A close-up photograph of a man with a beard sleeping peacefully in a bed. The lighting is warm and orange, creating a cozy atmosphere. The man's eyes are closed, and his expression is relaxed. He is lying on his back, with his head resting on a pillow. The background shows the texture of the bed's fabric and the folds of the blanket.

THE GOLDEN RULES OF SLEEP

**Along with exercise and proper nutrition,
sleep is essential to your training program.
Follow these rules to stay healthy and energized and
to encourage muscle growth**

By Joseph A. Arangio, M.S., C.S.C.S. ■ Photography by Kal



WHICH SCENARIO BEST DESCRIBES YOU? Every night, you go to bed at the same time and drift effortlessly into an undisturbed slumber. And every morning you wake up, sometimes before the alarm clock, feeling renewed and refreshed. Or... your sleep schedule changes like the weather. Bedtime may be 10 p.m. one night and then 12:30 a.m. the next. When the alarm goes off, you fumble for the snooze bar, feeling more exhausted than when you closed your bloodshot eyes just hours ago.

If you chose the second scenario, you may be missing out on the muscle-building benefits of quality sleep. You see, sleep initiates the manufacture and release of powerful, tissue-building substances. Only when you achieve good rest on a regular basis are you rewarded with chemicals that help bones, muscles, and joints rebuild after a vigorous workout and prepare you for the next strenuous session. And those first two hours of sleep matter most. Studies show that the majority of muscle-building hormones called growth hormone (GH) are released during the first 90 minutes of sleep.⁸

Not getting sufficient sleep has consequences more serious than fatigue. According to James Maas, Ph.D., sleep expert from Cornell University and author of *Power Sleep*, “If you’re really sleep-deprived, you may experience high blood pressure and/or an increase in stress hormones, and your blood sugar levels may rise to the degree of type-II diabetes.”

So, to keep you healthy and your muscles growing strong, we picked the brains of the world’s leading sleep authorities to come up with 10 golden rules for sleep. Use them to plan your sleeping habits, and you’ll enjoy the healing rewards every night.

GOLDEN RULE **1 SLEEP NINE HOURS A NIGHT**

IT’S PAST YOUR BEDTIME AND YOU’RE squinting at a computer monitor, trying to reply to 75 e-mail messages when you should be fast asleep. You’re down when you’re up, and when you’re up, you’re supposed to be down. The reality is, two-thirds of us sleep less than the recommended seven to eight hours each night, according to a recent survey by the National Sleep Foundation. The bottom line: We need to turn off the computer, pull the soft flannel sheets over our tired muscles, and catch some ZZZs.

As a general rule, almost everyone could use one more hour than they are getting now. “The average American gets 6.9 hours of sleep each night,” says Dr. Maas. “For optimal performance, nine hours is appropriate. Take someone who gets eight hours of sleep each night, add another hour, and his or her alertness increases by 25%.”

To figure out if you need more shut-eye than you’re currently getting, Dr. Maas recommends starting with a baseline of eight

hours every night. Once you have established eight hours as a pattern, subtract 15 minutes each night for one week. Notice if you have feelings of tiredness, inattentiveness, or mood shifts during the day. “This is an indication that you have cut back too much—you need more sleep,” says Dr. Maas.

