

Eat Your Way to Better Sleep!

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Eat Your Way to Better Sleep

- Over 50% of Americans are *sleep deprived*
- One-third have *Chronic Insomnia*
- At least 50% of all insomnia is *stress-related*

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- A recent survey by the National Sleep Foundation found that over 60% of Americans suffer from poor sleep quality (*insomnia*) resulting in everything from:
- *falling asleep on the job*
- *absenteeism*
- *anxiety and depression*
- *irritability*
- *poor judgment*
- *marital problems*
- *car accidents*

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- We live in a sleep-deprived world
- Studies suggest that healthy adults have a sleep need of *7-9 hours every night*
- Sleeping too little *inhibits your productivity* and ability to remember and consolidate information
- Lack of sleep can also lead to *serious health consequences* and jeopardize your safety and the safety of individuals around you

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- Everyone accepts that foods can help you fend off disease and feel healthy
- But when it comes to sleep, most people just don't think the problem could be their diet!



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- "Sleep is just as important to our overall health as are exercise and a healthy diet," said Carl Hunt, the director of the National Center on Sleep Disorders Research in Bethesda, Maryland.
- The center is part of the National Institutes of Health

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- Sleep is a biological need, much like food and water
- Millions of Americans are increasingly skimping on their sleep
- Today, Americans on average sleep **one hour less per night than they did 20 to 30 years go.**



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- "The dependency on caffeine and the whole Starbucks culture is certainly one proof that our society is sleepier than ever before," said William Dement, a pioneering sleep researcher at Stanford University in Palo Alto, California.



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- Short sleep duration is linked with:
- Increased risk of *motor vehicle accidents*
- Decrease of body temperature
- Lower release of growth hormone
- Increased risk of *diabetes and heart problems like high blood pressure*



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- Increased risk for psychiatric conditions including **depression** and substance abuse
- Decreased *ability to pay attention*, react to signals or remember new information
- *A weakening of your immune system*, increasing your chance of becoming sick
- Increase in **perception of pain** ON THE AIR



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- *Increase in body mass index* – a greater likelihood of obesity due to an increased appetite caused by sleep deprivation
- One recent study showed that young adult men placed on a restricted sleep schedule of four hours each night for six consecutive nights showed **altered metabolism of glucose**
- Their insulin-resistance pattern was similar to that observed in elderly men and in people developing diabetes

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Compared to an average total sleep time of 7 - 8 hours per night, the risk of *developing obesity rises*:

- 23% with just 6 hours of sleep per night,
- 50% with only 5 hours per night, and
- 73% with 4 hours per night

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- Heart health: Getting an extra hour of sleep a night may provide benefits to cardiovascular health similar to lower systolic blood pressure by 17 mm Hg
- Study measured the rate of arterial calcification – a predictor of cardiovascular disease – among 496 middle-aged adults and compared it with the number of hours they slept
- Among people who slept less than 5 hours a night, 27% developed calcification of the arteries over a 5-year period. That figure plunged to 6% for those who snoozed more than 7 hours

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- Daylight saving time
- When the clock is turned back at the end of daylight saving time, affording us an extra hour of sleep, there's a 5% drop in heart attack deaths and hospitalizations!



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- Breast Cancer: A large study of nearly 24,000 Japanese women found that women who got by on 6 hours of sleep or less per night had a whopping 62% higher risk of getting the disease than women who slept just one hour more
- Researchers suspect it is the melatonin, the hormone secreted during nightly sleep
- Previous research has shown that women who have the highest level of melatonin have the lowest risk of cancer

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- Immunity: One of the best ways to prevent cold and flu is getting enough sleep
- In a recent study, participants snorted nasal drops containing a cold-causing virus
- Researchers monitored how much the participants slept to see if there was an association between lack of sleep and lowered resistance
- Those who slept less than 7 hours a night were ***almost 3 times as likely*** to come down with a cold as those who got 8 hours or more

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- Hormones can also have a tremendous effect
- Hormones, the chemical messengers that control our body functions, also regulate the body's circadian rhythm
- Circadian rhythm is the 24-clock our bodies keep
- Hormones regulate stress, and mood so hormonal disruption can have major repercussions on our sleep patterns

Sleep Debt

- The amount of sleep a person needs also *increases* if he or she has been deprived of sleep in previous days.
- Getting too little sleep creates a "sleep debt," which is much like being overdrawn at a bank.
- Eventually, your body will demand that the debt be repaid.
- We don't seem to adapt to getting less sleep than we need, while we may get used to a sleep-depriving schedule, our judgment, reaction time, and other functions are still impaired.

