





Learn more about the Performance Triad at PERFORMANCETRIAD.MIL



Defense Health • Global Health

This module was developed by the Walter Reed Army Institute of Research (WRAIR).

This module was last updated on 27SEP2022.

Approved for public release; distribution unlimited

Introduction

The SLEEP Leadership training module is based on the concept of behavioral health leadership. It is designed to teach platoon-level leaders the sleep-related tactics they need to employ in order to improve sleep and optimize performance and safety in garrison and in the field.

The first lesson in this training guide is the train the trainer lesson. It is meant to give you the research background that supports and informs this training content so that you can deliver the lesson with more confidence. The train the trainer lesson is 50 minutes in length.

The second lesson is the actual Sleep Leadership Lesson. It is a 2hr lesson and the one you will deliver to the platoon level leaders. When using this PowerPoint as your presentation deck to the platoon leadership, begin with slide #32 as they do not receive the train the trainer information. Embedded in this module are images and videos that provide context for the tactics you'll teach. Speaker notes provide suggested text to facilitate discussion, leading to learning and knowing how to implement SLEEP leadership tactics.

The five SLEEP Leadership tactics introduced are:

- 1. Set Conditions
- 2. Lead by Example
- 3. Educate
- 4. Encourage
- 5. Plan & Prioritize

This module is based on research, lessons learned, and first-hand accounts of issues commonly experienced by Soldiers in the US Army. Information and portions of the training are also reflected in FM 7-22 (Holistic Health and Fitness).

SLEEP Leadership Training

Outline

Introduction

- What defines a leader?
- What is Sleep Leadership?

Sleep Basics

- How much sleep do we need?
- What are the consequences of not getting enough quality sleep?
- What is the impact of sleep on military readiness?

SLEEP Leadership

- Set Conditions: Learn to create a good sleep environment
- Lead by Example: Focus on your own behaviors first
- Educate: Teach your Soldiers about what helps and hurts sleep
- Encourage: Ask about sleep and promote healthy sleep behaviors
- Plan & Prioritize: Manage sleep in garrison and in the field



Conclusion

- Encourage leaders to employ these principles and check in with Soldiers
- Thank leaders for their time
- Conclude training



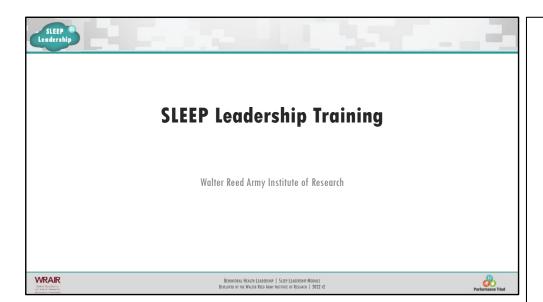
SLEEP Leadership Training



SLEEP Leadership Training

Training Module Symbol Guide

Symbol	Represents	Explanation
P	Timing	This symbol indicates the amount of time allotted for a given section of the material.
0	Target/ Intent	This symbol indicates the main function or rationale for a given slide.
1.	Key Point	Numbers are used to indicate the main points that must be addressed in order to meet a given slide's target / intent.
•	Sample Script	Bullets are used to elaborate on key points by providing a potential script that the trainer can use.
[TEXT]	Note to Trainer	Bracketed text indicates a note to the trainer which is not intended to be read aloud. These provide hints on how to present the material, references, examples and tips to avoid potential issues that may arise within a given topic.
PATE TO THE TO THE PATE TO THE PATE TO THE PATE TO THE	Multimedia	This symbol indicates the use of supplementary audio/video files. To avoid down-time or technical difficulties, keep an eye out for these and plan accordingly.
	Handouts	This symbol indicates that the participants will use handouts at a given point in the module. To avoid down-time, keep an eye out for these and plan accordingly.
Y '	Exercise	This symbol indicates the start of an exercise or activity. To avoid down-time, keep an eye out for these and plan accordingly.
	Continue	This symbol indicates that the training material for a given slide continues onto the next page.
	Stop	This symbol indicates that the training material for a given slide ends on this page.





SLEEP Leadership Training-2 hrs



Introduce yourself and the SLEEP Leadership training module.

- 1. Introduce the module and its purpose.
 - Good morning/afternoon my name is ______
 Welcome to the Sleep Leadership Training.
 - This is a block of instruction that has been endorsed by the Performance Triad program to emphasize leadership behaviors that support healthy sleep.
 - You all know that leadership matters. Typically, the Army talks about leadership in global ways like good and bad, and what it takes to be a good leader in your particular job.
 - This training addresses a specific area of leadership that focuses on sleep.
 - It is designed to give you specific skills for managing your own sleep and the sleep of your unit members.
 - The goal is to ensure you have the knowledge about sleep that will help you exhibit certain behaviors to optimize your performance and the performance of your unit.
 - We're going to start with a brief introduction into thinking about the role of Army leaders.



(

Reinforce that leaders are role models.

- 1. Introduce and play Kaplan video.
 - This video depicts Robert Steven Kaplan who was a Professor of Management Practice at the Harvard Business School.

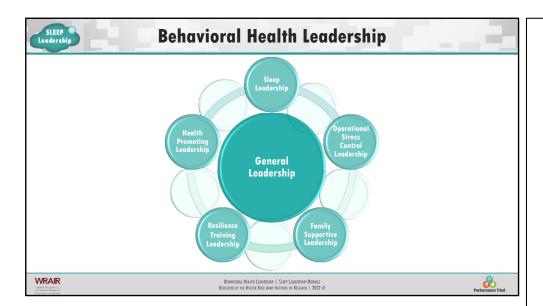


[PLAY VIDEO: Video 1 - Kaplan (1min 22sec)

Discuss video.

[NOTE: Ask one or more of the following to initiate discussion. Allow for student feedback.]

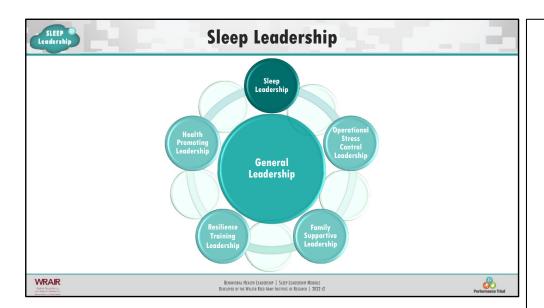
- [ASK]: This is from the perspective of an academic business leader... do you think this applies to leadership in the Army?
- [ASK]: In what ways do you see yourself as a role model?
- [ASK]: What behaviors do you think your Soldiers pick up on?
- [ASK]: What actions do you want to model for your Soldiers?
- 3. Summarize what it means to be a role model and leader.
 - Remember that part of being a leader means being a role model.
 - Leaders should be aware of their own behaviors when setting expectations for their subordinates.





Explain the leadership domains.

- 1. Explain the domains of leadership.
 - You all know what it takes to be a good Army leader in general.
 - But there are certain leadership domains that can help you develop specific skills that can improve your subordinates' health and well-being, which ultimately impacts readiness.
 - The domain we are going to focus on today is....





Explain sleep leadership and how sleep can affect performance.

- 1. Introduce Sleep Leadership.
 - ...Sleep leadership
 - Before we get into specific sleep leadership behaviors, let's talk about how sleep can affect performance.
 - [ASK] How many of you have ever felt really sleepy at work where you felt like you needed a short nap to get by?

[NOTE: Allow for a show of hands.]

Let's talk about that





Explain how sleep can affect performance and who is responsible.

- 1. Introduce topic of falling asleep at work
 - · Imagine a team member falls asleep while working
- 2. Discuss who is responsible for falling asleep at work.
 - [ASK]: Whose responsibility is it is that he fell asleep?

