Conflict of Interest Disclosures Hacking Sleep: Optimizing Sleep and ń 1 I do not b Circadian Health for Elite Performance ntial Cor Details of Pol ntial Confl North Dakota Academy of Family Physicians Grant/Re earch Suppor National Institutes of Hea **Big Sky Conference** January 17, 2023 3. The materi Michael Howell MD 4. Th Professor and Vice-Chair Department of Neurology University of Minnesota President, Sleep Performance Institute 2

Learning Objectives

- Upon completion of this course attendees should be able to...
 Effectively explain how sleep is a unique opportunity to improve athletic performance.
 - Recognize the relationship between poor sleep and clinician (doctor) burnout.
 Incorporate sleep/circadian strategies in fatigue mitigation programing to medical trainees.

Contents

- I. Background: Sleep and Brain Performance
- II. Depth of the Sleep Problem for Elite Athletes (and doctors)
- III. Explaining to athletes, coaches and managers how to harness the sleep edge

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EFFECTS OF SLEEP EXTENSION ON ATHLETIC PERFORMANCE

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2021 UMN Athlete Sleep Training Results

Reaction Time Before and After Sleep Training
Faster Reaction times and fewer errors







Sleep and Brain Performance-Proven Solutions

Addressing Sleep Disorders

Optimizing the circadian timing of sleep and

adjusting for performance

- Everyone can become more aligned
- Utilizing light and melatonin (careful you can make things worse)

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Perceptions and Misperceptions

8 decades (over 10,000 studies) of scientific investigations have demonstrated that the # of people who can perform on less sleep without impairment is...

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Consequences: Injury, Recovery and Longevity

 Sleeping less the night before a game was related to increased frequency of injuries taxe or tal. (in / Sports Med. 2011

Athletes sleeping < 8 hours are twice as likely to sustain an injury than those sleeping >8 hours
 Milewski, et al. Pediatr Orthop. 2014

An increase in sleep resulted in faster recovery

Consequences: Injury, Recovery and Longevity

- Sleep was the most important modality for recovery regardless of gender, sport, or level of competition. t al. Eur J Sport Sc
- Higher subjective sleepiness scores at first training camp were correlated with shorter MLB careers. Write, Cr et APSS advance, 2012

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Which Physicians Are Most Burned Out?











As a Predictor of Burnout • Among 922 resident respondents across 4 separate
institutions including adult and pediatric trainees. • A sleep disorder was the strongest predictor of
burnout (p-value < 0.001) 33









Sleep Routines "For me, sleeping well could mean the difference between putting up 30 points and living with 15" "I think that napping every game day, whether you feel like it or not, not only has a positive effect on your performance that night but also a cumulative effect on your body throughout the season." Steve Nash after winning his second MVP trophy (Abrams 2011, McCann 2012) 39 40



































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