

Calcium and Vitamin D

Calcium is an Important Mineral That Helps:

- Our bones and teeth stay strong
- Our muscles move when we exercise
- Our body stay at a healthy weight
- Our skin to form scabs when we get cut
- Our body maintain a healthy blood pressure

Vitamin D is an Important Nutrient That Helps:

- Our body absorb calcium and prevent osteoporosis
- Regulate insulin and blood sugar and prevent type 2 diabetes and heart disease
- Prevent the following types of cancer: bladder, breast, colon, ovarian, prostate and rectal
- Prevent falls and muscle weakness
- Regulate immune function

Men, women and children have different calcium needs, which change with age. Vitamin D is a nutrient that works together with calcium and is essential for children and adults.

Calcium and Vitamin D Requirements

<i>Age</i>	<i>Daily Calcium</i>	<i>Daily Vitamin D</i>
1 to 3 years	700 mg	600 IU
4 to 8 years	1,000 mg	600 IU
9 to 18 years	1,300 mg	600 IU
19 to 49 years, men up to 71 years	1,000 mg	600 IU
Women over 51, men over 71	1,200 mg	600-800 IU
Individuals with osteoporosis	1,500 mg	800 IU
Pregnant & Breastfeeding:		
Below age 18	1,300 mg	600 IU
19 and older	1,000 mg	400-800 IU

How to get the Calcium and Vitamin D Your Body Needs

Many foods, especially dairy products, are naturally rich sources of calcium. You can identify the good sources of calcium (both natural and fortified) and the amount a food provides on the food lists on the back of this page.

Few foods, other than fatty fish and fish liver oil, are naturally rich sources of vitamin D, and some foods are fortified with vitamin D, such as milk. Vitamin D is usually produced in your body when your skin is exposed to sunshine. Talk with your doctor to determine if you should rely on sun exposure for vitamin D.

If you don't get enough calcium from your diet and if your doctor tells you that your vitamin D levels are low, you can take over-the-counter supplements. Talk to your health care provider to determine if a calcium or vitamin D supplement is necessary and how much you need to take.

Calcium Content of Foods

Dairy

FOOD	SERVING SIZE	CALCIUM (MG)*
MILK		
Milk, non-fat, dry, instant	1/3 cup	500
Milk: whole, low-fat, nonfat, buttermilk and chocolate	1 cup	250 - 300
Pudding made with milk	1/2 cup	155
Rice milk & Soy milk, <i>fortified</i>	1 cup	300 - 370
Soy milk	1 cup	55
YOGURT & ICE CREAM		
Frozen yogurt	1/2 cup	100
Ice cream	1/2 cup	85 - 110
Yogurt (whole, low-fat, and nonfat) plain and fruit-flavored	1 cup	275 - 450
CHEESE		
American cheese	1 oz.	160
Brie cheese	1 oz.	50
Hard cheese (cheddar, Swiss, mozzarella, provolone)	1 oz.	200 - 220
Soy cheese, fortified	1 oz.	200
Cottage cheese	1/2 cup	80
Ricotta cheese (<i>part skim</i>)	1/2 cup	335

Non-Dairy

	SERVING SIZE	CALCIUM (MG)*
VEGETABLES & SOY		
Broccoli, cooked	1/2 cup	30
Dried beans and peas	1/2 cup	50 - 100
Leafy greens (mustard, beet, kale, collards, dandelion, spinach) cooked	1/2 cup	70 - 180
Soybeans	1/2 cup	130
FISH		
Salmon, canned (<i>with bones</i>)	3 oz.	180
Sardines, drained(<i>with bones</i>)	3 oz.	325
Tuna, light, canned in oil, drained	3 oz.	10
NUTS & SEEDS		
Almonds	1 oz. or 23 nuts	75
Nuts – most varieties	1 oz.	30
Seeds	1 oz.	20
Tofu, fortified with calcium sulfate or lactate	1/4 cup	215
OTHER		
Cereal bar, calcium fortified	1 each	300
Orange juice, calcium fortified	1/2 cup	175 - 200
Molasses, Blackstrap	1 Tbsp	170
Tortillas, corn (6 inch)	2 each	100

