FATIGUE MANAGEMENT & MITIGATION

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GRMEP
OBJECTIVES
By the end of this presentation participants will:

• Understand ACGME requirements for fatigue management & mitigation

• Recognize the signs of excessive fatigue and risk factors

• Challenge common misconceptions among physicians about sleep and sleep loss

• Describe fatigue mitigation strategies
ACGME

Common Program Requirements:

- Programs and SI’s must educate residents and faculty members concerning the professional responsibilities of physicians to appear fit for duty appropriately rested and fit to provide the services required by their patients
ACGME

- The program must educate all faculty members & residents to recognize the signs of fatigue & sleep deprivation.

- The program must educate all faculty members and residents in alertness management and fatigue mitigation processes & adopt fatigue mitigation processes to manage the potential negative effects of fatigue on patient care & learning.
ACGME

• Each program must have a process to ensure continuity of care in the event that a resident may be unable to perform his/her patient care duties

• The SI must provide adequate sleep facilities and/or safe transportation options for residents who may be too fatigued to safely return home
CLER

• One of 6 Focus Areas: Oversight of Duty Hours, Fatigue Management and Mitigation

• What is in place to meet requirements?
  • Education at Core Conferences
  • LIFE Curriculum- for residents & faculty
  • Call rooms
  • Institutional policy: Fatigue, TIC, taxi vouchers
  • Dashboards
HIGH RISK TIMES OF FATIGUE

• Midnight to 6:00 a.m.
• Early hours of the day shift
• First night shift or call night after a break
• Change of service
• The first 2 – 3 hours of a shift or end of shift
• Early in residency or when new to night call
• Transition from PGY1 to PGY2, with increased duty hours
CONCEPTUAL FRAMEWORK FOR RESIDENTS

Insufficient Sleep
(on call sleep loss/inadequate recovery sleep)

Fragmented Sleep
(pager, phone calls)

EXCESSIVE DAYTIME SLEEPINESS

Circadian Rhythm Disruption
(night float, rotating shifts)

Primary Sleep Disorders
(sleep apnea, etc)
MYTHS & FACTS

**Myth:** I only need 5 hours of sleep so none of this applies to me

**Fact:** Individuals vary in their tolerance to the effect of sleep loss, but are not able to accurately judge this themselves

**Fact:** Human beings need 8 hours of sleep to perform at an optimal level

**Fact:** Getting less than 8 hours of sleep starts to create a “sleep debt” which must be paid off
MYTHS & FACTS

Myth: I will adapt to less sleep

Fact: Sleep needs are genetically determined and cannot be changed

Fact: Human beings do not “adapt” to getting less sleep than they need

Fact: Task performance may improve somewhat with effort; optimal performance and consistency of performance do not!
MYTHS & FACTS

**Myth:** I know when I am too tired to perform and am not functioning optimally

**Fact:** Studies show sleepy people underestimate their level of sleepiness and overestimate their alertness

**Fact:** The sleepier you are, the less accurate your perception of impairment is

**Fact:** You can fall asleep briefly (microsleeps) without knowing it
MYTHS & FACTS

Myth: A nap will only make me more tired; I get used to night shifts right away

Fact: Some sleep is better than no sleep

Fact: What time and for how long you sleep are key to getting the most out of napping

Fact: Circadian rhythms and sleep patterns take at least a week to adjust

Fact: Adjustment usually includes physical and mental systems
CAFFEINE:

“I just need a cup of coffee or an energy drink”

**Facts:** Strategic consumption of caffeine is key

**Facts:** The effects occur within 15-30 minutes; half life is 3 – 7 hours

**Facts: Cons**

- Most likely disrupts subsequent sleep
- Tolerance may develop
- Has diuretic effects
SIGN OF EXCESSIVE FATIGUE

- Repeated yawning and nodding off
- “Micro sleeps”
- Increased tolerance for risk-taking
- Lack of engagement
- Inattention to detail
- Decreased cognitive function
- Irritability
- Increased errors
- Loss of appetite
- Increased susceptibility to illness
EFFECTS

• Chronic sleep deprivation can manifest in impaired memory consolidation, reaction time, and the ability to process information – shown in numerous studies on medical residents

• Sleep deprived residents are generally grossly inaccurate judges of their impairment level
• Reduced ability to handle stress on the job
• Increased errors in judgment
• Increased accident rates
• Being awake for 17 hours impairs performance to the same level as having a 0.05 blood alcohol content.
• Being awake for 20 hours impairs performance to the same level as having a 0.1 blood alcohol content.
IMPACT ON RESIDENTS/FELLOWS

• Sleep deprivation is the second leading cause of car and truck accidents

  ○ In a prospective cohort study of 2737 medical interns followed for 1 year, the rates of motor vehicle collisions after working an extended shift (≥ 24 h) were compared to rates after working a non-extended shift. The odds for having a collision after working an extended shift rather than a non-extended shift increased 66%
IMPACT ON RESIDENTS/FELLOWS

• There is a 50% greater risk of blood-borne pathogen exposure incidents in residents between 10 pm and 6 am (Parks 2000)

• Residents working longer hours report decreased satisfaction with learning environment and decreased motivation to learn (Baldwin et al 1999)
RECOGNIZE WARNING SIGNS OF EXCESSIVE FATIGUE

• Falling asleep in conferences or during rounds
• Feeling restless and irritable with staff, colleagues, family and friends
• Having to check your work repeatedly
• Having difficulty focusing on the care of your patients
• Feeling like you just don’t care
FATIGUE MITIGATION STRATEGIES

Strategic napping

• No longer than 30 minutes for a short nap to avoid grogginess that occurs when awakening from deep sleep (sleep inertia)
• If time allows, take a longer 2 hour nap
• Allow 15 minutes wake up time after a longer nap
• Avoid caffeine intake 3 hours before bed
• Avoid exercise 2 – 3 hours before bed
• Limit nicotine close to bedtime
• Quiet, dark, cool room
FATIGUE MITIGATION STRATEGIES

Timing of Naps

• If possible take advantage of circadian rhythm windows of opportunity: 2-5am & 2-5pm
• If not, nap when you can
• Be aware of sleep inertia and allow yourself enough time to recover from a longer nap
• Bottom line: Naps take the edge off but do not replace adequate sleep
FATIGUE MITIGATION STRATEGIES

Healthy Sleep Habits

• Get adequate (7-9 hours) of sleep before anticipated sleep loss
• Avoid starting out with a sleep deficit
• Develop a pre-sleep routine
• Avoid going to bed hungry; no heavy meals within 3 hours of going to sleep
• Get regular exercise but avoid exercising within 3 hours of going to sleep
FATIGUE MITIGATION STRATEGIES

Sleeping Environment

• Cooler temperature
• Dark (eye shades, room darkening blinds)
• Quiet (silence phone, turn off pager if able to, use ear plugs, white noise machine)

Protect your sleep time! Enlist the help of your family and friends.
SURVIVING NIGHT FLOAT

• Protect your sleep
• Nap before work
• Consider dividing sleep into two 4 hour periods
• Obtain as much exposure to bright lights as possible when you need to be alert
• Avoid light exposure in the morning after night shift
GRMEP GRADUATE MEDICAL EDUCATION
FATIGUE POLICY

• Familiarize yourself with the policy

• If you are excessively fatigued and it is unsafe to drive home, obtain a taxi voucher from your program coordinator or from the call rooms
REFERENCES:

ACGME

American Academy of Sleep Medicine