[NOTE: Allow for responses. Answers may include the following:

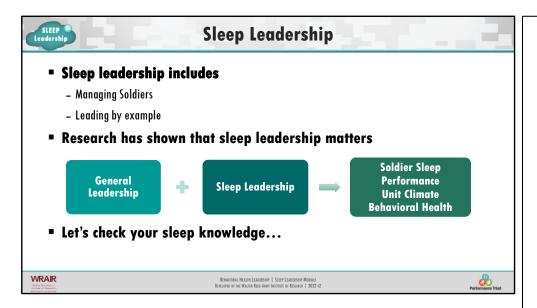
- · It's his.
- It's his leadership.
- It's his co-workers.]
- You might think it's his responsibility maybe he stayed up playing video games or has a sick kid
- What if I told you that his organization had him scheduled to work all night and then again in the morning, without enough sleep in between?
- Now imagine his co-workers what role might they play?
 Are they helping him stay awake? Just getting angry?
 Asking what happened?
- And note that his degraded performance may not just impact him but may affect his co-workers too



3. Summarize why leader supported sleep is important.

- In this instance, the consequences of falling asleep on the job may not be life threatening.
- In other situations or occupations, the consequences can be devastating.
- This is just one example of why we are focusing on the impact you can have on your unit through sleep leadership.

Record your own notes here:	





Further define sleep leadership.

- 1. Define sleep leadership.
 - Sleep leadership is defined by two components:

[CLICK TO ADVANCE]

 Managing Soldiers in a way that builds awareness of the importance of sleep, optimizes sleep, and reduces ongoing fatigue.

[CLICK TO ADVANCE]

- · And leading by example.
- 2. Describe how sleep leadership is different than general leadership.

[CLICK TO ADVANCE]

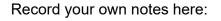
Research has shown that domain-specific leadership matters.

[CLICK TO ADVANCE]

While general leadership skills are important,

[CLICK TO ADVANCE]

We know that developing sleep leadership skills





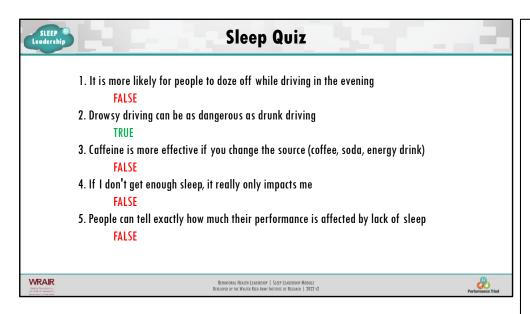
[CLICK TO ADVANCE]

- Leads to even better subordinate sleep, performance, unit climate and behavioral health and above generally good leadership.
- It's not always easy to recognize good sleep habits and there are a lot of misconceptions about how to manage sleep.

[CLICK TO ADVANCE]

• Let's take a short quiz to see what you already know about sleep...

Record	d your own notes here:	





Test sleep knowledge.

[SLIDE BUILDS]

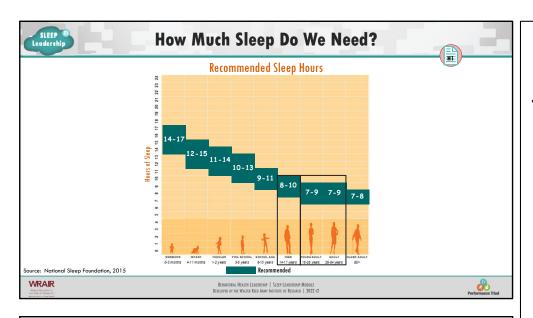
1. Test participants' sleep knowledge.

[NOTE: CLICK TO ADVANCE each question then ASK

- Raise your hand if you think this is True.
- Raise your hand if you think this is False.

Then **CLICK TO ADVANCE** to display the answer.]

- False. During the evening, you are in one of the most awake periods of the day because of our brain's circadian rhythm, which is like our inner clock. In fact you're more likely to doze off driving early in the morning.
- **2.** *True.* We'll discuss the similarities of sleepiness and intoxication more later.
- **3.** *False.* Although different products contain different amounts of caffeine, the effects are the same.
- **4. False.** If you are not getting enough sleep you could be putting the mission and your entire unit at risk.
- 5. False. The less sleep you get, the worse your performance will be. And you probably won't be able to tell the full extent of how much your performance is affected.



[REFERENCES:

See Appendix B, pg A-58-A]

Record your own notes here:



Learn ideal sleep duration for teens and adults.

[SLIDE BUILDS]

1. Discuss handouts page 2, left hand side.



[NOTE: DIRECT PARTICIPANTS TO HANDOUTS pg. 2 "Recommended Sleep Hours".]

- 2. Discuss sleep duration recommendations.
 - Let's talk about what the ideal amount of sleep is.
 - This graphic from the National Sleep Foundation shows how sleep needs change as people age.

[CLICK TO ADVANCE]

 The recommended amount of sleep for the majority of the military population falls within the range of 7 to 9 hours per 24 hour period for optimal health and performance.

[CLICK TO ADVANCE]

• It is also important for leaders to be aware that younger Soldiers may require even more sleep.



What is Normal Sleep?

■ Time to fall asleep: 15-20 minutes

■ Number of awakenings: 4-10 times a night

Number of days to recover from a sleepless night: 3 - 4 days



WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 V2





Learn what normal sleep looks like.

[SLIDE BUILDS]

- 1. Discuss average time to fall asleep.
 - [ASK] How long does it take the average person to fall asleep?

[NOTE: Wait for answers then CLICK TO ADVANCE]

- It's normal to take 15-20 minutes to fall asleep.
- If you usually fall asleep much faster than that, it may mean you are not getting enough sleep.
- 2. Discuss typical number of nightly awakenings.
 - [ASK] How many times do people normally wake up during the night?

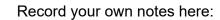
[NOTE: Wait for answers, then CLICK TO ADVANCE]

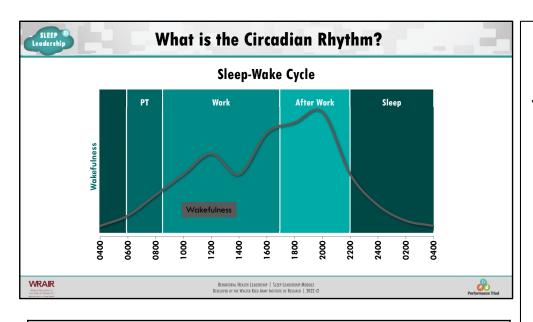
- 4-10 times a night. But most of the time you don't remember it.
- 3. Discuss time to recover from a full sleepless night.
 - [ASK] How long does it take to make up for one night without any sleep at all?

[NOTE: Wait for answers, then CLICK TO ADVANCE]

 It takes 3-4 days to fully recover from a single sleepless night.

[NOTE: "Chronic sleep restriction" takes even longer to recover from compared to a single all-nighter]





[REFERENCES:

See Appendix B, pg A-58-A]



Learn a typical sleep-wake cycle.

[SLIDE BUILDS]

- 1. Discuss the circadian rhythm's role in the sleep-wake cycle.
 - It's also normal to feel more awake or more sleepy at various points in the day not only due to how long you've been awake but also where you are in your natural 24 hour circadian cycle.

[CLICK TO ADVANCE]

- Here is an example of what a typical day might look like.
- The line indicates how awake or alert someone is throughout the day. The higher the line, the more alert someone is.
- Notice how it increases slowly as the morning progresses, which is why you may not feel fully awake when you first get up.
- Some people are very in tune with their circadian alertness—others aren't. If you are, you may notice a slight dip in wakefulness in the early afternoon.
- And then wakefulness increases into the evening until your sleep drive starts to kick in.
- You may notice a short burst of energy in the evening which can be deceiving. Think of it as your cue to get ready for bed before your sleep drive fully kicks in.



