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## Carbohydrates

**Also called:** Carbs

Carbohydrates are one of the main types of nutrients. They are the most important source of energy for your body. Your digestive system changes carbohydrates into glucose (blood sugar [<https://medlineplus.gov/bloodsugar.html>]). Your body uses this sugar for energy for your cells, tissues and organs. It stores any extra sugar in your liver and muscles for when it is needed.

Carbohydrates are called simple or complex, depending on their chemical structure. Simple carbohydrates include sugars found naturally in foods such as fruits, vegetables, milk, and milk products. They also include sugars added during food processing and refining. Complex carbohydrates include whole grain breads and cereals, starchy vegetables and legumes. Many of the complex carbohydrates are good sources of fiber [<https://medlineplus.gov/dietaryfiber.html>].

For a healthy diet, limit the amount of added sugar that you eat and choose whole grains over refined grains.


### Start Here

- Carbohydrates: How Carbs Fit into a Healthy Diet [<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/carbohydrates/art-20045705?p=1>] (Mayo Foundation for Medical Education and Research)

### Latest News

- No Fruit Juice Before Age 1, Pediatricians Say [[https://medlineplus.gov/news/fullstory\\_165826.html](https://medlineplus.gov/news/fullstory_165826.html)] (05/22/2017, HealthDay)
- Drink Water, Fight Fat? [[https://medlineplus.gov/news/fullstory\\_165714.html](https://medlineplus.gov/news/fullstory_165714.html)] (05/18/2017, HealthDay)
- Sugary Drinks More Affordable Across the Globe [[https://medlineplus.gov/news/fullstory\\_165230.html](https://medlineplus.gov/news/fullstory_165230.html)] (05/04/2017, HealthDay)
- More News on Carbohydrates [[https://medlineplus.gov/alphanews\\_c.html#carbohydrates](https://medlineplus.gov/alphanews_c.html#carbohydrates)]



### Related Issues

- Artificial Sweeteners and Cancer [<https://www.cancer.gov/about-cancer/causes-prevention/risk/diet/artificial-sweeteners-fact-sheet>]  (National Cancer Institute)  
Also in Spanish [<https://www.cancer.gov/espanol/cancer/causas-prevencion/riesgo/dieta/hoja-informativa-edulcorantes-artificiales>]
- Carbohydrate-Loading Diet [<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/carbohydrate-loading/art-20048518?p=1>] (Mayo Foundation for Medical Education and Research)
- Choosing Whole-Grain Foods: 10 Tips for Purchasing and Storing Whole-Grain Foods [<https://www.choosemyplate.gov/ten-tips-choosing-whole-grain-foods>] (Department of Agriculture)
- Glycemic Index Diet: What's Behind the Claims [<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/glycemic-index-diet/art-20048478?p=1>] (Mayo Foundation for Medical Education and Research)
- High-Fructose Corn Syrup: What Are the Concerns? [<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/high-fructose-corn-syrup/faq-20058201?p=1>] (Mayo Foundation for Medical Education and Research)
- Low-Carb Diet: Could It Help You Lose Weight? [<http://www.mayoclinic.org/healthy-lifestyle/weight-loss/in-depth/low-carb-diet/art-20045831?p=1>] (Mayo Foundation for Medical Education and Research)

### Specifics

- Added Sugar: Don't Get Sabotaged by Sweeteners [<http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating>]



[/in-depth/added-sugar/art-20045328?p=1](#)] (Mayo Foundation for Medical Education and Research)

- [Added Sugars \[http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Added-Sugars\\_UCM\\_305858\\_Article.jsp\]](http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Added-Sugars_UCM_305858_Article.jsp) (American Heart Association)
- [Artificial Sweeteners and Other Sugar Substitutes \[http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/artificial-sweeteners/art-20046936?p=1\]](http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/artificial-sweeteners/art-20046936?p=1) (Mayo Foundation for Medical Education and Research)
- [Carbohydrates and Diabetes \(For Parents\) \[https://kidshealth.org/en/parents/carbs-diabetes.html\]](https://kidshealth.org/en/parents/carbs-diabetes.html) (Nemours Foundation)  
Also in Spanish [\[https://kidshealth.org/es/parents/carb-diabetes-esp.html\]](https://kidshealth.org/es/parents/carb-diabetes-esp.html)
- [Counting Carbs? Understanding Glycemic Index and Glycemic Load \[https://newsinhealth.nih.gov/issue/Dec2012/Feature2\]](https://newsinhealth.nih.gov/issue/Dec2012/Feature2)  
 (National Institutes of Health)
- [Frequently Asked Questions about Sugar \[http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Frequently-Asked-Questions-About-Sugar\\_UCM\\_306725\\_Article.jsp\]](http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Frequently-Asked-Questions-About-Sugar_UCM_306725_Article.jsp) (American Heart Association)
- [Non-Nutritive Sweeteners \(Artificial Sweeteners\) \[http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Non-Nutritive-Sweeteners-Artificial-Sweeteners\\_UCM\\_305880\\_Article.jsp\]](http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Non-Nutritive-Sweeteners-Artificial-Sweeteners_UCM_305880_Article.jsp) (American Heart Association)
- [Sugar 101 \[http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Sugar-101\\_UCM\\_306024\\_Article.jsp\]](http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/HealthyDietGoals/Sugar-101_UCM_306024_Article.jsp) (American Heart Association)
- [Sweet Stuff: How Sugars and Sweeteners Affect Your Health \[https://newsinhealth.nih.gov/issue/Oct2014/Feature1\]](https://newsinhealth.nih.gov/issue/Oct2014/Feature1)  
 (National Institutes of Health)
- [Whole Grains: Hearty Options for a Healthy Diet \[http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/whole-grains/art-20047826?p=1\]](http://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/whole-grains/art-20047826?p=1) (Mayo Foundation for Medical Education and Research)

