



Never Too Sleepy to Fly:

Beating Pilot Fatigue for Peak Performance

HACKS TO BECOME A BETTER PILOT

version 031325

Your health is your most valuable asset — it’s your license to fly. But relying on drugs or surgery could ground you indefinitely, putting your career and dreams at risk. The good news? You’re here today, and it doesn’t have to be that way. Finally, you have choices that can make your life and your flying easier.

These safe, proven “hacks” were created by a Senior AME and recognized expert in advanced medicine. They’re designed to help you take control of your health and protect your future. Countless pilots have used these integrative approaches to stay sharp, strong, and cleared for takeoff — all without the risks of traditional treatments. Every day you wait is another chance for small issues to grow into bigger problems. Act now to protect everything you’ve worked so hard to achieve. This information is offered at no charge to you, so you have a trusted resource to consult to better understand how to promote your own wellness.

As an Amazon Associate, I earn from qualifying purchases. A similar program applies to other affiliate companies whose products I recommend. My recommendations are based on my medical experience and expertise and are not influenced in any other way.

Don’t wait for a medical scare to force your hand. Save and share this information with fellow pilots, friends, and family who also have these concerns. Together, we can build a healthier, safer future for everyone who loves to fly — and for those who love them.

Browse for what you need right now – Save to revisit later

***HELP!* Chronic lack of good restful sleep will *always* catch up to you, crippling your performance and dashing your hopes for advancement and even a long flying career.**

Your Solution Hacks are Below!

QUICK LOOKUP

REM Sleep

Not Really a “Sleeper Drug”

Sleep Hacks
Technology Hacks
Snooze Alarm
Naps for Real
Restless Legs
Heartburn – GERD
Circadian Rhythm
Oxygen
Nose Knows
No One Knows
Walking
Thyroid
Blue Light Blockers
Mattress – Sheets
Comforter – Pillow
Nutritional Hacks
 Adrenals and Thyroid
 Hydration
 Minerals – Amino Acids
 Herbals – Vitamins
 Food Choices
Biofeedback – Sleep Apps
Aroma Therapy
Hormone Herbs
Blasted by EMF Radiation
The Yeast Syndrome
Acupressure

Are You Asleep Yet?

Counting sheep ... Restful bliss ... Adequate sleep for pilots is not just a good idea and not just essential – it's absolute required for optimal performance and safety. But demands on pilots are anything but conducive to getting good sleep: high-demand on the flight deck, extended duty times, irregular schedules, time-zone changes, interrupted mealtimes and snacks, and so on.

FITBIT studies over several years showed that if you go to bed at the same time every night throughout the week that you had the best sleep patterns for a healthy lifestyle. If you stayed up later by even 30 minutes and slept in later on the weekends, your sleep quality was worse. They also found that as we age the amount of deep sleep diminishes.

You need sleep because it rests, restores and energizes your brain. The 5 stages of sleep are identified as Stage 1 and 2 for light sleep, 3 and 4 for deep sleep, and Rapid Eye Movement (REM) sleep. During 3 and 4 (Deep Sleep) your body repairs muscles and tissues, stimulates growth and development, boosts your immune system, and builds energy stores for the next day. With 5 or 6 REM (dreaming) cycles a night, your brain gets energized.

REM Sleep *IS* Sleep!

Louise Carter heads up Sleep Bubble.com, a website sharing wonderful perspectives. “During REM sleep, the body experiences more activity in the brain’s emotional, motor, visual, and autobiographical memory regions and less activity in those involved in rational thought. Scientists describe the brain in this stage as a second gut as it digests all information gathered during the day, separating essential from non-essential memories.

“REM sleep also affects how individuals read emotions. For example, people who napped and reached REM sleep were better at reading facial expressions than those who never entered REM sleep. Researchers have found that REM sleep reduces fear-related effects during scary situations, reducing the risk of post-traumatic stress disorder (PTSD). Dreaming also affects creativity, memory, and mood.

“Even if you can fall asleep after screen time [television, computer, or phone], the chances are that REM sleep is compromised. This is evident because most people exposed to blue light at night feel drowsy and unrefreshed.”

[<https://www.sleepbubble.com/should-you-go-for-a-walk-before-bed/>] September 1, 2023

Sleeping Enough to Fly Safely

The Centers for Disease Control and Prevention (CDC) uses 7 hours of sleep as their standard. They have gone so far as to break down the areas of the U. S. who usually get greater than 7 hours and less than 7 hours of sleep. The category of sleep the CDC investigates is **Short Sleep Duration**. Their 2016 report showed the largest geographic area of Short Sleep duration is **east** of a line from the Upper Peninsula of Michigan down to Alabama, encompassing about 55 to 60 per cent of the U. S. population, also roughly 55 to 60 per cent of American pilots. The people surveyed in this eastern section of the United States had the highest percentage of people getting **less** than 7 hours of sleep, ranging between 38 and 44 per cent. As an aside, Kentucky had the highest percentage of sleep deprived people, that could be about 9- to 10,000 pilots, about 1 per cent of total U. S. aviators.

Insomnia, whether characterized by difficulties falling asleep or staying asleep, can lead to Short Sleep Duration on a chronic basis. This has been documented to produce daytime fatigue, impaired cognitive function, and decreased alertness – factors known to affect performance and safety. Chronic insomnia aggravates health in ways that can be different for every person – but *pilot* capabilities are always seriously degraded.

Failing to make getting better sleep a priority can have a significant health impact. The CDC found that people who have Short Sleep Duration are more likely to report higher rates of obesity, to be physically inactive, and to smoke. They also have documented increased prevalence of chronic conditions that can abruptly abort your flying career, including coronary heart disease (predisposing to heart attacks), stroke, asthma, chronic obstructive pulmonary disease (COPD, emphysema), cancer, arthritis, depression, chronic kidney disease, insulin resistance, and adult-onset Type II diabetes.

Present ... *But AWOL*

Whether you recognize it or not, sleep deprivation adversely affects cognitive functions essential for piloting, including attention, memory, and decision-making. Studies have shown that after 24 hours of continuous wakefulness, pilots exhibit increased flying errors, aligning with peaks in

subjective and EEG-measured fatigue. Slowed reaction times make it challenging for pilots to respond promptly to unexpected events. Research indicates that performance declines on various cognitive tasks and simulated flight operations after 35 hours of continuous wakefulness. Who stays up that long? Well, a long flight day followed by insomnia rather than

Sleep deprivation can lead to mood disturbances, such as increased irritability and decreased motivation, which may affect crew interactions and decision-making processes. A study found significant declines in mood following 24 hours of sleep deprivation, which could impact overall flight performance. Fatigue compromises judgment and decision-making abilities, leading to procedural errors and poor tactical decisions. The National Transportation Safety Board has reported that pilots make more procedural and tactical decision errors if they have been awake for extended periods.

Prolonged wakefulness increases the likelihood of unexpected and even unnoticed microsleeps — brief, involuntary episodes of sleep — that can occur without warning, posing significant risks during critical flight operations. Attentional lapses due to sleep deprivation can lead to such microsleeps, compromising safety.

Chronic sleep deprivation can lead to a decline in physical capabilities, reducing operational tolerance and willingness, which are critical during demanding flight operations. Studies show an inverse relationship between fatigue and physical capability, indicating that as fatigue increases, the body's capability decreases.

In summary, inadequate sleep impairs various aspects of pilot performance, including cognitive functions, reaction times, mood, judgment, and physical capabilities. Recognizing and mitigating these effects through proper rest and fatigue management strategies are essential steps toward ensuring aviation safety.

Pilot fatigue is one of the least studied and unreported problems in aviation. **Sleep is the number one remedy for fatigue**, both mental and physical. Pilots and non-pilots take sleep for granted and often express the fallacy that they can always “make it up” on their days off and weekends. This unsubstantiated concept of “catching up on your sleep” is a trap that could potentially lead to airplane mishaps.

In an article titled “Fatigue in Aviation,” by John A Caldwell, Travel Medicine and Infectious Disease, May 2005 Volume 3, Issue 2, pages 85-96, statistics indicate that at least 4 - 8 per cent of aviation accidents are due to fatigue. He noted, for civilian, commercial, and military pilots: “Scheduling factors, sleep deprivation, circadian disruptions, and extended duty periods continue to challenge the alertness and performance levels of both short-haul and long-haul pilots and crews” and further emphasized that “Pilots and aircrew members are constantly confronted with long duty days, early departures, late arrivals, and non-standard work hours that include night duty and rotating schedules. Long-haul commercial pilots and many military pilots also make frequent transmeridian crossings which contribute to circadian disruptions and sleep difficulties.”
[<https://www.sciencedirect.com/science/article/abs/pii/S1477893904001012>]

The outstanding online CFI Notebook offers this warning on fatigue: “Fatigue is a physiological state of reduced mental or physical performance capability resulting from lack of sleep or increased physical activity that can reduce a pilot’s alertness and ability to safely operate an aircraft or perform safety-related duties. Fatigue is a very common factor associated with pilot

error. Fatigue has been a major contributor to countless aircraft accidents in both general and commercial aviation. **Fatigue is such a serious threat to safety** that it was one of the NTSB’s “Most Wanted” safety improvements in the transportation industry.”

The FAA has devoted considerable attention to defining, understanding, and addressing the many aspects of sleep and fatigue in the aviation environment. In June of 2010, Advisory Circular AC No: 120-100, “The basics of aviation fatigue,” was issued by the Director, Flight Standards Service, giving excellent perspectives on circadian rhythms, flight duty cycles, and necessary strategies for better sleep and reduced fatigue. This is an eye-opener! [www.faa.gov/documentLibrary/media/Advisory_Circular/AC%20120-100.pdf]

But It’s Not *Really* a “Sleeper Drug”

While ground-pounders with less demanding occupations often and “safely” take medications to help their sleep pattern, that option is not available to pilots, who need to be at their best and not adversely affected by drugs. Almost every medication induces side effects to some degree, such as daytime drowsiness and cognitive impairment. The risks are obvious: impaired ability to evaluate changing circumstances, slowed decision-making, and delayed or even incorrect responses to quickly changing conditions in flight. Side effects can also affect flight planning choices and communications with ATC. Pilots should carefully read medication labels to identify active ingredients and warnings about **drowsiness or impaired alertness**. Many OTC medications, especially those labeled as “PM” or for nighttime use, contain sedating antihistamines.

Here is a listing of most utilized over-the-counter products from most to least in America:

Diphenhydramine: This first-generation *antihistamine* (a **medication** also available by prescription) is widely used for its sedative properties. It’s the active ingredient in products like Benadryl, Nytol, Sominex, and Unisom SleepGels. While effective in inducing sleep, it can cause next-day drowsiness and other side effects, so it’s recommended for short-term use only.

The FAA imposes specific conditions on pilots who have taken over-the-counter (OTC) antihistamines for sleep due to their **sedative** effects, which can impair cognitive and motor functions essential for safe flying.

FAA Guidelines for *Sedating* Antihistamines – Mandatory Grounding Period: Pilots must observe a grounding period after the last dose of a sedating antihistamine to ensure the drug’s effects have fully dissipated. The FAA recommends waiting **at least 60 hours** after the final dose of diphenhydramine or doxylamine (below) before resuming flight duties.

Melatonin: A hormone that regulates the sleep-wake cycle, melatonin supplements are popular for addressing sleep disturbances, particularly those caused by jet lag or shift work. Available in various forms, including tablets and gummies, melatonin is generally considered safe for short-term use. Review your choices with your AME.

The **FAA cautions** against relying on melatonin: pilots who choose to use melatonin should ensure they allow **at least 24 hours** between their last dose and

their next flight to comply with FAA guidelines and maintain flight safety, assuming that you have no unusual or adverse reactions when using it.

Doxylamine Succinate: Another first-generation *antihistamine* (a **medication**), doxylamine is found in products like Unisom SleepTabs. Similar to diphenhydramine, it can help induce sleep but may lead to next-day **drowsiness** and other anticholinergic side effects. Only short-term use is recommended in general.

The **FAA Mandatory Grounding Period** of at least 60 hours noted above for diphenhydramine (Benadryl products) applies here as well. Read labels!

Valerian Root: An herbal supplement, valerian root is used by some individuals to promote relaxation and improve sleep quality. Its efficacy is not as well-established as other OTC sleep aids, and results can vary. Potential side effects include dizziness and gastrointestinal symptoms.

Valerian is listed among over-the-counter active dietary supplements that may cause **sedation or drowsiness**, impairing cognitive function and seriously degrading pilot performance. **FAA Recommendations for Valerian Use – Do Not Fly (DNF) Advisory:** Pilots are advised not to fly until valerian has been discontinued and a sufficient period has elapsed to *ensure* the absence of adverse effects, and motor functions essential for safe flying. Pilots should consult with their AME before using valerian or any other dietary supplements to ensure flight safety.

Magnesium Supplements: Magnesium plays a role in sleep regulation, and some people use magnesium supplements to aid sleep. While generally safe, high doses can cause adverse effects (including frequent and even loose stools), and it's best to consult with a healthcare provider before starting supplementation. Sadly, many physicians have little understanding of nutritional products, and almost everyone in developed countries is deficient in the essential mineral magnesium. Adequate magnesium helps maintain good sleep quality by promoting relaxation and naturally regulating neurotransmitters (such as GABA). Pilots frequently experience sleep disruptions due to irregular schedules and jet lag; *insufficient* magnesium can exacerbate insomnia or poor sleep, amplifying fatigue and stress.

While magnesium is generally considered safe and is not inherently sedative, some individuals might experience side effects such as drowsiness or diarrhea or gastrointestinal discomfort. As part of an “IMSAFE” review, before flying pilots should assess their overall health and consider whether any underlying condition or the use of an OTC medication could impair their ability to operate an aircraft safely.

Pilots are advised to avoid flying after taking a new medication or nutritional supplement for the *first* time until at least 48 hours have passed *without* any side effects. The FAA pilots to consult with an Aviation Medical Examiner (AME) before using any new supplement or medication, including magnesium, to ensure it won't adversely affect their flying duties.

In summary, while the FAA does not impose specific restrictions on the use of magnesium supplements, pilots should exercise caution, monitor for any adverse effects, and consult with an AME to ensure their fitness for flight.

You should note that while these OTC sleep “aids” are accessible, they are intended for short-term or occasional use. Prolonged use can lead to tolerance, dependence, or adverse effects. If sleep difficulties persist, it’s advisable to consult a healthcare professional to explore underlying causes and appropriate treatments.

In general, many physicians who face patients complaining of sleep difficulties simply reach for their prescription pad. Here is a listing of most prescribed medications down to least in modern America:

Where FAA guidelines are noted below, these medications are approved for use **no more than once or twice a week** – and you and your AME must agree that you suffer **no adverse or lingering effects** from any dosage:

Zolpidem (Ambien): A nonbenzodiazepine hypnotic, zolpidem is widely prescribed for its effectiveness in reducing sleep onset latency. It is known to help individuals fall asleep more quickly. FAA requires a ***minimum waiting period of 24 hours*** after the last dose before resuming pilot duties.

Eszopiclone (Lunesta): Another nonbenzodiazepine hypnotic, eszopiclone is effective for both sleep initiation and maintenance, helping individuals fall asleep faster and stay asleep longer. FAA requires a ***minimum waiting period of 30 hours*** after the last dose before resuming pilot duties.

Trazodone (Desyrel): Originally developed as an antidepressant, trazodone is often prescribed off-label for insomnia due to its sedative properties. It is commonly used to help with sleep maintenance.

Temazepam (Restoril): A benzodiazepine sedative-hypnotic, temazepam is prescribed for short-term treatment of insomnia, particularly for individuals who have difficulty staying asleep. The FAA mandates a ***minimum waiting period of 72 hours*** after the last dose of temazepam before a pilot can resume flying duties.

Zaleplon (Sonata): This nonbenzodiazepine hypnotic is effective for reducing the time it takes to fall asleep. Due to its short half-life, it’s particularly useful for individuals who have trouble initiating sleep but not maintaining it. FAA requires a ***minimum waiting period of 12 hours*** after the last dose before resuming pilot duties.

Doxepin (Silenor): At low doses, this tricyclic *antidepressant* is approved for the treatment of insomnia characterized by difficulties with sleep maintenance. It helps individuals stay asleep through the night.

Suvorexant (Belsomra): An orexin receptor antagonist, suvorexant is used to treat insomnia by suppressing the wake drive, thereby helping individuals both fall asleep and stay asleep.

Ramelteon (Rozerem): A melatonin receptor agonist, ramelteon is prescribed for sleep-onset insomnia. It works by mimicking the effects of melatonin to regulate the sleep-wake cycle. FAA requires a ***minimum waiting period of 24 hours*** after the last dose before resuming pilot duties.

Lemborexant (Dayvigo): Similar to suvorexant, lemborexant is an orexin receptor antagonist that helps with both sleep onset and maintenance by inhibiting the wake-promoting orexin neurons.

Triazolam (Halcion): A short-acting benzodiazepine, triazolam is used for the short-term treatment of insomnia, particularly for individuals who have difficulty falling asleep.

It's important to note that the prescription of these medications depends on individual patient needs, the specific nature of their insomnia, and potential side effects. Healthcare providers are expected to consider these factors when determining the most appropriate treatment for sleep disturbances. And every single one of these listed sedative-hypnotics has known *adverse effects* on performance of pilot duties.

Alternative Medications: If drug use appears to be an acceptable choice for you, remember that these items are *poorly* effective for inducing sleep. And further, strict observance to safety guidelines is essential. Experience has been gained with acceptable *non-sedating* antihistamines: fexofenadine (Allegra), loratadine (Claritin), and desloratadine (Clarinex), usually prescribed for control of allergy symptoms. Pilots must first use such medication “on the ground” to ensure they do not experience any adverse side effects. This trial period of *several days* helps to confirm that the antihistamine does not impair cognitive or motor functions. Approval of your AME would be most appropriate.

After the first dose, pilots should wait ***at least 48 hours*** before any flight duties, to monitor for any side effects. If the medication is used regularly, pilots should remain vigilant for any delayed side effects and assess their fitness for flight continuously. Always consult with your Aviation Medical Examiner before starting any new medication to ensure it complies with FAA regulations and does not compromise flight safety. By adhering to these guidelines, pilots can manage sleep distresses or allergy symptoms effectively without compromising their ability to operate an aircraft safely.

