


"People say 'I'm going to sleep now,' as if it were nothing,"

"But it's really a bizarre activity. For the next several hours, while the sun is gone, I'm going to become unconscious, temporarily losing command over everything I know and understand. When the sun returns, I will resume my life."

George Carlin.



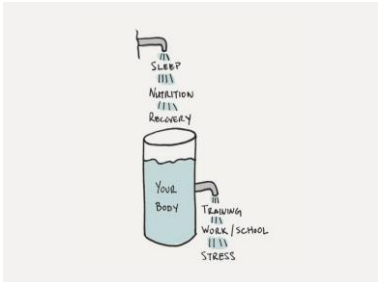
I slept like a baby.

I slept like a log.

I slept hard.

I tossed and turned.

Crazy dreams.



**Introduction**

Sleep - "the natural periodic suspension of consciousness during which the powers of the body are restored."

Sleep is been called "The Athlete's Steroid"  
Release of Human Growth Hormone while sleeping.




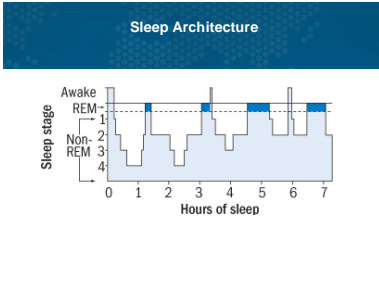
**Overview of Healthy Sleep**

90 min sleep cycles

Roll through 5 stages of sleep

5 - 6 cycles

8.5 - 10 hours sleep for athletes

## Healthy Sleep

Quantity of sleep is important, but **quality** of sleep is more important.

Some clients are in bed 7 - 9 hours/night but don't feel rested when they wake up.

## Overview of Healthy Sleep

If a person wakes up a lot and can't get back to sleep, this is considered a sleep disorder . . . and can be treated.

Quantity of sleep is important, but **quality** of sleep is more important.

Most sleep disorders can be treated with specialists who practice Sleep Medicine.

## Sleep Medicine . . . Bracko

1996 – 1999 sleep disorder.

3, 4, 5 hrs sleep/night.

Always injured. Always tired. Always "thinking" something was wrong. Always grumpy.

2000 diagnosed with Restless Leg Syndrome.

Started on 1.5 mg of Clonazepam. Reduces Periodic Limb Movement during sleep.

Changed my Life . . . Sleep . . . Fitness . . . Health.

## Sleep Medicine . . . Bracko

Pay specific attention to sleep hygiene.

- Wind down at night.
- Start the process at about 8:30pm
- Cold house . . . Cold hotel room.
- Ear plugs.
- Meditation when a lot of stress.

## Sleep Medicine . . . Bracko

Restless Leg "controlled."

Now on .75 mg Clonazepam.

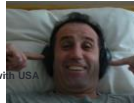
Sleep well 13 of 14 nights.

Stress causes disrupted sleep.

Custom fit ear plugs on planes.

Ear plugs in hotels.

Serious noise reduction when traveling with USA Men's Deaflympic Hockey Team.



## Overview of Healthy Sleep

Proper sleep helps contribute to a healthy immune system.

With proper sleep we're less likely to get sick – cold, flu, etc.

Stages 3 and 4 body produces human growth hormone.

Repair and enhance muscle tissue and cells and is key to improving sports performance . . . "The Athletes Steroid."

## Importance of Sleep

Most common symptoms of chronic poor sleep include:

- irritability
- memory loss
- headaches
- impaired fine motor skills
- muscle aches
- can't train or perform at full capacity.

## Importance of Sleep

It is difficult to improve performance/fitness when experiencing poor sleep or lack of sleep.

How can our clients get a good work-out when they're tired, irritable, have a headache, and fatigued?

## Sleep Improves Sports/Fitness Performance

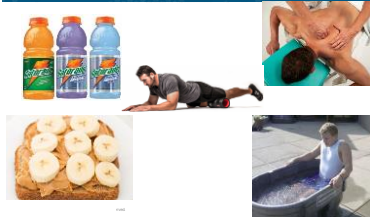


## Sleep Improves Sports Performance

"Sleep duration may be an important consideration for an athlete's daily training ..." Cheri Mah, Ph.D., Stanford Sleep Disorders Clinic.

"A universal **recovery strategy** that is essential to both physiological adaptation and to the consolidation of skill development is sleep."  
Gordon Sleivert, Ph.D., Canadian Sport Centre Pacific.

## Recovery?



## Sleep Improves Performance

Cheri Mah, Ph.D.

"sleep is an important factor in peak athletic performance"

"athletes may be able to optimize training and competition by maximizing the benefits of sleep."

## Sleep Improves Fitness and Sports Performance

Proper sleep helps athletes in two ways:

1. Boosts performance: improved cognitive function, reaction time, hand-eye coordination, concentration, increased energy, improved mood.
2. Aids recovery from workouts. Athletes get a better work-out ...