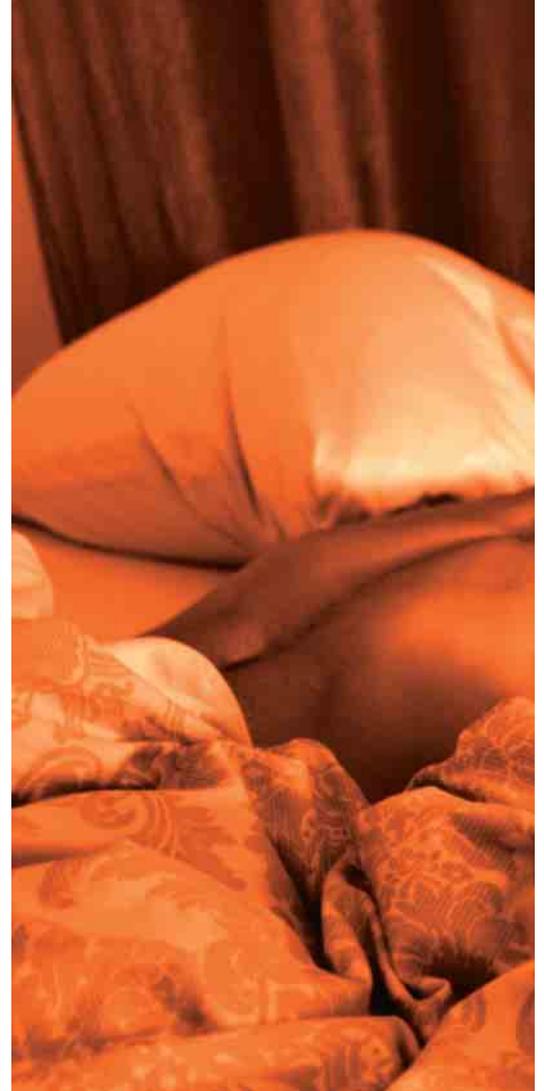
The solution: Add 15 minutes to your baseline sleep requirement by going to bed 15 minutes earlier for one week. If after one week you’re not attentive during waking hours, add another 15 minutes. “Most people need more than eight hours of sleep each night in order to feel alert all day long,” explains Dr. Maas.

GOLDEN RULE **2 ESTABLISH A ROUTINE**

THE ONLY WAY TO TRAIN YOUR INTERNAL timer is to practice going to bed at the same time each night and waking up at the same time without an alarm clock, every day. And yes, this includes weekends.

A study from the Endocrine Institute in Israel found that it’s best to train your brain’s 24-hour clock like a muscle, so that the sleepy phases of the clock coincide with the time that you spend in bed, and your waking moments correspond with your daytime activities.⁷ If you stay up until 2 a.m. on Friday and Saturday nights, you’ll have trouble falling asleep at 10 p.m. on Sunday, in turn making it excruciatingly painful to get up for work at 7 a.m. on Monday.

“Burn the midnight oil on the weekend, and you have inadvertently reset your internal clock so that your bedtime is now 2 a.m. and your wake-up time is noon,” says Richard Millman, M.D., sleep specialist and professor of medicine at Brown University School of Medicine. This self-induced jet lag affects exercise performance,



especially if you train first thing in the morning. “You are still physiologically asleep,” Dr. Millman explains. The simple solution is to have a fixed bedtime and wake-up time, on a regular basis. If you know that you are going to be up late on a particular day, take a 20-minute nap about eight hours after you get up, recommends Dr. Maas.

GOLDEN RULE **3 SLEEP THROUGH THE NIGHT**

PEOPLE WILL DO ALMOST ANYTHING to sleep more (except getting to bed earlier), with a favorite practice being to hit the snooze bar.

“Although hitting the snooze bar in the morning will give you the



feeling of more sleep, it's actually fragmenting your sleep," says Dr. Maas. Instead of "snoozing," try going to bed 20 minutes earlier at night and getting out of bed immediately after the alarm sounds the first time. Place the alarm clock on the other side of the room and turn up the volume.

Also, it's better to sleep through the night instead of trying to piece together a few hours at night and then a few naps in the daytime. "Fragmented sleep will lead to daytime drowsiness," says Dr. Maas. If you are a shift worker, for example, you might sleep seven hours in the daytime, after finishing a shift. This practice, however, throws off your biological clock; thus it's not as good as sleeping through the night. So what can

you do about it? As much as possible, adhere to sound sleep habits and a good training program. "Exercise reduces overall fatigue and increases attentiveness on work shifts," says Dr. Maas.

GOLDEN RULE **4 CATCH UP ON** **LOST SLEEP**

SLEEP DEBT DOESN'T DISAPPEAR INTO thin air any more than a charge on your credit card—there is an outstanding balance until you pay it back. Every hour that you're awake adds to your sleep debt, says Dr. Maas. It's like wearing a backpack and placing one lead brick in the sack, for every hour that you are awake. At the end of

the day that's about 16 bricks. Your back aches and your knees are buckling from the weight. "It takes one hour of sleep to get rid of every two bricks," says Dr. Maas. Therefore, if you're sleeping less than eight hours, you're waking up with sleep debt, a sack full of bricks, and an aching back, which has to bear the potential weight of another night's sleep loss. This is when you collapse. It's easy to see the physical burden of sleep deprivation in just a few days.

