the body can use is not going to give athletes larger and stronger muscles. While research shows that protein requirements are higher for athletes to aid in muscle repair and growth, most athletes are already consuming more protein than the body can use. Use the following formulas as guidelines to ensure proper amounts of protein are included in your dietary intake.

Table 7: *DAILY PROTEIN RECOMMENDATIONS*

Type of Training	Grams (g) of Protein Recommended
Endurance	1.4-1.8 g of protein per kilogram of body weight
Strength (to gain muscle mass)	1.6-2.0 g of protein per kilogram of body weight
Strength (maintenance)	1.6-1.7 g of protein per kilogram of body weight
Weight Restricted	1.8-2.2 g of protein per kilogram of body weight

To calculate protein requirements per pound of body weight, use Table 8.

Table 8: *PROTEIN REQUIREMENTS IN GRAMS PER POUND OF BODY WEIGHT*

To calculate the amount of protein your body needs on a daily basis, simply take your body weight in pounds and multiply it by the appropriate recommendation. For example, the range of protein for a 84.1 kilogram (185 pound) soccer player is 118-143 grams daily.

Weight In Kilograms		Protein In Grams		Daily Protein Intake
84.1	x	1.4	=	118 g
84.1	x	1.7	=	143 g

Calculate your own protein needs. Refer to Table 7 to get the recommended grams of protein for your type of training, and calculate both the low and the high values to get a range of appropriate protein for your daily intake.

Weight In Kilograms		Protein In Grams		Daily Protein Intake
	x		=	
	x		=	

Table 9 provides additional information to translate this information into servings of protein-rich food.

Table 9: *PROTEIN CONTENT OF COMMONLY CONSUMED FOODS*

Food	Serving size	Grams of protein
Chicken breast	3 oz	22 g
Ground beef	3 oz	22 g
Broiled fish	3 oz	20 g
Cottage cheese	1/2 cup	12 g
Greek yogurt	8 oz	25 g
Cooked lentils	1/2 cup	9 g
Cooked black beans	1/2 cup	8 g
Milk	1 cup	8 g
Peanut butter	2 tbsp	7 g
String cheese	1 oz	7 g
Extra firm tofu	3 oz	8 g
Egg	1 large or 2 egg whites	6 g
Mixed nuts	1/4 cup	5 g
Cooked quinoa	1 cup	8 g
Whole wheat bread	1 slice	3 g

Protein After Exercise

The body's ability to recover from games, practices, or intense workouts requires adequate rest and proper nutrition. An important component of the recovery process is consuming both carbohydrates and protein shortly after exercise to restore muscle glycogen and stimulate muscle protein synthesis.

EAT

Keep in mind that food is fuel and athletes should not come to practice or games without having had enough food to support the energy requirements for their sport. To keep athletes properly fueled and have their protein needs met, use the **EAT** guidelines:

Eat breakfast. It is the best way to start the day well fueled. Include foods that contain carbohydrates and protein, such as nonfat milk, yogurt, or eggs.

Add carbohydrates and protein to post-exercise meals. Some energy bars provide carbohydrates to replenish muscle glycogen stores and protein to help build and repair muscles.