Vitamin D Content of Foods

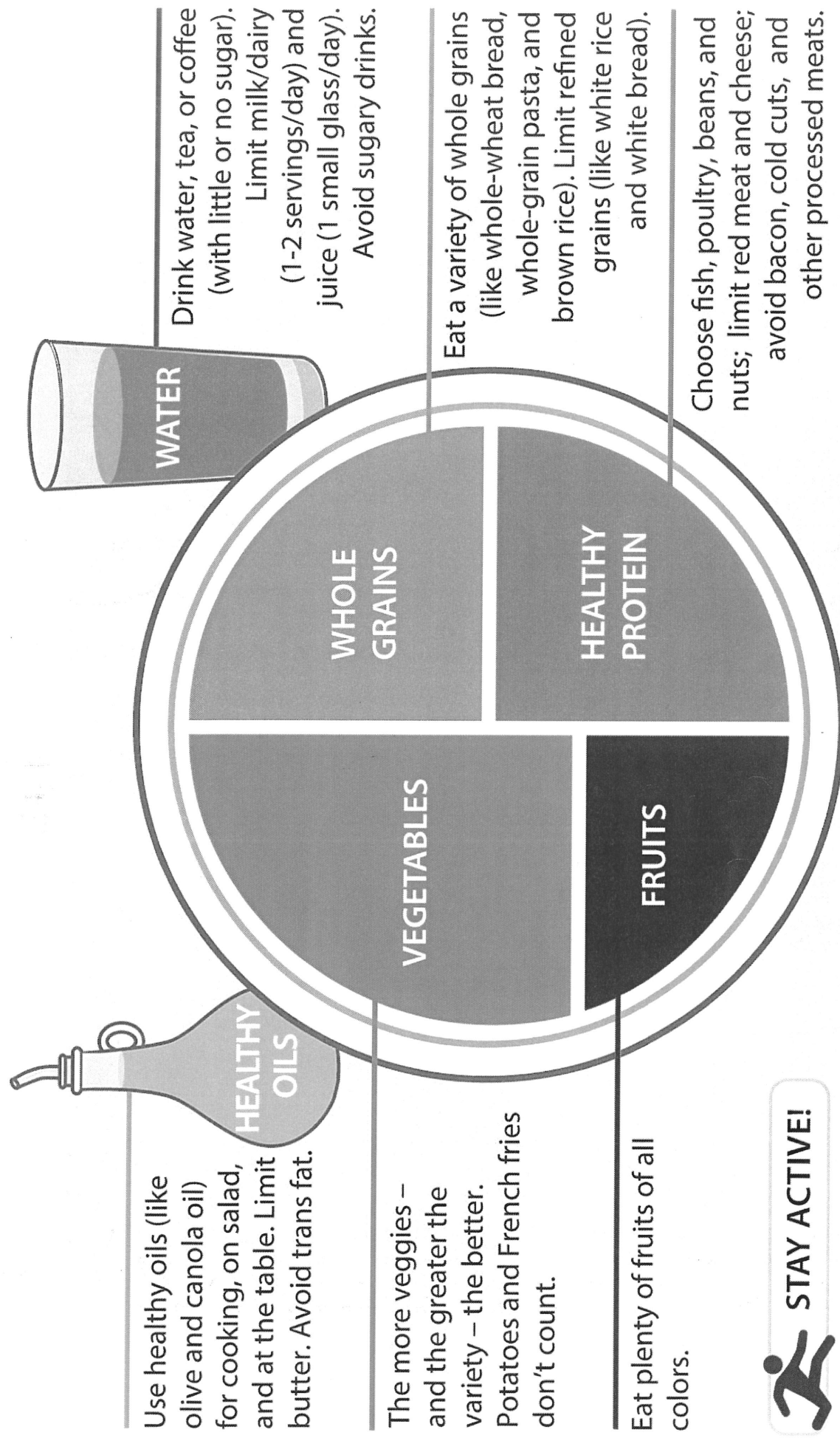
FOOD	SERVING SIZE	VITAMIN D (IU)
Cod liver oil	1 Tbsp	1360
Salmon, wild caught	3 oz.	400 - 800
Catfish	3 oz.	425
Tuna (canned in oil) or Mackerel	3 oz.	230 - 345
Milk, fortified	1 cup	90 - 125