Many adults have tried over-the-counter medications for sleep – even though they are not prescription sedatives or “sleepers” – but none of these are approved for pre-flight use by the FAA. Solving this challenge for pilots is important, but even more so is the need to discover and resolve the *underlying factors* contributing to insomnia as a long-term solution.

Top Performance in Life Each Day

Awakening rested gives you a brighter “expectant” look at the start of each day. This means happier interactions, even with people you don’t know, such as desk clerks and linemen. You are more likely to have the patience, energy, and emotional resilience to nurture healthy relationships ... important with others on your flight crew. Better moods and emotional stability reflect in smoother exchanges with family, friends, and strangers. These “soft” benefits not only help to reduce your stress but also contribute to sharper cognitive function, better memory, and optimal problem-solving skills and decision-making in every aspect of your life.

Sleep Hygiene = Sleep Habits = *yes, Hacks!*

This funky description, sometimes called “sleep habits,” means recognizing the importance of maintaining a consistent sleep schedule, creating a relaxing pre-sleep routine, and minimizing factors that disrupt sleep, such as caffeine, nicotine, alcohol, or screen time before bedtime. Good ideas, sometimes challenging for pilot schedules. Establishing robust sleep hygiene

practices lays the foundation for restorative rest. These helpful hints have long been accepted to help people who need to create a sleep-promoting setting.

The Insomnia Breakthrough: Effective Strategies to Fall Asleep, Sleep Through the Night, and Wake Feeling Refreshed (book)

AMAZON LINK: <https://amzn.to/4gxDQQ0>

Keep a Record to Understand *Your* Pattern

You can help to optimize the restfulness of your sleep by keeping a sleep diary to track your sleep habits, more easily identifying patterns or triggers for sleep disturbances. Each entry should include date, day of week, end-time of last flight, time into bed, time falling asleep (as able), times/reasons for awakenings, ease of returning to sleep, time awakening in morning, note whether feeling alert and rested or fatigued or brain-fogged. You might notice specific sleep triggers or patterns affecting sleep quality, related to days of the week or flight schedules or whatever. This information gives you a baseline for beginning to make getting better sleep a priority and is a head-start for any health professional you consult for help.

Regular Sleep Schedule (as best you are able)

Aim to go to bed and wake up at the same times daily, even on *off* days, to regulate your internal clock (circadian rhythm). If you need to shift your bedtime to accommodate flight schedules, try to plan as able to do so gradually (in 15 to 30 minute increments nightly) rather than making abrupt changes. Compliance with aviation regulations is crucial: Ensure you meet the FAA-mandated rest periods, which include flight time limits of 8 or 9 hours and a 10-hour minimum rest period before duty.

Wind-Down Activities

Engage in relaxing activities before bed such as reading, gentle stretching, or listening to calming music. Engage in screen-free activities to signal your body that it's time to wind down.

Limit Screen Exposure (television, desktop, laptop, tablet, or phone)

Reduce exposure to screens emitting blue light at least an hour before bedtime, as it can interfere with melatonin production. Blue light from phones, tablets, and computers can disrupt the production of the sleep hormone melatonin. Try to power down devices no less than 30 minutes before bed.

Avoid Stressors

Steer clear of intense work or emotionally charged conversations, television programs, podcasts, and such close to bedtime. Consider pre-bed journaling or light meditation to settle your mind.

Pre-Bed Journaling

If your mind races at night, jot down worries or to-do lists before bed to help “park” them until morning. Going to sleep after a bad day at work and reliving those thoughts before sleep may

lead to less than adequate amounts of quality sleep for that next day flight; writing down your experiences can help relieve you of dwelling on them.

Address Any Early or Distressing Mental Health Concerns

Chronic stress, anxiety, or depression can disrupt sleep continuity. Depression can lead to insomnia or excessive sleeping, while anxiety often causes difficulty in falling asleep due to racing thoughts or excessive worry. Consider speaking with a mental health professional if you're experiencing persistent emotional distress. Practices such as deep breathing, progressive muscle relaxation, or mindfulness-based exercises can reduce bedtime anxiety. Articles on this website will offer you integrative hacks that might really help you.

Welcome to Your Sleep-Conducive Environment

Create a bedroom setting that is dark, quiet, and cool. Consider using dim lights if any, blackout curtains, an eye mask, earplugs, or white noise machines to minimize sound disruptions. Cool environments (around 60–67°F or 15.5–19.5°C) often promote better sleep. A comfortable mattress and pillows suited to your preferred sleep position can greatly affect how quickly you fall asleep and stay asleep.

Gentle Stretching

Incorporating gentle stretching into your bedtime routine can enhance sleep quality by promoting relaxation and reducing physical tension. Stretching before sleep can reduce your stress levels, help your muscles to relax, improve your circulation, enhance your flexibility, even encourage mindfulness about relaxation and rest.

Engaging in stretching exercises helps activate the parasympathetic nervous system, which is responsible for rest and digestion. This activation leads to decreased stress levels, making it easier to transition into sleep. Stretching alleviates muscle tension accumulated throughout the day, reducing discomfort that might otherwise disrupt sleep. By easing tightness, stretching prepares the body for a more restful slumber.

Gentle stretching enhances blood flow, ensuring that muscles receive adequate oxygen and nutrients. This improved circulation supports muscle recovery and relaxation, contributing to better sleep quality. Regular stretching increases flexibility, leading to greater comfort during sleep by preventing stiffness and promoting ease of movement. This can be particularly beneficial for people who experience nocturnal cramps or discomfort.

Incorporating stretching into your pre-sleep routine encourages mindfulness, helping you become more attuned to your body and breath. This heightened awareness can facilitate a mental state conducive to falling asleep.

Neck Rolls: Sit or stand comfortably. Slowly roll your head in a circle clockwise, then counterclockwise, to release neck tension.

CRITICAL TIP:

The **Thompson Exercise** – has long been one of my *most successful secrets* in helping patients comfortably recover from any neck, mid-back, or low back pain syndrome. This

is an easy, safe, and even enjoyable “self-traction” maneuver that can be done almost anywhere and anytime by virtually everyone. Alec Thompson was one of the early physicians providing “prolotherapy” (described below) to his patients – a treatment injecting small amounts of naturally irritating fluid to stimulate healing and strengthening of weakened or torn supporting tissues. Blood flow is limited in these connective tissues, so they fail to repair to become as strong as they were before injury ... so people can suffer repeated episodes for years. These injections create a *healing* inflammation pattern, allowing these connective tissues to “proliferate” (grow thicker and again stronger), hence the name prolotherapy.

Dr. Thompson was seeking ways to help his neck and back injury patients become more comfortable and healed more quickly. He developed this “exercise” to promote better alignment of your spine, allowing muscles to relax rather than stay in spasm trying to limit your injury “wobble,” so healing can proceed easily. Basically you sit toward the front a chair, spread your knees to 90 degrees (like the corner of a table), and *gently* lean forward, drooping your head and hands toward the floor. Be careful that the chair doesn’t “throw” you off! I encourage my patients to do what I call “TEN-X”: 10 times a day, “go down” 10 times, each to a count of 10. Those who embrace this advice as a *daily habit* are much happier and more comfortable. Dr. Thompson taught me this assist in 1992 and I have taught it to every one of my patients since!

He developed several variations that correctly stretched the lower back, and this one is my favorite. Click to download and print my brochure, to share with everyone.

ON-SITE LINK: Download my office brochure on THE THOMPSON EXERCISE giving you more details. Coming soon.

Dr. Thompson’s new way for you to cure your aching back (book)

AMAZON LINK: <https://amzn.to/40JmXNw>

A variation on the Thompson exercise can be done while you are *lying flat on your bed*, facing up. Raise your knees toward your chest, reach your hands *inside* your legs at your lower thighs just above your knees, and *gently* pull your knees *outwards* ... if your arms were outstretched to the side, you would be aiming to pull your knees toward your elbows. This is called “the birthing position,” since it works well for delivering babies. You might even raise your chin to your chest and contract your belly muscles to pull your pelvis slightly “up,” that makes the Thompson even more effective for you. (I developed this powerful enhancement, so I call it the “Thompson-Trowbridge” maneuver.)

Hamstring Stretch: To stretch your hamstrings, try this simple *gentle* action. Stand next to your desk or sink or chair back, facing to the side in either direction. Position your legs as though you were taking a step, one foot ahead of the other (not centered). You will bend the knee of your “back” leg, *shifting your weight slightly down* and onto that back leg. Keep the *heel* of your “outstretched” (front) leg on the floor while you position your butt ever more slightly backward, gently stretching and relaxing your outstretched leg, keeping your heel on the floor and letting your foot/toes rise up comfortably. Now shift your legs and gently stretch the other side. This is an **unloaded** stretch, no weight or resistance on your hamstring but just on your back bent leg, that can be very useful for your hamstrings.

Incorporating these gentle stretches into your bedtime routine can help signal to your body that it’s time to wind down, promoting a smoother transition into restful sleep.

Practice Relaxation

Research has shown that consistently implementing relaxation methods can facilitate quicker sleep onset and better rest.

Alpha Bridge Technique: Developed by the U. S. Navy for their pilots, this method involves specific eye movements and breathing patterns to achieve quick, uninterrupted sleep.

The alpha bridge technique follows a series of eye movements and breathing patterns that are meant to simulate the natural process of falling asleep. The technique's name is based on the science behind alpha waves—a brain wave that presents when our minds are relaxed but still awake; this is the cognitive activity we experience before falling asleep. The technique is especially useful when you're not sleeping in a familiar place, like on a plane, at a hotel, or anywhere where unfamiliarity might disturb bedtime. The following is borrowed from <https://www.realsimple.com/alpha-bridge-sleep-technique-8739255?>.

Lie Down or Sit Down Comfortably

When it's time to fall asleep, make sure you're in the best sleeping position possible. For example, if you're on a long plane ride, recline your seat back and get comfortable.

Close Your Eyes and Count to 30

Shut your eyes and begin to count to 30. By the time you reach 30, your brain should be slightly more relaxed and your eyelids should feel heavier.

Open Your Eyes Slightly and Count to Five

Once your eyes start feeling heavy, open them slightly and count to five. After counting to five, repeat step two by closing your eyes again, counting to 30, and slightly opening your eyes and counting to five once again. If necessary, repeat steps two and three again.

Close Your Eyes and Sense Your Breathing

Once you've cycled through the second and third steps, complete the technique by closing your eyes and paying attention to your slow and deep breathing. Continue listening to your breath, and you should be asleep in no time.

Progressive Muscle Relaxation

Systematically tensing and relaxing muscle groups **can** reduce stress, improve sleep, and enhance relaxation. It's especially helpful for pilots who need to manage stress and fatigue without relying on medication. PMR is a safe, effective technique that helps pilots stay sharp, relaxed, and well-rested—without relying on medications. Try it for 5 to 10 minutes daily and feel the difference in your sleep, focus, and stress levels

Benefits from regularly practicing PMR:

- Reduces physical tension and stress-related headaches
- Improves sleep quality without medication
- Enhances focus and mental clarity before flights
- Lowers heart rate and blood pressure

Lie down in a comfortable position – Close your eyes and take a few slow, deep breaths to settle in.

Follow the Tension and Release Cycle

For each muscle group:

Tense the muscles for **5–10 seconds**, feeling the contraction.

Release the tension slowly and notice the difference.

Rest for 10–20 seconds before moving to the next group.

Breathe deeply and focus on the feeling of relaxation.

Starting with your toes and feet and progressing upward to your eyes and forehead, tighten your muscles (on each side) and then relax.

Apps like **Calm, Headspace, or Insight Timer** offer PMR-guided sessions.

Listening to a soothing voice can make it easier to focus and unwind.

Progressive Muscle Tightening and Relaxation Can Be Paired With Deep Breathing

Try the **4-7-8 breathing technique**, diaphragmatic deep breathing reduces anxiety:

Inhale for **4 seconds**

Hold for **7 seconds**

Exhale slowly for **8 seconds**

Body Scan Variation

Instead of tensing muscles, simply focus on each muscle group and mentally “release” tension as you move through the body.

Gentle Stretching

Incorporate gentle “yoga poses” or anything similar, along deep breathing into your pre-sleep routine. Yoga helps release muscle tension, improve flexibility, and promote relaxation.

Incorporating relaxation exercises into your daily routine can help reduce stress, improve sleep quality, and enhance your ability to cope with life’s challenges.

Guided Imagery for Relaxation

Just like a mental vacation — you close your eyes, take slow deep breaths, picture a peaceful scene, and use your imagination to create a relaxing, stress-free experience in your mind. Think of it as daydreaming with a purpose, you intentionally focus on calming images, sounds, and sensations to reduce stress, improve sleep, and boost mental clarity.

Engage your senses:

What do you see? (Blue ocean, green trees, sunset...)

What do you hear? (Waves crashing, birds chirping, a soft breeze...)

What do you feel? (Warm sun, cool sand, soft grass...)

The more details you add, the more immersive and calming the experience becomes.

Your brain reacts to imagined experiences almost as if they were real. If you mentally “see” and “feel” yourself in a peaceful place, your body responds by:

Lowering stress hormones

Slowing your heart rate

Relaxing your muscles

This is a great tool for falling asleep faster, reducing anxiety, and staying focused — which is especially useful for pilots always attentive to managing stress and fatigue. You can use this simple technique to help relax in minutes, no medication needed. Try it before a flight or a test to reduce performance anxiety.

Mindful Meditation – and An Easy Hack

Just like mental pre-flight preparation, this practice helps you clear your mind, stay focused, and handle stress with ease. It's about being fully present, managing distractions, and improving mental clarity, whether in the cockpit or on the ground or even lying down to go to sleep. Imagine tuning in to the present like adjusting a radio frequency — you filter out distractions and focus on what truly matters.

Find a quiet spot – even lying in bed. Take slow, deep breaths. Feel the air enter and leave your body.

If thoughts about work, weather, or checklists arise, acknowledge them and gently return to your breath. The goal isn't to clear your mind — it's to stay aware without getting distracted and using your breath to stay calm and focused.

Start with just 2 to 5 minutes a day. Even brief sessions improve focus and relaxation.

Benefits available to you are wonderful. Mindful Meditation enhances focus and situational awareness, staying sharp in high-pressure environments. It reduces stress and anxiety, which lowers cortisol thereby preventing tension buildup. It can improve your reaction time, so you handle unexpected situations calmly. And, of course, it promotes better sleep so you combat fatigue without medication.

Mindful Meditation Made Easy: Your Step-By Step Guide (book)

AMAZON LINK: <https://amzn.to/40XeeGe>

This technique is so easy and quick that you can use it before a flight, as a quick reset to reduce any pre-flight anxiety. During cruise flight, ask your pilot flying to give you a couple of minutes to take few deep breaths help maintain focus. After a long flight, even just before evening bedtime, it can help transition you from high-alert to relaxation mode, safer and stress-free.

You can choose a more traditional meditation approach as well. Incorporating this into your bedtime routine can significantly enhance sleep quality by calming your mind and promoting relaxation. In examining and treating pilots for almost 4 decades, I have found a meditation program that is quick to understand, easy to use, and very effective ... if practiced daily! When the Beatles returned from India in the 1970s, they brought along Maharishi Mahesh Yogi – and he set up training centers for “TM” Transcendental Meditation throughout the United States. I learned the technique at the beginning of my second year of medical school ... and it was an unexpected lifesaver for stress management and effective study. TM training will cost you about \$1,000 or so and you might find the experience invaluable.

My colleague, Herbert Benson, M. D., was at that time a Harvard physiologist – with a full lab at his disposal. Curious about TM, he studied it from the point of view of what is happening inside your mind and your body. His research showed that virtually every culture has a similar “meditation” program, and his work “took the mysticism out of meditation.” The resulting book,

The Relaxation Response, originally published in 1976, has given remarkable results for countless people, many of whom have used the technique to reliably go to sleep.

The Relaxation Response (book)

AMAZON LINK: <https://amzn.to/42xoV52>

Transcendental Meditation training centers

<https://www.tm.org/meditation-near-you>

Strength in Stillness: The Power of Transcendental Meditation (book)

AMAZON LINK: <https://amzn.to/40RqlWz>

Cognitive Behavioral Therapy for Insomnia (CBT-I)

CBT-I is a structured, evidence-based approach that helps individuals address the underlying thoughts and behaviors contributing to sleep difficulties. This technique is a bit more complicated and involved than the ones I have presented here. Several reputable online resources offer easy-to-follow instructions and guidance on implementing CBT-I techniques:

Sleep Foundation: Provides a comprehensive overview of CBT-I, detailing its components and offering practical advice on how to apply these strategies to improve sleep: sleepfoundation.org

NHS Inform: Offers a self-help guide that utilizes CBT principles, providing expert advice and structured steps to manage sleep problems effectively: nhsinform.scot

UNC School of Medicine: Features a detailed CBT-I treatment manual, including session-by-session outlines and behavioral treatment regimens, suitable for those seeking an in-depth understanding of CBT-I techniques: med.unc.edu

Cognitive Behavioral Therapy Made Simple: 10 Strategies for Managing Anxiety, Depression, Anger, Panic, and Worry (Retrain Your Brain with CBT) (book)

AMAZON LINK: <https://amzn.to/3CPJb7n>

These resources are designed to help individuals implement CBT-I strategies independently and easily, promoting better sleep habits and reducing insomnia-related challenges.

Mindful Consumption in Preparation for Better Sleep

Avoid caffeine, nicotine, and alcohol close to bedtime, as they can impair sleep quality. Alcohol can initially make you feel sleepy but may disrupt later stages of sleep, causing early awakenings or fragmented rest. Coffee, tea, and sodas consumed later in the day can interfere with falling asleep. Pay attention to your individual sensitivity and cut off caffeine intake accordingly. Restricting caffeine drinks several hours before bedtime can reduce their stimulating effects. Caffeine intake during the day will not increase your performance to make up for any lost sleep; you will still be fatigued but just more wide awake.