[NOTE: There is a natural mid-afternoon dip due to circadian rhythm (and this is exacerbated by a heavy lunch).]

2. Add earlier hours to display.

 We recognize that this figure might not be realistic for military life...

[CLICK TO ADVANCE]

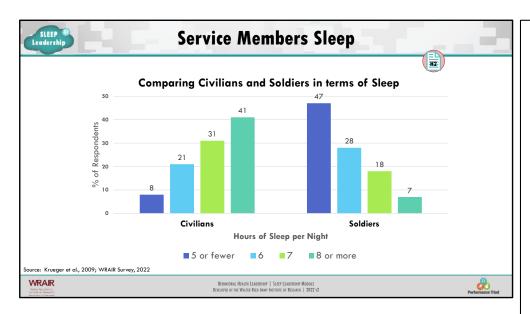
- So we extended it out a bit to cover those earlier hours for Soldiers.
- Notice that your wakefulness is very low between 0400 and 0800 when you could be doing PT and driving to work.

[NOTE: Another thing that influences how sleepy you feel is how much light there is... we'll talk about shift work earlier morning hours and other unique circumstances later.]

2. Summarize circadian rhythm.

- Overall, try to pay attention to the feedback that your body is giving you.
- Use the information to your benefit, rather than fighting against your sleep drive.

Record your own notes here:



[REFERENCES:

See Appendix B, pg A-58-A]

Record your own notes here:



Show differences between civilian and Soldier sleep.

1. Discuss handouts page 2, right hand side.

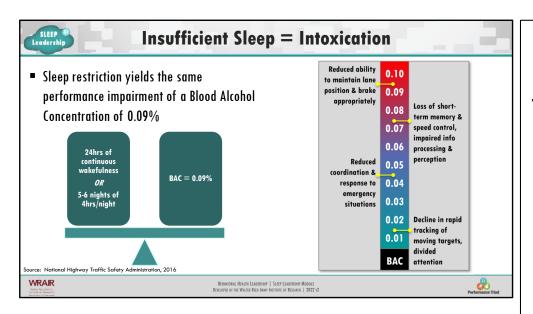


[DIRECT PARTICIPANTS TO HANDOUTS pg. 2-"Comparing Civilian and Soldier Sleep".]

- 2. Discuss differences between typical civilian and Soldier sleep hours.
 - Let's take a look at what research has revealed about Soldiers' sleep compared to civilians.
 - On the left side of this graph is data from over 10,000 civilians across the country.
 - As you can see, 72% of civilians are getting at least 7 hours of sleep per night.
 - On the right side of this graph is data from 2,600 Soldiers at Ft Campbell.
 - Only 25% of Soldiers are getting at least 7 hours of sleep.
 - To look at it another way, 8% of civilians are getting 5 or fewer hours of sleep per night compared with 47% of Soldiers.

[NOTE: Groups were matched for age and gender and norms for sleep.]

You may be wondering why this matters...



[REFERENCES:

See Appendix B, pg A-58-A]



Insufficient sleep can lead to significant impairment.

[SLIDE BUILDS]

- 1. Describe the impacts of insufficient sleep.
 - ...it's because not getting enough sleep can lead to significant impairment.

[CLICK TO ADVANCE]

 Some studies comparing lack of sleep with Blood Alcohol Concentration find that when you only get 4 hours of sleep over 5 to 6 nights you're operating at a performance-level equivalent of a point-O-9 blood alcohol level.

[CLICK TO ADVANCE]

 The legal limit of intoxication in the US is point-O-8; however, under UCMJ Article 112, there is no specific blood alcohol level that is used to determine if a Soldier is "drunk on duty."

[NOTE: Another interesting fact is that 5 nights of sleep with 5 or less hours of sleep results in the same level of cognitive impairment as 1 night of total sleep deprivation].

- Most people would not show up to work drunk.
- [ASK] But, how many of your Soldiers show up to work on only 4 hours of sleep?

[NOTE: Allow for answers]



• **[ASK]** Have you ever considered how severe the consequences of insufficient sleep can be?

[NOTE: Allow for answers]

 [ASK] And how would this impact your behavior as a leader?

[NOTE: Allow for answers]

(Coord yo	di Owiii	lotes nere	.



(

Even a relatively small amount of sleep loss can have a large impact.

1. Introduce and play Czeisler video.



Let's watch another short video. This is Dr. Charles
 Czeisler [pronounced "Size-ler"] the director of Sleep
 Medicine at Harvard Medical School and a renowned
 expert on sleep and the circadian rhythm.

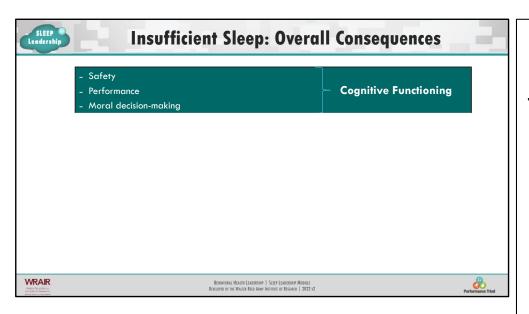
[NOTE: Play video: Video 2 – Czeisler (1min 33 sec)

- 2. Discuss and summarize video.
 - [ASK] What's the main point here?

[NOTE: Allow for discussion then summarize]

- There is a huge impact from just a one hour change.
- It also emphasizes the importance of staying on a regular schedule for going to bed and getting up.
- Sleep loss doesn't just affect you it can affect your work, health, and safety – as well as the safety of others.

Record your own notes here:



[REFERENCES:

See Appendix B, pg A-58-A]



Understand the overall consequences of insufficient sleep.

[SLIDE BUILDS]

- 1. Describe the cognitive consequences of insufficient sleep.
 - Insufficient sleep affects a wide range of domains.
 - Starting with cognitive functioning, mistakes, attention, memory, mental performance and even moral decisionmaking.

[NOTE: More details about moral decision-making and sleep are in the appendix.]

[CLICK TO ADVANCE]

- 2. Describe the physical consequences of insufficient sleep.
 - Insufficient sleep also impacts physical health, including physical conditioning.
 - Slower recovery, and decreased motivation to stick to a PT regimen and healthy diet; and weight gain.
 - A lack of sleep can increase susceptibility to a range of illnesses, including enteric disease (e.g., traveler's diarrhea) and the common cold.
 - It also impairs your antibody response (including your body's ability to benefit from a vaccine).
 - In terms of pain: a lack of sleep is associated with heightened pain sensitivity.
 - It also impairs your inflammatory response so you don't heal as fast.



- Chronic lack of sleep (or short-changing yourself on a consistent basis) is also associated with an increased risk of Type II diabetes, hypertension, heart disease, stroke, and Alzheimer's
- It even impacts testosterone levels. In two studies with Rangers, there was a 25% (study 1) and 28% (study 2) decrease in Testosterone after a full night of sleep loss.

[CLICK TO ADVANCE]

- 3. Describe the emotional consequences of insufficient sleep.
 - Insufficient sleep also impacts emotion regulation
 - It degrades the ability to work and resolve conflicts with co-workers and family members
 - It increases risk for developing behavioral health problems
 - and degrades overall mood and sense of wellbeing which can spread and contaminate the entire formation, a phenomenon called "social contagion."
 - These performance and health outcomes are impacted not just because someone feels sleepy but because lack of sleep directly impacts how well parts of the brain communicate with one another and ultimately how well the brain functions.
 - A lack of sleep impairs the ability of your thinking part of the brain (called the prefrontal cortex) to put the brakes on the emotional part of the brain (called the amygdala).
- 4. Describe the cumulative and cyclical aspects of insufficient sleep.
 - These consequences can be cumulative and have a real impact on readiness.
 - No matter how much you train, you can't avoid the impact of sleep loss.
 - There is also a cyclical relationship between sleep & health problems (e.g., poor sleep can lead to bad eating habits, which can lead to weight gain, which can lead to sleep apnea

Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



[REFERENCES:

See Appendix B, pg A-58-A]



Understand the work-specific consequences of insufficient sleep and sleep priority by role.