* Values are rounded to the nearest 5 mg and may be averaged with similar foods in group

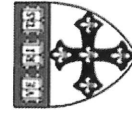
Source: American Dietetic Association Nutrition Care Manual Calcium Content of foods

To look up other foods, visit the USDA Nutrient Database online at www.nal.usda.gov/fnic/foodcomp/search/

HEALTHY EATING PLATE



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Harvard T.H. Chan School of Public Health
The Nutrition Source
www.hsph.harvard.edu/nutritionsource



Harvard Medical School
Harvard Health Publications
www.health.harvard.edu



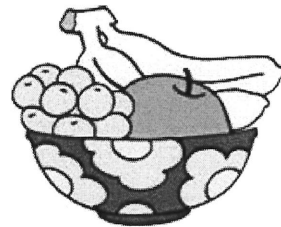
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Healthy Snacks for kids and teens

Healthy snacks can provide energy, and control appetite throughout the day. Well chosen snacks provide an opportunity to increase fruit and vegetable intake. Choosing a snack with a protein and a fiber source will help your child feel full between the meals.

- ❖ Plate with baby carrots, celery sticks, cucumber slices, green pepper rings, cherry tomatoes, sugar snap peas, broccoli, cauliflower with 2 tablespoons of low fat ranch dressing, and hummus or salsa.
- ❖ Apple slices with peanut or almond or cashew butters.
- ❖ Ants on a log: 2 stalks of celery with 1-2 tablespoons of peanut or almond butter.
- ❖ Slices of pear or apple or a cup of berries with handful of walnuts, almonds or an ounce of low fat cheese cubes
- ❖ 5-7 whole wheat crackers with a slice of low fat cheese.
- ❖ Light yogurt with berries.
- ❖ $\frac{1}{2}$ Whole wheat pita bread with light mayonnaise stuffed with turkey, lettuce and a tomato.
- ❖ A bowl of tomato, vegetable, or bean soup with a handful of whole grain crackers.
- ❖ Cut up fresh fruit with cottage cheese.
- ❖ 3 Cups air popped pop corn.
- ❖ 1 Whole wheat tortilla with 1 oz melted low fat cheese.
- ❖ 1 Whole wheat tortilla rolled with $\frac{1}{2}$ cup black beans and salsa
- ❖ 1 Whole grain bread with avocado and sliced turkey.
- ❖ Cut up medium size fruit with 1 oz low fat cheese cubes.
- ❖ Frozen handful of grapes or a frozen banana
- ❖ Hard boiled egg or egg salad on a whole wheat bread.
- ❖ Steamed edamame