Large or spicy meals too close to bedtime can cause discomfort or acid reflux, waking you during the night. [See my “Heartburn Hack” below.] And obviously drinking too many liquids in the evening can lead to frequent trips to the bathroom, interrupting your sleep.

Sleep-friendly foods:

Nuts or Seeds with Fresh Fruit and Nut Butter

Greek Yogurt

Hummus and Veggies

Cheese With Fruits and Nuts

Open-face Sandwich – maybe a better supper choice – slice of whole grain bread, spread some hummus, add avocado, lettuce, tomato or whatever salad vegetable you love. Then top it off with a protein like smoked salmon, egg, or tofu. You’re creating a balanced meal that is not too large because it’s close to bed.

Get Creative with the Protein and Fiber Combinations, choose small portions of foods you enjoy

Eat to Sleep: What to Eat and When to Eat It for a Good Night’s Sleep—Every Night (book)

AMAZON LINK: <https://amzn.to/40T4Svd>

You Gotta Love Technology Hacks: Falling Faster, Resting Better

Sleep is one of the most personalized activities on the planet! Some people awaken all through the night, some awaken early and can’t go back asleep, others have great difficulty falling asleep. Elegant studies over the past 60 years have demonstrated that external sounds can entrain brainwave patterns to produce specific sleep results. That understanding has led to creation of sophisticated smartphone programs to help you fall asleep faster and achieve more restful sleep and much more. FAA recognizes white noise or pink noise as effective for blocking disruptions. “White” Noise spans all audible frequencies equally, but some people find it a bit “sharp.” “Pink” Noise gradually decreases in volume as frequency increases, giving a more balanced, soothing sound for some listeners.

BrainWave: 37 Binaural Series app

The #1 ranked binaural app for 14 years, delivering consistent results. A number of new features have greatly expanded its applications, deserving your consideration. Also includes white, brown, green, and pink noise generation as well as ambient environment sounds and calming music as well as allowing for you to choose different background music from your own library.

Moongate: Binaural Beats app

Fall asleep easier, release anxiety, calm racing thoughts, and stay focused. Also includes white, brown, green, and pink noise generation as well as ambient environment sounds and calming music.

Certain sound waves can directly impact brain activity, promote relaxation, reduce stress, and improve sleep quality. But how do *specific* frequencies contribute to restful sleep? **Delta** Waves (0.5 – 4 Hz) are associated with deep sleep and restoration. These are the slowest brain waves and are dominant during deep, *non*-REM sleep (stages 3 and 4). These stages are crucial for physical restoration, memory consolidation, and immune function. Binaural beats at 1 – 4 Hz can encourage your brain to sync with deep sleep rhythms. Listening to **white** or **pink** noise can help enhance **delta** wave activity, helping people who struggle with deep sleep or who

wake up not feeling refreshed.

Theta brain waves (4 – 8 Hz) are seen with relaxation and **dreaming**, linked with creativity, emotional processing, and memory processing and retention. These dominate during your light sleep and REM (dreaming) sleep phases. Binaural beats (6 – 7 Hz) before bed help induce theta waves, which also can be enhanced if you practice deep **breathing** or progressive muscle **relaxation** with theta wave music. Those who struggle to unwind before bed or have fragmented sleep patterns will feel better with longer or more frequent theta phases.

Alpha brain waves (8 – 14 Hz) are associated with **transition** to sleep, so they appear when you are calm but awake. Drifting off to sleep or meditation are periods of alpha patterns. Enhance your smooth transitions by listening to calming **nature** sounds that naturally include alpha frequencies, such as rainfall or ocean waves. Alpha wave binaural beats (10 – 12 Hz) will quiet your mind. Playing selected quiet backgrounds as you sleep might provide major benefits as you discover how best to improve your sleep patterns.

Self-Assessment for Safety

Regularly evaluate your fitness for duty – **IMSAFE Checklist**: Assess factors such as Illness, Medication, Stress, Alcohol, ***Fatigue***, and Emotion to determine readiness for flight.

If you want a book that summarizes conventional conclusions on better sleep, consider this:

The Insomnia Breakthrough: Effective Strategies to Fall Asleep, Sleep Through the Night, and Wake Feeling Refreshed (book)

AMAZON LINK: <https://amzn.to/3CAAbDe>

Hack To Snooze for *Just 10 More Minutes?*

Not really! Your body naturally prepares to wake up before your alarm goes off. When you hit snooze and doze off again, you restart a new sleep cycle but wake up in the middle of it. That leaves you feeling groggy (a phenomenon called sleep inertia). For pilots, hitting snooze can be even worse since wakeful alertness is critical for safe flight operations. Chronic sleep inertia can impair reaction time, judgment, and focus, all things pilots can't afford to compromise.

Those extra 5 to 10 minutes of snooze time are usually light, fragmented sleep, which is **not** restorative rest. You just are more frustrated when the alarm rings again. The more times you snooze, the more confused your brain gets about whether it's time to wake up. This can lead to prolonged morning grogginess, making it harder to feel alert.

If you want to feel more rested, try these steps:

Set your alarm for the actual time you need to wake up, not earlier so you plan to justify “snoozing” a bit longer.

Use a gradually rising alarm sound to wake up more naturally.

Go to bed earlier and keeping a consistent sleep schedule.

Expose yourself to natural daylight in the morning to help regulate your circadian rhythm.

Is *Napping* Really a Hack? “Wake Me At 2:30”

Yep! As crazy as it sounds, a short nap might be ideal for resetting alertness during the day and contributing to better sleep at night. In countries like Spain, Italy, and parts of Latin America, taking a short nap in the early afternoon, known as a “siesta,” is a common practice. This rest period helps individuals to recharge during the day and can contribute to overall sleep health and general health.

Even more: Imagine a product that increases alertness, boosts creativity, reduces stress, improves perception, stamina, motor skills, and accuracy, enhances your sex life, helps you make better decisions, keeps you looking younger, aids in weight loss, reduces the risk of heart attack, elevates your mood, and strengthens memory. Now imagine that this product is nontoxic, has no dangerous side effects, and, best of all, is absolutely *free*. The documented research results are compelling:

short naps boost memory and information retention fivefold
they reverse the productivity-destroying effects of a poor night’s rest
they beat caffeine for improving performance
they increase cognitive function and creativity
and they reduce stress and anxiety.

The University of Michigan found a desirable outcome: “taking a nap may be an effective strategy to counteract impulsive behavior and to boost tolerance for frustration.” Good ideas for reducing stress and enhancing pilot performance.

NASA studied naps to make sure sleepy pilots weren’t putting themselves or passengers at risk. The space agency found that pilots who slept in the cockpit for 26 minutes showed alertness improvements of up to 54 percent and job-performance improvements by 34 percent, compared to pilots who didn’t nap. When it comes to naps, short is generally better. While naps during flight duties might be absolutely unreasonable, other opportunities during the day (stops, delays) might allow for refreshing and safety-promoting “NASA naps.”

This miracle drug is, in fact, nothing more than the nap: the *right* nap at the *right* time. The work of Sara C. Mednick, Ph.D., a researcher at the Salk Institute and the leading authority on the study of the nap, *Take a Nap! Change Your Life*, is the scientifically-based breakthrough program that shows how we can fight the fatigue epidemic — which afflicts an estimated **50 million** Americans — through a custom-designed nap. You might need to neutralize the voice in your head that tells you napping is a sign of laziness. (Not that anyone would have called JFK, Churchill, Einstein, or Napoleon a slug-a-bed.) Her research shows you exactly when your optimum napping time is, and exactly how long you should try to sleep — even how it’s possible to design a nap to inspire creativity one day, and the next day design one to help you with memory. There are tips on how to create the right nap environment, a 16-step technique for falling asleep, a six-week napping workbook, and more

Take a Nap! Change Your Life! (book)

AMAZON LINK: <https://amzn.to/4jU2zkq>

Hacks for Scootin’ Around: Restless Leg Syndrome

The Federal Aviation Administration acknowledges that RLS can affect a pilot's ability to operate an aircraft safely. The condition itself, especially if it leads to significant sleep disruption, may be disqualifying. Additionally, some medications commonly prescribed for RLS can have side effects that impair cognitive and motor functions, posing risks during flight operations.

A number of contributing factors could relate to RLS, such as deficiencies of iron, B12, folic acid, and magnesium, calcium, or potassium, as well as stress and muscle tension. Appropriate evaluation (by an integrative medicine practitioner) could lead to simple solutions without resorting to drugs that could impact your medical certificate.

Heartburn Hack – GERD – Gastro-Esophageal Reflux Disorder

Silly as it sounds – since we've long heard "Just take a couple of TUMS" – but GERD can be most uncomfortable and *draw your attention away* from optimal performance of pilot duties. When you're lying down, you might even suffer more discomfort that can easily interfere with restful sleep. This is especially a concern after a larger meal, eating closer to bedtime, or eating certain foods (spicy, tomato-based, peppers, and so on). Continuing or frequent episodes mean that you should see a skilled physician for definite diagnosis and any needed treatment – which you should discuss with your AME. Incidentally, I have spent dozens of years successfully and easily resolving these troubling issues for pilots and others – the *right* diagnosis and the *right* treatment matter!

Some folks suffering with GERD/heartburn have a "hiatal hernia," loosening of the muscle ring where your esophagus (swallowing tube) goes through your diaphragm and into your stomach. Constipation – straining with passing bowel movements – is a common contributor to such a hernia, so keeping your stools soft and easy to pass is an important treatment to reduce future problems. (Yes, that's something a skilled integrative physician does, *without* a lot of x-rays and scopes and other expenses.). If you find you are more comfortable sleeping "on a pile of pillows" or with blocks under the head of your bed, you deserve proper evaluation and treatment – but do **not** "volunteer" for surgery!

One hack I've used with patients for my 46-year career is to sip (chilled or not) aloe vera juice (or gel) all day long, or at least as needed for comfort. Even adding papaya juice in equal parts can give more relief.

Lily Of The Desert Aloe Vera Juice - Inner Fillet Aloe Vera Drink, Organic Aloe Juice with Natural Vitamins, Digestive Enzymes for Gut Health, Stomach Relief, 32 Fl Oz (Pack of 2)

AMAZON LINK: <https://amzn.to/3CMF63O>

Forever Living - Forever Aloe Vera Gel - 99.7% Pure Inner Leaf Aloe Vera Juice - Preservative-Free - 33.8 fl oz (Pack of 2)

AMAZON LINK: <https://amzn.to/3CMFj76>

Namai 100% All Natural Pure Papaya Juice, No Added Sugar, No Preservatives, Pack of 24

AMAZON LINK: <https://amzn.to/4gEX9ab>

If you wish to carry tablets rather than dealing with liquids, I have long recommended papaya tablets that often provide substantial relief. Chew as many as you wish.:
American Health Super Papaya Enzyme Plus Chewable Tablets, Natural Papaya Flavor - Promotes Digestion and Nutrient Absorption, Contains Papain and Other Enzymes - 360 Count
AMAZON LINK: <https://amzn.to/4jQDkiT>

The “Time” Is Right: Hack for Circadian Rhythm

These disorders involve a misalignment between an individual’s internal biological clock and their present external environment. Examples include delayed sleep-wake phase disorder, where individuals fall asleep and wake up much later than desired, and advanced sleep-wake phase disorder, where sleep and wake times are earlier than desired. Such misalignments can lead to difficulties in both falling asleep and maintaining sleep. As you would expect, pilots whose duty schedules involve long transmeridian flights – especially across open oceans – are more prone to suffer circadian imbalances. You must adhere to company and FAA policies with regard to rest cycles and sleep periods in these circumstances. If you continue to be “out of phase,” consult with a skilled integrative medicine physician or perhaps your AME. Again, I’ve spent dozens of years creating successful solutions for pilots – the *right* diagnosis and the *right* treatment matter!

You might find invaluable understanding and assistance from this book by W. Chris Winter, M. D., a leading authority in sleep medicine:

The Sleep Solution: Why Your Sleep is Broken and How to Fix It (book)
AMAZON LINK: <https://amzn.to/3X1iK5t>

Lots of Hacks for Chronic Pain Syndromes

The FAA considers medical conditions that chronically interfere with sleep as disqualifying, regardless of whether a sleep aid is used. Virtually all medications used for chronic pain, such as opioids, certain antidepressants, and muscle relaxants, can cause sedation, cognitive impairment, or other side effects that may compromise flight safety. Pilots must refrain from using any of these and consult with their AME regarding definitive diagnosis and proper FAA-approved treatment of the underlying cause rather than using such medications. Other presentations on this website offer excellent hacks for your consideration, many of which I have developed or enhanced and successfully offered pilots and others for dozens of years.

Depression – which commonly occurs in people suffering chronic pain that seems never to get better – is another medical condition that can affect your sleep. As with chronic pain issues, you must have proper evaluation and treatment before acting as a pilot. Again, many of the medications that are used can cause sedation, cognitive impairment, and other side effects that compromise flight safety – in addition to the condition itself. Depression prescriptions can cause ... *depression!* Consult with your AME before undertaking any flight duties.

Hacks for Oxygen and Restful Sleep

Pilots are familiar with oxygen needs at high altitudes and with effects that can occur “at ground level” when at higher elevations. At altitudes above 6,000 feet, lower atmospheric oxygen

pressure can reduce melatonin production, making it harder to fall and stay asleep. Pilots and high-altitude travelers often report lighter sleep, vivid dreams, and increased awakenings due to oxygen deprivation. What many pilots (and their physicians) do not realize is that lower blood oxygen saturations are more common than expected in adults who are seemingly normal. Normal, that is, except that they are developing chronic degenerative disease changes at earlier ages and faster than anticipated.

Since 1993, I have studied the effects of marginal blood oxygen levels in my patients and my observations have led to excellent improvements for almost everyone – *without* CPAP! Continuous Positive Airway Pressure (CPAP) is considered to be the “gold standard” treatment for sleep apnea, but I feel this diagnosis is in error quite often. Further, as with any medical therapy, CPAP (which I call “scuba diving”!) can have side effects and risks. While some people adjust well, many others experience discomfort or complications that need attention.

What is clear is that when oxygen levels drop, sleep quality suffers, leading to fatigue, cognitive impairment, and reduced alertness — all critical concerns for pilots. Low oxygen levels trigger the release of stress hormones (like cortisol), keeping the body in a fight-or-flight state instead of restful sleep. Addressing these situations is essential for general health as well as flight performance. An overnight “sleep study” is a simple assessment, with a small probe clipped onto your finger (recording pulse oximeter). While many “sleep labs” generate pages and pages of expensive reports, the most important and inexpensive diagnostic data are your oxygen saturation levels and your pulse through the night.

In my review of thousands of such sleep studies over the past 33 years, my conclusions are straightforward: oxygen saturations of 99 and 100 per cent are “normal,” 98 is “borderline,” 97 and below is increasingly abnormal, and 88 and below is of concern. Each 1 per cent decrease in blood oxygen saturation (SpO₂) roughly correlates to a 7 mm Hg decrease in arterial oxygen pressure (PaO₂) in the moderate range of the oxygen-hemoglobin dissociation curve. The FAA and “sleep specialists” often use a different standard: “SpO₂ measurement is the leading metric to detect hypoxia, and NAVAIR provides ranges of no concern (94% or greater), low concern (87%–94%), and high concern (below 87%). The low concern range indicates a danger of becoming hypoxic, and the high concern range indicates an individual who has already become hypoxic, even if they do not exhibit outward symptoms yet.” So ... my evaluations during sleep and recommendations for supplemental oxygen assistance at night do not fall into the definition of “high concern” for flight duties.

Individual results with flying certainly vary. At high altitudes (e.g., 8,000 feet+ MSL), in general SpO₂ drops, leading to lower blood oxygen levels and *potential* hypoxia symptoms. Typical *resting* SpO₂ ranges at various altitudes for a healthy person in an unpressurized cabin (at MSL altitudes) are roughly ...

6,000 feet (≈1,830 m): **92–95%**
8,000 feet (≈2,440 m): **90–93%**
10,000 feet (≈3,050 m): **88–91%**
12,000 feet (≈3,660 m): **83–88%**

A drop below SpO₂ 90 per cent (PaO₂ ~60 mm Hg) *can* impair cognitive function, vision, and reaction time. So the important question to ask is ... what is the significance of lowered oxygen saturations during sleep, even when daytime measurements might be in the 90s? Hypoxia worsens sleep quality and alertness and impairs the repair and restoration functions vital for every organ, your brain, your heart, your kidneys, your liver, your muscles, every organ. Hypoxia reduces REM sleep duration, making sleep feel less restorative.

To randomly check your oxygen saturation levels, this is a simple and adequate meter – you might be surprised to see lower levels as you climb to higher altitudes. Through-the-night *recording* oximeters are completely different medical instruments – and your saturations could be significantly lower as you sleep.

mibest OLED Finger Pulse Oximeter, O2 Meter, Dual Color White/Black

AMAZON LINK: <https://amzn.to/3Qeetb6>

If you are someone who wants to “see” what your personal oxygen levels are through the night, this is an “adequate” monitor and recorder application. This does NOT satisfy the requirements for diagnosing a medical problem during your sleep. If your pulse is **below 50** during your recording, you should arrange to have a cardiologist order a Holter continuous recording heart monitor, at least 24-hour or perhaps 72-hour. Bradycardia – low pulse rate – can be a medical problem requiring correction before you undertake flight duties.

Continuous Wrist Pulse Oximeter, Blood Oxygen Saturation Monitor with Smart reminder, Bluetooth, 72 Hours Endurance Tracking SpO2 and Pulse Rate, Checkme O2 Max with PC Software and APP

AMAZON LINK: <https://amzn.to/3QggtzI>

When your oxygen levels drop, your brain senses distress and triggers sleep fragmentation called micro-awakenings (even if you don’t fully wake up). This pattern, as your oxygen saturation levels might get lower and lower as you grow older, prevents your brain from reaching deep sleep (slow-wave sleep) and REM sleep, leading to poor rest and fatigue and gradual impairment of other organ functions. REM sleep is crucial for memory, mood regulation, and cognitive function. Hypoxia also causes your heart to work harder to circulate blood. This can lead to nighttime restlessness, tossing and turning, and increased wakefulness, the result of which (in my opinion) is to increase your breathing to raise your oxygen levels.