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- We all want a great night's sleep
- Our 24/7 lifestyles are making that harder and harder
- Food can have a major impact!
- What you eat can be one of the most important factors in getting a good night's sleep

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- Ultimately to maintain a normal sleep rhythm, one must maintain a normal *eating rhythm*
- Cortisol links the two
- Cortisol is a hormone produced by the adrenal glands, located above the kidneys



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- Cortisol helps regulate many body functions including:
 - ✓ Activation of thyroid hormone
 - ✓ Bone re-sorption
 - ✓ Muscle strength
 - ✓ Energy production
 - ✓ Resistance to infection/auto immune disorders
 - ✓ Strong determinant in how rejuvenating sleep will be

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- Cortisol is produced in a cyclic fashion
- Highest levels in the morning
- Lowest levels at night
- This 24 hour cycle is called the circadian rhythm
- Any disruption of this rhythm can result in tendency toward fatigue, easy bruising, infection, osteoporosis, low sex drive, infertility, migraine headaches, adult acne, abdominal bloating and either low or high blood pressure

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- A disruption in cortisol level during the night will affect quality of sleep
- If cortisol level is high during the night – disrupted rapid eye movement (REM) sleep
- Will wake up non-refreshed, no matter how many hours of sleep you get



Stages of Sleep

- Phase I: Transition State
- Phase II: Theta Waves & Spindles
- Phase III: Delta & Theta Waves
- Phase IV: Delta/Deep Sleep
- Phase V: REM Dream State



Stages of Sleep

- A complete cycle lasts 90-110 minutes
- Most people have 3-5 REM cycles per night
- Infants spend 50% of their time in REM
- REM decreases with the aging process

***Research reveals that we
need at least one full cycle of REM***

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- REM sleep is accompanied by:
- Muscle relaxation
- Increase in breathing rate
- Intense dreaming
- Paralysis that occurs simultaneously in the major voluntary muscle groups



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- Key to rejuvenating sleep is having a normal level cortisol at night
- Key to a normal cortisol level at night is a normal cortisol rhythm during the day and leading up to sleep

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- Cortisol levels are VERY responsive to food intake during the day
- The glycemic index of a meal affects the cortisol level for approximately the next 5 hours
- The glycemic index of a food is how quickly blood sugar levels rise after ingesting a particular food



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- Foods containing high sugar and low fiber have a **high glycemic index**
- Higher glycemic index levels result in **higher fluctuations in insulin levels**
- High insulin levels – underlying cause of many diseases such as coronary artery disease

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- High glycemic foods such as sugar and refined starches cause **cortisol levels to rise**
- Starting the day with starchy or sugary breakfast foods can cause the cortisol levels to rise rapidly
- Cortisol levels will likely remain elevated all day . . . and all night

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- Worse than having a high glycemic meal is having **NO MEAL AT ALL!**
- Any time during the day that one does not eat within 5 hours of the previous meal or snack, **cortisol level tends to rise**
- A rise above normal range during the day, almost guarantees that the nighttime cortisol will be high
- Disrupted REM sleep!



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- EAT BREAKFAST!!
- Best breakfast is low glycemic foods that are high in protein
- Cottage cheese and fruit and nuts
- Greek yogurt and fruit and nuts
- Eggs and high fiber bread and vegetables
- Protein shake with fruit and a handful of nuts

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- If you are going to eat cereal –eat whole grain and add protein and fiber
- Oatmeal with whey protein and added fiber
- Small serving whole grain cereal with cottage cheese/yogurt and fruit
- Whole grain toast with peanut butter and cottage cheese/yogurt/eggs with fruit



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- Eat regular meals/snacks
- Irregular blood sugar can cause insomnia and troubled sleep
- **If blood sugar drops too low, body responds by releasing cortisol and adrenaline** into the blood
- These hormones stimulate release of glucose to raise blood sugar levels to normal level

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- Cortisol and adrenaline are “stress hormones”
- Going long periods of time without eating causes stress to the body
- Going long periods of time without eating and then eating a huge meal causes tremendous stress to the body!