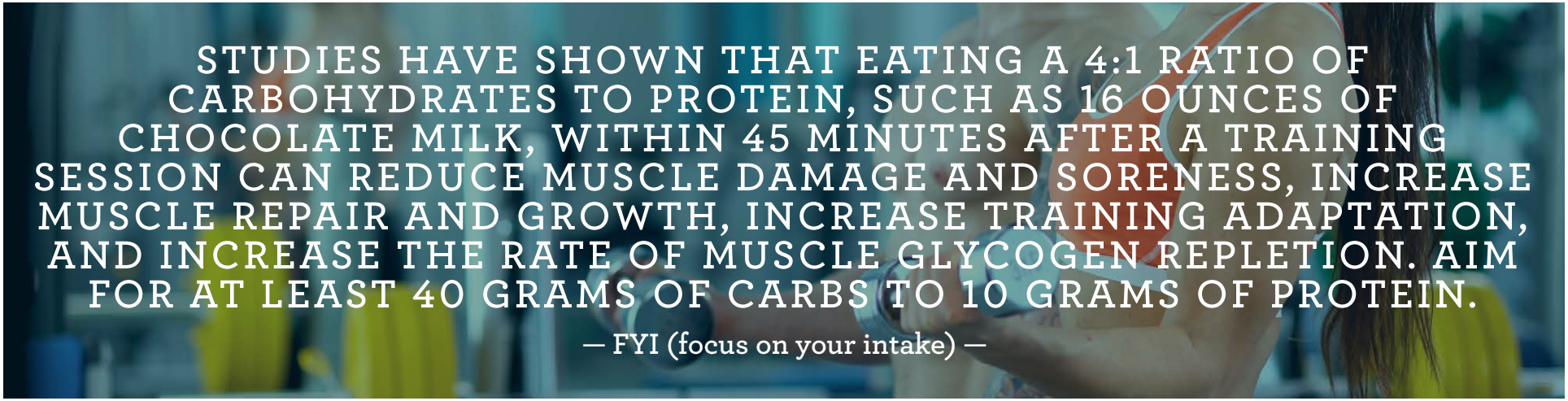
Toss the supplements. Athletes should rely on protein from food sources first, instead of supplements. This helps ensure that diets are balanced for health and performance. In addition to meat sources of protein, dairy products, nuts, and seeds are all rich sources of protein and can easily be added to any meal or snack.

Building Body Mass

Many athletes want to add more bulk to their bodies in the form of lean muscle. Many supplement products claim to build muscles. Athletes should take special caution when considering supplementation (please see Supplements and Your Health section for additional information and cautions). Due to the limited regulations of the dietary supplement industry, there is a risk of products being contaminated with sport-prohibited or unknown substances with or without the manufacturer knowing. There is no guarantee that the product contents match with those listed on the label. Taking a lot of extra protein either from supplements or food does not guarantee bigger muscles. If it did, athletes could spend time lounging instead of lifting to build muscle.

The following are healthy ways to build muscle:

- *Follow a strength training program that challenges muscles.*
- *Add 500 to 1,000 more calories each day to current dietary intake, to allow the body to use protein already present in the diet for muscle growth and not be broken down to fuel activity.*
- *Eat foods that are both high in carbohydrates and proteins like grilled chicken sandwiches, peanut butter sandwiches, and Greek yogurt with granola.*
- *Choose low-fat sources of both carbohydrates and protein. For example, choose a baked potato over French fries, or grilled chicken over fried chicken.*
- *Eat protein throughout the day to best support muscle growth. Aim for 0.3 grams/kilogram of body weight, or about 15-20 grams of protein, every 3-4 hours.*



Fat as Fuel

Fat Intake in Athletes

Fat is the primary fuel for light to moderate intensity exercise. Fat is a valuable metabolic fuel for muscles during endurance exercise and performs many important functions in the body, although it does not provide quick bursts of energy needed for speed.

The more efficient an athlete becomes in their respective sport, the easier it is for them to operate at a lower intensity while maintaining the same level of work or maintaining the same speed (metabolic efficiency).

Stored fat provides an abundant source of energy. A 150-pound athlete with a relatively low 6% body fat carries 1,500-2,000 calories in the form of glycogen and 45,000 calories in the form of stored fat. Fat stores play an important role in fueling athletes in situations where glycogen has been depleted and no foods are being consumed.

Research has shown that metabolic adaptations do occur as a result of high fat fueling, although claims that high fat, carbohydrate-restricted diets improve performance in competitive athletes have not been proven.

For athletes that require bursts of power in their sport, such as in gymnastics, soccer, basketball, baseball, boxing, figure skating, swimming, and rowing, a high fat diet is not recommended to support optimal performance.