Conventional physicians (even so-called “sleep specialists” and “pulmonologists”) usually consider the diagnosis to be “OSA” or “obstructive sleep apnea” and prescribe CPAP, where a bedside machine pushes only *room air* into your lungs through a tight-fitting mask covering your nose and mouth. Such pressures can injure sensitive lung cells through barotrauma and atelectotrauma. Rarely CPAP can “pop” your lung, creating a pneumothorax or collapsed lung.

The reasoning for using CPAP is to “push past” an “obstruction” to airflow, usually with their tongue or in the back of your throat. The plan is for CPAP to reduce the number of airway blockage episodes that reduce your oxygenation. Patients who are obese or who have chronic lung diseases (as from asthma, smoking, or other inhalation exposures) can suffer more frequently with hypoxic episodes.

My experience has been that fewer patients have “obstructive” sleep apnea and far more have “**central**” apnea, where the “drive” (brain signal) to breathe is altered and resulting oxygen saturations are decreased. In reviewing patients, my conclusion has been that reduction of the “central drive” occurs primarily in two situations: history of head injuries or documented toxicity from chemical or heavy metal body burden. Treatment in this situation has been simple as well: prescription of oxygen through a nasal cannula (as you see when visiting friends in the hospital) while sleeping better through the night. Rather than using cumbersome oxygen tanks, small briefcase size oxygen concentrators work just fine. My studies showed that patients feel dramatically better when oxygen delivery is at 3 (*or more*) liters/minute. In 1999, I discovered a

report from French physicians who concluded that 2.5 liters is the minimum setting – almost a “startling discovery,” since physicians have been trained for decades that 2 liters is all that is needed. And that insufficient training standard continues to this day.

I have a sadly personal illustration of the importance of oxygen levels in recovery with pulmonary diseases. In 1996, I had my 79-year-old father do a “sleep study” with a finger probe that demonstrated he needed supplemental oxygen while sleeping. So I had an oxygen concentrator sent to his home – but he had departed for a 2-week trip to Florida, for a cruise and then to join my family for a few days at Disney World. When we met in Orlando, he was “tuckered,” having great difficulty keeping up with walking. The next day, he was frankly worse – indeed, I diagnosed pneumonia and took him to a local hospital for treatment. In talking with his admitting doctor, I explained the need for additional oxygen and asked for 3 to 4 liters (not 2!) to be administered. He promptly recovered with antibiotics and oxygen – then suddenly worsened when his hospital doctor lowered the nasal cannula oxygen delivery to 2 liters “because he was doing so well.” Regular doctors appear to have a difficult time understanding how *non*-obstructive breathing difficulties can be so easily treated. He survived wonderfully well for another 17 years, sleeping with 3 liters/minute oxygen via nasal cannula and concentrator.

The use of prescribed supplemental nighttime oxygen in this situation is not for treatment of “obstructive” airway “sleep apnea,” so is not disqualifying for pilots to perform flight duties. Some people with “obstructive” apnea (OSA) will exhibit snoring in addition to fatigue, morning headaches, or gasping during sleep. Those folks deserve proper evaluation, diagnosis, and treatment. Incidentally, throat surgery for “obstruction” can be extensive and very poorly tolerated – CPAP has far fewer side effects for them.

Hacks Because ... Your Nose Knows

“Nasal dilators,” including external nasal strips and internal nasal clips, are designed to enhance airflow through the nasal passages by widening the nasal valve, the narrowest part of the nasal airway. By reducing nasal resistance, both external nasal strips and internal nasal dilators can effectively reduce snoring duration and intensity. The effectiveness of nasal dilators can vary among individuals. While some may experience significant benefits, others might notice minimal improvement.

Most users tolerate nasal dilators well, but some may experience minor side effects such as skin irritation from external strips or discomfort from internal devices. Nasal dilators can be a simple and non-invasive option to improve nasal airflow, reduce snoring, and potentially enhance sleep quality for individuals without serious underlying sleep disorders.

Breathe Right Nasal Strips, Extra Clear for Sensitive Skin, 72 Clear Strips

AMAZON LINK: <https://amzn.to/4aW4ikW>

SleepRight Intra-Nasal Breathe Aids Breathing Aids for Sleep Nasal Dilator - 2 Pack (4 Pieces)

AMAZON LINK: <https://amzn.to/4hBQGxO>

Hacks To Rescue You When “*No One Knows*”

Some people do quite well using a “mouth guard” that is fashioned to gently move their lower jaw slightly forward during sleep. Promoted as an “anti-snoring” mouthpiece, this approach might be a simple and effective improvement for restful sleep. Since the idea assumes that your throat airway is narrowed, success might suggest that you could benefit from seeing a dentist skilled in making more permanent adjustments to your jaw alignment to improve tongue location. [I served as the first physician president of the International Academy of Biological Dentistry and Medicine, so I have more than a brief understand of airway dynamics.]. I strongly *discourage* the radical throat-altering surgery promoted by some throat specialists.

Anti-Snoring Mouth Guard, Effective Anti-Snoring Mouthpiece for Stop Snoring, Snore Solution Devices for Men and Women

AMAZON LINK: <https://amzn.to/3CD2sJl>

If this simple mouth guard seems to help, you might want to try one that is “personalized” for you in its fabrication:

Somnofit-S Anti-Snore Mouth Guard+ by SnoreLessNow | FDA-Cleared Anti Snoring Mouthpiece | Sleep Tight Mouth Guard | Adjustable Snoring Solution for Men and Women | Swiss-Made Snoring Mouthpiece

AMAZON LINK: <https://amzn.to/4aWIm9q>

These mouthguards are promoted for those who are grinding or clenching during the night, a situation that I have found often related to your jaw position being slightly askew. If you have been told you suffer with “TMJ” (temporomandibular joint dysfunction), this approach might easily provide dramatic improvement. One easy test hack is to place your fingers, one on each side, at your “inside” jaw angle. Pressing slightly “in,” you can feel your teeth ... now push more “up and back,” higher toward your cheekbone on each side. If your (lateral pterygoid) muscles are quite tender, you very likely have “TMJ” and probably you are a “teeth-grinder” *and* possibly you have reduced airflow that could benefit from nightly use of a properly-fitted mouth guard. In my clinical experience, many of these “TMJ” patients have suffered with neck injuries (as accident whiplash or fall), with gradual development of jaw-joint pains. I strongly discourage surgical attack on your TMJ joints, since I have easily helped so many patients with my prolotherapy treatments (see my Neck Pain presentation).

An extremely common early warning sign of sleep apnea or sleep-related disordered breathing is snoring. While snoring is common, it is not normal. The person doing the snoring is typically unaware of the occurrence, it can keep your partner awake and can also represent a more serious health risk to you.

Another thought is that your tongue (for many different reasons) slips farther back in your throat and partially blocks your airway flow. You can do a quick at-home “test” to see if that might help your breathing and sleep comfort. Whatever your experience with such a mouthpiece, share your observations with a specially trained dentist (contact information below).

Adjustable Snore Relief Mouthpiece: Tailored Comfort for Better Sleep

AMAZON LINK: <https://amzn.to/4k3L3KC>

Some Other Common Symptoms of Sleep-Related Disordered Breathing Are:

- Bruxism (clenching and grinding)
- Mouth Breathing
- Unusual Wear on the Biting Surfaces of Teeth

- Unexplained Broken Crowns or Fractured Teeth
- Headaches
- Stress
- Brain Fog
- Forward Head Posture
- Chronic Fatigue
- Face, Neck, Shoulder, or Joint Pain
- Waking Up at Night Gasping for Air
- Dry Mouth Upon Waking Up
- Difficulty Concentrating

When left untreated, disordered breathing can cause or aggravate a long list of potential symptoms and more serious challenges to your wellbeing.

Common Health Issues Associated with Advanced Disordered Breathing Are:

- Anxiety
- Attention-deficit/hyperactivity disorder (ADD or ADHD)
- Memory Problems
- Depression
- Gum Disease
- Upper Respiratory Infections
- Chronic Sinus Infections
- Obesity
- Diabetes
- Hypertension
- Hyperthyroidism
- Chronic Pain
- Cardiovascular Disease

Disordered breathing often worsens over time and can become life-threatening when left untreated. The great tragedy is that this condition can be easily diagnosed and easily treated appropriately – but it is so often *missed*. I don't want you to lose your chance to “sink your teeth into” your lifetime career of flying!

Airway-focused dentists address the root cause of disordered breathing and provide solutions to treat the disorder at the source. Traditionally, Continuous Positive Airway Pressure (CPAP) machines have been the primary method of treating sleep apnea and other sleep-related disordered breathing. While using a machine to force air into your lungs during sleep works to provide your body with adequate oxygen and prevent airway collapse, CPAP is merely a band-aid, offering no real solution for the underlying cause. Personalized care addressing the underlying structural issues can provide a permanent solution for most patients. Be sure to review significant medical interventions with your AME before resuming flight duties.

I invite you to learn more about treatments that are available to you from professional members of the **American Academy of Dental Sleep Medicine**: [\[https://aadsm.org/\]](https://aadsm.org/)

Any Hacks for *Serious* Diseases?

Chronic respiratory diseases like asthma or chronic obstructive pulmonary disease (emphysema, COPD) can cause breathing difficulties, coughing, or wheezing during the night, leading to sleep disruptions. These symptoms can make it hard to maintain continuous restful sleep. Smokers, of course, are at far greater risk of such problems. Other articles on this website will introduce you to hacks that might substantially improve your condition. If you have issues that are likely to impair your performance of flight duties, be sure to arrange for definite medical diagnosis and treatment. And, of course, review all details with your AME.

Creating a bedroom environment and bedtime routine that encourages relaxation, maintaining a consistent sleep schedule, managing stress, daily mild exercise, and following healthy daytime habits are the cornerstones of falling asleep more easily. If making these adjustments does not improve your sleep, consider seeking guidance from a healthcare professional or sleep specialist for personalized evaluation and recommendations.

By integrating these strategies into your routine, you can enhance sleep quality, reduce fatigue, and maintain the high level of alertness required for safe flying. Remember, prioritizing rest is not only vital for your health but also for the safety of your crew and passengers.

Down the Hack Path: Walking Your Way to Better Rest

More perspectives from Louise Carter: “Taking a late-evening walk for 30-60 minutes increases your chances of falling asleep for longer.

“Walking 1-3 hours before bedtime is connected to improved physical and mental health. It assists with digestion, which is essential for people with sedentary jobs and lifestyles.

“Walking also provides an opportunity to relieve stress and anxiety, enhance your mood, share time with a partner, and stop thinking about things that bother you at work.

“According to the National Sleep Foundation, a single session of moderate-intensity aerobic activity, like walking, enabled volunteers with insomnia to fall asleep sooner than vigorous aerobic exercises.

“In today’s hectic world, resting on the couch after dinner to watch TV and have a glass of wine seems harmless. However, if getting quality sleep is your goal, this post-dinner ritual is detrimental.

“Fortunately, going for a walk may be a solution. When you spend 30-60 minutes walking post-dinner, you’re not watching TV and using your cell phone.

“While this may not sound like much, it impacts your circadian rhythm. The problem with social media, watching TV, and playing video games before bedtime is the temptation to stay awake.

“The action, suspense, and bad news can make you anxious, causing you to toss and turn for hours. Also, the bright light from a screen can keep you alert.

“Usually, as the evening progresses and it gets darker and cooler, the body naturally produces the hormone melatonin, which leads to the gradual onset of sleep.

“Going for a walk after a meal regulates blood sugar levels. The body experiences a blood sugar spike after a heavy meal, leading to elevated insulin release and fat storage.

“However, going for a walk at night in a well-lit, safe area gets everything moving in your stomach and reduces the effects of insulin, assisting with weight management.

“Watching TV at night triggers late-night cravings because the body releases more ghrelin (hunger-inducing hormone) and less leptin (hunger-suppressing hormones) at unusual hours.

“Giving in to your cravings and consuming high-sugar or processed food triggers the brain’s reward center, causing you to overeat junk food.

“Walking stimulates the brain’s reward center to be a healthy substitute for nighttime cravings.

“Therefore, walking has the opposite effect on the body’s biochemistry, inhibiting your cravings and allowing you to sleep without a rumbling stomach.”

[<https://www.sleepbubble.com/should-you-go-for-a-walk-before-bed/>] September 1, 2023

Unbelievable Hacks for Thyroid Issues?

Undiagnosed hypothyroidism (underactive thyroid) can significantly disrupt your sleep due to its effects on metabolism, hormones, and body temperature regulation. While it doesn’t always directly cause insomnia, up to 30 to 50 per cent of people with thyroid dysfunction report sleep disturbances.

Low thyroid function is often missed by regular doctors because they measure blood tests different than those I have used for 40 years now. You can feel tired all day but that fatigue doesn’t mean that you will enjoy restful sleep. Without refreshing sleep, you can suffer with brain fog and sluggishness the next day – certainly risky for any pilot duties.

Low thyroid causes dysregulated melatonin and cortisol levels, making it harder for you to fall asleep and stay asleep. Frequent awakenings can fragment sleep, further destroying needed rest and refreshment. Cold hands and feet can make sleep uncomfortable, along with nerve irritation and muscle discomfort, sometimes progressing to restless leg syndrome. Untreated hypothyroidism can cause weight gain, which predisposes to obstructive sleep apnea with narrowing of your throat.

An overnight “sleep study” with a finger probe oximeter can easily show whether oxygen saturation levels are decreased. Of all the problems that can affect physical or mental health, none is more common than thyroid gland disturbance. None is more readily and inexpensively corrected. And none is more often untreated, and even unsuspected. If you are concerned, ask your doctor to order these tests, looking for less than optimal blood levels of T3-free: TSH, T4-free, T3-free, thyroid antibodies; if you are taking a thyroid medication, ask to add T3-reverse as well. Diagnosing and properly treating Wilson’s Temperature Syndrome might be stunningly successful for you ... I have helped pilots and patients for 3 dozen years to enjoy life again.

Hypothyroidism: The Unsuspected Illness (book) (1976) by Broda Barnes M. D
AMAZON LINK: <https://amzn.to/4gknIB9>

Wilson's Syndrome: The Miracle of Feeling Well (book) (1991) by E. Denis Wilson M. D. (buy used)
AMAZON LINK: <https://amzn.to/4hgSaNL>
www.wilsonssyndrome.com

An excellent review and guide by my dear friend David Brownstein, M. D.
Overcoming Thyroid Disorders Third Edition (book)
AMAZON LINK: <https://amzn.to/4jExhxS>

In my practice, for years we have used indirect measures as well, such as morning axillary (armpit) temperatures (before getting out of bed) and iodine “spot” painted on your skin at bedtime and recording how long it takes to fade.

To paint a silver-dollar size spot on your skin at night, a different location each time for about a week:
Organic Lugol's Iodine, Iodine and Potassium Iodide 2% Solution 3000 mcg - Liquid Supplement Drops for Thyroid Support for Women and Men, Metabolism Health, Detox Boost - Non-GMO
AMAZON LINK: <https://amzn.to/4jMp36K>

Place thermometer under arm (armpit) or 5 or 10 minutes before getting out of bed and record the temperature for about a week. Women should not do it during the time of their period. If you have difficulty “shaking it down,” slip the thermometer into a long sock and – standing away from any door or door frame, spin it over your head to “shake” it down:
°Cand°F Glass Thermometer for Underarm 2PCS - Basal Body Thermometer - Fever Thermometer - Accurate Easy Reading by HARIKA LIFE
AMAZON LINK: <https://amzn.to/4bcJxC1>

If you must use a digital thermometer under your arm instead, make note of that fact on your record form:
Boncare 9 Seconds Digital Basal Thermometer for Adults and Kids - Accurate Oral Thermometer with Fever Alarm, Rectal Thermometer for Baby with Large Display
AMAZON LINK: <https://amzn.to/3CVEhFR>

Overactive thyroid, called hyperthyroidism, can lead to sleep disturbances as well. This is a specific medical problem that increases metabolism, causing symptoms like nervousness, irritability, and insomnia, which can affect the ability to fall asleep. A variety of treatments are available – and often essential – in addressing these problems. Be sure you arrange for proper diagnosis and treatment, since this can be a more complicated problem. And, of course, discuss all details with your AME before resuming flight duties.

Hack to Avoid “Fried-Eyes”: Blue Light-Blocking Glasses

Blue light emitted from smartphones, tablets, computers, and LED screens can impact your eye health, sleep quality, and overall well-being. Prolonged exposure, especially at close range, may contribute to digital eye strain, causing symptoms like dry eyes, headaches, blurred vision, and difficulty focusing. Blue light can also disrupt circadian rhythms by suppressing melatonin production, making it harder to fall asleep and reducing sleep quality. While there is ongoing

debate, some research explores whether cumulative exposure to blue light could contribute to long-term retinal damage, which could threaten the later years of your flying career, though current evidence is inconclusive. To reduce risks, experts recommend limiting screen time before bed, using blue light filters or screen settings, and following the “20-20-20 Rule” — every 20 minutes, look at something 20 feet away for 20 seconds. Blue light blocking lenses are inexpensive and a worthwhile investment – and many patients note that they are more comfortable and for longer periods of time when using computers.

