



# The Wonder Treatment

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JULY 30, 2019

# Understanding Runners Pysche

- ▶ Undergrad Elon College (yes, college not university)
- ▶ Rugby
- ▶ Marathon and beyond
  
- ▶ HCA Virginia Sports Medicine
  - ▶ Gait analysis





# To Good To Be True

- ▶ This Treatment...
  - ▶ Improves Tissue Healing
  - ▶ Decreases Injuries
  - ▶ Improves Athletic Performance
- ▶ “If you told an athlete you had a treatment that would reduce the chemicals associated with stress, that would naturally increase human growth hormone, that enhances recovery rate, that improves performance, they would all do it....”
  - ▶ - Casey Smith, Head Athletic Trainer, Dallas Mavericks

# The Power of Sleep

- ▶ “...Sleep does all of those things.”
  - ▶ - Casey Smith, Head Athletic Trainer, Dallas Mavericks





# Overview

- ▶ My Background
- ▶ Benefits of Sleep
- ▶ What Can Happen if You Don't Get Enough Sleep
- ▶ How Much Sleep is Enough
- ▶ How To Help Athletes Get Sleep

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# HCA Virginia Sports Medicine Boulders Clinic

- ▶ Running
- ▶ Elon College
- ▶ VCU (MCV) Grad School Physical Therapy
- ▶ 2008 CJW Sports Medicine (aka HCA Virginia Sports Medicine)



# What Can Sleep Do For You?

## REM Sleep

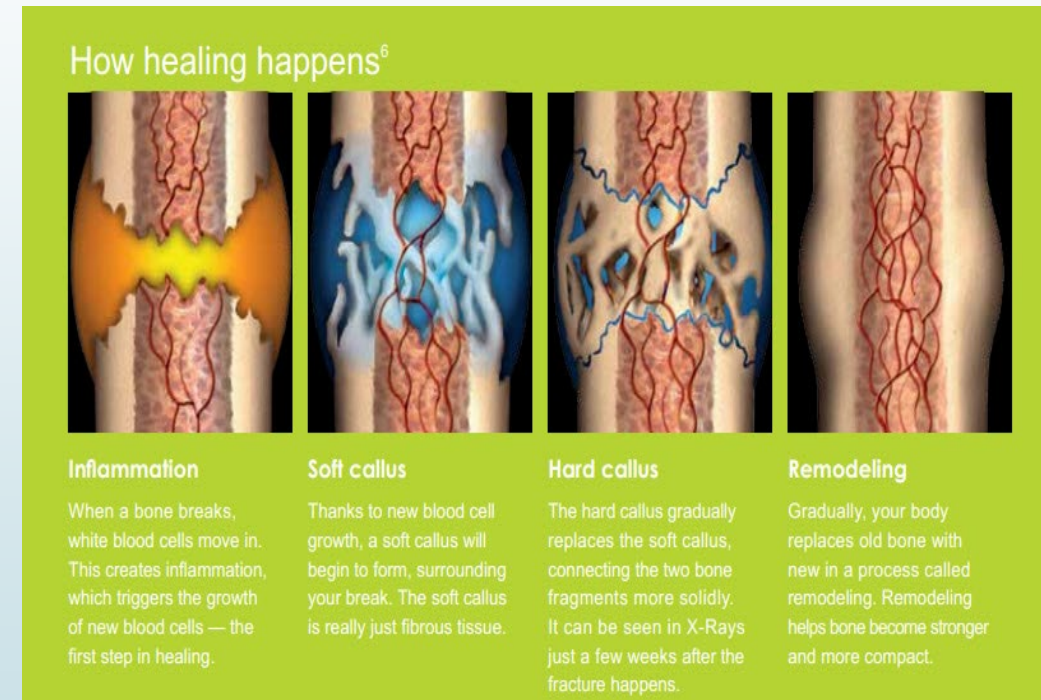
- ▶ 20%
- ▶ Mental Recover
- ▶ Memory Consolidation

## Non REM Sleep

- ▶ 80%
- ▶ Physical Recovery
- ▶ Tissue Repair

# NREM Tissue Repair

- ▶ Least amount of Brain activity, and INCREASED blood supply to tissues
  - ▶ Healing/Tissue Regeneration
  - ▶ Break down free radicals minimizing brain cell damage caused by stress
- ▶ Production of Growth Hormone (GH)
  - ▶ GH accelerates **bone healing**
  - ▶ GH accelerates **BONE HEALING**







## But Wait, There's More!

- ▶ When we sleep...
  - ▶ Prolactin is released to help regulate inflammation
    - ▶ Don't need medication , just sleep
- ▶ Hunger lowers
  - ▶ Are appetites are satiated, and weight is maintained

# How Much Sleep is Enough?

- ▶ How much sleep do your athletes get?
- ▶ How much sleep do you get?
- ▶ How much sleep is recommended?





# How Much is Enough?

- ▶ General Population:
  - ▶ Children 6-13 years: 9-12 hours
  - ▶ Teenagers 13 – 18 8 – 10 hours
  - ▶ Adults 18 – 64 7 – 9 hours
  
- ▶ Athletes 8 – 10 hours

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# Other Benefits

- ▶ Athletic Performance

- ▶ Improved swim turn and stroke efficiency (running mechanics?)
- ▶ Increased free throw and 3 Pt percentages
- ▶ Increased tennis serve accuracy
- ▶ Improved half court and full court sprints (basketball)
- ▶ **Increased time to exhaustion**



# Sleep Deprivation

- ▶ Negative Effects of Sleep Deprivation
  - ▶ Increase in pro-inflammatory cytokines
    - ▶ Impairs immune system
    - ▶ Impedes muscle recovery and repair from damage
    - ▶ Leads to autonomic nervous system imbalance (overtraining symptoms)
    - ▶ Alters pain perception
  - ▶ Increases Perceived Level of Exertion
  - ▶ Decreased reaction time
  - ▶ Judgement and decision-making significantly altered



# How Can We Help Our Runners?

- Make Sleep a Priority
- Sleep Hygiene
  - Create/talk about a sleep hygiene education program
- Identify Athletes at Risk
  - Busy schedules (tests, exams, etc)
  - Type A runners
  - Chronic injuries
  - Runners who are not improving



# Healthy Sleep Hygiene Recommendations

- 1. Don't go to bed until sleepy
- 2. Have a regular bedtime routine/ritual (reading a book, take bath/shower)
- 3. Try to get up the same time every morning (including weekends)
- 4. Try to get full night's sleep every night, and avoid naps
- 5. Use bed for sleep, not watching tv, etc.
- 6. Avoid alcohol and nicotine
- 7. Avoid high-intensity exercise before bed
- 8. **Avoid phones, computers, and tablets** (disrupts melatonin)

# Recap

- ▶ Sleep improves healing (tissue and bone)
- ▶ Sleep positively effects sport performance
- ▶ Lack of sleep is detrimental to sport performance
- ▶ Talk to athletes about importance of sleep





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# Any Final Thoughts?

➡ Question?

➡ Thank you!



# Works Cited

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