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- Go to bed by 10 p.m.
- Eat breakfast by 7 a.m.
- Eat low glycemic meals every 4-5 hours
- If you eat grains, eat *whole grains*
- Avoid sugar and excess starchy foods like bread, crackers, chips, bagels, cereal, rice, pasta



Tryptophan

- The amino acid tryptophan is used by the body to create the “sleepy” brain chemicals serotonin and melatonin
- Tryptophan is found naturally in cottage cheese, eggs, halibut, beef, turkey, bananas, figs, and milk

Tryptophan

- Tryptophan is a precursor of the sleep-inducing substances serotonin and melatonin
- This means tryptophan is the raw material that the brain uses to build these relaxing neurotransmitters
- Making more tryptophan available, either by eating foods that contain this substance or by seeing to it that more tryptophan gets to the brain, will help to make you sleepy
- On the other hand, nutrients that make tryptophan less available can disturb sleep.

Tryptophan

- Eating **carbohydrates with tryptophan-containing foods** makes this calming amino acid more available to the brain
- A higher carbohydrate meal stimulates the release of insulin, which helps clear from the bloodstream of those amino acids that compete with tryptophan, allowing more of this natural sleep-inducing amino acid to enter the brain and manufacture sleep-inducing substances, such as serotonin and melatonin
- **Eating a high-protein meal without accompanying carbohydrates may keep you awake**, since protein-rich foods also contain the amino acid, tyrosine, which perks up the brain.

Put Down That Midnight Snack!

- Eating a big meal before sleep will definitely disrupt your REM sleep
- When you eat too much too close to sleep, your liver and digestive organs go to work digesting rather than allowing the body to rest
- If you sleep at all, you'll wake up tired and cranky
- Try a SMALL snack before bed: apple and peanut butter, fruit and cottage cheese, whole grain toast and 100% fruit jam

Good Bedtime Snacks

- **Oatmeal:** a good snack to have before bedtime because it combines carbohydrates with protein.
- **Yogurt :** a great food because it's about half carbohydrates and half protein.
- **Hummus:** eat this with some pita for a perfect mix of both protein (from the chickpeas) and carbohydrates
- **Bananas:** contain tryptophan, melatonin, serotonin, and magnesium, which can act as a muscle relaxant. Try them with some peanut butter and toast.
- **Almonds:** have both tryptophan and magnesium, so you could also try adding these to your oatmeal.

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- Whole grains and complex carbohydrates produce a slow, steady rise in insulin which helps tryptophan to enter the brain and trigger the production of serotonin
- Regular consumption of whole grains can help regulate the production of this “feel good” compound that is essential to sleeping well
- Eat whole grains, beans and vegetables on a regular basis

Try Cherries

- Cherries are rich in melatonin
- Melatonin helps with restful sleep
- Melatonin is a hormone that is released from the pineal gland in the hours of darkness in most mammals
- This causes our core temperature to drop and then we have more of a propensity to sleep
- Eat cherries as part of an afternoon or bedtime snack with Greek yogurt or cottage cheese

Tart Cherry Juice

- Tart cherry juice also raises melatonin levels
- Research published in the European Journal of Nutrition, 2011 showed pure tart cherry concentrate given in 30 mls (about 1 oz) twice per day – before breakfast and dinner, diluted with 8 oz water elevated total melatonin levels in study participants
- Significant increases in time in bed, total sleep time and sleep efficiency
- About 110 calories (one fruit serving)
- No side effects

Cherries/Cherry Juice

- Several research studies show cherries and cherry juice help facilitate recovery in professional sports players
- Cherries can help reduce inflammation, reduce oxidative stress, accelerate recovery from strenuous physical activity and also help with sleep facilitation