Foods that contain fat can generally be categorized by containing mostly saturated or unsaturated fat. Foods high in saturated fat include fatty meats, high-fat dairy like whole milk or ice cream, coconut oil, palm oil, butter, and ghee. To support heart health and minimize inflammation, saturated fat intake should be limited.

Foods rich in unsaturated fat include nuts, seeds, avocado and avocado oil, olives and olive oil, vegetable oils, and fatty fish like salmon. Support optimal health and performance by getting most dietary fats from unsaturated fat sources.

Athletes should consume 20-35% of total calories from fat, focusing on most fat calories coming from unsaturated sources. Too little fat intake can lead to issues such as low energy intake and availability, and even decreased production of hormones. Too much fat in the diet can lead to unwanted weight gain and an undesirable body composition. A standard American dietary pattern is usually high in fat, so athletes need to pay attention to where fat is coming from in their diet to keep their intake in a healthy, performance-supporting range.

Table 10: *SUBSTITUTIONS FOR REDUCING FAT INTAKE*

Instead of:	Try:
Whole milk	Skim, 1%, or 2% milk
Ice cream	Higher protein ice cream, avocado ice cream, 100% real fruit popsicles
Sour cream	Plain Greek yogurt
Bacon	Canadian or turkey bacon
80% or 85% lean ground beef or turkey	90 or 93% lean beef or turkey
Fried chicken	Baked, roasted, seared, or grilled chicken
Doughnuts and pastries	100% whole grain breads, homemade whole grain breads
Apple pie	Baked or raw apple
Cookies, cakes, or brownies	Peanut butter pretzels, dried fruit, trail mix
French fries	Baked or roasted potatoes

Gut Health

Probiotics are live microorganisms that populate the gut with healthy bacteria. In turn, healthy bacteria in the gut helps to support the body's immune system, leading to fewer respiratory illnesses and the prevention of a multitude of medical conditions. Probiotics are naturally found in fermented foods like yogurt, kefir, kombucha, sauerkraut, kimchi, tempeh and miso. While there are supplemental forms of probiotics available, it is best and safest to consume them from food sources.

Prebiotics can be thought of as the food for beneficial gut bacteria. Food is the best way to get prebiotics in your diet, which usually come in the form of fiber from plants. Great food sources of prebiotics include onion, garlic, pears, apple, banana, whole wheat, asparagus, beans, mango, Brussels sprouts, and dairy.

Vitamins and Minerals

Vitamins and minerals (when not consumed in food form) are classified by the Federal Drug Administration (FDA) as dietary supplements. Amino acids, botanicals, herbs, and substances, such as enzymes, organ tissues and glandulars, and metabolites, are also classified as dietary supplements.

Many athletes believe they do not get enough vitamins and minerals in their diet and wonder if they should start taking some sort of supplement; while other athletes are on a constant quest to find the latest diet or supplement that will give them a competitive edge. The reality is that making wise food and beverage choices are crucial for peak performance and contribute to endurance and repair of injured tissues. A good working knowledge and understanding of foods that provide essential nutrients will aid in an athlete reaching their greatest potential.

Athletes have increased energy needs, which allows for more opportunities to obtain the nutrients they need through a balanced diet composed of a variety of natural foods. Most sports nutrition professionals agree that supplementation will not necessarily improve performance.

However, the athlete who takes a simple one-a-day type of vitamin or mineral that does not exceed the nutrient levels of the Recommended Dietary Allowance (RDA)/Dietary Reference Intake (DRI), is probably not doing any harm, especially if it is third-party tested. An athlete should consult with his or her sports dietitian, or other health care professional, to determine whether vitamin and mineral supplementation is needed to maintain optimal health.

Nutrients that may be low in an athlete's diet are listed in Table 11. Choose a variety of foods in each food category to ensure that all nutrients are included in your diet.

