



Fatigue Management Across the Spectrum: Resident to Fellow to Faculty

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Pediatric Residency Education

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Goals

1

Review concepts of workplace fatigue

2

Understand current ACGME standards for fatigue in residency training

3

Use small groups to develop strategies for managing and mitigating fatigue

Methods

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graph LR; A[Didactics and data about fatigue] --- B[Small group work with diverse roles];
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Didactics and
data about
fatigue

Small group
work with
diverse roles

Dictionary

fatigue



fa·tigue

/fə'tēg/ 

noun

1. extreme tiredness, typically resulting from mental or physical exertion or illness.

"he was nearly dead with fatigue"

synonyms: tiredness, weariness, sleepiness, drowsiness, exhaustion, enervation, languor, lethargy, torpor, prostration; war-weariness

"his body was slumped from fatigue"



ACGME on Fatigue

- **Residents and faculty members** must demonstrate an understanding of their personal role in the recognition of impairment, including from illness, **fatigue**, and substance use, in themselves, their peers, and other members of the health care team.
- Each **program** must ensure continuity of patient care, consistent with the program's policies and procedures, in the event that a resident may be unable to perform their patient care responsibilities due to excessive **fatigue**.
- The **program**, in partnership with its **Sponsoring Institution**, must ensure adequate sleep facilities and safe transportation options for residents who may be too **fatigued** to safely return home.

2017 ACGME Common Program Requirements for Education

(i.e. Why
We're Here!)

- **Programs must:**

- educate all **faculty members and residents** to recognize the signs of fatigue and sleep deprivation;
- educate all **faculty members and residents** in alertness management and fatigue mitigation processes; and,
- encourage residents to use fatigue mitigation processes to manage the potential negative effects of fatigue on patient care and learning.

Why do we make residents work so much?

- There's not enough time to fit it all in
- The “good stuff” usually happens outside of the usual work hours
- Sometimes you learn a lot by observing a process
- It's better to practice difficult situations with supervision to avoid harm
- In acute care settings, patients need doctors 24/7/365

The logo for 'start with why' is centered within a white circle. The text 'start' is in a bold, black, sans-serif font. Below it, the word 'with' is in a smaller, lighter font, and 'why' is in a bold, black, sans-serif font. The entire logo is set against a light blue rectangular background.

start
with why



Fatigue

- Feeling of tiredness that varies in intensity and duration
 - Sleepiness
 - Impaired vigilance
 - Impaired sustained attention
- Common Causes in Physician Training
 - Sleep Deprivation
 - Emotionally or physically intense exertion
 - Prolonged exertion
 - Complex tasks
 - Impairment
- Fatigued persons may be unaware of impaired behavior