## Statistics and Research

- [Consumption of Added Sugar among U.S. Children and Adolescents, 2005–2008 \[https://www.cdc.gov/nchs/data/databriefs/db87.htm\]](https://www.cdc.gov/nchs/data/databriefs/db87.htm) (National Center for Health Statistics)
- [Consumption of Added Sugars among U.S. Adults, 2005–2010 \[https://www.cdc.gov/nchs/data/databriefs/db122.htm\]](https://www.cdc.gov/nchs/data/databriefs/db122.htm) (National Center for Health Statistics)
- [Consumption of Sugar Drinks in the United States, 2005–2008 \[https://www.cdc.gov/nchs/data/databriefs/db71.htm\]](https://www.cdc.gov/nchs/data/databriefs/db71.htm) (National Center for Health Statistics)

## Clinical Trials


- [ClinicalTrials.gov: Dietary Carbohydrates \[https://clinicaltrials.gov/search/open/?term=%22Dietary+Carbohydrates%22\]](https://clinicaltrials.gov/search/open/?term=%22Dietary+Carbohydrates%22)  
 (National Institutes of Health)
- [ClinicalTrials.gov: Sweetening Agents \[https://clinicaltrials.gov/search/open/?intervention=%22Sweetening+Agents%22\]](https://clinicaltrials.gov/search/open/?intervention=%22Sweetening+Agents%22)  
 (National Institutes of Health)

## Journal Articles

### References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- [Article: Does preoperative oral carbohydrate treatment reduce the postoperative surgical stress... \[https://www.ncbi.nlm.nih.gov/pubmed/28073036\]](https://www.ncbi.nlm.nih.gov/pubmed/28073036)
- [Article: An Integrated View of the Effects of Wine Polyphenols and... \[https://www.ncbi.nlm.nih.gov/pubmed/28067835\]](https://www.ncbi.nlm.nih.gov/pubmed/28067835)
- [Article: A nutritional perspective on UCP1-dependent thermogenesis. \[https://www.ncbi.nlm.nih.gov/pubmed/28057582\]](https://www.ncbi.nlm.nih.gov/pubmed/28057582)
- [Carbohydrates -- see more articles \[https://www.ncbi.nlm.nih.gov/pubmed?term=dietary+carbohydrates\[majr\]+AND+humans\[mh\]+AND+english\[la\]+AND+\(review\[pt\]+OR+guideline\[pt\]+OR+clinical+trial\[pt\]+OR+jsubsetk\[text\]+OR+jsubsetaim\[text\]+OR+patient+education+handout\[pt\]\)+NOT+\(editorial\[pt\]+OR+letter\[pt\]\)+AND+%22last+1+Year%22\[edat\]](https://www.ncbi.nlm.nih.gov/pubmed?term=dietary+carbohydrates[majr]+AND+humans[mh]+AND+english[la]+AND+(review[pt]+OR+guideline[pt]+OR+clinical+trial[pt]+OR+jsubsetk[text]+OR+jsubsetaim[text]+OR+patient+education+handout[pt])+NOT+(editorial[pt]+OR+letter[pt])+AND+%22last+1+Year%22[edat])
- [Sugar substitutes -- see more articles \[https://www.ncbi.nlm.nih.gov/pubmed?term=\(sweetening+agents\[majr\]+OR+Non-Nutritive+Sweeteners\[majr\]\)+AND+humans\[mh\]+AND+english\[la\]+NOT+\(editorial\[pt\]+OR+letter\[pt\]\)+AND+%22last+1+Year%22\[edat\]](https://www.ncbi.nlm.nih.gov/pubmed?term=(sweetening+agents[majr]+OR+Non-Nutritive+Sweeteners[majr])+AND+humans[mh]+AND+english[la]+NOT+(editorial[pt]+OR+letter[pt])+AND+%22last+1+Year%22[edat])

