

Sleep and Sports Performance

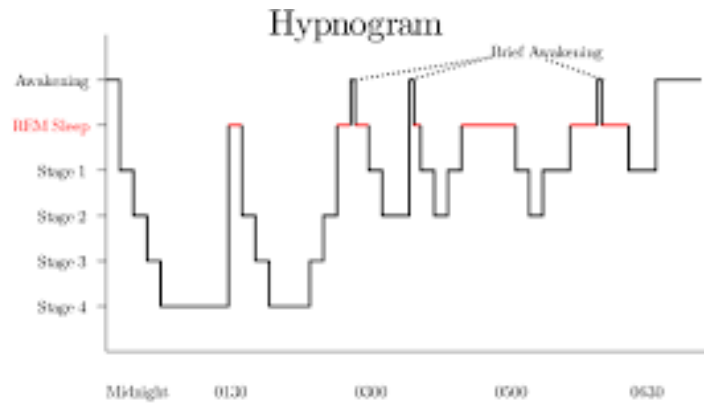
A short review of sleep, and how impaired sleep can affect the athletes you see.

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What is sleep?

- "In animals, Sleep is a naturally recurring state characterized by altered consciousness, relatively inhibited sensory activity, and inhibition of nearly all voluntary muscles. It is distinguished from wakefulness by a decreased ability to react to stimuli, and it is more easily reversible than being in hibernation or a coma."

What it looks like



Sleep Deprivation



8-9 hours of sleep is what we need—though most do not get this routinely.

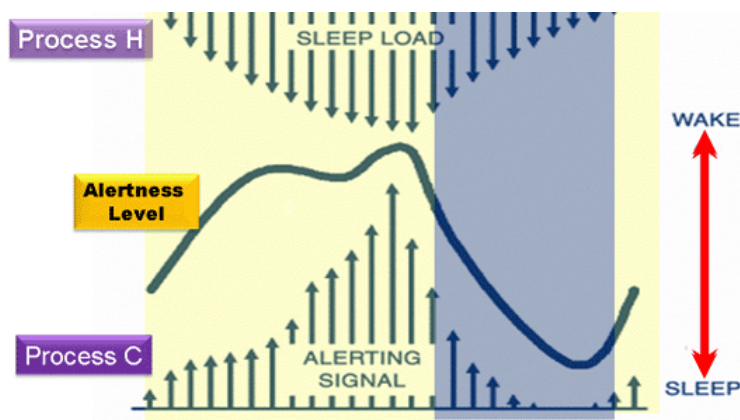
Minister of Defense

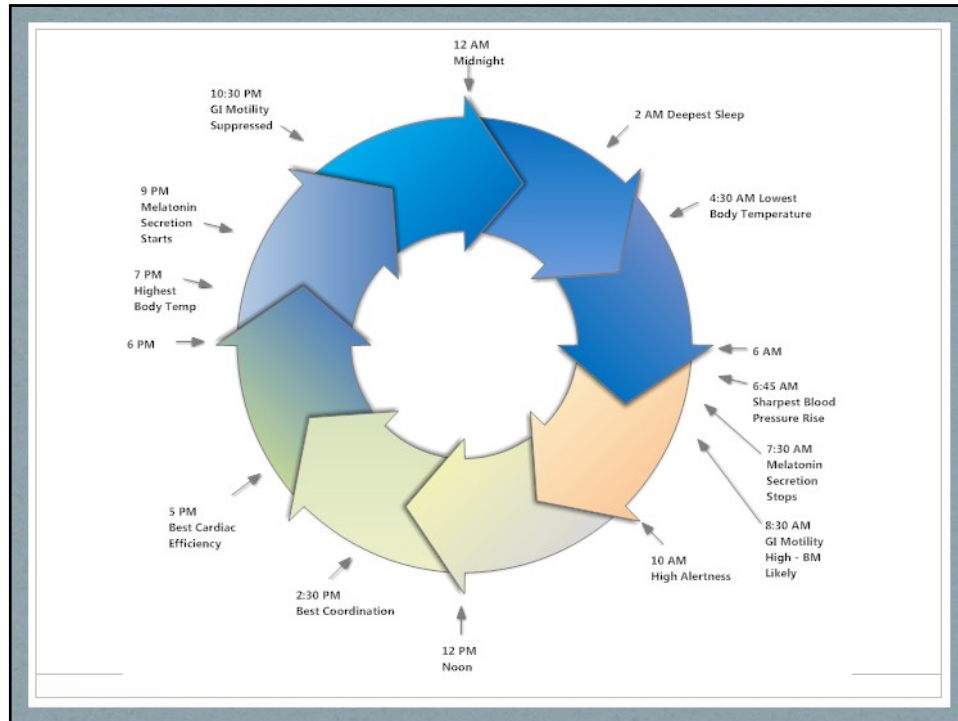
- White most likely had a condition that affected the amount of air his lungs could hold, resulting in "fatal cardiac arrhythmia," said Dr. Mike Sullivan, the medical examiner for Mecklenburg County and a forensic pathologist.
- The report issued by Sullivan's office also said sleep apnea may have been a factor.
- "Sleep apnea may have contributed to death"



OSA is a real risk

Circadian Shifts





Lots of data

- West coast NFL teams playing evening games versus East coast teams.
- How jet lag impairs Major League Baseball performance
- [Alex Song,^a Thomas Severini,^b and Ravi Allada^{a,1}](#)
- The most striking effect of jet lag was on poor defensive performance, exemplified best by home runs allowed by pitchers. An increased tendency to give up the long ball was seen among eastward travelers (but not westward travelers), and in both home and away groups.

Insufficient sleep

- One night of sleep restriction following heavy exercise impairs 3 Km cycling time trials performance. PMID 28467857
- The effects of Sleep Deprivation on Soccer Skills.
 - PMID28485189
- One night of sleep deprivation decreases treadmill endurance performance. PMID19543909

How sleep affects performance

- Time- how much sleep you get, regularly. AND, how to catch up or do not when it is reduced.
- Timing- when you compete in relation to your normal circadian rhythms. This changes not only with travel, time zones, but with age.
- Quality- is your sleep actually healthy?

What should you do?

- Identify sleep issues- ask.
 - OSA, sleep schedules/environment, how do you feel when you wake after sleep?
 - Insomnia- despite best intentions, common.
- Prove it- parents, caregivers, teachers.
 - When does your athlete go to SLEEP(not bed).
- Educate- competitive athletes DO care about what affects their success.
- Treat- each aspect of sleep can be addressed and can be improved to maximize the athlete's success.

Sleep Evaluation

- History is your friend
- IF- sleep is fragmented, insufficient, frustrating..
 - Circadian and homeostatic tools work.
 - Align times and environmental cues, treat underlying pathology and be aware of mood.
- IF- snoring, pausing, is part of sleep,
 - OSA- sleep study, surgery or CPAP.
- IF- despite sleep time being ok- your athlete is remarkably sleepy during the day,
 - Disorders of hypersomnia(narcolepsy) can hide.
- **Center for Pediatric Sleep Medicine at CHKD**