ANYLUV Blue Light Glasses Men/Women, Al-Mg Metal Computer Blue Light Blocking Glasses, Relieve Eyestrain and Eye Protection

AMAZON LINK: <https://amzn.to/4hYoBAR>

Blue Light Blocking Glasses For Men/Women Anti-Fatigue Computer Monitor Gaming Glasses Reduce Eye Strain Game Glasses

AMAZON LINK: <https://amzn.to/3ELSp5c>

livho High Tech Blue Light Glasses - Advanced 99% Blue Light Blocking Computer Glasses - Anti Eyestrain and UV Glare Protection

AMAZON LINK: <https://amzn.to/4h84Rtz>

If you prefer the convenience of “clip on” lenses, these might work easily for you in the light deck environment:

Clip-on Blue Blocking Eye Wear

AMAZON LINK: <https://amzn.to/43dGIP0>

You can order general “reading magnification” lenses if you use glasses for reading:

Henotin 3 Pack Blue Light Blocking Reading Glasses, Spring Hinge Computer Readers for Men Women, Anti UV Ray Filter Eyeglasses

AMAZON LINK: <https://amzn.to/3QsyRWd>

Inexpensive enough (and choose your refraction level) to leave at your desk, in your plane, in your flight bag, and so on:

SIGVAN 6 Pack Reading Glasses for Women Men Blue Light Blocking, Spring Hinge Anti Eyestrain/Glare Computer Readers (6 Black, 1.50)

AMAZON LINK: <https://amzn.to/41pkMha>

LifeArt Blue Light Blocking Glasses, Computer Reading Glasses, Anti Blue Rays, Reduce Eyestrain, Rimless Frame Tinted Lens with Diamond, Stylish for Men and Women (No Magnification)

AMAZON LINK: <https://amzn.to/4hM9eLE>

Hack to Look Forward to ... Better Mattress

Mattresses are a matter of individual choice – here are ones that are most popular for comfort and value.

This mattress combines cooling gel memory foam with a supportive innerspring system, offering medium-firm support ideal for various sleeping positions. It’s praised for its comfort and durability:

Signature Design by Ashley Queen Size Chime 12 Inch Medium Firm Hybrid Mattress with Cooling Gel Memory Foam for Pressure Relief

AMAZON LINK: <https://amzn.to/40ToT50>

Featuring a medium-firm feel, this mattress provides contouring memory foam that offers support and pressure relief. It includes a cooling top layer to help regulate temperature and minimize motion transfer, making it suitable for couples:

Nectar Classic 12" Queen Mattress (New Version) - Medium Firm - Contouring Memory Foam - Cooling Top Layer - Support and Pressure-Relief - Minimal Motion Transfer - 365-Night Trial and Forever Warranty

AMAZON LINK: <https://amzn.to/40QISkR>

This mattress offers a medium-plush feel with gel-infused memory foam for enhanced cooling. It's an affordable option that doesn't compromise on comfort, making it a popular choice among budget-conscious shoppers:

Vibe Gel Memory Foam Mattress, 12-Inch CertiPUR-US Certified Bed-in-a-Box, Queen, Fiberglass-Free

AMAZON LINK: <https://amzn.to/4aWQmaw>

Infused with green tea extract and castor natural seed oil, this mattress helps maintain freshness. It provides pressure-relieving comfort and is available in various thicknesses to suit different preferences:

ZINUS 12 Inch Green Tea Cooling Memory Foam Mattress [New Version], Queen, Fiberglass Free, Medium Firmness, Cooling Gel Foam, Certified Safe Foams and Fabric, Mattress in A Box

AMAZON LINK: <https://amzn.to/4gB1ICo>

Combining memory foam and innerspring coils, this mattress offers a balance of comfort and support. It's known for its motion isolation and cooling features, making it ideal for hot sleepers and those sharing a bed:

DreamCloud 14" Queen Mattress - Luxury Hybrid Gel Memory Foam - 365 Night Trial - 7 Premium Pressure-Relieving Layers - Forever Warranty - CertiPUR-US Certified

AMAZON LINK: <https://amzn.to/4jUFDRR>

When choosing a mattress, consider factors such as your preferred sleeping position, firmness level, and any specific needs like cooling features or motion isolation. Reading customer reviews and checking the return policy can also help ensure you select the best mattress for your comfort and support requirements.

Another Hack to Look Forward to: Comfy Sheets

Bed linen are a matter of individual choice as well – here are ones that are most popular for comfort and value. You'll appreciate your home sheets more when you travel elsewhere!

This 4-piece set from Mellanni's Iconic Collection offers hotel luxury with extra soft, cooling bed sheets that are wrinkle, fade, and stain-resistant. It's a favorite among customers seeking comfort and durability:

Mellanni Queen Sheet Set - 6-Piece Iconic Collection Bedding, (Including 4 Pillowcases), 16-Inch Deep Pocket, Easy Care, Extra Soft, Cooling Sheets, Brushed Microfiber – White

AMAZON LINK: <https://amzn.to/3CQbxhR>

Praised for their softness and cooling properties, these sheets provide a luxurious, hotel-like feel. The fabric is incredibly smooth, enhancing bedtime relaxation:

Extra Deep Queen Sheet Set - 6 Piece Breathable and Cooling Sheets - Hotel Luxury Bedding Set w/18-24 Inch Extra Deep Pockets - Easy Fit - Super Soft, Wrinkle Free and Comfy - Antique White, Queen Size

AMAZON LINK: <https://amzn.to/4gCCVOh>

Ideal for colder seasons, this 100% Turkish cotton flannel set balances warmth and breathability. It's a budget-friendly choice that has garnered over 9,300 perfect ratings for its comfort and quality:

Great Bay Home Flannel Sheet Set Queen Size - 100% Turkish Cotton, Double-Brushed, Winter Bed Sheets - Ultra-Soft, Cozy, 4-Piece Rustic Bedding Set

AMAZON LINK: <https://amzn.to/4hA0cl2>

Made from bamboo silk, this set is praised for its cooling and moisture-wicking properties, making it ideal for hot sleepers. It's durable, resistant to fading and staining, and offers a comfortable, non-slippery texture:

Linenwalas Premium 100% Viscose Derived from Bamboo Queen Sheet Set - Ultra Soft, Breathable and Cooling, Ideal for Hot Sleepers, 16" Deep Pocket, Hotel Luxury Bedding

AMAZON LINK: <https://amzn.to/3CV4jck>

This 7-piece bed-in-a-bag set includes a comforter, sheets, pillowcases, and shams. It's known for its softness and all-season usability, providing a complete bedding solution:

Bedsure Queen Comforter Set Sage Green - Bed in a Bag Queen Size 7 Pieces, GentleSoft™ Pintuck Bed Set Gift for Family, Pinch Pleat Sage Green Comforter with Sheets, Pillowcases and Shams

AMAZON LINK: <https://amzn.to/4gFgmIP>

When selecting sheets, consider factors such as material, thread count, and specific features like cooling or warming properties to suit your personal preferences and sleeping environment.

A Delightful Hack for Any Season: Comforter

Again, comfort and design are very personal matters. Enjoy reviewing these choices.

This pintuck comforter is praised for its softness and elegant design:

Bedsure Cooling Comforter Queen Size- GentleSoft™ Double Sided Cooling Blanket for Hot Sleepers, Q-Max>0.4, Breathable and Lightweight Duvet Insert, Gifts for Women, Men, Grey, 88x88 Inches

AMAZON LINK: <https://amzn.to/4hVV76j>

An all-season down comforter featuring box stitching to prevent fill shifting. Customers appreciate its lightweight warmth and durability:

WhatsBedding White Queen Size Feather DownFiber Comforter, Filled with Feather and DownFiber, All Season Duvet Insert, Luxury Hotel Bedding Style Comforter,Ultra Soft 100% Cotton

AMAZON LINK: <https://amzn.to/4hwZqVZ>

This lightweight, reversible comforter offers versatility with its dual-color design. Users commend its softness and suitability for year-round use:

Homelike Moment Comforters Queen Size - Grey Duvet Insert Down Alternative Bed Queen Comforter, Lightweight Bedding Comforters Full Size Quilted Soft All Season Reversible Dark Gray/Light Grey

AMAZON LINK: <https://amzn.to/41bjF6l>

A 7-piece set featuring a seersucker comforter, sheets, pillowcases, and shams. Known for its textured design and comfort, it's a stylish addition to any bedroom:

CozyLux Queen Bed in a Bag 7-Piece Comforter Set with All Season Bedding - White, Comforter, Pillow Shams, Flat Sheet, Fitted Sheet, Pillowcases

AMAZON LINK:

This 3-piece set includes a boho-style tufted comforter and pillow shams. Customers love its chic design and cozy feel:

Bedsure Tufted Boho Comforter Set Queen Size - Beige Boho Bed Set, GentleSoft™ 3 Pieces Farmhouse Shabby Chic Embroidery Bedding, Gifts for Woman, Soft Jacquard Queen Comforter for All Seasons

AMAZON LINK: <https://amzn.to/42NQAPj>

When selecting a comforter, consider factors such as material, weight, and design to ensure it meets your comfort and aesthetic preferences. Reading customer reviews and checking product specifications can further assist in making an informed decision.

Absolutely Essential Hack: *Your* Pillow

Well ... it almost doesn't get more personal than this! As someone who has had 2 neck operations, I have tried virtually every different pillow design. Take advantage of my personal experience and professional training and expertise.

What has *always* worked best for me is a **king size down pillow by DownLite**. Unlike all other pillows, a “soft” one like this can be molded to the shape and position you want – and easily changed through the night as you roll into different positions. Using it is simple: regardless of your sleeping choice (side or back): lie down with the pillow under your neck and head and repeatedly “stuff it” to adjust and find just the right support for “right then.” As you change positions during the night, you can easily readjust the pillow support each time. I have been so thrilled with finding how easy this down pillow can be “stuffed” to adapt to my needs that it is always the last item that I cram into my suitcase for any travel.

DOWNLITE 3-in-1 Adjustable White Goose Down Pillow - King Size, 20” x 36” - Hypoallergenic Cotton Fabric, Firm, Medium or Soft Density Options to Suit All Sleepers - Machine Washable/Dryable

AMAZON LINK: <https://amzn.to/4hp0nPR>

If you are allergic to down or feathers, here is a good alternative:

DOWNLITE 3-in-1 Adjustable Down Alternative Pillow by Stearns and Foster™ (Hypoallergenic) - King

AMAZON LINK: <https://amzn.to/3E7Qis8>

If you feel you want to review other choices, consider these:

These down alternative pillows are designed to provide comfort for back, stomach, and side sleepers. They feature a cooling gel fiber fill that maintains its shape and offers plush support throughout the night. With over 248,000 reviews, they are among Amazon’s best-selling bed pillows:

Beckham Hotel Collection Queen/Standard Size Memory Foam (Adjustable Fill) Bed Pillows Set of 2 - Cooling Shredded Foam Pillow for Back, Stomach or Side Sleepers

AMAZON LINK: <https://amzn.to/4hVMtVJ>

This set of queen-size pillows offers a soft, breathable microfiber cover and plush filling, providing a comfortable sleeping experience. They are suitable for various sleeping positions and have garnered over 39,000 reviews, highlighting their popularity among users:

Utopia Bedding Bed Pillows for Sleeping Queen Size, 1000 Grams Filled Hotel Quality Cooling Pillows for Side, Back or Stomach Sleepers (White, Set of 6)

AMAZON LINK: <https://amzn.to/4aXvaRV>

Featuring an adjustable fill made from a blend of memory foam and microfiber, this pillow allows users to customize the loft and firmness to their liking. It’s designed to provide proper support and alignment for all sleeping positions. This pillow has been praised for its versatility and comfort:

Coop Home Goods Eden Bed Pillow Queen Size for Sleeping on Back, Stomach and Side Sleeper- Medium Soft Memory Foam Cooling Gel - CertiPUR-US/ GREENGUARD

AMAZON LINK: <https://amzn.to/41cm3JQ>

These hotel-quality pillows are filled with down alternative microfiber, offering a balance of

softness and support. They are designed to be breathable and hypoallergenic, making them suitable for allergy sufferers. With over 54,000 reviews, they are a popular choice among Amazon shoppers:

viewstar Pillows Queen Size Set of 2, Hotel Quality, Cooling Down Alternative Gusseted Bed Pillows for Side, Back, or Stomach Sleepers, Soft and Supportive for Sleeping, Machine Washable (White)

AMAZON LINK: <https://amzn.to/4gB6n7m>

This set of two pillows features a soft cotton cover and supportive polyester filling, providing a comfortable sleeping experience. They are designed to maintain their shape and offer support for various sleeping positions and are well-regarded by users:

Beckham Hotel Collection Bed Pillows Standard / Queen Size Set of 2 - Down Alternative Bedding Gel Cooling Pillow for Back, Stomach or Side Sleepers

AMAZON LINK: <https://amzn.to/3QzCQQZ>

When choosing a pillow, consider factors such as your preferred sleeping position, desired firmness, and any specific needs like hypoallergenic materials or cooling properties. Reading customer reviews and product descriptions can help you make an informed decision to enhance

Nutritional Hacks – Supplements for Better Sleep

Take Note: Just as combining various physical approaches can help reduce your anxiety and help improve your stress management, also combining various nutritional supplements can amplify the biochemical processes can make for a more comfortable future.

The few “CRITICAL TIP” items taken together form a sound basis for your well-being.

A dietary supplement is a product taken by mouth that contains a “dietary ingredient” intended to supplement the diet. These may include vitamins, minerals, herbs or other botanicals, amino acids, and substances such as enzymes, organ tissues, glandular extracts, and metabolites. They can also be extracts or concentrates, and may be found in many forms such as tablets, capsules, softgels, gelcaps, liquids, or powders. Supplements commonly used include vitamins, minerals, protein, and various other performance-enhancing compounds. If a pilot experiences side effects such as excessive drowsiness, cognitive slowing, or dizziness from an amino acid, you must stop use and consult your AME.

Flight Surgeons (FS), Aviation Medical Examiners (AME), and other Aviation Medical Officers (AMO) should inform, educate and regulate the use of nutritional supplements as a method of exercising Operational Risk Management. Medical officers shall not recommend the consumption of dietary supplements for medical conditions, performance enhancement or health maintenance. Keep in mind that natural products are not always necessarily safe and dosages must be limited by relevant directions on product labels. **14 CFR § 91.17** – Prohibits the use of any substance that impairs faculties while operating an aircraft.

Airmen should not fly while using any medication, prescription or OTC, or any dietary supplement that carries a label precaution or warning that it may cause drowsiness or advises the user “be careful when driving a motor vehicle or operating machinery.” At least one-year of post-marketing experience to assess possible effects of a new drug is required before considering for certification for flight duties. Airmen newly starting a medication or any

kind or a dietary supplement should refrain from any flight operations for at least the first 24 hours. Effects of ingested products vary from person to person and any item can interact adversely to others being properly used. Discuss any questions or concerns with your AME.

***Too Tired!* Adrenal Exhaustion Can Interrupt Your Sleep**

The adrenal glands produce hormones such as cortisol. Cortisol follows a natural daily rhythm, peaking in the morning to promote wakefulness and gradually declining throughout the day to facilitate sleep onset at night. Disruptions in adrenal function can lead to imbalances in cortisol levels, which may significantly impact sleep quality and contribute to insomnia.

Chronic stress can lead to sustained activation of your brain-adrenal response system, resulting in consistently elevated cortisol levels. This heightened cortisol secretion can interfere with the ability to fall asleep and maintain sleep, as the body remains in a state of heightened alertness. Research indicates that individuals with insomnia often exhibit increased secretion of adrenocorticotrophic hormone (ACTH) and cortisol, while maintaining a normal circadian pattern.

The concept of “adrenal fatigue” suggests that prolonged stress may lead to overworked adrenal glands, resulting in hormonal imbalances that can cause symptoms such as body aches, fatigue, However, conventional doctors overlook the of “adrenal fatigue” due to what they consider a lack of scientific evidence supporting this diagnosis. Regardless of whether you *believe* there is enough evidence supporting the concept of gravity, letting go of an object will generally mean you will need to pick it up off the floor. Engage in relaxation techniques such as mindfulness meditation, deep breathing exercises, or gentle yoga to help reduce stress and normalize cortisol production.

CRITICAL TIP:

Adrenal Stress Gland Support – When you endure prolonged stress or repeated episodes, your adrenal glands (cortisol, epinephrine) can be taxed to the max. Basic nutritional support can help support their function and even their recovery to full capability, so you are better able to handle stressful situations. This has been one of my “secret hacks” for many years! Daily dosage: 1 (or 2) at breakfast, 1 (or 2) at lunch, maybe 1 more at supper. Use the least amount that provides you comfortable success.

Adreno Distress Guard - 60 Softgels by Perque

AMAZON LINK: <https://amzn.to/3EelDJV>

Another of my “secret hacks” for people who need more adrenal support. Daily dosage 1 twice a day for long term assistance:

Standard Process Drenamin - Whole Food Antioxidant, Adrenal Support and Immune Support with Shitake, Alfalfa, Rice Bran, Riboflavin, Calcium Lactate, Choline - 90 Tablets

AMAZON LINK: <https://amzn.to/4hzP9YQ>

CRITICAL TIP:

Salt Deficiency and Impaired Adrenal Function

Iodized salt was introduced on a large scale in the early 1920s as a public health measure to prevent iodine deficiency disorders like goiter. This proved to be one of the simplest and most effective public health strategies to prevent iodine deficiency, especially prevalent in areas removed from ocean beaches: the Great Lakes, Appalachian, and Pacific Northwest regions (areas once known as the “goiter belt”).

But then ... widespread medical advice in the United States to limit salt intake really took hold in the **1970s**, bolstered by increasing evidence linking excessive sodium consumption to hypertension. Over the ensuing decades, concern over sodium intake became commonplace in standard medical recommendations for preventing and managing high blood pressure and other related health issues. Sadly, much of that research might be seriously flawed. As a result, 3 generations of babies were exposed to restricted salt content during their development and into childhood and adulthood.

But wait! While people “limit” the salt they add to their meals, they continue to consume daily salt: pickles, pretzels, popcorn, peanuts, and so on. The salt used in those and other snacks do not provide iodine, leading to the situation where a surprising number of people suffer with thyroid insufficiency – which their doctors finally identify and treat with medications ... but quite differently than those I use as an integrative medicine physician.

Because you might be avoiding salt in general, here’s what I have asked my patients to do for years, the “salt lick trick.” Each morning as you sit for breakfast, “cup your palm” and sprinkle some salt into it. Lick it – if plain salt tastes overwhelmingly good or you feel an intense craving, it might signal you are deficient at that time. Continue to sprinkle and lick salt until it tastes “salty.” I maintain that might be the level that your body is “short” that day, so plan to add extra beyond your usual. When you find your first “lick” is “salty,” that suggests that you are adding an appropriate level to your foods each day.