## Reference Desk

- You Are What You Eat [<https://publications.nigms.nih.gov/chemhealth/eat.htm>]  (National Institute of General Medical Sciences)

## Find an Expert

- Center for Nutrition Policy and Promotion [<https://www.cnpp.usda.gov/>]
- Food and Nutrition Information Center [<https://www.nal.usda.gov/fnic>]

## Children

- Allergies and Hyperactivity (and sugar) [<https://www.healthychildren.org/english/health-issues/conditions/adhd/pages/allergies-and-hyperactivity.aspx>] (American Academy of Pediatrics)  
Also in Spanish [<https://www.healthychildren.org/Spanish/health-issues/conditions/adhd/Paginas/Allergies-and-Hyperactivity.aspx>]
- Carbohydrates, Sugar, and Your Child [<https://kidshealth.org/en/parents/sugar.html>] (Nemours Foundation)  
Also in Spanish [<https://kidshealth.org/es/parents/sugar-esp.html>]
- Cut Back on Your Kid's Sweet Treats: 10 Tips to Decrease Added Sugars [<https://choosemyplate-prod.azureedge.net/sites/default/files/tentips/DGTipsheet13CutBackOnSweetTreats.pdf>] (Department of Agriculture) – PDF  
Also in Spanish [[https://choosemyplate-prod.azureedge.net/sites/default/files/tentips/DGTipsheet13CutBackOnSweetTreats-sp\\_0.pdf](https://choosemyplate-prod.azureedge.net/sites/default/files/tentips/DGTipsheet13CutBackOnSweetTreats-sp_0.pdf)]
- Learning about Carbohydrates [<https://kidshealth.org/en/kids/carb.html>] (Nemours Foundation)  
Also in Spanish [<https://kidshealth.org/es/kids/carb-esp.html>]

## Teenagers

- Carbohydrates [<https://www.girlshealth.gov/nutrition/basics/carbs.html>]  
(Department of Health and Human Services, Office on Women's Health)
- Carbohydrates and Diabetes [<https://kidshealth.org/en/teens/carbs-diabetes.html>] (Nemours Foundation)
- Low-Carb Diet [<http://youngwomenshealth.org/2013/12/06/low-carb-diet/>] (Children's Hospital Boston)  
Also in Spanish [<http://youngwomenshealth.org/2014/03/10/dieta-baja-en-carbohidratos/>]

## Women

- Are Artificial Sweeteners OK to Consume during Pregnancy? [<https://kidshealth.org/en/parents/sweeteners.html>]  
(Nemours Foundation)

## Patient Handouts

- Calorie count – sodas and energy drinks [<https://medlineplus.gov/ency/patientinstructions/000888.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000888.htm>]
- Carbohydrates [<https://medlineplus.gov/ency/article/002469.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/002469.htm>]
- Counting carbohydrates [<https://medlineplus.gov/ency/patientinstructions/000321.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000321.htm>]
- Sweetened beverages [<https://medlineplus.gov/ency/patientinstructions/000335.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000335.htm>]
- Sweeteners – sugar substitutes [<https://medlineplus.gov/ency/article/007492.htm>] (Medical Encyclopedia)  
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007492.htm>]



## MEDICAL ENCYCLOPEDIA

Calorie count – sodas and energy drinks [<https://medlineplus.gov/ency/patientinstructions/000888.htm>]

Carbohydrates [<https://medlineplus.gov/ency/article/002469.htm>]

Counting carbohydrates [<https://medlineplus.gov/ency/patientinstructions/000321.htm>]

Hyperactivity and sugar [<https://medlineplus.gov/ency/article/002426.htm>]

Sweetened beverages [<https://medlineplus.gov/ency/patientinstructions/000335.htm>]

Sweeteners – sugar substitutes [<https://medlineplus.gov/ency/article/007492.htm>]

Sweeteners – sugars [<https://medlineplus.gov/ency/article/002444.htm>]

## Related Health Topics

Carbohydrate Metabolism Disorders [<https://medlineplus.gov/carbohydratemetabolismdisorders.html>]

Diabetic Diet [<https://medlineplus.gov/diabeticdiet.html>]

Dietary Fiber [<https://medlineplus.gov/dietaryfiber.html>]

Dietary Proteins [<https://medlineplus.gov/dietaryproteins.html>]

Nutrition [<https://medlineplus.gov/nutrition.html>]

## Languages

Chinese – Simplified [<https://medlineplus.gov/languages/carbohydrates.html#Chinese-Simplified>] (简体中文)

Chinese – Traditional [<https://medlineplus.gov/languages/carbohydrates.html#Chinese-Traditional>] (繁體中文)

Spanish [<https://medlineplus.gov/spanish/carbohydrates.html>] (español)

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