## Sleep Improves Performance - Research

Mah (2008) college swimmers increased sleep to 10 hours/night for 6 – 7 weeks:

- swam a 15-m sprint 0.51 seconds faster (little more than 1% of the pool)
- reacted 0.15 seconds quicker off start blocks
- improved turn time by 0.10 seconds
- increased kick strokes by 5.0 kicks



## Sleep Improves Performance - Research

Mah, et al (2011) college basketball increased sleep to 10 hours/night improved performance:

- faster timed sprint – 0.70 sec (baseline to half-court, back to baseline, full-court, full-court back)
- free throw percentage increased - 9.0%
- 3-point field goal percentage increased – 9.2%



## Sleep Improves Performance - Research

Mah (2010) 7 Stanford University football players - 18 to 22 years.

"These athletes began their competitive season with moderate levels of daytime sleepiness and fatigue."

- aimed for a minimum of ten hours of sleep each night.
- 20-yard shuttle run time decreased 4.71 → 4.61 sec
- 40-yard dash time decreased 4.99 → 4.89 sec
- Daytime sleepiness and fatigue also decreased significantly, while vigor scores significantly improved.

## Sleep Improves Performance - Research

Schwartz & Simon (2015). Sleep extension improves serving accuracy: A study with college varsity tennis players. *Physiology & Behavior*. 151:541-544.

7 females, 5 males, college varsity tennis team.

Normal sleep-wake schedule for 1-week - 7.25 hrs sleep.

One-week sleep extension - 9 hrs sleep.

Serving accuracy tested during "normal" sleep and during sleep extension.

Serve accuracy improved - 6.1% (statistically significant).



## Sleep Improves Performance

Samuels (2009) ... critical relationship between recovery during sleep and an athlete's ability to train at max capacity.

Human growth hormone peaks - 10:00pm - midnight - 2:00 am.

What time are our clients going to bed?

Looking at a computer . . . Working . . . E-mails?

Is there a way to help our clients get to sleep after working, family, kids to bed, etc?

## Sleep Improves Performance

Walker and Stickgold (2006) Sleep, memory, and plasticity. *Annual Review of Psychology*. 57:139-66

- relationship between sleep and consolidation of skill and performance enhancement.
- a cause & effect relationship exists among sleep, memory, and performance.
- importance of sleep for athletes for optimal performance when cognitive tasks and psychomotor vigilance are required.

## Pro Teams

"... sleepy baseball players don't stay in majors as long as rested players."

Chris Winter, MD, Charlottesville Neurology & Sleep Medicine, Charlottesville, VA.

"Sleep deprivation affects baseball players - or any athlete - in a variety of ways, impairing reflexes, motivation, judgment, healing, & attention."

## Pro Teams

"Chronic sleep deprivation can slow reaction time 10 fold ... devastating for a hitter who has .25 sec's to decide to swing at a ball."

Scott Kutscher, MD, Sleep Expert, Vanderbilt University.

## Pro Teams

Charles Czeisler, director of Sleep Medicine Harvard University (known in NBA as the "Sleep Doctor") (Time, The Science of Sleep, 2015).

Czeisler indicates it is the sleep after an event or practice that enhances skill development.

Many NBA teams have stopped the morning shoot around so players can get more sleep.

## Pro Teams

Many pro teams (NHL, MLB, NBA) have changed their flight schedules.

Old - play at night, fly to next city, get 5 - 7 hrs fragmented sleep.

New - play at night, sleep in same city, fly next day, get 7 - 9 hrs continuous sleep.

MLB - teams flying over 2 time zones ... try to get early to adjust.

Tips to Help Our Clients Get Better Sleep





### Tips to Help Clients Get Better Sleep

Cell phone addiction . . . "Dopamine Loop."

Dopamine a neurotransmitter released in association with pleasure.

Dopamine can interfere with the natural sleepiness at night.

Risk of addiction to phones and tablets for social media and work.

Dopamine has been linked to "seeking behavior."

### Tips to Help Our Clients Get Better Sleep

Decrease temperature in bedroom . . . body likes cooler temp's for better sleep.

18 – 20 C ... but as low as 15 C (64 – 68F ... 59F)

Bedroom should be like a TOMB ...

**COLD**  
**DARK**  
**QUIET**

Hot bath 90 – 120 min before bed, body temp drops quickly after a bath.

### Tips to Help Our Clients Get Better Sleep

Wind down before bed.

Eat three to four hours before bed, and avoid heavy meals.

Some evidence to show a light carbohydrate snack before bed helps with sleep.

Protect sleep from intrusions & interruptions.

### Tips to Help Our Clients Get Better Sleep

Environmental Factors

Evaluate and address "bedroom" factors.

- Noise
- Light (use black out curtains)
- Use a reliable, regular, effective alarm clock
- Use a good mattress and pillow
- Privacy/security ... doors and windows

### Tips to Help Our Clients Get Better Sleep

Use the bed for sleeping, lovemaking, and reading.

Naps are good . . . but not too long . . . 15 to 20 minutes in the afternoon, if necessary.

A long nap can cause sleep inertia.

### Sleep Improves Sports Performance

Watson AM (2017). Sleep and Athletic Performance. Curr Sports Med Rep., 16(5): 413-418.

Most studies show that athletes fail to obtain the recommended amount of sleep.

Athletes face obstacles that can reduce proper sleep:

- Training and competition schedules
- Travel
- Stress
- Academic demands
- Overtraining

Athletes have been found to demonstrate poor self-assessment of their sleep.

Athletes may require monitoring to identify individuals at risk and promote proper sleep.

Athletes need simple solutions to enhance sleep.

### Thanks for coming!!

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