[SLIDE BUILDS]

- 1. Describe work-specific consequences.
 - Less sleep means less readiness and a degradation in job and mission performance.
 - Soldiers with 5 hours of sleep are twice as likely to make a mission-critical mistake compared to those with 7 hours of sleep.
 - These mistakes are not deliberate and can even be deadly.
 - Fatigue was a contributing factor in 628 Army accidents and 32 deaths between 2011 and 2014.
- 2. Describe types of work tasks affected by sleep loss.
 - Here are some of the major work areas that are affected by sleep loss:

[CLICK TO ADVANCE]

Physically demanding tasks

[CLICK TO ADVANCE]

Tedious, routine or sedentary tasks

[NOTE: PMCS= Preventive Maintenance Checks and Services.]

[CLICK TO ADVANCE]

Complex decision-maker tasks



3. Discuss priorities for sleep based on role.

 [ASK]: Based on this information, who do you think needs sleep the most?

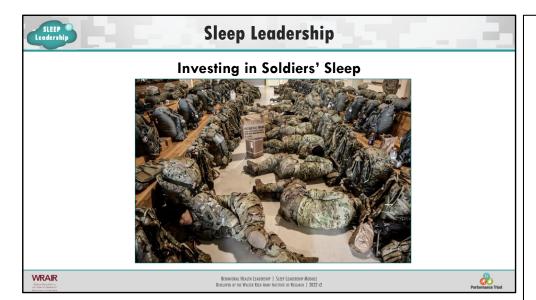
[NOTE: Allow for responses.]

- The top priority for adequate sleep should be leaders responsible for complex tasks and decision-making.
 - Complex tasks require judgment, situational awareness, and moral decision-making.
 - Decision makers include ones you typically think of such as brigade commanders, but they also include ones you may not immediately think of such as gunners and drivers.
- The next highest priority for getting adequate sleep is for those with tedious, routine or sedentary duties, like security, guard duty, or network monitoring, who also require good sleep.
- Purely physical work, like lifting and digging, requires the least amount of sleep.

[NOTE: Example: Increased risk of PT-related injuries]

- However, all work can be negatively impacted by sleep loss.
- [ASK] Do you know of any mistakes that have been caused by insufficient sleep?
- Soldiers AND leaders need 8 hours of quality sleep every 24hrs to avoid sleep-related mistakes and to make the best operational decisions.

Record your own notes here:

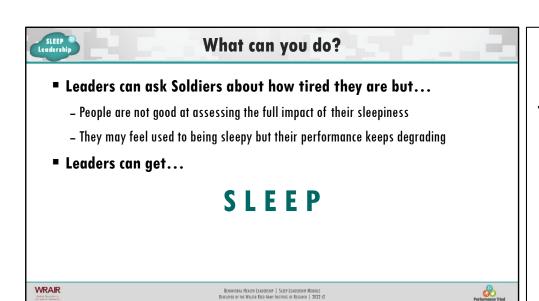


(

Transition from sleep knowledge to sleep leadership training content.

- 1. Transition from sleep knowledge to sleep leadership training content.
 - So far we've discussed the problem of insufficient sleep, the significance it has for you as a leader, and the potential impact on your unit's performance.
 - · Now let's talk about what you can do about it.
 - How much can you actually impact unit members when it comes to sleep?
 - Obviously, there are barriers to good sleep that impact everyone in the military. (1) There are long work hours; (2) It's not a 9-to-5 job. Soldiers work to mission complete, and that can mean extended hours; (3) Units also typically have early PT, impacting how much Soldiers can catch up on sleep too.
 - Individual's also bear some personal responsibility for their sleep, and you can't force someone to go to sleep, or monitor their every choice.
 - So there's a limit to what you can do but as a leader, you can also have a direct and indirect influence.
 - Like any problem, the first thing you want to do is assess the situation.

Record your own notes here:



[REFERENCES:

See Appendix B, pg A-58-A]



Describe how it takes more than asking how tired Soldiers are.

- Describe how and why it takes more than just asking how tired Soldiers are.
 - **[ASK]** Can you cover all your bases by asking Soldiers how tired they are and if sleep is affecting their performance?

[CLICK TO ADVANCE]

- You can start there, but research shows that people are not good at estimating their sleepiness or its full impact on their performance.*
- People might get used to feeling sleepy, but performance will continue to degrade.
- So even if Soldiers say they're doing fine, they might not be accurately assessing themselves.
- As a leader, what can you do? We're going to talk about 5 tactics you can use to not only assess the situation but establish a healthy sleep culture in your unit.

[CLICK TO ADVANCE]

 We are going to summarize these 5 tactics using the acronym SLEEP.





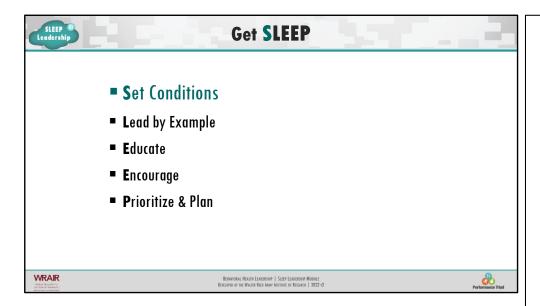
Provide an overview of the 5 tactics of sleep leadership.

- 1. Provide an overview of the 5 tactics of sleep leadership.
 - Here are the 5 tactics to help you become a good "sleep leader" and establish a healthy sleep culture in your unit.
 - The first one is Set conditions, followed by Lead by example, Educate, Encourage and finally Prioritize and plan.
- 2. Discuss handout 2.



[DIRECT PARTICIPANTS TO HANDOUT 2 "SLEEP Leadership Notes"]

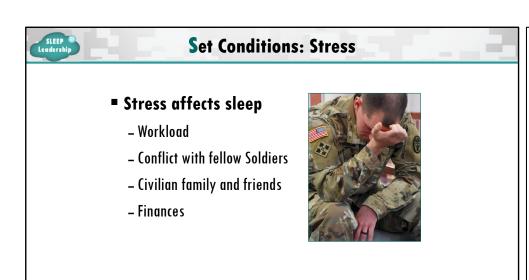
· Check your handout for an overview of the tactics.





Provide an overview of Set Conditions

- 1. Introduce Set Conditions.
 - Let's start with Set Conditions.
 - Simply asking about sleep may show your Soldiers that it is a priority for you
 - But, enhancing sleep conditions allows you to facilitate healthy sleep.



BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE
DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 v2

Record your own notes here:



WRAIR

Describe stressors that affect sleep.

[SLIDE BUILDS]

- 1. Describe types of stress that affect sleep.
 - Two main conditions affect sleep, they are stress and the physical environment? First, let's talk about stress.

[CLICK TO ADVANCE]

- While not always practical, leaders should consider adjusting the overall workload.
 - Think about how workload stress has interfered with your sleep.
 - Consider re-distributing work, giving Soldiers more control over their jobs, and ensuring social support from unit members.
- Conflict within the unit can also be a source of stress.
 - As a leader, you can do a lot to help resolve conflict and mediate issues as they arise.