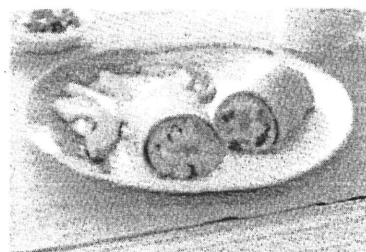




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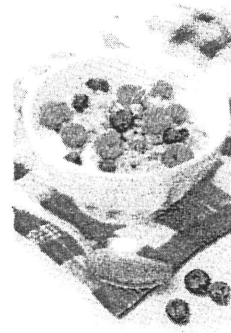
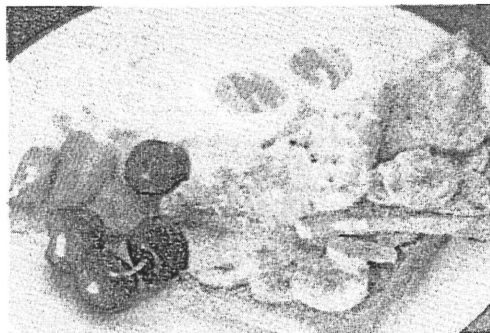
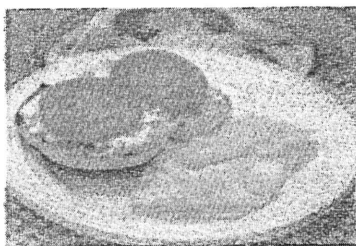
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Healthy Breakfast Ideas



Eating a healthy breakfast provides your child the fuel he/she needs for physical and mental activities.

- Two slices of 100% whole grain bread with nut butter (peanut / almond / cashew / pecan) topped with banana slices, serve with a glass of fat free or 1% milk.
- Breakfast burrito made from whole wheat tortilla filled with scrambled eggs (or leftover chicken) black beans, salsa and avocado slices, serve with cut up fruit and a glass of fat free or 1% milk.
- A bowl of steel cut oatmeal combined with cinnamon diced apple, peach or fresh berries, handful of walnuts drizzled with small amount of honey or maple syrup.
- Greek yogurt mixed with fresh berries, apple or banana and walnuts, drizzle with a small amount of honey.
- A slice or two of 100% whole grain toast with an omelette or hard boiled egg and cut up fresh fruits.
- A bowl of Kashi Go Lean crunch cereal with low fat milk and a cup of berries.



Preventing and Treating Iron Deficiency

Iron is an element critical to formation of red blood cells. Chronic lack of iron eventually leads to anemia (low red-blood-cell count). Anemia can cause fatigue, irritability and headaches (although these common symptoms can also occur with other medical conditions and in otherwise healthy people). Many people, particularly children and menstruating teens and women, find it challenging to include enough iron in their diets to maintain red-blood-cell formation. Others at risk to develop iron-deficiency anemia include those who lose blood through their gastrointestinal tract, those with inadequate vitamin C intake, those who diet to lose weight, and those who have had major surgery. Anemia is diagnosed by a simple blood test.

Daily iron requirements: How much do you need?

Age	Iron Requirement
Infants < 6 months	No supplement
Infants > 6 months, Formula Fed	Iron-fortified formula
Infants > 6 months, Breast Fed	11 mg.
Children from 1 through 3 years	7 mg.
Children from 4 through 8 years	10 mg.
Children from 9 through 13	8 mg.
Teens 14 through 18 years	11 mg. males; 15 mg. females
Adults 19 through 50	8 mg. males; 18 mg. females
Adults 51 to over 70	8 mg.
Pregnancy, all ages	27 mg.
Lactation 14 through 18 years	10 mg.
Lactation 19 through 50 years	9 mg.
Adolescents and adults < 50 years	10 mg.
Adults > 50 years	10 mg.

Food Sources of Iron

There are many excellent food sources of iron. Please see the next page for iron content in common foods. Iron from animal sources is more efficiently absorbed than iron from plant sources. However, iron absorption from all foods can be enhanced in several ways:

- Eat foods rich in vitamin C, such as orange or grapefruit juice.
- Cook in iron pots and pans.
- Avoid caffeine when eating iron-rich foods, since caffeine reduces iron absorption.
- Infants who are formula fed generally should drink iron-fortified formulas; breast-fed infants should begin iron-fortified cereals at age 6 months.