Napping is a temporary solution if you can't get good nighttime sleep. A 20- to 30-minute power nap taken in the midday trough, about eight hours after you wake up in the morning, will help pay back some of the missed sleep in

your sleep debt bank account, says Dr. Maas. Napping will help you catch up; however, you do not want to get into the vicious cycle of napping two hours per day and only sleeping a few hours each night, adds Dr. Millman.

GOLDEN RULE **5 TRAIN HARD EVERY WEEK**

NO DOUBT ABOUT IT, A GOOD WORKOUT can reduce stress and thus improve sleep. Scientists at Harvard Medical School found that a 10-week randomized controlled trial of resistance training in 32 subjects aged 60 to 84 improved subjective sleep quality, strength, and quality of life, while relieving symptoms of depression.⁷ Smart training helps you to confront and cope with the pressures in your life. “Exercise itself is a stressor. By overcoming the stresses associated with your workout, you establish a behavioral process of conquering difficulties,” says Joanne M. Koury, M.Ed., a Pennsylvania-based exercise physiologist. Your training enhances sleep by reducing anxiety associated with the responsibilities of everyday life, she adds.

Most experts advise against training too close to bedtime. It can cause an endorphin surge and elevate your core body temperature—both will keep you up. If you want to promote sleep, exercise first thing in the morning or in the early evening. “Give yourself at least four hours between the end of your workout and bedtime,” says Dr. Millman.

GOLDEN RULE **6 EAT HEALTHY FOOD**

IF YOU’RE IN THE HABIT OF EATING SIX portion-controlled meals each day, you’re already on the road to a better night’s sleep. You might not realize it, but sensible nutrition has

allowed you to escape a host of diet-related sleep disturbances, including gastrointestinal distress caused by late-night spicy meals or a growling empty stomach.

Certain foods contain substances that increase sleep-promoting brain chemicals. The amino acid tryptophan, found in turkey, milk, and other dairy products, is a precursor to sleepy substances like serotonin, says Sheah Rarback, R.D., spokesperson for the American Dietetic Association. Combining tryptophan-rich foods with portion-controlled carbohydrates may induce sleep. “Carbohydrates help shuttle tryptophan from the blood into the brain, where it causes drowsiness,” says Rarback.

GOLDEN RULE **7 STAY WELL HYDRATED**

DRINK FLUIDS, PREFERABLY WATER, as soon as you wake up and throughout the day to stay well-hydrated. How much is enough? “Depending on activity level, climate, and state of health, your fluid requirements will vary,” says Rarback. “The person who is sedentary in a cool environment, all day long, has a different fluid requirement than the individual who runs for one hour in the heat,” notes Rarback. As a general rule, drink eight to 10 glasses of water daily, and remember that fluid comes in many different forms. If you eat high-fluid fruits and vegetables such as grapefruit, watermelon, and tomatoes, these will meet some of your water needs, explains Rarback.

GOLDEN RULE **8 BUILD A SLEEP CHAMBER**

THE BEST SLEEPING ENVIRONMENT IS a quiet, dark, and cool room. Do your best to block out unwanted

sound and light from your bedroom, says Dr. Maas. Heavy curtains will accomplish both. The methodic hum of a fan may block uncontrollable sounds (traffic, neighbors) and promote sleep. If all else fails, use earplugs and eye-shades.

An environment conducive to restful sleep is fresh and comfortable. “About 65° with 65% humidity is ideal,” says Dr. Maas. You can regulate the temperature throughout the night by adding or removing blankets. And while you may envision linen sheets and a quality down comforter as the epitome of coziness, know that preferences vary. Also, there’s no scientific data showing that you obtain superior sleep with one brand of mattress versus another. It all boils down to personal preference, says Dr. Millman.