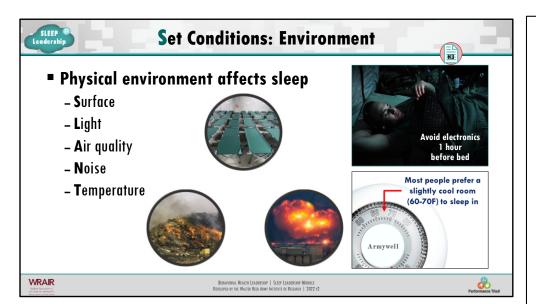
[CLICK TO ADVANCE]

- Other common sources of stress can be related to family and friends or finances.
 - Make sure you are taking into account all sources of stress that may be impacting your Soldiers' sleep.

- Think about which pieces of these challenges you may be able to influence.
- It's also possible you'll be able to impact the physical environment

[NOTE: Be relatively brief on these points so group doesn't get stuck here.]

Record your own notes here:	





Describe environmental conditions that impact sleep.

[SLIDE BUILDS]

- 1. Describe environmental conditions that impact sleep.
 - Environmental conditions have a huge role in sleep.
 - There are 5 conditions that you may be able influence as sleep leaders: Surface, Light, Air, Noise and Temperature.
 - Let's talk about each condition individually.
 - As we discuss these, know that other options will be needed in the field. These ideas are mainly for use in garrison environments.
- 2. Explain *SLANT* as a factor in sleep.

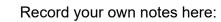
[NOTE: DIRECT PARTICIPANTS TO HANDOUT 3 - "Sleep in Operational Settings" using SLANT acronym as a guide.]

[CLICK TO ADVANCE]

 For surface: a soft yet firm sleeping surface is ideal. As a leader, you can help ensure good sleeping surfaces when there's an option

[CLICK TO ADVANCE]

- For light, ideally the sleep environment would be dark.
 Here are some tips.
- Prevent light from entering the sleeping area. Use a sleep mask or cover windows and door gaps with curtains, sheets or even trash bags.
- Avoid electronics 1 hour before bed. The blue light typically emitted from devices and TVs can affect both your amount and quality of sleep.





 If you do chose to use electronics at night, use an app or setting to decrease the blue light.

- · We'll discuss apps in more detail later.
- And as leaders you may be able to adjust barracks SOPs to optimize the sleep environment such as:
 - · Adding "lights out"
 - Adjusting hallway light brightness

[CLICK TO ADVANCE]

 For air quality, see if you can place sleeping environments away from burning waste and exhaust from generator fumes.

[CLICK TO ADVANCE]

- For noise, you want to have a quiet environment.
- You can wear ear plugs if you prefer total quiet; however, some people prefer a little background noise.
- Consider using a fan or a white noise app to block out low level or routine noise.

[NOTE: There is also pink noise, which is a mix of high and low frequencies that is more balanced and natural than white noise.]

- And if you have sleep apnea, don't be afraid to use a CPAP device. It also provides some white noise.
- And as a leader, you can let your Soldiers know about these kinds of options and reinforce or institute quiet hours in the barracks.

[CLICK TO ADVANCE]

- For temperature, we recommend that you maintain a cool environment if possible. For adults, the optimal temperature hovers around 70 degrees.
- This can be challenging for rooms with multiple occupants and in buildings with limited climate control.
- If your sleeping area is too warm, wear lightweight clothes, use light bedding and consider a fan.
- If your sleeping area is too cool, wear socks, use heavier bedding and consider an electric blanket.
- And as a leader, advocate for your Soldiers if there are temperature control issues in the barracks.
- You can also encourage Soldiers to check the lending closet for fans and other helpful options.

Record your own notes here:

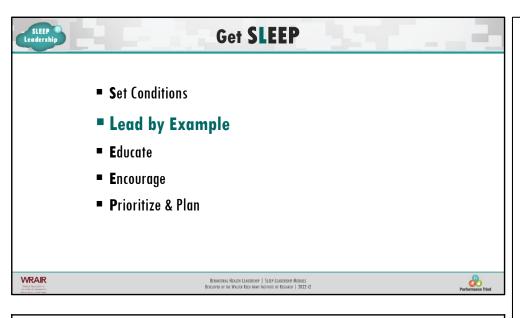
[REFERENCES:

See Appendix B, pg A-58-A]



5. Summarize

- Remember the acronym "SLANT". Think about things you can do to improve the sleep environment for you and your Soldiers, both off post and in the barracks.
- Consider how Soldiers are assigned to rooms, taking into account these conditions and work-shift cycles.
- Appropriate billeting is critical for creating a good environment for undisturbed sleep.
- As leaders, you have some control over these conditions and can facilitate a work environment that prioritizes sleep.



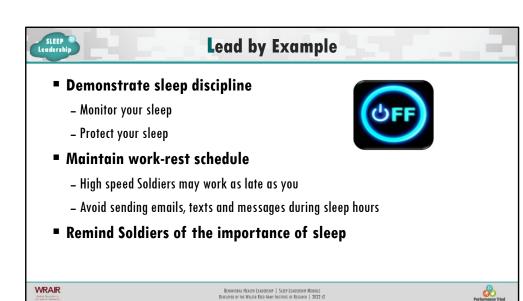
[REFERENCES:

See Appendix B, pg A-58-A]



Provide an overview of Lead by Example.

- 1. Introduce Lead by Example.
 - The next step is to Lead by Example.
 - We all know that Soldiers may do what they see their leaders do.
 - For instance, a large study of Army combat units found that:
 - If a supervisor smoked cigarettes, 50% of that supervisor's Soldiers also smoked
 - But if the supervisor didn't smoke, only 31% of their Soldiers smoked
 - This study demonstrates the degree to which leader behaviors can influence Soldiers.
 - · The same thing may apply to sleep.



(

Describe leading by example for sleep.

[SLIDE BUILDS]

1. Demonstrate sleep-related discipline.

[CLICK TO ADVANCE]

- In essence, you need to be a good sleep role model.
- Use a sleep log or a personal fitness device to monitor sleep.
- And establish and protect a consistent bed time.
- 2. Establish and protect healthy work-rest schedules.

[CLICK TO ADVANCE]

- It's also important to maintain a regular work-rest schedule.
- One way you can demonstrate prioritizing sleep is by not staying at work too late.
- We understand that as a leader, you may be the last to leave.
- But do your best to balance your work priorities with getting enough sleep.
- If you set aside sufficient time for sleep, you will actually be more productive in the long run than if you sacrifice sleep to try to get work done now.
- And unless it's an emergency, don't send messages after the duty day. If you're worried about forgetting to send a message, save draft emails, texts, etc. to be sent the next day.



Describe how to use times when Soldiers are together to remind Soldiers about sleep health.

[CLICK TO ADVANCE]

- One way to remind Soldiers about the importance of sleep is to talk about it during formations, including safety briefs.
- You can also incorporate these messages into counseling sessions with your Soldiers.
- Talk about how YOU use these strategies in your own life.
- Summarize and discuss.
 - Being a healthy role model matters.
 - When you are able to maintain your own sleep health, your behaviors will resonate more with your subordinates and serve as a stronger example for them to follow.
 - This training is not suggesting you shut off your phone but rather that you lead by example in terms of when you communicate.
 - [ASK] What do you see as some of the challenges of leading by example when it comes to sleep discipline?

[NOTE: Allow for answers. Possibilities discussion: responding to emergencies, last-minute taskers, sheer quantity of work]





Provide an overview of Educate.

1. Introduce Educate.

- The next step is Educate. We've talked about the basics of how much sleep you need.
- Now we're going to talk about the role of caffeine, alcohol, sleep medications and treatment for sleep problems.
- [ASK] But first, whose job do you think it is to educate Soldiers about sleep?

[NOTE: Listen for answers that include individual Soldiers, buddies, leaders and medical providers/BHOs**]**





Discuss the role of caffeine in sleep.