Iron Supplements

An oral iron supplement is sometimes recommended for people. If you are not iron deficient, you should not take such a supplement, because too much iron can be harmful. Several iron supplements are available without a prescription. All may cause some gastric distress or constipation, although individual reactions may differ. You may tolerate one product better than another. Taking iron supplements with food decreases such symptoms. All are better absorbed on an empty stomach, taken with orange or grapefruit juice or vitamin C. Avoid taking supplements with milk or calcium supplements, which decrease iron absorption. Some iron supplement examples are:

- Ferrous Sulfate (such as Slow Fe, Feosol, Fer-In-Sol): usually the cheapest form, well absorbed, can cause gastric distress or constipation.
- Ferrous Gluconate (such as Fergon): more expensive and causes less gastric distress.
- Ferrous Fumarate (such as Ferro-Sequels): similar to ferrous gluconate; contains stool softener.

Common Foods and Iron Content

Food	Amount	Iron (mg.)	Calories
Beef			
Liver, braised	3.5 oz.	6.77	161
Round, top, broiled, 1/4" fat trim	3.5 oz.	2.88	215
Ground, 85% lean, baked	3 oz.	2.2	213
Pork			
Loin, braised	3.5 oz.	1.40	273
Poultry			
Turkey, dark, no skin, roasted	3.5 oz.	1.78	175
Chicken, breast, no skin, roasted	1/2 breast	0.89	142
Chicken, thigh, no skin, roasted	1 thigh	0.68	109
Fish, Shellfish			
Clams, cooked by moist heat	3 oz. (19 small)	23.76	126
Mussels, blue, cooked by moist heat	3 oz.	5.71	147
Trout, rainbow, cooked by dry heat	3 oz.	2.07	129
Ocean perch, cooked by dry heat	3 oz.	1.00	103
Grains and Grain Products			
Bran Flakes, Kellogg's	3/4 cup (1 oz.)	18.00	90
Spaghetti, enriched, cooked	1 cup	1.96	197
Tortilla, corn, enriched	1 tortilla	1.42	67
Bread, whole wheat, Roman Meal	1 oz. slice	1.20	65
Oats, regular/quick/instant dry	1/3 cup (1 oz.)	1.14	104
Vegetables/Fruits/Legumes			
Lentils, boiled	1 cup	6.59	230
Kidney beans, boiled	1 cup	5.20	225
Beans, baked, Van De Camp's	1 cup	3.60	260
Spinach, boiled	1/2 cup	3.21	21
Potato, baked, with skin	1 potato	2.75	220
Prunes, dried	10 prunes	2.08	201
Raisins, seedless	2/3 cup	2.08	300
Apricots, dried, sulfured	10 halves	1.65	83
Peas, green, frozen, boiled	1/2 cup	1.26	63
Tomato juice	6 fluid oz.	1.06	32
Dates, dried	10 dates	0.96	228
Turnip greens, boiled and chopped	1/2 cup	0.57	15
Misc. foods			
Molasses, blackstrap	1 tablespoon	3.50	47
Molasses, regular	1 tablespoon	0.94	53
Peanut butter, creamy/smooth	2 tablespoon	0.53	188
Sunflower seeds, dried	1 oz.	1.98	162
Spices*			

* Spices high in iron content include cumin, coriander, cardamom, fenugreek and tumeric. For lists of additional foods with iron content, see <http://fnic.nal.usda.gov/>

Topics

- How Lack of Sleep Affects Your Health
- How to Improve Your Sleep
- Helpful Sleep Apps
- Sleep Resources
- For Teenagers
- For Parents

SLEEP IS IMPORTANT

Sleep is as necessary for your body's health as exercise or eating healthy. When you get enough sleep, many other aspects of your life will improve. Teens need 9 to 9.5 hours of sleep, but sleep surveys show they generally get between 6 and 7 hours. This deficit can negatively affect your mood, academic ability and athletic performance. It can be difficult to change your sleep schedule and it takes more than just a few nights of getting enough sleep to set a good habit, but if you work at it, the benefits are worth it.