Athletes should always choose food over dietary supplementation. The body needs more than 40 nutrients every day and supplements do not contain all the nutrients that are found in food. Supplements cannot make up for a poor diet or poor beverage choices.

Table 11: *MICRONUTRIENT SOURCES*

Selected Micronutrients	B Vitamins	Calcium	Vitamin C	Vitamin D	Magnesium	Selenium	Iron
Vegetables	Leafy green vegetables Asparagus Cauliflower Sweet potatoes Mushrooms	Broccoli Kale Turnip greens	Tomatoes Brussel sprouts Broccoli Red peppers Turnip greens Collard greens		Spinach Potatoes	Green beans Broccoli	Spinach
Fruits	Dried prunes Bananas	Fortified orange juice	Oranges Grapefruit Berries Kiwi Mango		Raisins Banana	Banana	Raisins Dried apricots
Grains	Whole grain breads Cereals Pasta, Rice Tortillas	Corn tortilla Flour tortilla	Fortified breakfast cereals	Fortified cereal	Whole grain cereals Oatmeal	Spaghetti Rice	Oatmeal Spaghetti Fortified cereals
Dairy	Milk Yogurt	Milk Dairy products		Fortified dairy products	Yogurt	Cottage cheese Cheddar cheese	
Meats Eggs Nuts Beans	Turkey Pork Chicken Salmon Tuna	Soybeans	Salmon	Tuna Salmon Sardines Eggs	Almonds Cashews Peanuts Chickpeas	Lean beef Ham Chicken Nuts	Red meat Dark meat Chickpeas Shrimp Tofu

Natural foods contain a matrix of various nutrients that researchers are continuing to discover and learn more about. Often, individual nutrients don't work as effectively when isolated in a pill or supplement form.

Self-prescribed supplement users should heed overdose warnings and look for symptoms of toxic levels of supplementation, such as diarrhea, skin rashes that do not fade, and unexplained joint pain. Fat soluble vitamins (A, D, E, and K) can be toxic when misused. Unlike water soluble vitamins in which excess amounts are excreted in the urine, fat soluble vitamins are stored in body fat and remain in the body.

Remember that more is not always better. The established Recommended Dietary Allowance (RDA)/Dietary Reference Intake (DRI), for vitamins and minerals are to be used as a guide in determining nutritional needs. These allowances have a large margin of safety built into the recommendations. Even though it has been shown that a severely inadequate intake of certain vitamins and/or minerals can impair performance, it is unusual for an athlete to have such severe nutritional deficiencies. Even marginal deficiencies do not appear to markedly affect the ability to exercise efficiently. The goal for any athlete should be to meet DRI/RDA vitamin and mineral recommendations, as consuming more than these established quantities has not been shown to further improve performance and excess consumption can actually be harmful.

Athletes searching for a competitive edge often look to a supplement or a special combination of nutrients to find it. However, there are no quick-fix supplements for improving sports performance. Consuming a wide variety of foods and staying well hydrated are the basic cornerstones to reaching athletic potential.

For athletes subject to sport drug testing, taking nutritional or dietary supplements may cause a positive test for a prohibited substance that may not be disclosed on the product label. In accordance with all applicable rules for a positive test result within a sport, a sanction may be imposed.

Some trade associations and other businesses have programs that include analytical testing and quality assessment of dietary supplements, culminating in a "stamp of approval" or a "guarantee" that the supplement is safe for use in sport. These programs may reduce the risk that a supplement is contaminated, or contains an undisclosed ingredient. HOWEVER, it does not eliminate this risk. Athletes who take dietary or nutritional supplements, even if claiming to be "approved" or "verified," do so at their own risk of committing an anti-doping rule violation, or suffering from negative health side effects.

Supplements and Your Health

Background. Dietary supplements are defined as products containing "dietary ingredients" intended to supplement the diet. These include vitamins, minerals, amino acids, botanicals, herbs, and substances like enzymes, organ tissues and glandulars, metabolites, etc.