This “salt lick trick” is *unscientific* and is criticized by many conventional physicians. While it’s an interesting concept, the “salt lick trick” remains more of a novelty or conversation starter than a recognized clinical approach. You should be **watching your blood pressure levels** as you choose to increase your salt intake, since we might have to “do a dance” with more salt and your blood pressure management. I should add that almost all of my patients – and pilots – who have added more salt as a result do report overall feeling “better,” feeling more energy, rarely with issues with blood pressure. Isn’t that the goal of all medical and health interventions?

My recommendation for “table salt” or “cooking salt” is Himalayan pink. It might offer trace minerals and a distinctive taste, but it **cannot** replace iodized salt if you need to ensure adequate iodine intake, so you need to find reliable iodine sources in your diet. You might include shrimp, wild caught cod and other white fish, tuna, eggs, even dairy such as yogurt. Still, iodine supplementation is wise, so ask your doctor about my favorite supplement prescribed for patients (and myself), so you avoid mistakenly creating thyroid problems:

Optimox Iodoral 12.5 mg – Iodine Supplements for Thyroid Support, Potassium Iodide Tablets, Lugol Solution, Daily Vitamins and Minerals, High Potency Iodine Tablets – 180 Tablets

AMAZON LINK: <https://amzn.to/40C4cKB>

Wild Foods Organic Pink Himalayan Salt, Fine Ground for Table and Cooking, 16 oz | 100% Real, Pure, Unrefined | Pink Himalayan Sea Salt with 80+ Minerals and Electrolytes, Small Batch, Ethically Sourced

AMAZON LINK: <https://amzn.to/4hC7ips>

Another excellent choice in many ways – BUT it does not contain “enough iodine” so you should consider adding Iodoral, above. A pinch in your water or on your food is tasty beyond your expectation:

Salt Tribe | Baja Gold Mineral Sea Salt | 90+ Trace Minerals | Fine Ground | Hydration Support | Sal Organica | Low Sodium | Organic and Unrefined | 15 oz | Single Origin Mexico

AMAZON LINK: <https://amzn.to/3QD26Wh>

Often Missed Hack: Thyroid and Adrenal Glands Interactions – Your thyroid and adrenal glands are part of an interconnected web of hormonal control. When one is out of balance (as with hypothyroidism), the other can be overtaxed trying to compensate. This situation is far more common than you would expect – and generally missed by conventional physicians. The blood tests that they choose and rely on often reflect a rudimentary understanding of your energy-production system. You can begin a journey to repair (or at least support) low gland functions by doing some simple home tests and learning about what they might mean ... so you can find a skilled integrative medicine physician to work with you from there.

Of all the problems that can affect physical or mental health, none is more common than thyroid gland disturbance. None is more readily and inexpensively corrected. And none is more often untreated, and even unsuspected. If you are concerned, ask your doctor to order these tests, looking for lower or low normal blood levels of T3-free: TSH, T4-free, T3-free, thyroid antibodies; if you are taking a thyroid medication, ask to add T3-reverse as well.

The Hack That Refreshes: Eat, *Drink*, and Sleep Well

Adequate hydration plays a significant role in promoting restful sleep by supporting various physiological processes essential for maintaining sleep quality. Maintaining optimal hydration is crucial for regulating body temperature during sleep. Proper hydration allows the body to efficiently manage heat distribution, promoting comfort and uninterrupted rest.

Dehydration can lead to symptoms such as dry mouth, nasal passages, and muscle cramps, which may cause discomfort and disrupt sleep. Ensuring adequate fluid intake helps prevent these issues, contributing to a more restful night's sleep. Studies suggest that dehydration may affect melatonin levels, potentially leading to difficulties in falling asleep or maintaining sleep.

While staying hydrated is important, consuming large amounts of fluids close to bedtime can increase the likelihood of nocturia — frequent urination during the night — which can disrupt sleep. As we age, men can experience prostate changes that lead to sleep interruptions. Often nutritional supplements can reduce the effects of prostate enlargement – but be sure to see your physician for evaluation. Women, particularly after childbirth and as they are growing older, can experience more frequent urination (or even “stress incontinence,” leakage with coughing, laughing, jumping), sometimes interrupting sleep. To balance hydration and minimize nighttime awakenings, it's advisable to distribute water intake evenly throughout the day and reduce

consumption in the evening hours. The absolute wrong choice is to reduce fluid intake overall – you need hydration!

Aim to drink water regularly during the day to maintain hydration levels, reducing the need to consume large quantities in the evening. Reduce intake of caffeine and alcohol, especially in the evening, as they can increase urine production and disrupt sleep.

CRITICAL TIP:

Hydration – is a concept tossed around in “health and wellness” circles, often without any clear definition. Your body is about 55 - 60 percent water; even mild dehydration can drain your energy and have you feeling tired, experiencing headaches, reduced motivation, and even impaired mood. Sadly, our early “training” has detached us from recognizing and responding to our natural signal of “thirst”: we quickly learn in grade school to be “camels” – when you drink less, you don’t have to raise your hand to request to be excused to go to the bathroom. But sufficient water intake helps to cushion and lubricate your joints, as well as fostering desired normal chemical reactions inside every cell of your body.

How much water do you need? “One size fits ... *none*.” The answer depends on several factors for every individual, and remember your results may vary and can change over time or in different conditions! In general: the U.S. National Academies of Sciences, Engineering, and Medicine has determined that the *average*, healthy adult living in a temperate climate needs an adequate daily fluid (beverage) intake of about 15.5 cups (100 ounces, 3.7 liters) for men and about 11.5 cups (75 ounces, 2.7 liters) for women. About 20 percent of your daily fluid intake can come from food, the rest from liquids. Calculated as an 8-ounce glass: 12 – 13 glasses for men and about 9 glasses for women. Some physicians have concluded that these volumes are too much and recommend even less. What has you feeling best is where you should direct your goals. **CAUTION:** for you, this could be too much or too little ... and your needs can vary over time *and* in different circumstances.

Exercise can increase your need, as well as any hot or humid environment, including sitting for hours on the flight deck. You must replace losses from sweating, fever, vomiting, or diarrhea. If your urine is light yellow or colorless, you are more likely to be getting sufficient intake. One of my friends studied how many of our “disease” conditions – arthritis, high blood pressure, many others – can be improved significantly by appropriate intake of water: “Dr. F. Batmanghelidj’ classic water book! This book, based on a pioneering physician’s twenty years of clinical and scientific research into the role of water in the body, explains a breakthrough discovery that Unintentional Chronic Dehydration (UCD) produces stress, chronic pains and many painful degenerative diseases.”

Your Body’s Many Cries for Water (book) (2008)

AMAZON LINK: <https://amzn.to/3Ej59Qo>

If you need “flavor” to encourage you to drink enough water (and avoid the crafty temptations of soda pop and other commonly available beverages), you could consider easily carrying around ...

Stur Liquid Water Enhancer | The Ultimate 10-Pack Variety Pack | Naturally Sweetened

AMAZON LINK: <https://amzn.to/4jvNRQv>

Cirkul 32oz. Chameleon Stainless Steel *Water Bottle Starter Kit* with Green Lid, 2 Flavor Cartridges

AMAZON LINK: <https://amzn.to/4hppged>

This type of pack is required for the Cirkul water bottle:

Cirkul FitSip Flavor Cartridge Variety Pack with Electrolytes, 6-Pack

AMAZON LINK: <https://amzn.to/4hhGY3q>

Many people find that they feel better when adding minerals to their water. This choice makes great sense when food choices or your appetite are limited:

Stur Electrolyte Water Enhancer | Sweetened with Stevia

AMAZON LINK: <https://amzn.to/42ovwOU>

Ultima Replenisher Daily Electrolyte Powder Drink Mix – Original Variety, 20 Stickpacks – Hydration Packets with 6 Electrolytes and Minerals

AMAZON LINK: <https://amzn.to/40uMoRs>

Liquid I.V.® Hydration Multiplier Sugar-Free - Raspberry Melon | Electrolyte Powder Drink Mix

AMAZON LINK: <https://amzn.to/4gZtd9A>

CRITICAL TIP:

Magnesium – An essential mineral involved in hundreds of biochemical reactions, important for muscle spasm relaxation, reduced anxiety and stress, better sleep and energy, and promotion of healing, especially connective tissues. One of the more surprising — and often overlooked — factors that can heighten stress in pilots is marginal or deficient magnesium status. While magnesium doesn't always get headline treatment in aviation health discussions, an increasing body of research suggests this mineral is critical in moderating stress responses and supporting optimal nervous system function. It helps regulate cortisol, the “stress hormone,” by influencing adrenal function. When magnesium levels are low, the body can overproduce cortisol, leading to heightened feelings of tension and anxiety. Any of the deficiency effects can i

Under high stress or flight conditions, pilots can experience muscle tension, increased blood pressure, and palpitations — symptoms that may be worsened if magnesium is marginal or frankly depleted. Chronic stress (such as long flight schedules or specific duty assignments) can reduce magnesium retention. Many pilots rely on coffee or energy drinks for alertness, but caffeine increases magnesium excretion – as do any diuretics taken for various medical conditions. Inconsistent meals or reliance on convenience food often leads to lower magnesium intake. Low fluid intake (especially during long flights) impairs many functions, including mineral balance. Marginal or deficient magnesium levels represent a surprisingly common, but under-recognized, factor, not generally addressed at AME or other physician evaluations.

Mild-to-moderate magnesium deficiency can show only as generalized fatigue, muscle twitches, or slight irritability — symptoms that can easily be attributed to “just stress” or an intense schedule. Serum magnesium is rarely included in standard blood panels, and even when it is, the level does not usually decrease to or below “low normal” until intracellular levels (where magnesium exerts its primary effects) are approaching critical deficiency. Remember not to focus on “one cause” for any discomforts or symptoms – Vitamins D3 and B12 (and others), and

iron can also affect energy and mood. Addressing only magnesium while ignoring others is foolish. This underscores the daily need for supplementation with a general-vitamin-mineral product.

Daily dosage 1 or 2 *or more* twice daily. If you suffer with constipation or excessive stress or anxiety, more magnesium often helps.

While magnesium is generally considered safe and is not inherently sedative, some individuals might experience side effects such as drowsiness or gastrointestinal discomfort. As part of an “IMSAFE” review, before flying pilots should assess their overall health and consider whether any underlying condition or the use of a supplement or an OTC medication could impair their ability to operate an aircraft safely.

Pilots are advised to avoid flying after taking a new medication or nutritional supplement for the first time until at least 48 hours have passed *without* any side effects. The FAA encourages pilots to consult with your AME before using any new supplement or medication, including magnesium, to ensure it won't adversely affect your flying duties.

In summary, while the FAA does not impose specific restrictions on the use of magnesium supplements, pilots should exercise caution, monitor for any adverse effects, and consult with an AME for any questions to ensure their fitness for flight.

MagTech Magnesium Supplement - Chelated Magnesium Complex - 3 Forms of Magnesium: Magtein Magnesium L-Threonate, Glycinate and Taurate - Supports Relaxation and Brain Health*, 90 Magnesium Capsules

AMAZON LINK: <https://amzn.to/3PMRNyy>

Metagenics Magnesium Glycinate - Highly Absorbable Magnesium - Magnesium Glycinate for Nervous System Support* - Gluten-Free - Non-GMO - Vegetarian - 240 Tablets

AMAZON LINK: <https://amzn.to/4g5tjeJ>

Zinc – This essential mineral plays a key role in so many systems and supplementation can enhance your health easily. Longer sleep duration, improved sleep quality, enhanced REM sleep and better dream recall, appear to come **from** prolonged deep sleep (slow-wave sleep). Zinc naturally enhances melatonin production for better sleep cycles. Generally these results are associated with no significant side effects. Daily dosage 2 to 4 capsules daily.

Pure Encapsulations Zinc (Citrate) - for Immune System, Tissue Development and Metabolism* - Mineral Supplement with Enzymes - Highly Absorbable Zinc - Vegan and Non-GMO - 180 Capsules

AMAZON LINK: <https://amzn.to/4hVZGh8>

Calcium – This essential mineral has many functions inside your body. It naturally helps your brain to convert tryptophan into serotonin and melatonin, and it supports deep REM sleep for high quality restorative rest with fewer awakenings. For years I have advised my patients to take 2 or 3 capsules or tablets at bedtime, especially for muscle relaxation and to reduce or avoid

nighttime cramps. Too much calcium supplementation can actually be harmful. Many people think that drinking milk is a good calcium source – actually, milk is great for baby cows *but* Yogurt, cream cheese, cottage cheese, and real cheese (not “Slices” at the store) are decent food sources. Avoid calcium carbonate and “oyster shell” calcium products. Avoid taking at the same time as magnesium, as they can argue with each other inside!

Pure Encapsulations Calcium MCHA | Hypoallergenic Supplement to Support Bones* | 180 Capsules

AMAZON LINK: <https://amzn.to/4hZ33nr>

Selenium – Among other functions, this essential mineral supports thyroid function, helping to regulate metabolism and normalize sleep. Deficiency is linked to difficulty in falling asleep and staying asleep. Selenium helps prevent oxidative stress that disrupts sleep – possibly more important for pilots exposed to concentrated sunlight and higher altitudes. Daily dosage 1 capsule daily, maybe more if deficiency is documented by your integrative physician.

Pure Encapsulations Selenium - 200 mcg - for Healthy Cellular Function, Immune System and Antioxidant Defenses - Mineral Supplement - Vegan and Gluten Free - 180 Capsules

AMAZON LINK: <https://amzn.to/4hDhHRJ>

Copper – Another essential mineral that can have surprising effects – some “iron” deficiency anemias will not correct without additional copper. It supports deep sleep by balancing dopamine, serotonin, and melatonin and works with zinc and iron to reduce insomnia. Low levels can disrupt circadian rhythms, especially important for long-haul pilots. Avoid excessive supplementation, rely on advice from a skilled integrative physician, avoid taking at the same time as zinc – they can argue with each other! Daily dosage 1 capsule daily.

Thorne Copper Bisglycinate - Well-Absorbed Trace Mineral Supplement - 60 Capsules

AMAZON LINK: <https://amzn.to/4hU1qYa>

CAUTION: Specific iron and potassium supplementation should be prescribed and monitored by a skilled physician.

CRITICAL TIP:

General Multiple Vita/Mineral – Important for complete nutritional support, so that your body functions are efficient and balanced because you have an adequate supply of needed major and trace nutritional factors. B-complex vitamins are especially helpful for restful sleep. Daily dosage 2 or 3 twice daily – take with food if you feel you tolerate it better.

THORNE Advanced Nutrients - Multivitamin and Mineral Supplement with Nicotinamide Riboside - Foundational Support, Healthy Aging and Eye Health - Gluten-Free, Soy-Free - 240 Capsules - 30 Servings

AMAZON LINK: <https://amzn.to/40J9rtb>

Or

Metagenics PhytoMulti Multivitamin - Daily Multivitamins with Phytonutrients - Multivitamin for Men and Women - PhytoMulti Multivitamin Supplement - with Zinc and B6 Vitamins - 60 Capsules

AMAZON LINK: <https://amzn.to/3CxXpJQ>

Or

Biotics Research Bio Multi Plus Iron Free Multivitamin, Chelated Minerals, Iron Free, Emulsified Fat Soluble Vitamins, High antioxidants, SOD, Catalase 90 Tabs

AMAZON LINK: <https://amzn.to/4g9JcRh>

Or

Ancient Nutrition Organic SuperGreens and Multivitamin Tablets with Probiotics, Made from Real Fruits, Vegetables and Herbs, for Digestive, Detoxification and Energy Support, 90 Count

AMAZON LINK: <https://amzn.to/4g9Zh9u>

Or

Ancient Nutrition Organic SuperGreens and Multivitamin Powder with Probiotics, Made from Real Fruits, Vegetables and Herbs, for Digestive, Detoxification and Energy Support, 25 Servings

AMAZON LINK: <https://amzn.to/40uaVpX>

Tryptophan – This key amino acid can be invaluable for some people. This formula below enhances restful, healing sleep by restoring healthy brain chemistry. Regain sleep that refreshes, revitalizes and reenergizes mind and body by improving levels of the neurotransmitter serotonin naturally. Your result is simple: restorative sleep with health-restoring sleep rhythms, and better brain activity, mood, and energy. Pilots are advised to exercise caution when considering the use of any supplement, including tryptophan, due to potential side effects such as drowsiness, which could impair flight performance. The FAA emphasizes that any substance causing sedation or cognitive impairment is incompatible with flight duties, so pilots should consult with your AME before using tryptophan or any other supplement to ensure flight safety and regulatory compliance. In general, avoid use within 12 to 24 hours of flight duties. Daily dosage 1 or 2 or 3 capsules before bedtime.

Sleep Guard - 90 Capsules by Perque

AMAZON LINK: <https://amzn.to/4hMsZTu>

Pure Encapsulations 5-HTP 100 mg - Brain Health, Sleep Regulation and Appetite Support* - 5-Hydroxytryptophan - Gluten Free and Non-GMO - 60 Capsules

AMAZON LINK: <https://amzn.to/40ViF4F>

Glycine – This amino acid can be surprisingly helpful to encourage restful sleep. It lowers body temperature, a key signal for sleep onset, enhances slow-wave sleep (deep sleep) and improves sleep quality, and it reduces symptoms of insomnia and nighttime awakenings. Pilots are advised to exercise caution when considering the use of any supplement, including

tryptophan, due to potential side effects such as drowsiness, which could impair flight performance. The FAA emphasizes that any substance causing sedation or cognitive impairment is incompatible with flight duties, so pilots should consult with your AME before using tryptophan or any other supplement to ensure flight safety and regulatory compliance. Due to relaxation, in general avoid use within 12 hours of flight duties. Daily dosage 1 or 2 capsules before bedtime.

Pure Encapsulations Glycine - Supports Restful Sleep and Liver Detox* - Liver Supplement - Vegan and Gluten-Free - 180 Capsules
AMAZON LINK: <https://amzn.to/4hZSErC>

Theanine – This amino acid promotes relaxation, focus, and memory by enhancing alpha-wave production in the brain, improves REM sleep and overall sleep quality, and supports a healthy stress response. It naturally enhances GABA, serotonin, and dopamine production in the brain neurotransmitters that reduce stress and anxiety. Generally there are no significant side effects that would affect flight duties. Daily dosage 1 or 2 capsules at bedtime.