Signs of Clinical Fatigue

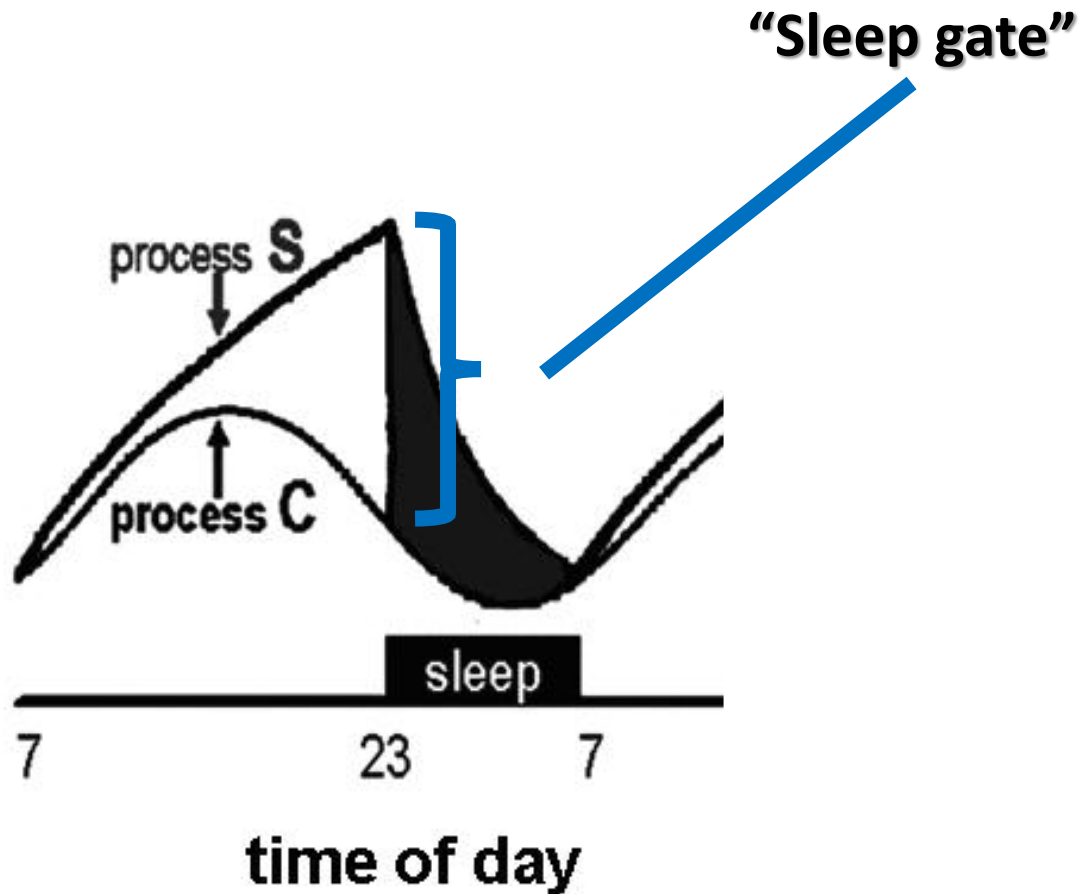
- Moodiness, irritability
- Impoverished speech or flat affect
- Impaired problem solving
- Sedentary nodding off and micro-sleeps (5-10 second lapses in attention)
- Difficulty focusing on tasks
- **Medical errors**

Sleep

- Reliably relieves fatigue
- Adults need 7.5 -8.5 hours daily
- Are you aware how much sleep that you need?



Two process model of sleep



- Controlled by
 - Process S – sleep drive that increases “sleep pressure”
 - Process C – Circadian rhythm drives wakefulness
 - ✓ Strongest in the early morning
 - ✓ Weakest in the late afternoon