The increased visibility of many vitamins, minerals, herbals, as well as other dietary supplements, some argue, can be attributed to the passage of the Dietary Supplement Health and Education Act (DSHEA) in 1994. Under DSHEA, the Food and Drug Administration (FDA) DOES NOT evaluate any supplements for safety or effectiveness before they are sold. The FDA will only step in and take regulatory action after a supplement has hurt someone or made them sick. Often, a supplement must sicken dozens or hundreds of people before the FDA takes action.

Additionally, the passing of DSHEA allowed manufacturers to publish only limited information about the benefits of dietary supplements. It is easy for products to get to the marketplace without pre-market controls, and if necessary, they are extremely difficult to remove, even when serious health concerns are raised about their safety.

The Anabolic Steroid Control Act of 2004 (SB 2195) took effect on January 20, 2005 as an amendment to the Controlled Substances Act. The Act classifies a number of prohormones or steroid precursors, previously manufactured as dietary supplements, as controlled substances, making their distribution illegal without a medical prescription. According to this Act, possession and/or distribution of these substances can be punishable by up to five years in prison.

Did you know? While some mainstream supplements are made by responsible manufacturers, a growing number of supplement products contain dangerous and undisclosed ingredients, including steroids, stimulants, and other dangerous drugs. One major issue is that unscrupulous companies are marketing supplements spiked with these dangerous substances, taking advantage of many consumers' desires for maximized sport performance or aesthetic improvements, and advertising them as healthy and safe products when they're not.

Most Americans are unaware that designer steroids and other dangerous drugs are intentionally being sold as dietary supplements and that current law makes it too easy for these products to get to the market. Best estimates suggest that there are hundreds of supplement products currently available that contain one or more of approximately 20-25 designer steroids alone. Initial evidence of supplement contamination was established in a 2004 market survey from an International Olympic Committee accredited lab, during which 15% (94) of the 634 supplements analyzed were found to contain hormones or prohormones not listed on the supplement label. Since the study, numerous other reports of contamination, mislabeling, and alteration of supplements have continued to surface from independent research.

Contamination can also occur. In the United States, high-profile athletes who test positive from contaminated or intentionally spiked supplements containing undisclosed prohibited substances can be made ineligible for competition.

Given the overall possibility of supplement contamination, the risk of taking a mislabeled supplement is a real threat to the careers of American athletes and the health of all consumers. Some products can be unintentionally adulterated with substances, such as pesticides or heavy metals, while others may be inadvertently contaminated with sport-prohibited substances due to cross-contamination. While there certainly are supplements that are safe and pure, it is possible for one batch of a product, for example, to become contaminated with a dangerous or sport-prohibited substance when manufacturing equipment isn't cleaned properly and contains remnants of ingredients from a previous product. This is similar to what can happen in a factory that manufactures nut products along with other products like cereals and breads. If the machines aren't cleaned correctly or if particles or dust permeate manufacturing areas, the breads or cereals can contain remnants or traces of the nuts, which can be potentially dangerous to those with nut allergies.

The health consequences are numerous. The consumption of these dangerous hidden drugs, such as designer steroids, has been a known cause of liver injury, stroke, kidney failure, and pulmonary embolism.

The inclusion of stimulants in supplement products also has the potential for harmful effects. Some stimulants can cause increased blood pressure, irregular heart rhythm, stroke, or even death.

Protect yourself! This is a REAL concern. Rather than relying on advertisements from companies who are trying to sell you their product, as a consumer, you have the responsibility to educate yourself. In the world of anti-doping, strict liability applies and athletes are responsible for what is in their systems at the time of a drug test. Anabolic steroids and stimulants are prohibited classes of substances in sport. It is up to the athlete or consumer to research reliable sources of information that can point out the many substances that are known to be included in supplements and that may, in fact, damage one's health or athletic career.

