















"Diversity of Gut Microbiome promotes healthy sleep."

-PloS One Journal 2019

To increase diversity:

- 1. Increase fiber: fruits, veggies, whole grains, nuts beans, seeds
- 2. Decrease artificial sweeteners and other food additives
- 3. Consider fermented foods such as kimchi (fermented cabbage), kefir, tempeh
- Eat polyphenol-rich foods: nuts, seeds, berries, olive oil, cruciferous vegetables (broccoli, Brussels's sprouts, cauliflower, cabbage, turnip), coffee and tea – especially green tea

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-Dr. Michael Breus, aka the Sleep Doctor

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"Both insufficient sleep and poorquality sleep make your body want to store fat, not burn it!"

-Dr. Michael Breus, aka the Sleep Doctor

Poor sleep appears to increase your appetite cravings for sweets, carbs and high-fat foods.



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Sleep and Cognition in the Active Ager

- "Negative sleep changes are associated with worse cognitive functioning."
- Older adults showed greater negative effects on cognition from sleep deprivation than younger adults in areas such as vigilance, reaction times, word detection, addition, and more
- Insomnia appears to negatively impact memory and executive functioning
- Sleep disordered breathing in older adults negatively affects vigilance, executive function, and memory
 Sleep Med Clin 2018

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Sleep and Anxiety in the Active Ager

 "Better sleep may limit the negative effects of anxiety on executive functions in mid-to-late life"
 Aging Ment Health 2019

Shocking Sleep and Obesity Trends

In 1960, the obesity rate in US adults was 13.4% and people were sleeping an average of 8 - 8.9 hours a night.

In 2010, the obesity rate climbed to 35% and people were sleeping an average of 6.5 hours a night.

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Sleep Disordered Breathing

- Also known as sleep apnea
- Sleep Apnea is risk factor for stroke
- It can precede stroke and occur after it
- Treatment: CPAP
- Prevention: If have cardiovascular disease or diabetes, get tested for sleep apnea
- Some research indicates improvement in cognition after treatment with CPAP
- Pap may also slow the deterioration of Alzheimer's

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Sleep Research

- Total sleep time decreases with age, and appears to plateau after 60
- Sleep efficiency (the percentage of time that you spend in bed asleep) begins to decline and continues to decline after adolescence
- Appears to be a steady 10 minutes increase of WASO (Wake After Sleep Onset) per decade of age from 30 to 60 years, then stays steady

Sleep Research

- Napping
 - Appears to occur more in active agers compared to their younger counterparts
 - frequent napping associated with excessive daytime sleepiness depression, pain and nocturia (waking up to go to the bathroom) in a survey of US older adults
 - Recommendations vary, but seem to favor short 20-30 minute naps

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Hormone Decrease may be a Factor in Sleep Disturbances

- Cortisol levels during sleep increase with aging
- Prolactin secretion during sleep decreases with age
- Growth hormone released during sleep decreases with aging
- TSH decreases with aging
- · Melatonin decreases with aging
- Testosterone, estradiol, estrogen, and progesterone decrease with aging

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Sleep Research

• Healthy Older Adults appear to perceive better sleep quality, compared with older adults who have health issues -Sleep Med Clin. 2018

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Sleep Stages

- 5 stages of sleep
- 4 stages are NREM (Non Rapid Eye Movement)
 - Stages 1 and 2 are lighter sleep
 - ${\scriptstyle \bullet}$ Stages 3 and 4 ${\rm ~are~deeper~sleep}$
 - Physical restoration: Body heals, repair and regeneration of tissues
- REM (Rapid Eye Movement) Sleep
- Mental Restoration
- 90 minute cycle to go through all the stages
- Need 4-5 cycles to restore your body (4 cycles is 6 hours 5 cycles = 7.5 hours sleep)
- Adult sleep duration recommendation: (26-64): 7-9 hrs
- Older adults (65+): 7-8 hrs

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The 8-Great Sleep Tight Tips: Sleep Hygiene is key!

- 1. Have a sleep schedule
- 2. Eliminate caffeine especially after 2 pm (some may need to eliminate it all together for best results)
- 3. Limit alcohol, especially 3 hours before bed

4. If exercise keeps you up, exercise in the earlier part of the day

- 5. Get some sensible sun in the early part of the day
- 6. Wind down 1 hour before bed, dim lights, turn off electronics.
- 7. Eat a balanced diet
 8. Eat a varied diet





Hot Cup of Milk

- There is not a lot of evidence showing that a hot cup of milk is helpful for sleep
- However, this is a remedy that has been passed down through generations, so it may be worth giving it a try

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Calcium Rich foods low fat and fat free dairy products, salmon with bones, soy foods, leafy green vegetables, enriched food products, sardines, almonds, poppy seeds

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Chocolate, tomatoes, bananas and your sleen!

your sleep! Theobromine: Associated with daytime sleepiness

- Sources: Cocoa/chocolate, tea
- Lycopene: May help with falling asleep -sources: tomato, tomato products, red fruits and vegetables such as watermelons, pink grapefruits, apricots, and pink guavas
- **Potassium:** Associated with less daytime sleepiness -sources: banana, sweet/white potato, spinach, beets, black/white beans, butternut squash, edamame, swiss chard, salmon
- **Total Water** (and less of other types of beverages) associated with healthy sleep, and less non-restorative sleep and less daytime sleepiness.

Vitamin D, the Mediterranean Diet and Sleep

- Vitamin D
 May help with maintaining sleep
- Mediterranean Diet associated with less risk for insomnia

- American Geriatric Psychiatry

• More difficulty falling asleep with a higher intake of hexadecenoic acid, a saturated fat found in meat, cheese, milk and butter

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Copper Rich Foods

pecans, sesame seeds, cashews, peanuts, cremini mushrooms, soy products, barley, sunflower seeds, garbanzo beans

Zinc Rich Foods

lean beef, spelt, scallops, sesame seeds, pumpkin seeds, oats, yogurt

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Iron

Iron deficiency can trigger restless legs syndrome, which can affect your sleep. Check with your doctor to see if you may be deficient

Iron rich foods: lean beef, beans, sunflower seeds, tofu, whole grains, oysters, light tuna, chicken, turkey, raisins, fortified food products such as cereal

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Magnesium Rich Foods Magnesium may increase good quality sleep Magnesium rich foods: nuts, sunflower seeds, whole grains, spinach, beans, bananas, dairy products, raisins

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B Vitamins

- B vitamins play a role in various mechanisms that affect sleep
- Some foods with B vitamins: whole grains, cereals, nuts, potatoes, broccoli
- If you take B vitamins in supplement form, take early in the day as they may have a stimulating effect



Small studies have found that tart cherry juice reduced the severity of insomnia in study participants. This may be due to the presence of natural melatonin in cherries

Are night sweats interfering with your sleep?

Soy foods may reduce hormonerelated night sweats. Try edamame (soy beans), roasted soy nuts, tempeh, tofu, soy milk, and soy-based veggie burgers

Spices for better sleep

Nutmeg, turmeric, garlic, parsley, dill, sage and basil may promote sleep

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