***Sleep: Vital ingredient in resilience, energy, and healthy physical/hormonal balance! (By Brittany Burns, MD)***

**Sleep plays a vital role in good health and well-being throughout your life**.

Getting enough quality sleep at the right times can help protect your physical health, mental health, resilience, and quality of life. Energy levels, and the way you feel while you're awake depends in part on what happens while you're sleeping.

*Everyone differs on how much sleep is necessary to achieve adequate rest. Teenagers and into your mid-20’s typically require 8-11 hours of sleep, with a tendency to have a second wind in the evening often keeping them up and sleeping in later. Adults require between 6-9 hours of sleep. Less than 6 hours is selling yourself short, no matter who you are—running with higher cortisol and stress hormones as well as higher cardiovascular and other disease risks. Variables that affect how much sleep is needed include: individual variability, activity level, stress levels, and sleep efficiency.*

***Sleep efficiency****: People who seem to require longer amounts of sleep to feel fully rested may be suffering from poor sleep efficiency. High adrenalin levels from stress and anxiety, Neuro-hormonal shifts such as decreased serotonin levels in depression, sleep apnea, alcohol, caffeine, and lack of good ‘sleep hygiene’ are among the most common causes of decreased sleep efficiency.*

*Good ‘sleep hygiene’ refers to behaviors that help reinforce our natural Circadian Rhythm controlled within the brain. This “Circadian Rhythm” and flux of hormones such as Melatonin that coordinate and reinforce sleep can be disrupted by many behaviors including:*

***Noise pollution:*** *Falling asleep and sleeping with noise such as TV, computers, and music distracts from your natural ‘wind down’.*

***Light exposure:*** *Blue-white lights from computer and TV screens 1-2 hours prior to bed-time can blunt your natural let-down of Melatonin in the brain that helps to reinforce sleep. Leaving lights on or not having adequate window treatments to block out light (unless you are part of the few that are able to follow the rise and fall of the suns natural light) disrupts the Circadian axis.*

***Inconsistent sleep timing:*** *Inconsistent sleep hours and significant variability in your bedtime negates a lot of our natural built-in tools that reinforce sleepiness and sleep efficiency, it renders the Circadian Rhythm useless and confused.*

***Caffeine/Nicotine/Alcohol:*** *Avoiding excess caffeine (>2 servings/day), and caffeine after 3 pm is a good rule of thumb as it can contribute to adrenal fatigue and deter natural reinforcement of circadian rhythm.*

***Exercise:*** *Exercise has been shown to help shorten sleep latency and improve sleep efficiency with less interrupted sleep. For some who struggle with sleep, exercising after 6 pm can impact ability to wind down for sleep.*

***Stress:*** *Excess cortisol, adrenaline, and stress hormones can make it both difficult to fall and stay asleep.*

**Sleep Apnea:** *Snoring, gasping for air, or pauses in breathing while sleeping can be signs ofsleep apnea. Extra body weight and advancing age can be risk factors. Apnea can cause hundreds of small interruptions in your REM sleep, and frequent dips in oxygen levels that overtime take a toll on your lung pressures and heart. Speak to your provider if you are concerned about sleep apnea!*

***Top health reasons to strive for adequate sleep duration and good sleep efficiency include:***

***Memory:*** *Your mind is surprisingly busy while you snooze. During sleep you strengthen memories or "practice" skills learned while you were awake (it's a process called consolidation). "If you are trying to learn something, whether it's physical or mental, you learn it to a certain point with practice," says Dr. Rapoport, who is an associate professor at NYU Langone Medical Center.*

***Lifespan:*** *Too much or too little sleep is associated with a shorter lifespan. Ideal sleep duration changes during life, but consistently has been shown to have adverse outcomes if getting less than 6 hours of sleep or if getting >10 hours.* ***Quality of Life:*** *Research indicates that people who get less than 6 hours of sleep have higher blood levels of inflammatory proteins than those who get more sleep. A 2010 study found that CRP inflammatory marker is higher in those who got <6 hours of sleep. Inflammation is linked to heart disease, stroke, diabetes, arthritis, cancer, and premature aging!*

***Improved Performance athletics:*** *A Stanford University study found that college football players who tried to sleep at least 10 hours a night for seven to eight weeks improved their average sprint time and had less daytime fatigue and more stamina. The results of this study reflect previous findings seen in tennis players and swimmers.*

***Creativity:*** *Your brain appears to reorganize and restructure memories, and researchers have found that people seem to strengthen the emotional components of a memory during sleep, which may help spur the creative process.*

***Grades and Job performance:*** *Quality sleep improves the ability to multi-task and be more resilient to challenges thrown your way. Sleep reinforces memory by “practicing” things learned that day, and improves retention of information the day following.*

***Reaction time and judgment:*** *Sleep deprivation has been compared to levels of alcohol intoxication in studies performed on sleep deprived medical residents. It has been shown to greatly slow reaction speed and increase risks of motor vehicle accidents.*

***Weight loss:*** *Researchers have found that dieters who were well rested loose more fat than those who were sleep deprived (this population loses more muscle mass). Sleep and metabolism are controlled in the same parts of the brain. When you are sleepy, certain hormones like cortisol spill into your blood and can help both drive appetite but also affect metabolism and fat storage.*

***Improved Spirits****: Lack of sleep increases stress hormones such as cortisol and predisposes to irritability and mood lability making us less resilient to the stressor’s life may throw us.*

***Sleep Tips:***
**1. Beds are for sleep only.**
 -- Do NOT worry or plan in bed. Journaling, writing your list of to-do’s or worries earlier in the day can help to take this off your mind.
 -- Do NOT watch television, use your phone, read, or eat in bed.