THORNE Theanine - 200mg of L-Theanine - Support a Healthy Stress Response, Relaxation, and Focus - Increases Brain Alpha-Wave Production - 90 Capsules
AMAZON LINK: <https://amzn.to/3WVTLOX>

L-Serine – This amino acid supports the production of serotonin and melatonin, enhances REM sleep, and improves dream recall. Generally it improves sleep continuity and reduces nighttime awakenings without creating significant side effects. Daily dosage 1 capsule at bedtime.

Douglas Laboratories L-Serine | Amino Acid Supplement for Heart and Brain Health and Muscle Building* | 60 Capsules
AMAZON LINK: <https://amzn.to/4gEBefj>

Arginine – This amino acid promotes nitric oxide (NO) production, which helps relax blood vessels and improve circulation, reducing stress-related wakefulness **and** nighttime cortisol levels. It enhances sleep by reducing nighttime arousals **and** promoting deep sleep stages, without creating significant side effects. Daily dosage 2 or 3 capsules at bedtime.

Pure Encapsulations L-Arginine - 1,400 mg - Support Nitric Oxide Production - Heart Health and Blood Flow - Gluten Free and Non-GMO - 180 Capsules
AMAZON LINK: <https://amzn.to/4bhVZ3r>

Taurine – This amino acid naturally increases **GABA activity**, promoting relaxation and **reducing anxiety**, as well as lowers **cortisol** and supports **melatonin production**. Generally it improves sleep duration without significant side effects. Daily dosage 1 or 2 capsules at bedtime.

Pure Encapsulations Taurine 1,000 mg - Supports Heart Health and Detox - Essential Amino Acid - Liver and Gallbladder Health* - Vegan and Gluten Free - 120 Capsules

AMAZON LINK: <https://amzn.to/3X0ONCP>

GABA – This amino acid is known to function as a neurotransmitter in your brain. If taken in excessive doses or for prolonged periods, GABA can impair situational awareness. The FAA advises you to avoid flight duties for at least 24 hours after taking. Avoid use with alcohol. Occasional daily dose 1 capsule at bedtime.

Douglas Laboratories GABA 500 mg. | Amino Acid Support for Brain Neurotransmitters, Sleep Cycles, and Body Temperature | 60 Capsules

AMAZON LINK: <https://amzn.to/4bjoZYe>

CRITICAL TIP:

Vitamin D3 – An essential vitamin that reduces chronic inflammation and supports immune system regulation, and reduced stress and anxiety, among many other functions. It also plays an unrecognized role in your body's wake-sleep cycle. Laboratory reports often suggest a normal range for Vitamin D3 as low as 20 or 30, but patients do much better in many ways when their blood level is between 80 and 100. (One recent study showed dramatic resistance to suffering adverse effects of “the flu” when level was above 50.) Daily dosage 1 or 2 twice daily – have your doctor order a blood test for “Vitamin D3” – if your level is below 40, you certainly need to take for 4 or more months and get a recheck later. A study done during the recent viral infections showed that those with a level above 30 were unlikely to die, those above 50 were unlikely to be so sick as to require hospital care.

Pure Encapsulations Vitamin D3 125 mcg (5,000 IU) - Supplement to Support Bone, Joint, Breast, Heart, Colon, and Immune Health* - with Vitamin D - 60 Capsules

AMAZON LINK: <https://amzn.to/3PO8MAI>

Melatonin – Commonly used to regulate sleep, melatonin has also been found to reduce anxiety in certain situations, such as preoperative settings. **CAUTION:** However, subtle adverse effects are possible, so the FAA suggests you **defer flight duties** for **at least 60 hours** after the last dose – assuming that you have no issues when using it – although your AME might consider advising a shorter time before flight duties. Daily dosage 1 or 2 at bedtime helps most people and should be used **only briefly or sporadically**.

Ritual Sleep BioSeries™ Melatonin: Sleep Aid for Adults, Sleep Supplement with Time Released Capsules, Drug Free Sleep Vitamins for Adults for All Night Sleep Support, 20 Capsules

AMAZON LINK: <https://amzn.to/4gh1Syv>

Valerian Root – (*Valeriana officinalis*) – An herbal preparation that helps relax muscle spasms, which can greatly aid your comfort and reduce anxiety and stress. Daily dosage 1 or 2 or more as often as needed, especially at bedtime. **CAUTION:** Because “sedation” is a primary effect of valerian compounds, you are **not authorized** for flight duties for **at least 60 hours** after your last dose, assuming you have no lasting effects. Consult with your AME regarding any use.

Herbal Roots Pure Organic Valerian Root Capsules - 900 mg - Non-Habit Forming with no Melatonin, Non-GMO - 60 Count Vegan Capsules
AMAZON LINK: <https://amzn.to/40vXN3s>

CAUTION: If used in combination with hops, the sedative effects of both can be enhanced and any dosage should be reduced and the combination should be considered as a “new” product when you first begin using.

Hops Supplements – Beyond their use in brewing, hops (*Humulus lupulus*) have been studied for their potential sleep-promoting properties. Research indicates that compounds in hops might modulate GABAA receptors, similar to many prescription and over-the-counter agents, contributing to relaxation and improved sleep. Hops may cause dizziness or drowsiness in some individuals and even reduced alertness. The FAA does not specifically mention hops in its guidelines, however they have been traditionally used for their sedative properties which could potentially impair cognitive and motor functions that are critical for pilots. Accordingly, you should avoid using hops for sleep or relaxation for **at least 60 hours** before flight duties and consult your AME for guidance concerning any use. Dosage for sleep 20 to 40 drops.

Herb Pharm Certified Organic Hops Liquid Extract for Calming Nervous System Support - 1 Ounce
AMAZON LINK: <https://amzn.to/3Xm15Zd>

CAUTION: If used in combination with Valerian root, the sedative effects of both can be enhanced and any dosage should be reduced.

Lemon Balm – (*Melissa officinalis*) – Lemon balm is known for its anxiolytic effects and can help reduce stress and improve mood. Lemon balm is generally safe and non-sedating. Daily dosage 1 – 2 capsules twice daily. Consult your AME before use.

Zazzee Organic Lemon Balm 10:1 Extract, 3000 mg Strength per Capsule, 180 Vegan Capsules, 6 Month Supply, Standardized and Concentrated 10X Extract, 100% Vegetarian, All-Natural and Non-GMO
AMAZON LINK: <https://amzn.to/3WCtWoU>

Hush! I’m Hacking! – Biofeedback

Biofeedback has been explored as a method to improve sleep by promoting relaxation and reducing stress. This technique involves using electronic monitoring to convey information about physiological processes, such as heart rate or muscle tension, with the goal of gaining conscious control over them. It can promote relaxation and has been explored as a method to improve sleep quality.

A Primer of Biofeedback Spiral-bound book
AMAZON LINK: <https://amzn.to/41cNIds>

Aroma Therapy with Essential Oils – can create a comfortable home or office environment that can help with relaxing sleep. The procedure is simple: fill a diffuser with 3 or more ounces of water, add 2 or 3 drops of pure essential oils for relaxation, and allow the cool

vapor to fill your world with a calming aroma. Your cost is minimal and your enjoyment might be surprising. Utilizing essential oils like lavender in aromatherapy practices has been associated with improved sleep quality. Incorporating these scents into your bedtime routine through diffusers or topical applications may promote relaxation and facilitate better sleep.

Homeweeks 300ml Essential Oil Diffuser, Quiet Aromatherapy Mist Diffusers for Essential Oils, Wood Grain Ultrasonic Oil Diffuser with Remote Control, Timer, 7 Colors Light for Bedroom (300ml)

AMAZON LINK: <https://amzn.to/4g9Say2>

Waterless Nebulizing Essential Oil Diffuser - Battery Operated and Portable | Cordless Diffuser for Large Room Aromatherapy | Wireless Nebulizer and USB Rechargeable | Model: Cove (Ceramic Cream)

AMAZON LINK: <https://amzn.to/3CkYaWG>

You will need aromatherapy oils to place into your diffuser:

Sampler set: Plant Therapy Top 6 USDA Organic Essential Oil Set - Lavender, Peppermint, Eucalyptus, Lemon, Tea Tree 100% Pure, Natural Aromatherapy, for Diffusion and Topical Use, Therapeutic Grade 10 mL (1/3 oz)

AMAZON LINK: <https://amzn.to/3E4dGa7>

Inhaling **lavender** (*Lavandula angustifolia*) essential oil can increase slow-wave sleep, instrumental in slowing heart rate and relaxing muscles.

Plant Therapy Lavender Essential Oil 100% Pure, Undiluted, Natural Aromatherapy, Therapeutic Grade 100 mL (3.3 oz)

AMAZON LINK: <https://amzn.to/3PN51vi>

Bergamot (*Citrus bergamia*) essential oil, derived from the bergamot orange, has a calming effect that can reduce anxiety and improve sleep quality. Its soothing properties make it a popular choice for those seeking natural sleep aids.

Plant Therapy Bergamot Essential Oil 100% Pure, Undiluted, Natural, Therapeutic Grade 30 mL (1 oz)

AMAZON LINK: <https://amzn.to/3QfiYCh>

Chamomile (*Matricaria recutita*, others) essential oil is known for its sedative effects, which can help induce sleep and improve sleep quality. It's often used in aromatherapy to promote relaxation and reduce insomnia symptoms.

Chamomile German Essential Oil USDA Certified Organic 100% Pure Premium Therapeutic Grade, Undiluted - Aromatherapy Diffuser for Calm and Relaxation, Skin Care, Hair Care

AMAZON LINK: <https://amzn.to/42Sc7Gk>

Cedarwood (*Laurus nobilis*) essential oil has a warm, woody scent that is believed to promote the release of serotonin, a neurotransmitter that converts to melatonin, aiding in sleep regulation.

Organic Cedarwood Essential Oil 30 ml - Pure Natural Cedar Wood Oil for Diffusers, Aromatherapy and Hair Growth - Aceite de Cedro Puro - Nexon Botanics

AMAZON LINK: <https://amzn.to/3QeGAH5>

Clary sage (*Salvia sclarea*) essential oil possesses calming properties that can alleviate stress and promote restful sleep. It's particularly beneficial for individuals experiencing sleep disturbances due to anxiety.

Plant Therapy Clary Sage Essential Oil 100% Pure, Undiluted, Natural Aromatherapy, Therapeutic Grade 30 mL (1 oz)

AMAZON LINK: <https://amzn.to/40SsAId>

Choose high-quality, pure essential oils from reputable sources. Incorporating these essential oils into your nightly routine may help create a calming environment conducive to restful sleep.

Hacking the Numbers: Best Sleep-Tracking Apps

We all enjoy precision to help understand actions and concepts – hard to “get” when you’re asleep? Not necessarily. Consider these apps and how any one of them might help you.

Sleep Cycle – Tracker and Sounds app

This Editors’ Choice app analyzes your sleep patterns using your smartphone’s microphone, tracking your REM, Light and Dark Sleep, and claims to wake you at the optimal time.

Timeshifter app

Ideally designed for pilots and other shift-workers. With years of development and experience, this app gives scientifically-based advice to tackle the disruption of your circadian rhythm and to reduce the disruptive symptoms such as insomnia, sleepiness, and digestive discomfort.

And if you’re concerned about regaining full alertness on awakening, here’s more technological wizardry to help your situation. As the seasons change or with prolonged exposure to dim environments, melatonin levels in the body can fluctuate, disrupting hormonal balance and leading to feelings of sadness and fatigue. This light therapy lamp helps to restore balance and boost energy levels.

ReTimer Light Therapy Glasses (FAA-endorsed for circadian alignment)

AMAZON LINK: <https://amzn.to/4gMXM1p>

Hormone Hacks Beyond Thyroid and Cortisol

Peri- or pre-menopause and menopause create variable challenges for women. Fluctuating or declining estrogen and progesterone can cause hot flashes, night sweats, and general sleep disruption. Progesterone, in particular, has a calming effect on the brain and lower levels can contribute to insomnia. During the last half of your menstrual cycle (after ovulation, luteal phase), you can experience poor sleep or “premenstrual insomnia” when progesterone levels fall.

Low testosterone in men – far more common than in past decades, likely due to environmental toxicities – can be associated with poorer sleep quality. Chronic stress can elevate cortisol at night and disrupt overall hormonal balance.

Skilled integrative medicine physicians often can introduce balanced hormonal therapy programs to restore more normal physiologic function. For dozens of years, I have discouraged the prescription of E2, estradiol, the most commonly offered estrogen, because research has shown that elevated levels are associated with an increased risk of hormone-sensitive cancers, particularly breast and endometrial (uterine lining) cancers. One study highlighted that higher blood concentrations of estradiol significantly elevate the risk of breast cancer in *premenopausal* women. My Balanced Hormone Therapy replacement program has “smoothed out” the lives of so many women, for many years! And this can be essential for reversing weakening of bones osteopenia/osteoporosis, responsible for killing one woman in six. Incidentally, aging men need to be evaluated as well, especially if pursuing vigorous exercise, as they too can suffer degeneration of bone structure.

Herbs to Hack “Sex Hormones” For Better Sleep

Black Cohosh – (*Actaea racemosa*) – is commonly used to address menopausal symptoms such as hot flashes and mood swings, possibly influencing estrogen pathways, aiding in hormonal regulation for women. Daily dosage 1 daily for women.

Gaia Herbs Pro Black Cohosh - Herbal Supplements for Menopause Support - Supports Hormone Balance for Women - with Black Cohosh - 60 Vegan Liquid Phyto-Capsules (60 Servings)

AMAZON LINK: <https://amzn.to/4b8IUJx>

Fenugreek – (*Trigonella foenum-graecum*) – has been associated with increased libido and testosterone levels in men. In women, it might help alleviate symptoms of polycystic ovary syndrome (PCOS) and support overall hormonal health. Useful for men *and* women. Daily dosage 1 capsule once or twice daily.

Nootropics Depot Fenugreek Extract Capsules | 500mg | 60 ct | 3% Trigonelline, 1% Protodioscin | Trigonella foenum-graecum | Mood, Fitness, and Metabolic Function

AMAZON LINK: <https://amzn.to/3EUTRCg>

Tongkat Ali – (*Eurycoma longifolia*) – traditionally used in Southeast Asia to boost testosterone levels, enhance libido, and improve male fertility. Some studies suggest it may also aid in reducing stress. Useful for men *and* women. Daily dosage 1 capsule once daily.

Nootropics Depot Tongkat Ali Extract Capsules | 100mg | 60 Count | 10% Eurycomanone by HPTLC | Eurycoma longifolia Root Extract

AMAZON LINK: <https://amzn.to/4hJApHk>

Ashwagandha – (*Withania somnifera*) (Indian ginseng) – an adaptogenic herb traditionally used to manage stress and anxiety, it might balance cortisol levels and support thyroid function, contributing to overall hormonal equilibrium. In men, ashwagandha has been linked to increased testosterone levels and improved reproductive health. Ashwagandha compounds can decrease stress severity, improve cognitive function, boost immune function, and promote better sleep. However, due to the wide variety of cardiovascular, neurologic and immune system effects, dosage effects and the multiple varieties of ginseng marketed, ginseng is *not approved* for use by aircrews.

Hacking Through the Food Maze

In other presentations, we'll address disturbing issues with our food choices: "fertilizers," pesticides, preservatives, processing chemicals, stabilizers, artificial flavors, artificial colors, fillers, added sugars, added sweeteners, seed oils, unhealthy oils, other non-food ingredients, not to mention residual antibiotics and hormones ... or even the toxic *trash* (rodent and insect pieces and excrement) that governmental standards "accept" as "tolerable" in our food supply. (*Really?!*) If God put the wrapper on it, you stand a better chance of reduced exposures. If manufacturers and distributors "treated," processed, packaged, shipped, prepared, and served to you ... well, those are unlabeled and undisclosed challenges that we all face every day. Does "organic" really mean "organic" – less often than you would expect. And be wary of "health foods" as well. Later presentations will provide you with hacks to reduce your health risks, improve your comfort and life expectancy, enhance your performance and mental acuity, and prepare you to charge through each day readily handling stress and anxiety, ready for a great night of restful sleep to prepare for your next morning of accomplishments.

Alcohol

Hacking Your Appetite for Better Z-Z-Z-Z-s

Chronic insufficient sleep can lead to altered leptin and ghrelin levels, increasing your hunger and disrupting normal eating patterns. Additionally, disrupted leptin/ghrelin cycles can contribute to obesity, which itself can worsen your sleep quality. Adequate, consistent sleep helps maintain stable leptin and ghrelin levels.

These are not traditionally "sleep hormones" but are appetite-regulating hormones that can influence energy balance. **Leptin** signals satiety, whereas **ghrelin** stimulates hunger. Paying attention to food selections and avoiding late-night eating can support better sleep quality.

Beyond rational life choices – healthy foods, appropriate nutritional supplementation, adequate physical exercise, reasonable daily schedules – no specific "hacks" have been documented by present research to influence leptin and ghrelin. Once again, a prudent lifestyle does just what it is supposed to do, help to create a happier, healthier you. If you are concerned about possible imbalances in your hormones, consult your skilled integrative physician for evaluation.

Hacks to Shield You From Being Blasted By EMF

Exposure to electromagnetic fields (EMF) from devices like electronic flight bags, smartphones, tablets, Wi-Fi routers, laptops, and wearables has been linked to various stress-related effects on your body and mind, including interruption to restful sleep patterns. While research is ongoing, several possible ways EMF exposure contributes to fatigue, sleep disturbance, stress, anxiety, and related symptoms have emerged.

Increased Cortisol Levels

Some studies suggest EMF exposure can disrupt your body's natural stress response by triggering the release of cortisol, your primary stress hormone. Elevated cortisol levels over time contribute to chronic biochemical disturbances to your organ functions, fatigue, and poor resilience.

Sleep Disruption

EMFs, especially from devices near the bed (like phones or routers), might interfere with melatonin production — the natural hormone critical for sleep. Poor sleep quality intensifies feelings of stress, anxiety, and irritability. Chronic disruption of restful sleep impairs your performance, attention, mental acuity, and comfort, as well as setting the stage for earlier development of degenerative diseases.