- 1. Provide caffeine education and recommendations.
 - Let's start with caffeine. [CLICK] Caffeine can provide an edge during performance and missions when you haven't had enough sleep.
 - Contrary to popular belief, caffeine does not "give you energy"; rather, it delays the onset of sleep and inhibits your body's sleep signals.
 - It's fine if used in moderation but it is NOT a long-term solution or substitute for sleep.
 - [CLICK] Timing matters. Make sure you stop using caffeine at least 6 hours before going to bed, or you might find it hard to fall asleep.
 - This includes "Pre-Workout" which is 300 mg of caffeine that some Soldiers take before heading to the gym. "Preworkout" taken in the afternoon or evening can disrupt sleep.
 - [CLICK] Know how much you're consuming. Whether you
 have one cup of coffee each morning or you rely on energy
 drinks all day, make sure you know how much caffeine you
 are getting.
- Discuss different sources of caffeine.



- * [DIRECT PARTICIPANTS TO HANDOUT 4-"Caffeine facts and products"]
- Here is a list of common sources of caffeine and how much is in each one.



2. Discuss different sources of caffeine.



[NOTE: DIRECT PARTICIPANTS TO HANDOUT 4 "Caffeine facts and products"]

- Here is a list of common sources of caffeine and how much is in each one.
- It is very common for people to not know how much caffeine they are consuming.
- For example, a 5-hour energy shot has over 200 mg of caffeine
- You can use this list to educate yourself and your Soldiers about how much caffeine they are consuming on a daily basis.
- Try to limit your caffeine intake to no more than 400 mg per 24 hours
- Discuss caffeine tolerance, negative side effects and withdrawal.
 - If you notice you need more caffeine to get the same effect, you're probably building up a tolerance and might need to consider alternate strategies.
 - If you're experiencing negative side effects from too much caffeine, you might want to adjust your intake.
 - Some of the signs and symptoms to look out for:
 - Problems falling asleep or staying asleep
 - Nervousness
 - Restlessness
 - Irritability
 - Upset stomach
 - Fast heartbeat
 - Muscle twitches
 - These and headache are some side effects of caffeine withdrawal, but they usually pass quickly.
 - According to a study with 627 Soldiers, consumption of 2 or more energy drinks per day more than doubles the risk for mental health problems and aggression.

[NOTE: In the Toblin et al. study (2018), 1 in 6 Soldiers reported drinking 2 or more energy drinks per day. The results of the study were essentially the same regardless of which type and size of energy drink Soldiers reported using.] Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



Educate: Alcohol and Sleep Aids

Alcohol makes sleep worse

- Less well-rested in the morning
- Wake up more in the night
- Harder to fall back asleep
- Disrupts breathing during sleep
- Over-the-counter sleep aids can also disrupt sleep quality and continuity
 - Consult your healthcare provider
- Alcohol and sleep aids can cause a hangover effect even if you thought you got sufficient sleep

WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE
DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022





Discuss the role of alcohol and sleep medications in sleep.

[SLIDE BUILDS]

1. Alcohol

· Some people believe alcohol helps you sleep.

[CLICK TO ADVANCE]

- However, alcohol has a significant negative impact on sleep.
 - While alcohol might help you get to sleep faster, the quality of your sleep will suffer.
 - Alcohol keeps you from getting deep restorative sleep, which means you're less well-rested.
 - It causes your sleep to be fragmented. This means you have many "micro-awakenings" you are not aware of that disrupt your sleep.
 - It can also lead to waking up too soon and being less likely to be able to fall back asleep because the alcohol is wearing off.
 - Alcohol also affects your breathing. It leads to more snoring, and is particularly bad for sleep apnea.
- Because "drunk sleep" won't be restorative, you will ultimately need more hours of sleep to recover.



- We're not saying to stop drinking. However, be aware of the effects of alcohol and definitely don't use it as a sleep aid.
- Try curbing alcohol use 2 to 3 hours before bed.

2. Sleep medications.

[CLICK TO ADVANCE]

- Similar to alcohol, many over-the-counter medications used for sleep like Unisom, Benadryl Nyquil, Tylenol PM or Zzzquil can also disrupt the quality and continuity of sleep.
- These sleep aids may not be the best option for helping you sleep and you should not use prescription or over-the-counter sleep aids without the guidance of your healthcare provider.

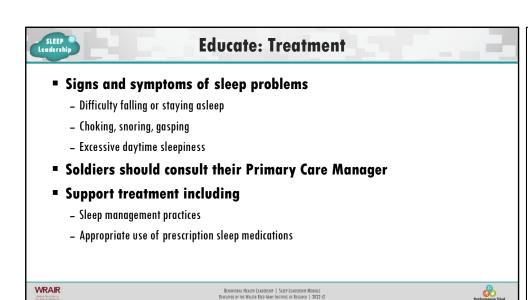
[NOTE: You can use Melatonin in low doses (0.2 to 5 milligrams), however too much melatonin can disrupt your sleep cycle and long-term use is not well-studied.]

[CLICK TO ADVANCE]

 And finally, both alcohol and sleep medications (prescribed and over-the-counter), can cause a hangover effect, leaving you feeling groggy in the morning even if you thought you got sufficient sleep. Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



(

Discuss sleep disorders, treatment and the role of leaders.

[SLIDE BUILDS]

1. Describe sleep problems and who to seek care from.

[CLICK TO ADVANCE]

- The signs and symptoms listed here are some that may indicate a sleep problem.
- Two of the most common sleep disorders are insomnia and sleep apnea.

[CLICK TO ADVANCE]

- If you or your Soldiers need more help to address sleep problems, visit a primary care manager to request assistance.
- A primary care manager may refer to a specialist who will review what's causing the problem and make recommendations to correct it.
- 2. Describe how to support treatment for sleep problems.

[CLICK TO ADVANCE]

 If the primary care manager and/or specialist make recommendations or provide medication, it is important for you as a leader to support this treatment plan.





Provide an overview of Encourage.

- 1. Provide an overview of Encourage.
 - The next step is Encourage.
 - Leaders can play a critical role in encouraging good sleep habits in their units.



- Check in with Soldiers about their sleep
- Emphasize the need to practice good sleep habits



WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE Developed by the Walter Reed Army Institute of Research | 2022 v2





Describe encouraging through sleep accountability.

[SLIDE BUILDS]

1. Describe encouraging through sleep accountability.

[CLICK TO ADVANCE]

- Besides supporting treatment options, you can also encourage good sleep habits by checking in with your Soldiers and asking them about their sleep.
- [ASK] What are some questions you can ask your Soldiers to keep them focused on sleep health?

[NOTE: Allow for responses. Examples might be:

- "When did you get to sleep last night?",
- "How long did you sleep?"
- "How much sleep have you had over the past 24 hours?"
- "Did any kind of conditions get in the way of your sleep?"
- "How did you sleep last night?"]

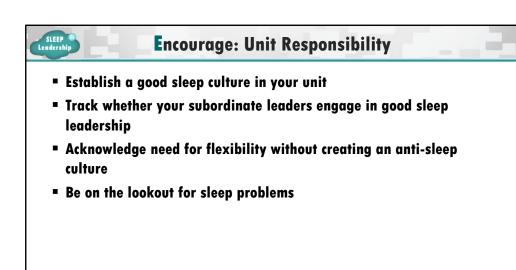
[CLICK TO ADVANCE]

- Remember, the goal is to encourage Soldiers to practice good sleep habits.
- One study with Soldiers found that those who knew more about the importance of sleep were 15% more likely to get adequate sleep than other Soldiers.
- Leaders should not only ask these questions to their Soldiers, but also ask themselves as a reminder to keep their own sleep habits in check.

Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



(

WRAIR

Describe who is responsible for establishing a good sleep culture.

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 V2

[SLIDE BUILDS]

- 1. Describe how the unit is responsible for establishing a good sleep culture.
 - Establishing a good sleep culture is a unit responsibility.