More Information. There is no risk-free way to choose a supplement, as the only way to have zero risk is to not use supplements. If using a dietary supplement is needed, the best way to reduce the risk of using a low-quality or contaminated product is to choose one that is certified by a USADA-recommended third party. See USADA.org/Supplement-Connect.

SUPPLEMENT CONNECT
USADA.org/Supplement-Connect

Fluids and Hydration

Hydration is one of the most important nutritional concerns for an athlete. Approximately 60% of body weight is water. As an athlete trains or competes, fluid is lost through the skin through sweat and through the lungs while breathing. If this fluid is not replaced at regular intervals during practice or competition, it can lead to dehydration. A dehydrated athlete has a decreased volume of blood circulating through the body, and consequently:

- *The amount of blood pumped with each heart beat decreases*
- *Exercising muscles do not receive enough oxygen*
- *Exhaustion sets in and the athlete's performance suffers*
- *By-products of exercise are not flushed out of the body as regularly as they should be*

Research has shown that losing as little as 2% of total body weight can negatively affect athletic performance. For example, if a 150-pound athlete loses 3 pounds during a workout or competition, their ability to perform at peak performance due to dehydration is reduced. Proper fluid replenishment is the key to preventing dehydration and reducing the risk of heat injury in athletes engaged in training and competition.

Preventing Dehydration

The best way to prevent dehydration is to maintain body fluid levels by consuming plenty of fluids before, during, and after a workout or competition. Often, athletes do not realize that they are losing body fluids or that they are impacting their performance through dehydration. Athletes who are not sure how much fluid to drink can monitor hydration using two helpful techniques:

- *Weighing themselves before and after practice or competition. Difference in weight can indicate how much fluid was lost during the activity and help determine how much fluid should be replaced.*
- *Checking urine color. Urine that is dark gold in color indicates dehydration. Urine similar in color to pale lemonade is a sign of a hydrated athlete.*

Many times athletes wait to drink until they are thirsty. Thirst is not an accurate indicator of how much fluid an athlete has lost. Athletes who wait to replenish body fluids until feeling thirsty are already dehydrated. As a matter of fact, most individuals do not become thirsty until more than 2% of body weight is lost. Waiting until you are thirsty can affect your performance. When athletes only drink enough to quench their thirst, they may still be dehydrated.

For best results, keep a bottle of fluid available when working out and drink as often as desired, ideally every 15-20 minutes. Table 12 lists guidelines for fluid replacement from the National Athletic Trainers Association, the Academy of Nutrition and Dietetics, and the American College of Sports Medicine.

Table 12: *GUIDELINES FOR PROPER HYDRATION*

- **MONITOR FLUID LOSSES:** Weigh-in before and after training, especially during hot weather and conditioning phases of the season
- **FOR EACH KILOGRAM (POUND)** lost during exercise, drink 1.5 liters for each kg lost and 3 cups for each pound lost
- **DO NOT RESTRICT** fluids before, during, or after the event
- **DO NOT RELY ON** thirst as an indicator

URINE COLOR CHART

What about fluid replacement drinks?

Sports drinks containing between 6-8% carbohydrates can provide energy to the working muscle that water cannot, which increases exercise capacity and improves performance. It appears that athletes who consume a sports drink can maintain blood glucose levels at a time when muscle glycogen stores are diminished. This allows carbohydrate utilization and energy production to continue at high rates. Research has also shown that mouth rinses with carbohydrates can improve performance at rates similar to ingestion. Beverages containing more than one kind of sugar (i.e., glucose and fructose) can increase carbohydrate absorption rates because each sugar is absorbed via different channels.

How important are the electrolytes provided by fluid replacement drinks?