HOW LACK OF SLEEP AFFECTS YOUR HEALTH

Getting less than the suggested 9 to 9.5 hours of sleep can:

- **Limit your ability to learn**, listen, concentrate, and solve problems.
 - A study on 148 college students showed this relationship between sleep duration and average GPA:
 ≥ 9 hours, 3.24 GPA 7-8 hours, 3.01 GPA ≤ 6 hours, 2.74 GPA¹
- **Cause you to eat more** unhealthy foods. Sleep deprivation can also inhibit you from losing weight even when eating healthy and exercising!
- **Impact your growth** as essential growth hormones are released during sleep that aid the growth of bones, tissue and red blood cells.
- **Lead to poor athletic performance**, inhibit you from recovering properly after a workout, and decrease your energy and motivation.
 - A study on the 2011 Stanford men's basketball team showed that when they slept for about two more hours over several weeks, their free throw and 3-point percentages went up by 9% and 9.2% respectively while their 282 foot sprint time decreased by 4.3%.²
- **Cause you to become more irritable**, have mood swings, and can increase poor choice making.
- **Impair your driving skills**
 - More than half of the estimated 100,000 car crashes per year due to drowsy driving are caused by drivers 25 years or younger.³
- **Increase your risk of becoming depressed**
 - In a poll of adolescents aged 11-17 who reported being unhappy, 73% of them also reported not sleeping enough.⁴ Also, people with insomnia are almost ten times more likely to be depressed.⁵

¹ http://media.biobiochile.cl/wp-content/uploads/2015/03/215-4929907074434892796-The_Relationship_Between_Sleep_Length_and_Grade_Point_Average.pdf

² <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3119836/>

³ http://sleepfoundation.org/sites/default/files/sleep_and_teens_report1.pdf page 20

Useful Sleep Links

End Your Sleep
Deprivation

National Sleep
Foundation

sleep.org

Palo Alto Medical
Foundation

HEARD Alliance

Sleep Education by The
American Academy of
Sleep Medicine

Ways to Get Your Child
to Sleep

Society for Adolescent
Health and Medicine

Sleepnet.com

JUDGE YOUR SLEEP BY HOW YOU FEEL IN THE DAY

You should wake up feeling refreshed. Do you...

- ✓ Sleep more than 2 hours past your regular wake up time on the weekends?
- ✓ Have trouble waking up in the morning?
- ✓ Have difficulty concentrating in school or while playing sports?
- ✓ Fall asleep in class?

If you answered yes to any of these questions, then you might not be getting enough sleep.

HOW TO IMPROVE YOUR SLEEP

Sleep debt adds up! In order to catch up on sleep and change your sleep habits for the better you can:

- Make sleep a priority, because sleep is a very essential part of your health
- Establish a bed and wake-up time that you stick to as much as possible, even on the weekends
- Keep a sleep diary to track when you fall asleep and wake up
- If you need to nap, nap smartly, and for less than 30 minutes
- Have your room be cool, quiet, and dark. Then let in bright light in the morning to signal your body to wake up
- Try not to have caffeine 6 hours before going to sleep
- Avoid eating, drinking, or exercising 2-3 hours before sleeping
- Avoid bright screens at least 30 minutes before sleeping or use a dimming app like the ones mentioned below
- Perform the same routine before you sleep every night, such as light reading or listening to calming ambient noises
- Get into bed only when you plan to sleep, perform other activities at your desk or somewhere else

SLEEP APPS TO HELP:

Sleep Cycle, SleepBot, and Sleep Better with Runtastic (free) apps

- Tracks your sleep habits and mutes all messages and notifications
- Acts as an alarm clock which wakes you up in your lightest sleep phase

Twilight (free) for your phone and f.lux (free) for your PC or Mac

- Dims and changes the color of your screen as it gets closer to nighttime to prepare your body for sleep

Relax and Sleep Well (free)