[CLICK TO ADVANCE]

 Perpetuate good sleep leadership by encouraging and rewarding junior leaders and Soldiers for supporting a healthy sleep culture.

[CLICK TO ADVANCE]

- Prioritize sleep and also accomplish the mission by remaining flexible and realistic.
 - Sometimes Soldiers will have to sacrifice sleep, but that doesn't diminish its importance.
 - Set the standard that Soldiers who sacrifice sleep need time to catch up on it.

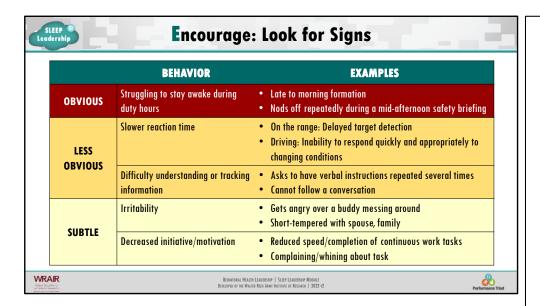
[CLICK TO ADVANCE]

- We are better able to detect the effects of sleep loss in others than in ourselves.
- Empower your Soldiers to look out for each other and to challenge commonly held beliefs such as "sleep is for the weak" and "you can train yourself to go without sleep".

 Also as a leader, listen for the signs. If a Soldier says "I didn't sleep well because PFC Jones snored all night", that is a cue that you may need to refer PFC Jones for a sleep evaluation because he is probably not sleeping well either.

•	Also, sometimes excessive sleep can be a sign of	•
	depression.	

Record your own notes here:	





Educate leaders on signs of insufficient sleep and how they can respond.

[SLIDE BUILDS]

- 1. Educate leaders on signs of insufficient sleep and how they can respond.
 - As we've discussed, people are not good at estimating the full impact of sleep on performance.
 - It's important to know what signs of insufficient sleep are, in addition to those that may indicate an actual sleep disorder.
 - This slide shows some of these signs, categorized as obvious, less obvious and subtle.
 - [ASK] What are some of the obvious signs that Soldiers are not sleeping enough?

[NOTE: Allow for responses.]

[CLICK TO ADVANCE]

[ASK] What about some of the less obvious signs?

[NOTE: Allow for responses.]

[CLICK TO ADVANCE]

 [ASK] How about some subtle things that you might not necessarily have associated with sleep loss?

[NOTE: Allow for responses.]



[CLICK TO ADVANCE]

- You may have seen these before and thought the Soldier might be angry, depressed, not motivated, or that they were sub-standard.
- Or you might interpret these subtle signs as just the way someone's personality is – that they are a difficult person.
- However, their behavior could have been a result of insufficient sleep.
- Consider the role of sleep in your responses to Soldiers displaying these signs.

Encourage: Effective Sleep Habits



- 1. Try to limit using your bed for non-sleep activities
- 2. Finish exercising at least 3 hours before bedtime
- 3. Don't go to bed hungry
- 4. Maintain a bedtime routine
 - Wind down 30-60 minutes before lights out
 - Allow at least 8 hours in bed
 - Adhere to a consistent bed and wake-up time
 - Don't hit the snooze button





BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE
DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 v2





Describe how to encourage good sleep hygiene.

[SLIDE BUILDS]

- 1. Describe how to encourage good sleep habits.
 - Now we're going to talk about some practical actions you can take to encourage Soldiers to establish healthy sleep habits.
 - You already know that it's important to create a quiet, dark, comfortable sleeping environment.
 - · You should also encourage the following habits:

[CLICK TO ADVANCE]

- · Use your bed only for sleep and sex.
 - No devices, video games or TV in bed; try to do these things in a different room or at least a different part of the bedroom.

[CLICK TO ADVANCE]

Don't do strenuous exercise late in the evening.

[CLICK TO ADVANCE]

Don't go to bed hungry or too full.

[CLICK TO ADVANCE]

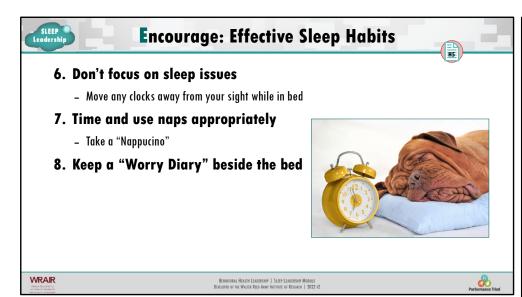
- Maintain a consistent bedtime routine.
 - Start winding down 30 to 60 minutes before bedtime
 - Avoid bright lights (including LED lightbulbs).



- · Allow at least 8 hours in bed.
- Go to bed around the same time each night and adhere to a set wake-up time each morning.
- And don't hit the snooze button.
- Set the time for when you actually need to wake up instead of waking up and then snoozing again for a few extra minutes.

[CLICK TO ADVANCE]

- · Also, get out of bed if you can't sleep.
 - · Don't lay there tossing and turning.
 - If you can't fall asleep after 20 minutes, get out of bed and do something low-key until you are drowsy again.





Describe how to encourage good sleep hygiene.

[SLIDE BUILDS]

1. Describe how to encourage good sleep habits.

[CLICK TO ADVANCE]

- · Don't focus on sleep issues.
 - Make sure your alarm is set and then have the clock be out of your line of sight.
 - Continually focusing on the time won't help sleep.

[CLICK TO ADVANCE]

- Naps are most effective when they are not too long and not too close to your bed time.
 - Naps are not always beneficial. If you have a sleep problem they reduce your sleep drive at night but can be useful in helping you catch up if you are sleep deprived.
 - Some individuals find that "nappucinos" are effective for them. Here's how this works: To maximize alertness after a short nap, try drinking a cup of coffee just before the nap. By the time you wake up, the caffeine will be kicking in and you will be more alert.

[CLICK TO ADVANCE]



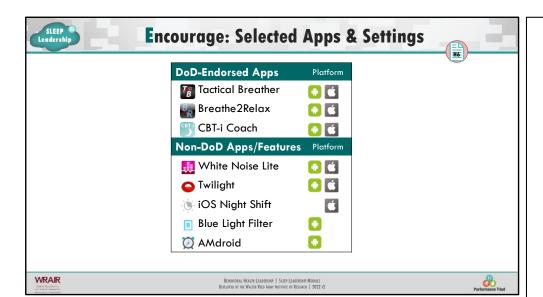
- · Keep a Worry Diary beside the bed.
 - Here's how a Worry Diary works. Think of problems that may keep you up at night and write them down on paper (not your phone or other electronic device).
 - This allows the worry to exist on the paper and not in your head.
- Keep it by your bed in case other distracting thoughts pop up and are keeping you awake. If writing a list isn't enough, identify the plan/solution or whether it is outside of your control.
- 2. Discuss handouts page 4.



[NOTE: DIRECT PARTICIPANTS TO HANDOUT 5-"Sleep: A Guide for Soldiers"]

 This is a good overview of what we've covered so far, including sleep habits and signs of sleep loss.

Record your	own notes here:





Provide overview of some sleep-related apps and internal device features and conduct adjust settings activity.

Discuss handouts page 5.



[DIRECT PARTICIPANTS TO HANDOUT 6 -

"Selected sleep-related apps and settings"]

- This handout provides more detail on the apps and internal device features shown on this slide.
- 2. Discuss selected apps and internal device features.
 - A number of apps and settings can be helpful for sleep and decompression.
 - These are available for Apple, Android, or both.
 - The top 3 are sponsored by the DoD.
 - Tactical Breather and Breathe2Relax both help with decompressing, which can be especially helpful when you're winding down for bed.
 - CBT-i Coach is designed for people struggling with insomnia. It has a lot of good features for tracking sleep and reminders for changing sleep habits.
 - White Noise Lite, Twilight, iOS' Night Shift and Android's Blue Light Filter may be particularly useful to help you fall asleep.