**2. Get up when you can´t sleep and do something relaxing.**
 -- If you cannot sleep for more than about 20 minutes, leave the bedroom and go and do something quiet that is not productive (no screens).

**3. Reduce stress.**
 --Start making a relaxing bedtime routine without screens (no phone, TVs, computers).

 --Try meditation or mindfulness - consider using the “Headspace” app.

**4. Create routine to enforce your natural Circadian Rhythm.**

 --Turn off bright lights, and transition to more ambient yellow/orange lighting

 --Try to go to bed at similar time each evening when feeling sleepy

 --Wake up at the same time every day even on weekends. (Don´t induce jet lag.)

 --Consider light therapy—with gradual UV light timer in the morning to help wake you up naturally, and in darker months UV light during the day

**5. Caution on daytime napping.**
 -- If you do nap, keep to once daily (most natural physiologic time is early afternoon)

 --Keep your naps short to less than 30 minutes.

 --Pay attention to if you sleep better or worse when you nap.

**6. Create natural “wind-down” activities/routine prior to bed.**

 --Chamomile or “Sleepy Time” tea an hour prior to bed

 --Calming scents from essential oils, potpourri sachets by the bed, effusion: Lavendar, Clary Sage, Rose, Chamomile, your partners scent!

**7. Be physically active daily.**
 --A steady daily amount of exercise (non-sedentary activity) may deepen sleep but should avoid exercise immediately prior to bedtime.

**8. Avoid caffeine, alcohol, and nicotine.**
 --If you use nicotine, avoid 2-3 hours prior to bed, and even better ask me how I can help you quit! Use 1800-QUITNOW.
 --As a general rule, avoid caffeine intake after 3 pm. Some may need to be more restrictive both in limiting quantity and in earlier timing of use.
 --Avoid alcohol several hours prior to going to sleep. It may help you fall asleep but makes sleep quality worse with more fragmented sleep.

**9. Make your bedroom comfortable to promote good sleep**.
 --If you are sensitive to noise interruption, consider using white noise (Examples: running a fan, or playing a calming white-noise app on phone)

 --Negotiate comfortable sleeping temperatures (this can be different for partners, and may need to adjust sleep clothing layers and bedding)

 --Mattress quality and firmness, pillow style, and sleeping positions all may need to be considered in sleep ergonomics

**10. Supplements/Sleep Aids.**

 --Circadian support: Melatonin 3-6 mg for adults (avoid high dose supplementation), consider extended-release forms if more sleep interruption

 --Calming support: Magnesium, Chamomile or Sleepy-time tea, Passionflower, Lemon Balm, Lavender/Clary Sage/Rose scents

 --Hormonal interrupted: Stress/Anxiety-Gaba, L-Theanine, CBD, Inositol. Menopausal-Valarian root, B6/B12

 --Pain interrupted: Tylenol, CBD (create individualized custom plan with your provider)

 --Snoring/Sleep apnea: Use of prescribed CPAP/BiPAP or customized oral appliance, and/or consideration for positional correction aid

 --Consider combination supplement sleep aids, that combine several safe vitamin/botanical ingredients to aid sleep: A few of my favorites….

 \*“Insomnitol” by Designs for Health: Melatonin 3 mg, B6, Inositol, L-Theanine, 5-HTP, Gaba, Valarian, Chamomile, Passionflower, Lemon Balm

 \*“SLEEP” by Olly (sold at Target): melatonin 1,3, or 5mg, L-Theanine, Chamomile, Passionflower, Lemon Balm

 \*“Neurocalm” by Designs for Health for stress: Vit B6 & B12, Magnesium, Chamomile, Gaba, L-Theanine, 5-HTP, Phosphatidylserine

**Other Resources:**
-The best way to treat resistant insomnia is through Cognitive Behavioral Therapy for Insomnia. This can be done with a therapist and online.
-Online Cognitive Behavioral Therapy for Insomnia resources (they maybe reimbursable through your insurance):
 \*[www.myshuti.com](http://www.myshuti.com)

 \*[www.CBTforinsomnia.com](http://www.CBTforinsomnia.com)

 \*[www.sleepio.com](http://www.sleepio.com)

***Sleep is important! Reach out to your medical provider to formulate an individualized sleep plan if you are struggling.***