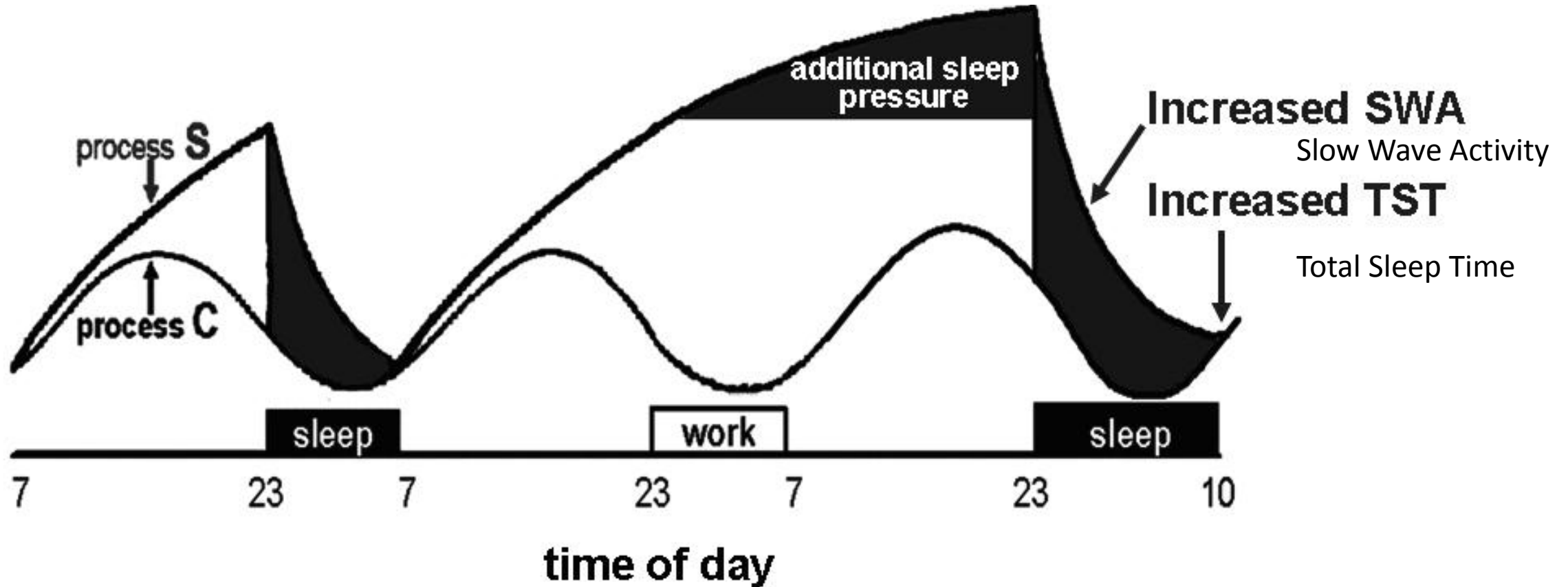
**Need.
More.
Sleep.**



Sleep Deprivation

- Impairs cognitive performance and fine motor skills
- Proven to impair clinical performance of physicians
- Acute Sleep Loss + Chronic Sleep Loss + Circadian misalignment has a potent negative synergistic effect

Two process model of acute total sleep deprivation





Negative Effects of Chronic Sleep Deprivation and Prolonged Shift Work

- Diminished performance
 - Decision making areas in the prefrontal cortex diminish and the amygdala becomes more active
- Accidents
- Obesity
- CV disease

Fatigue Mitigation

There is no effective intervention to restore full cognitive function other than restoring lost sleep.

Fatigue mitigation goals:

- Enhance alertness

- Maximize potential for effective rest

- Ensure Patient and Physician Safety



Fatigue Mitigation in the Moment

- Fatigued Colleagues are often unaware or impaired
 - IF YOU SEE SOMETHING, SAY SOMETHING!
- Strategic/Structured Napping (ACGME!!) can help
 - Proven to restore alertness during night shifts
 - Just 30 minutes will work
 - 02:00-03:00 seems to be the best time
 - Napping doesn't affect ability to get daytime rest
- Brief periods of exercise can restore alertness during prolonged shifts (take the stairs!)





Fatigue Mitigation in the Moment

Caffeine!!

- 2 to 4 hours of effectiveness
- Restores alertness BUT NOT **cognitive function**
- Avoid within 5 hours of recovery sleep
- Diminishing return and increased toxicity with repeated boluses

Common Caffeine Formulations

- Tall (12oz) Pike Place : 235mg
- Medium (14oz) Dunkin: 210 mg
- No Doz/Vivarin (one dose): 200mg
- Monster Energy (20oz): 160mg

- Green Mtn Keurig K cup: 75mg
- Mountain Dew (12oz) : 54mg
- Black Tea (8oz) : 47mg
- Diet Coke (12oz): 46mg