Calcium and Magnesium

- Calcium and magnesium are Mother Nature's tranquilizers
- Calcium helps the brain use tryptophan to manufacture melatonin. This explains why dairy products, which contain both tryptophan and calcium, are one of the top sleep-inducing foods.
- Oral magnesium supplementation has been shown to improve symptoms of fatigue in persons with low magnesium levels.
- Deficiency of magnesium can result in difficulty sleeping, constipation, muscle tremors or cramps, anxiety, irritability, and pain. It has also been used for people with restless leg syndrome.
- Foods rich in magnesium are legumes and seeds, dark leafy green vegetables, wheat bran, almonds, cashews, blackstrap molasses, brewer's yeast, and whole grains.

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- Energy production throughout the day, as well as our ability to relax and have a good night's sleep, is dependent on the way we digest and absorb our food
- Balancing blood-sugar levels and preventing fluctuation is one of the key elements in preventing insomnia and other sleep problems
- Many dietary choices can affect our quality of sleep

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- The old adage “Breakfast like a king, lunch like a queen and eat dinner like a pauper” hold true to our circadian rhythms
- Our digestive capabilities are at their optimum levels in the early part of the day
- Our food choices, especially later in the day, can affect the quality of our sleep
- Foods can have a sedative or a stimulatory effect

To pave the way for better sleep:

- Establish consistent sleep and wake schedules, even on weekends
- Create a regular, relaxing bedtime routine such as soaking in a hot bath or listening to soothing music – begin an hour or more before the time you expect to fall asleep
- Create a sleep-conducive environment that is dark, quiet, comfortable and cool
- Sleep on a comfortable mattress and pillows
- Use your bedroom only for sleep and sex (keep "sleep stealers" out of the bedroom – avoid watching TV, using a computer or reading in bed)
- Finish eating at least 2-3 hours before your regular bedtime

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- Eliminate caffeine from your diet, especially in the form of soft drinks, tea and coffee, as well as over-the-counter drugs (check the labels).
- Practice daily breathing exercises, and relaxing deep breaths when falling asleep.
- Take a warm bath before bedtime, add Epsom salt for extra magnesium
- Get at least 45 minutes of aerobic activity every day at least 2-3 hours before bedtime

Exercise

- Insomniacs who did 16 weeks of aerobic exercise – walking outside or using a treadmill or stationary bike – for 30 to 60 minutes 4 times a week slept an extra 75 minutes found a recent study published in *Sleep Medicine*
- That's more than other nondrug therapies have achieved
- Exercise improves metabolism and decreases inflammation – both of which can enhance sleep quality and reduce daytime fatigue

Skip the Nightcap



- Here's the catch-22 with alcohol: It may help you fall asleep faster, but you may experience frequent awakenings, less restful sleep, headaches, night sweats and nightmares.
- If you're consuming alcohol in the evening, balance each drink with a glass a water to dilute the alcohol's effects.
- For a good night's sleep, the better bet is to avoid alcohol four to six hours before bedtime.

Chamomile Tea



- One of the popular ways to relax before bed is to drink some relaxing herbal teas.
- There are many different types of herbal teas that you can drink to promote relaxation.
- The most common herbal tea for relaxing is chamomile tea. Chamomile has an apple-like flavor so it's very easy on the palate.
- The pollen found in chamomile tea may cause allergic reactions
- If you are allergic to ragweed pollen, you may not be able to use chamomile.
- Chamomile may interfere with blood thinners

Passionflower



- Passionflower is used for sleep problems (insomnia), gastrointestinal (GI) upset related to anxiety or nervousness and generalized anxiety disorder (GAD)
- Passionflower is found in combination herbal products used as a sedative for promoting calmness and relaxation.
- The chemicals in passionflower have calming, sleep inducing, and muscle spasm relieving effects.
- Passionflower can cause some side effects such as dizziness, confusion, irregular muscle action and coordination, altered consciousness, and inflamed blood vessels.

Sleepytime Tea

- Chamomile, spearmint, lemongrass, tilia flowers, blackberry leaves, orange blossoms, hawthorn and rosebuds.
- Extra has added Valerian
- Some people react to valerian with dizziness, headaches and nausea