Nervous System Overstimulation

Prolonged exposure to EMF appears to stimulate your autonomic nervous system, keeping the body in an enhanced **sympathetic** “fight or flight or fright” state instead of balanced in the restorative **parasympathetic** state. This can lead to you suffering with restlessness, difficulty relaxing, and heightened anxiety.

Oxidative Stress

EMF exposure has been linked to an increase in free radicals and oxidative stress – known as inflammation or “rusting chemistry” – which is directly associated with cellular damage and increased physiological stress responses.

Headaches and Cognitive Strain

Frequent EMF exposure — especially from close-range devices, such as those we most commonly use — is associated with increased suffering with headaches, brain fog, and difficulty concentrating, each of which further contributes to mental fatigue and stress buildup in a self-perpetuating downward spiral as your overall health deteriorates.

Emotional Sensitivity and Irritability

Some individuals report heightened irritability, mood swings, and anxiety after prolonged exposure to EMFs, especially in electrosensitive individuals or during periods of enhanced stress ... think: flight duties.

Stress Amplification in Sensitive Individuals

People with pre-existing or persistently induced anxiety, chronic illness, or nervous system “disorders” may be more sensitive to EMFs, experiencing greater emotional reactivity and stress symptoms. While such individuals might function perfectly well in their daily lives, the enhanced demands of flight duties can quickly become more than they can easily handle.

The exact mechanisms behind these stress responses aren't fully understood, and not all studies agree on the strength of the link between EMFs and chronic stress or anxiety. However,

reducing unnecessary exposure, especially at night, is a common recommendation for minimizing potential risk.

Recent research has suggested that external modification of electronic devices can dramatically reduce your exposure to harmful effects of EMFs. As more attention is devoted to these health risks posed by our common instruments, ever better solutions can be expected. You can take simple steps today to limit induced biochemical stresses in your body, beyond simply avoiding devices or keeping them “at a distance.” Consider applying them to each of your units: mobile phone, tablet, laptop, desktop, pager or walkie-talkie, wi-fi routers, modems, and so on.

6 Pcs Protection Cell Phone Stickers 99% Effective Protector Cell and Smart Phones/Laptops/Tablets/TV/Monitors - All Devices Brown Cyan, JF-04

AMAZON LINK: <https://amzn.to/4kq04qq>

Easily test your devices before and after application of these “protective stickers,” even finding additional sticker placements to further reduce radiation:

EMF Meter Detects Radio, Magnetic and Electric Fields - For 5G, Cell Towers, WiFi, Bluetooth, Smart Meters

AMAZON LINK: <https://amzn.to/3XoddpO>

A budget-conscious solution to testing your devices:

TESMEN EMF Meter, Hound-200 EMF Detector: 3-in-1 Portable Electromagnetic Field Radiation Detector for EF, RF, MF, WiFi Signal, Suitable for Home, Office EMF Inspections and Ghost Hunting – Green

AMAZON LINK: <https://amzn.to/4kpljs2>

Microwave Concerns – You might be disappointingly surprised to test EMF generation from your microwave oven. These units generate non-ionizing electromagnetic fields (EMFs) in the microwave frequency range (2.45 GHz) to heat food. Most studies and regulatory reviews have concluded that properly functioning microwave ovens emit “minimal” EMFs outside the oven, well within established safety limits. However, there are potential dangers if the oven is damaged or used improperly.

Potential Dangers to People

Radiation Leakage (Faulty Seals or Doors)

Damaged seals, hinges, or doors can leak microwave radiation, exposing nearby users to higher-than-safe EMF levels. Prolonged, close-range exposure to leaking microwaves could cause thermal burns or localized heating of tissues, especially the eyes (which are sensitive due to low blood flow to cool them down).

Thermal Effects

Microwaves heat tissue by causing water molecules to vibrate, and direct high-intensity exposure could cause deep tissue heating — but this risk is essentially *non*-existent with properly functioning home microwave ovens.

Neurological and Cellular Concerns (*Unproven* but Studied)

Some studies have investigated long-term low-level microwave exposure (such as occupational exposure for appliance repair workers) for potential links to:

Headaches, fatigue, sleep disruption, and enhanced stress

Possible cellular stress and oxidative damage (inflammation, “rusting chemistry”)

Results are inconclusive, with no definitive proof that typical microwave use poses these risks.

Potential Dangers to Food (Nutrient Loss or Changes)

Nutrient Degradation

Microwave cooking can degrade some nutrients (like vitamin C and some B vitamins), especially when cooking foods with a high water content. However, *all* forms of cooking degrade nutrients to some extent, especially at higher temperatures or prolonged heating. Microwave cooking has been found in some studies to preserve nutrients better than boiling or frying because of the shorter cook times.

Formation of Harmful Compounds (In *Rare* Cases)

Overheating certain foods (especially fats or oils) can produce harmful byproducts such as acrylamide, but this happens with all high-heat cooking methods, not just microwaving.

Microwaving foods in **plastic** containers can potentially leach chemicals (like BPA or phthalates) into the food, particularly if the container is not microwave-safe. Even that label or determination should be suspect, since all plastics are potential biological challenges.

Certain People at Greater Risk

Pregnant Women

There is no *conclusive* evidence that normal microwave use harms pregnant women or their unborn babies. However, some cautious experts recommend that pregnant women avoid standing directly in front of or pressing against microwave ovens while in use — especially if the microwave is old, damaged, or leaking.

People with Implanted Medical Devices

Individuals with pacemakers, defibrillators, or other implanted electronic devices should avoid prolonged close exposure to **any** appliance emitting potentially strong electromagnetic fields EMFs. Modern pacemakers are generally well shielded against microwave interference, but older models (pre-2000) may be at risk for malfunction if exposed to strong EMFs, particularly from a leaking microwave.

Children

Young children’s developing tissues (including the brain) are believed to be more sensitive to environmental stressors, including EMFs, though there is no *conclusive* evidence that microwave ovens harm children. Caution is still advised around microwave use, especially avoiding pressing up against the microwave (or peering into it) while in use.

Individuals with Electromagnetic Sensitivity (EHS)

Some people report symptoms like headaches, fatigue, and anxiety from exposure to low-level EMFs (a controversial condition called Electromagnetic Hypersensitivity).

While scientific evidence for EHS presently is inconclusive, these individuals may choose to limit time near microwaves and other EMF-emitting devices. People can be expected to have varying degrees of sensitivity, so some who notice considerable improvement with using protective stickers on their devices might have been unexpectedly being harmed biochemically.

People with Pre-existing Conditions (Neurological Disorders or Immune Dysfunction)

Some preliminary research has explored the theory that chronic EMF exposure might worsen symptoms for people with Chronic Fatigue Syndrome (CFS), Multiple Chemical Sensitivity (MCS), autoimmune disorders, perhaps a variety of chronic diseases. These “links” remain speculative, but some people with chronic health issues may prefer to limit unnecessary microwave exposure.

Hacks to *Beat the Yeast*, Sleep Your Best

THE YEAST SYNDROME ... a very common and *undiagnosed* fungal infection that might easily explain *many* of your problems ... proper treatment for which could help you look to a brighter, healthier future!

The Yeast Syndrome, often associated with an overgrowth of *Candida* (a type of yeast in your body), may interfere with sleep in several ways. When such overgrowth occurs — especially in the gut — it can trigger inflammation, disrupt gut microbiome balance, and produce toxins that may affect your nervous system and overall well-being. These biochemical disturbances can contribute to insomnia, restless sleep, and frequent waking.

Additionally, *Candida* overgrowth can lead to issues such as blood sugar imbalances, hormonal disruptions, and increased histamine levels, all of which may stimulate your nervous system and make it harder to fall asleep or stay asleep. Many people with yeast overgrowth also experience chronic fatigue, anxiety, and brain fog, which can further impact sleep quality – and especially your expected performance of flight duties.

Addressing underlying causes, such as diet, gut health, and immune function, is often key to improving both sleep and yeast-related symptoms.

In 1986, Bantam Books published what has become my long-lasting bestselling book, recognized as the leading explanation of how doctors really could help millions of people around the world to recover better health and happiness:

The Yeast Syndrome: How to Help Your Doctor Identify and Treat the Real Cause of Your Yeast-Related Illness (book) 1986

AMAZON LINK: <https://amzn.to/4hdKagQ>

My office brochure so you can easily locate topics of interest in The Yeast

Syndrome book

ON SITE LINK: Coming Soon

In the book, I have well documented an astonishing number of usual and unusual illness issues associated with yeast overgrowth/fungal infections – but that was *almost 40 years ago*. We now know that even *many more* diseases and distresses are related to this unsuspected and undiagnosed microbial attack while doctors write more and more prescriptions for patients who “just won’t get better.” *Undiagnosed* means **untreated**, so countless patients continue to suffer because their doctors simply don’t do needed doctoring. So much so that the Centers for Disease Control and Prevention in 2017 embarked on an annual campaign for physicians, when confronting recurring or continuing or confusing problems, to “**THINK FUNGUS**.” The CDC focus is on Increased *Awareness*, Early *Recognition*, and Timely *Diagnosis* and *Treatment*. Better late than never?

In 2018, I wrote a “Cliff’s Notes” version of my earlier book, easily and quickly giving folks an opportunity to understand this fundamental threat of yeast (fungus, mold, mildew) to everyone’s health.

Sick and Tired?: Easily Defeat the Thieves that are Stealing Your Health (book) 2018

AMAZON LINK: <https://amzn.to/3Eb2I2q>

Fatigue, daytime exhaustion, sleep disturbances, chronic sinus issues, nasal polyps, and even mastoid and sphenoid and other complex sinus infections, chronic tonsilitis, bronchitis, pneumonia, recurrent kidney infections, chronic skin rashes, allergies and allergies and more allergies, and so on and on and on, can frequently be linked to **fungal infections or yeast overgrowth** (commonly associated with *Candida* species). Sadly, almost 40 years after publication of my well researched book, few physicians understand and accept the ideas and fewer still understand how to properly treat it for resolution of multiple discomforts or diseases. This is generally called **The Yeast Syndrome** or **Chronic Fungal Infection** and should be included in *every* comprehensive diagnostic and treatment plan.

In 1999, physicians at the Mayo Clinic published an excellent research paper demonstrating how almost **all** chronic or recurrent sinus infections were related to ... **yeast!** I was thrilled to see that they were finally catching up to my diagnoses and treatments from 15 year earlier! That documentation has been almost universally ignored. Further, most physicians have no idea that the recent explosion of **autoimmune illnesses** is commonly related to yeast. And that’s not counting the much more common distresses with your gut, skin, brain, and all other organs in distress. So ... those conventional doctors fail to treat people “right.”

I authored an invited dissertation for the June and July 2022 issues of the **Townsend Letter** (a leading publication for integrative practitioners) entitled “**Still Missing Diagnosis of The Yeast Syndrome?**” This article gives you a quick and easy way to understand how yeast/fungus can affect you (and many of your family and friends), how we can diagnose your problem, and how we can treat you definitively. Hardly any physicians understand these concepts despite my repeated publications and lectures here and overseas over almost 40 years. For full recovery with your nose/sinus issues, you might need specific treatment by a skilled integrative physician.

To illustrate how sad the situation is – since hundreds of millions of people around the globe are suffering needlessly – I am the only physician in the Houston metropolitan area who has a

treatment program for The Yeast Syndrome for longer than 30 days. Resolution can take dedicated efforts for months. When an integrative medicine physician fails to understand treatment and fails to pursue it properly, they advise their suffering patients, “Well we tried treating yeast but you must have other problems, so let’s do more tests.” And their trusting but unsuspecting patients, believing them to be an expert, spends thousands more dollars and many months or *years* needlessly suffering, with their untreated yeast syndrome continuing to worsen.

“Still Missing Diagnosis of The Yeast Syndrome?” cover article in the **Townsend Letter**, June and July 2022

Download and share (*with everyone!*) your copy of this fundamental article today

ON SITE LINK: Go to **page 2** – Health Hacks – 7 – General Systemic – The Yeast Syndrome

To learn more about integrative medical approaches that can help you and those who love you, you could **subscribe to the Townsend Letter**:

INTERNET LINK: <https://townsendletter.com/subscribe/>

If you learn better by watching videos or listening to audios, I invite you to download and share these that I have prepared over the years:

DVD on The Yeast Syndrome

ON SITE LINK: Coming Soon

DVD on The Yeast Syndrome

ON SITE LINK: Coming Soon

DVD on The Yeast Syndrome

ON SITE LINK: Coming Soon

DVD on Immunity, Inflammation, and Infection (they are really *all* the same ... but your doctor doesn’t know and refers you to a variety of “specialists”)

ON SITE LINK: Coming Soon

CD on The Yeast Syndrome

ON SITE LINK: Coming Soon

CD on The Yeast Syndrome

ON SITE LINK: Coming Soon

CD on The Yeast Syndrome

ON SITE LINK: Coming Soon

If you (like *many* others!) think you might be suffering so much with **The Yeast Syndrome** and concerned that this could *interfere* with your career prospects or enjoyment in general, I invite you to consider efficient, affordable, definitive care – either here in Houston or by *Teleconsultation*.

DIAL 1-800-FIX-PAIN to share your concerns with one of our experienced Treatment Counselors and discover how we can help you easily negotiate the sometimes confusing treatment maze. If you wish, you could send me an email: info@healthCHOICESnow.com –

And please include your phone number!

Hacks to Reduce Your Stress or Anxiety with Acupressure Points

While acupressure can be a helpful relaxation tool, it's not a substitute for professional medical or mental health treatment. If you have any concerns about specific points, or if you experience pain or worsening of symptoms, please consult a qualified healthcare provider. A primary advantage is that gentle pressure requires no tools and no preparation. If such meets your needs, you have another hack that can be employed anytime. Stimulating certain acupressure points may help induce sleep by calming the mind and easing tension. Here are some key points associated with improved sleep:

1. An Mian (Peaceful Sleep):

- **Location:** Behind the ear, just behind the bony protrusion known as the mastoid process.
- **Technique:** Apply gentle pressure with your finger, massaging in a circular motion for 2 - 3 minutes before bedtime.
- **Benefits:** Traditionally used to alleviate insomnia and promote restful sleep.

2. Shen Men (Heart 7):

- **Location:** On the underside of the wrist, at the crease just below the base of the palm, aligned with the little finger.
- **Technique:** Use your thumb to apply gentle pressure to this point, massaging in a circular motion for 2 - 3 minutes on each wrist.
- **Benefits:** Known to calm the mind and reduce anxiety, facilitating better sleep.

3. San Yin Jiao (Spleen 6):

- **Location:** On the inner side of the lower leg, about four finger-widths above the inner ankle bone, just behind the shinbone.
- **Technique:** Apply firm pressure with your thumb, massaging in a circular motion for a few minutes on each leg.
- **Benefits:** May help with insomnia and is also associated with alleviating menstrual cramps and other pelvic issues.

4. Yin Tang (Hall of Impression):

- **Location:** Midway between the inner ends of the eyebrows, in the center of the forehead.
- **Technique:** Use your index finger to apply gentle pressure to this point, massaging in a circular motion for 1 - 2 minutes.
- **Benefits:** Helps to calm the mind and reduce stress, promoting relaxation and sleep.

5. Nei Guan (Pericardium 6):

- **Location:** On the inner forearm, about three finger-widths below the wrist crease, between the two tendons.

- **Technique:** Apply gentle pressure with your thumb, massaging in a circular motion for 2 - 3 minutes on each arm.
- **Benefits:** Associated with reducing anxiety and promoting relaxation, which can aid in improving sleep quality.

Incorporating acupressure into your nightly routine may enhance relaxation and improve sleep quality. Consistency is key; regular practice can lead to more significant benefits over time. However, if sleep issues persist, it's advisable to consult a healthcare professional to address any underlying conditions.

Always remember ... pilots often face significant challenges with sleep their entire lifetime due to the physical and mental demands and changing schedules of flying. A proactive approach is essential to combine recognizing the predisposing factors and designing and adhering to these hacks for preventive care and nutrition, the only solution to help daily optimum performance and career longevity. Addressing these issues not only enhances your comfort and capabilities but also helps to reduce your risks for earlier and more serious medical complications.

Waste no time – you're cleared for takeoff!

If I can help keep you flying safely and comfortably for years to come, my career will have been wonderfully worthwhile – even though we might never have met. I wish you to enjoy the blessings of better health.

If you choose to review my medical practice website:



www.healthCHOICESnow.com

(Because if you don't know you have choices now ... you don't have any!)

DO YOU HAVE QUESTIONS? HAVE YOU FOUND ANSWERS? PLEASE SHARE ...

What more could I have shared with you about these problems?

Email me at ... feedback@clearedfortakeoff.info

What questions do you have about successful integrative medicine "hacks"?

Email me at ... info@clearedfortakeoff.info

Do you have “hacks” or other procedures that I could include here?

Email me at ... info@clearedfortakeoff.info

Do you have a *Success Story* to share about your experiences with what I have shared with you?

Email me at ... feedback@clearedfortakeoff.info

One favor, since you now have hacks that are insider information:

Please don't wait for a medical scare to force your hand. Save and share this page with fellow pilots, friends, and family. Together, we can build a healthier, safer future for everyone who loves to fly — and for those who love them.

[To receive our current FREE GIFT ... CLICK HERE →](#) 

Back to Page 2 – Pilot health and amazing hacks

<https://clearedfortakeoff.info/pre-check/>

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This website happily introduces you to hacks developed and discovered by a Stanford educated world-class expert in integrative medicine, general aviation pilot licensed since 1978, who served as a Senior Aviation Medical Examiner for the FAA for 12 years, president or director of integrative medical and dental professional organizations, best-selling author recognized as Marquis Who's Who Top Doctor in Advanced Medicine and recipient of Marquis Who's Who Lifetime Achievement Award, with a career dedicated to diagnosing and treating complex chronic problems in patients who had exhausted all other options. Your “second opinion” hacks come from a physician who 25 years ago began lecturing at airshows on How to Regain and Maintain Your Medical. And now they are joyfully and freely offered to you, your family, your friends, pilots and *all* others. When life is your choice, failure is not an option.