150 mg – 600 mg most effective dosing range

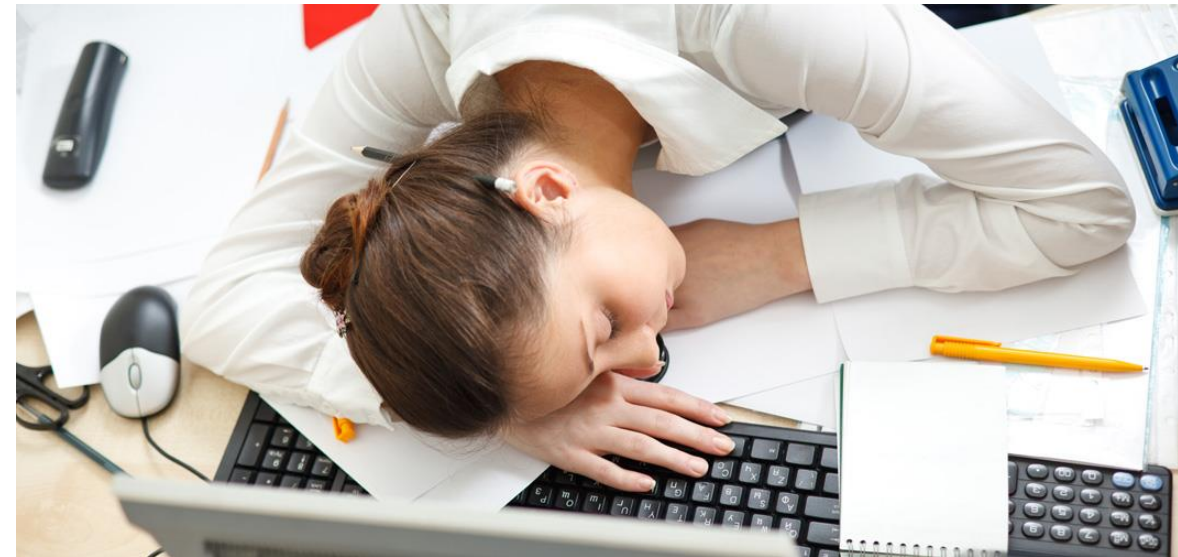
Fatigue Mitigation in the Moment: ACGME

- **There must be a plan to relieve maximally fatigued trainees of patient care duties and safely transfer that care to another physician. – Call for help.**
- **Faculty, staff and trainees must know how to use this plan and be encouraged to use it. – It's OK.**
- **Safe transportation home and sleep facilities must be provided. – Keys to call rooms in the lounge, take a nap.**



Fatigue and Driving After a Shift

**How do you know
when you are too tired
to drive?**





Fatigue and Driving: Signs of Drowsy Driving

- Trouble focusing on the road
- Difficulty keeping your eyes open
- Nodding off or yawning
- Drifting from your lane, missing signs or exits
- Not remembering driving the last few blocks/miles
- Closing your eyes at stoplights

You must nap before driving or get a ride if overtired!!!!

Fatigue Mitigation: ACGME Professionalism

- Residents **and** faculty members must demonstrate an understanding of their personal role in the assurance of their fitness for work, including:
 - management of their time before, during, and after clinical assignments
 - recognition of impairment, including from illness, fatigue, and substance use, in themselves, their peers, and other members of the health care team
- Physicians are expected to adjust their lifestyle so they can be physically and mentally prepared to provide excellent care for patients without outside prompting

Fatigue Mitigation: Lifestyle/Night Float/Sleep

- Exercise

- Submaximal aerobic exercise relieves fatigue in the short term
- Physicians enrolled in exercise programs report less work dependent fatigue symptoms
- 150 minutes weekly is a good starting point.
 - 30 minutes 5 times/week



- Prophylactic Napping

- 30-40 minutes
- Before a prolonged or night shift
- Similar effectiveness to repeated 150 mg boluses of caffeine





Fatigue Mitigation: Maximizing Sleep Efforts

- Avoid exposure to sunlight when attempting to sleep after night shifts
- Make your sleep area in as dark and quiet as possible
- Minimize electronic distractors (TV, pager, phone, iPad)
- Cooler room temps promote more restful sleep (<72 F)
- White noise can help mask variable outside noise and promote sleep
 - There are free apps!
- 8 hours of nightly sleep is preferred and at least 6 hours of sleep while on night float

Questions and Discussion



Small group activities

- Let's shuffle!
- Each table needs (if possible)
 - Residents
 - Fellows
 - Attendings





Guidelines

- Introduce yourself to everyone at your table
- Be respectful
- Avoid story telling
 - “There was that one time I was on for 73 hours straight and stayed awake by snorting ground up Sweet Tarts...”
- Everyone contributes because everyone experienced fatigue

Discussion 1: Recognition

- Do you know how many hours of sleep per night that you need?
- Would you want a colleague to recognize their own fatigue and tap out?
- Would you want a colleague to point out your own fatigue to you?
- How?

Discussion 2: Mitigation

- What do you do to minimize your risk for fatigue BEFORE working?
- How do you most effectively mitigate fatigue DURING a shift?
- How do you make the switch?
 - nights to days
 - after a 24 hour call

Final thoughts

- Fatigue is dangerous to you **and** your patients
- When you see something, say something
- Use fatigue mitigation techniques judiciously and effectively
 - That means caffeine, too
- Continue to think about better ways we can help residents **and** faculty manage this