The ingestion of sodium during exercise may help with maintenance or restoration of plasma volume during exercise and recovery. The consumption of sports drinks containing sodium helps retain water in the body and aids in hydration by increasing the absorption of fluid from the intestines into the muscles. Recent research has suggested that a 6-8% carbohydrate sport drink with at least 110 mg of sodium per 8-ounce serving empties from the stomach just as fast as plain water. Endurance activities lasting longer than 3 hours may require as much as 175 mg of sodium per 8-ounce serving.

There has been concern by parents, coaches, and athletes that sports drinks may contain too much sodium. However, many fluid replacement drinks are low in sodium. An 8-ounce serving of a fluid replacement drink can have a sodium content similar to that of a cup of reduced fat milk. Most Americans consume too much sodium through processed and convenience foods, not through fluid replacement drinks.

What is an ideal fluid replacement drink?

The ideal fluid replacement beverage is one that tastes good, does not cause GI discomfort or distress when consumed in large volumes, promotes rapid fluid absorption and maintenance of body fluid, and provides energy to working muscles during intense training and competition.

Guidelines for Fluid Replacement

The following guidelines for maintaining body fluid balance, improving performance in the heat, and preventing heat-related illness appear to be prudent based on current scientific knowledge.

- *For intense training and long workouts, a fluid replacement drink containing carbohydrates may provide an important source of energy. A 6-8% carbohydrate beverage is typically most effective in maintaining fluid balance while supplying the muscles with fuel.*
- *The fluid consumed during activity should contain a small amount of sodium and electrolytes. The sodium may be beneficial for quicker absorption and replacement of sweat loss.*
- *The beverage should be palatable and taste good.*
- *Don't wait until right before exercise to start hydrating. Maintaining good hydration throughout each day is not only important for overall health, but helps an athlete enter a training session or event well hydrated.*
- *The athlete should drink 7-12 ounces of cold fluid about 15-30 minutes before workouts. If the workout is prolonged, choose a beverage that has a 6-8% carbohydrate concentration.*
- *Drink 4-8 ounces of cold fluid during exercise at 15-20 minute intervals.*
- *Start drinking early in the workout because thirst does not develop until 2% of body weight has been lost, by which time performance may have begun to decline.*
- ***Avoid carbonated drinks**, which can cause GI distress and may decrease the volume of fluid consumed.*
- ***Avoid beverages containing caffeine, alcohol, and those promoted as energy drinks.***
- *If you have never had a sports drink, don't drink one for the first time on competition day. Practice consuming fluids while you train. Use a trial and error approach until you discover the fluids that work well for you and encourage hydration.*

Bottom Line

Nutrition plays a critical role in athletic performance, and athletes, coaches, and parents need to realize that making wise food choices can increase the chances of optimal athletic performance. It is easy for athletes to fall prey to nutrition misinformation and fad diets in the search for a quick fix to improve performance.

It is imperative that athletes stay current on accurate nutrition issues as they are ever-changing. By making informed food choices, athletes will have an advantage over those who choose to ignore the role that food plays in human performance.

Resources:

USADA.org/supplement-connect USADA's Supplement Education Center

acsm.org American College of Sports Medicine

eatright.org Academy of Nutrition and Dietetics

fda.gov/food U.S. Food and Drug Administration

fda.gov/safety/recalls FDA Recalls, Market Withdrawals, & Safety Alerts

fns.usda.gov/cnpp Center for Nutrition Policy and Promotion

dietaryguidelines.gov Dietary Guidelines for Americans, 2020-2025

nutrition.gov National Agricultural Library, U.S. Department of Agriculture

health.gov/nhic National Health Information Center - U.S. Department of Health and Human Services

sportsrd.org Collegiate and Professional Sports Dietitians Association

scandpg.org Sports, Cardiovascular, and Wellness Nutrition, a dietetic practice group of the Academy of Nutrition and Dietetics

Sports, Cardiovascular, and Wellness Nutrition Dietetic Practice Group. Sports Nutrition: A Handbook for Professionals. 6th ed., Chicago: Academy of Nutrition and Dietetics. 6th Edition. 2017.

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