- Hypnosis and meditation app designed to help you relax and sleep better

Relax Melodies (free) and Sleepmaker Rain (free)

- Many gentle ambient sounds to help you fall asleep

⁴ <http://sleepfoundation.org/sleep-disorders-problems/depression-and-sleep/page/0/4>

⁵ http://www.ncbi.nlm.nih.gov/pubmed?Db=pubmed&Cmd=ShowDetailView&TermToSearch=16335332&ordinalpos=9&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

FOR TEENAGERS

- **Strive to get the right amount of sleep each night.** Count backwards about 9 to 9.5 hours from the time you wake up for school. This should be your bedtime. If you feel groggy in the morning, try making your room brighter when your alarm goes off. A wake-up light alarm that gradually lightens the room can help.
- **Sleep is like hunger,** when you are hungry, you eat, so if you feel sleepy, sleep. If you are sleepy in the day, try to improve your nighttime sleep.
- **Avoid all-nighters and nights of extreme sleep deprivation at all costs.** Just one sleepless night can lead to significantly less memory retention and a 60% increase in the part of the brain associated with aggression and overactive emotions. This has the same effect as going five days with four or less hours of sleep.
- **As a teenager, your circadian rhythm dips** later than usual, around 11:00 pm, making it difficult to fall asleep before then. Try to minimize activities in the morning, so you can wake up later.
- The times during the day where you usually feel the most tired are between 3-7am and 2-5pm. These times extend longer and become more noticeable the more sleep deprived you are. **Enough sleep will keep you attentive throughout the whole day at school.**

FOR PARENTS

- **Set a strict bed and wake-up time for your child.** Sleep habits can become ingrained as early as elementary and middle school so help them develop those good habits. Effective ways to do this are setting a regular breakfast time and removing electronic devices from the bedroom.
- **Educate yourself on how to improve sleep.** Also, be familiar with sleep disorders and depression along with how to spot them. Most importantly, become a positive role model for sleep.
- **When your child is young, don't make staying up late a reward or an earlier bedtime a punishment.** Instead, find other ways to reward your child and always encourage an early bedtime.
- **Support the decision to push back school start times** so that your teenager can get enough sleep.⁶



⁶ http://sleepfoundation.org/sites/default/files/sleep_and_teens_report1.pdf page 14

SLEEP RESOURCES

Books:

The Sleep Disorders eBook by The National Sleep Foundation

- Detailed info on the physiology of sleep and how it affects you

The Promise of Sleep

- Written by Stanford professor Dr. William Dement based on his famous sleep class.

Quiet Your Mind and Get to Sleep

- Directed mainly towards insomnia and aims to optimize your sleep patterns and calm your mind

Online Programs for Better Sleep:

MIT Medical Sleep Resources and UCLA Health Free Guided Meditations

- Various podcasts and voice recordings to help you relax and fall asleep
- Recordings include white noise, mindful relaxation, and sleep tips

Go! to Sleep Cleveland Clinic Wellness Program

- 6-week long intervention that logs your activities and sleep
- Gives relaxation techniques and sleep improvement recommendations

CBT for Insomnia

- 5-week 5-session cognitive-behavioral therapy program developed by Harvard Medical School professor Dr. Gregg Jacobs
- Offered as a PDF program with optional CD/MP3 relaxation techniques

For More Information:

If you believe you have a sleep disorder or would like a professional to analyze your sleep, ask your doctor for a referral to a sleep center.

Palo Alto Medical Foundation, Sleep Disorders Centers

Sunnyvale Sleep Center Phone: (408) 523-3460

Capitola Sleep Medicine Center Phone: (831) 460-7333

Fremont Sleep Disorders Center Phone: (510) 498-2689

Los Gatos Center (Winchester) Phone: (408) 523-3460

San Carlos Center Phone: (650) 632 - 0820

To find other sleep centers, visit www.sleepeducation.com/find-a-facility