The right pillow can place you in the correct position for sleep. “A good pillow helps you maintain the primary curvature of the cervical spine,” says Neil A. Stansbury, M.D., sports medicine orthopedist in Allentown, Pennsylvania. “This posture may prevent pinched nerves and neckaches associated with misalignment of the neck. The back sleeper needs mostly neck support—your head should basically rest on the mattress. On the other hand, side sleepers should find a pillow that supports both the head and neck, while keeping them in precise alignment.”

GOLDEN RULE **9 RELAX BEFORE YOU RETIRE**

MOST PEOPLE NEED “DOWN TIME” before they can drift off into a nocturnal slumber. Schedule time on a nightly basis to perform quiet, relaxing activities before sleep. “Take a warm bath, listen to soothing music, and consciously forget about the stress of daily living,” suggests Dr. Millman. In

time, your relaxation strategies will develop into cues that instruct your body to unwind.

Try reading before you sleep in order to calm down. Just be sure to close the book as soon as you begin to nod off. "Don't struggle to get to the end of the chapter. When you feel drowsy, your biological clock is telling you it's bedtime. So close your eyes and sleep," says Dr. Millman.

Avoid mentally stimulating activities prior to shut-eye. "One of the worst things that has happened to a good night's sleep is surfing the Internet," says Dr. Millman. In addition, television before bed is habit-forming and can disturb your restful state.

Set aside time a few hours before bed for planning your next day. Instead of bringing your briefcase into the bedroom, spend 15 minutes thinking about tomorrow's schedule. Make "to do" lists and reminder notes for important events. Once you complete the planning session, your mind is free to rest. "Scheduled planning time allows you to deal with potential stressors before bedtime, thereby allowing you to relax prior to sleep," says Dr. Millman.

GOLDEN RULE 10 CREATE A SLEEP LOG

A DAILY PROFILE OF YOUR SLEEP habits can help you recognize patterns or circumstances that may be preventing quality sleep. If you're already tracking your eating schedule and workouts, it's

easy to make note of your bedtime practices.

For example, when you arise in the morning, jot down waking and sleeping times, total number of times you woke up during the night, and total hours slept. At the end of the day, make note of caffeine intake, exercise, bedtime meals, medication(s), and pre-sleep activities.

On the days when you are alert, energized, and ready to conquer the world, it's easy to find out what you did the day before to feel so empowered. Discover and repeat patterns that may be responsible for your success. On the other hand, your diary will help you alleviate rituals that disrupt a good night's rest.

CONCLUSION

THE ROAD TO A HEALTHY LIFESTYLE is paved with sound nutrition, efficient training, stress management, and smart sleep habits. Remember, the gym is a means to an end. All the weights that you lift and miles that you pedal stimulate muscular change. In order for your muscles to grow, you need to incorporate sufficient sleep into your routine. And it's not just getting enough hours of rest, it's getting quality sleep.

Start tonight with a commitment to take on these sleep-enhancing strategies. And avoid the bad habits (described in the sidebar on the right) that destroy sleep. You'll enjoy restorative benefits and improved health and alertness.

Sweet dreams. 

SLEEP SABOTAGERS

Seemingly innocent activities before bedtime can hinder the natural release of tissue-building, anti-aging substances.

Avoid stimulants

As a general rule, avoid caffeine six to eight hours before bedtime, says Rarback. Caffeine blocks brain receptors that promote sleep. "It causes physiological arousal which makes it more difficult to fall asleep," says Shawn Youngstedt, Ph.D., sleep scientist from the University of California, San Diego. Plus caffeine decreases the deep, growth hormone-rich stages of sleep.

Reduce stress

Balancing your checkbook immediately before bed or discussing business on the telephone is not a good idea, says Dr. Millman. In addition, viewing *The Exorcist* too close to bedtime might make you anxious and unsettled and make the transition into sleep tricky. "Anything that causes autonomic nervous system arousal will impair sleep due to increases in heart rate, breathing, and sweat production," says Dr. Youngstedt.

Avoid alcohol

Sure, alcohol may make you sleepy after dinner, but the sleep that you get is superficial and hardly restful. "Alcohol prevents you from achieving the deep, restorative sleep associated with growth hormone production," says Rarback.

If you consume alcohol, moderation and timing are the keys to ensuring deep, continuous sleep.

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