(

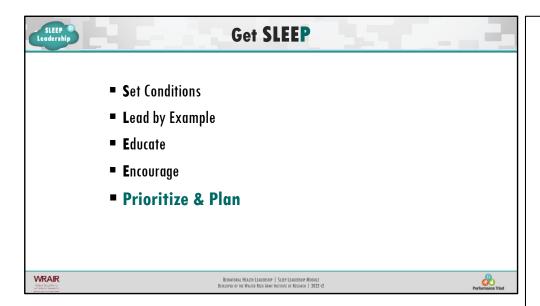
Provide overview of some sleep-related apps and internal device features and conduct adjust settings activity.

- Conduct phone settings activity.
 - Let's take a few moments now and see how we can adjust our phone settings to make them work to our advantage in terms of our sleep goals.
 - This will likely be one of the few times you're asked to take out your phones during an Army class.



- Everyone take out your phone. Let's look at how you can adjust the settings to put your phone in dark or night shift mode.
- On the slide are the steps to adjust the settings on the iPhone and Android platforms. Take a moment to try adjusting your settings.
- And if you don't know how, chances are someone else in the room does. So go ahead and ask for help if you need it.

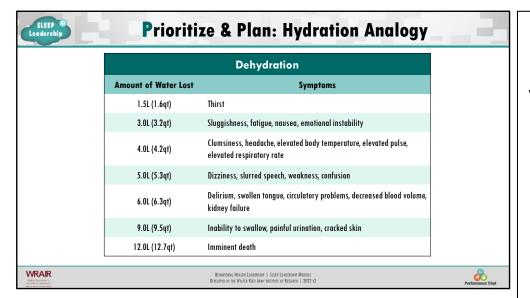
[NOTE: Allow 2-3 minutes for students to make adjustments, provide assistance as you are able.]





Provide an overview of Prioritize and Plan.

- 1. Provide an overview of Prioritize and Plan.
 - The next step is Prioritize and Plan.
 - Leaders can play a critical role in setting unit priorities and making an effective sleep plan for training exercises and missions.



[REFERENCES:

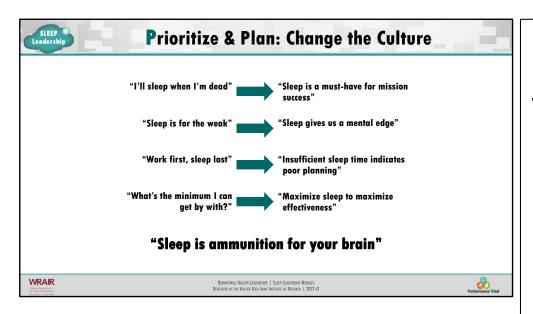
See Appendix B, pg A-58-A]

Record your own notes here:



Describe similarities between sleep loss and dehydration.

- 1. Describe similarities between sleep loss and dehydration.
 - Here is an analogy. We all know that water is a critical supply item.
 - But, dehydration was not always thought of negatively. In fact, in the WWII era, it was believed that water restriction improved tolerance to dehydration.
 - Since then, there has been a cultural shift in the perception of hydration: water is now recognized as being critical for performance and health.
 - You cannot train out the effects of sleep loss any more than you can train out the effects of dehydration.
 - That's why there needs to be a cultural shift in the Army that reinforces the critical importance of sleep.



[REFERENCES:

See Appendix B, pg A-58-A]



Discuss how to shift the organization to a more pro sleep culture.

[SLIDE BUILDS]

- 1. Describe how the culture around sleep needs to change similarly to the culture around hydration.
 - Here are some examples of cultural beliefs that are antisleep.

[CLICK TO ADVANCE]

[NOTE: Go through each statement]

 [ASK] If you were trying to shift your unit towards a more pro sleep culture, what would these statements look like?

[NOTE: Go through each allowing participants to address each statement]

[ASK] How can the culture be shifted?

[CLICK TO ADVANCE]

- Here are some examples of culturally shifted statements:
 - "Sleep is a must-have for mission success"
 - "Sleep gives us a mental edge" and "imagine how much better you would be if you'd slept"



- "Insufficient sleep time indicates poor planning
- "Maximize sleep to maximize effectiveness" and "You don't want to let your team down because you are not your sharpest"

[NOTE: Actually, not getting enough sleep leads to increased risk of developing chronic illness, being involved in dangerous accidents, and a shorter lifespan.]

· Leaders at all levels play a key role.

[CLICK TO ADVANCE]

- For example, MG Burleson (former 7th ID commander), often said "Sleep is ammunition for you brain".
- This kind of statement can support a pro-sleep culture across the force.

Record your own notes here:



[REFERENCES:

See Appendix B, pg A-58-A]



Describe how sleep is an essential element of resupply.

[SLIDE BUILDS]

- 1. Describe how sleep is an essential element of resupply.
 - Prioritizing sleep is a disciplined approach to managing resources.
 - Army Techniques Publications are incorporating new information about the basics the body needs for optimal performance.

[CLICK TO ADVANCE]

 ATP 6-22.5, the leader's guide to soldier health and fitness, makes sleep as critical as any other logistical item of resupply such as water, food, fuel and ammunition.



Prioritize & Plan: Schedule Sleep

■ Ensure time allotted for sleep is not interrupted by work

- Build in time for Soldiers to
 - Get sufficient sleep
 - Take care of their personal life







WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 V2





Describe how scheduling time for sleep is important for work and home life balance.

- 1. Describe how scheduling time for sleep is important for work and home life balance.
 - Send the message that sleep is critical by ensuring that Soldiers have a schedule that prioritizes sleep.
 - Protect sleep time by not planning regular meetings, briefings, inspections, or other events during a Soldier's sleep hours.
 - It is natural for people to need some time to fall asleep once they go to bed. So as a planning factor, don't forget to take that into account.
 - In addition to work hours, schedules need to include time for meals, connecting with friends and family, and quality sleep.





Play and discuss Canucks video.

1. Introduce and play Canucks video.

[NOTE: If there isn't enough time, you can skip this video and slide.]

 Let's watch a short video about what the Vancouver Canucks learned about the impact of sleep on performance.

[PLAY VIDEO: Video 3 – Canucks (2min 37sec)

- 2. Discuss video.
 - This video shows how an individual's sleep is important to the overall team.
 - · Other industries have to go through this culture shift.
 - You might get some resistance from Soldiers at first by trying to monitor their sleep more closely, but once they see the positive effect it has on performance, they'll be sold.

Prioritize & Plan: Mission Planning

- Consider sleep as an important planning factor
 - Save complex mission planning for later in the morning
- Instruct Soldiers to "Bank Sleep"
 - Get extra sleep before missions that require long hours
- Allow time for sleep recovery
 - Not a 1:1 exchange



WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE Developed by the Walter Reed Army Institute of Research | 2022 v2





Discuss how to incorporate good sleep hygiene into mission planning.

[SLIDE BUILDS]

1. Discuss the handouts page 6, left side.



[NOTE: DIRECT PARTICIPANTS TO HANDOUT 7 - "Achieve Maximum Sleep in Sustained Operational Environments"]

1. Discuss how to incorporate good sleep health into mission planning.

[CLICK TO ADVANCE]

- Address sleep during planning for both garrison and field tasks.
 - Consider not scheduling more complex tasks earlier in the morning.

[CLICK TO ADVANCE]

- Build in enough time for Soldiers to get extra sleep before missions.
 - Research shows "sleep banking" can mitigate effects of subsequent sleep loss

[NOTE: "Sleep banking" is actually a way to pay down the ongoing sleep debt most of us have (like credit card debt or a mortgage) rather than purely storing sleep for later (like a savings account)]

[CLICK TO ADVANCE]

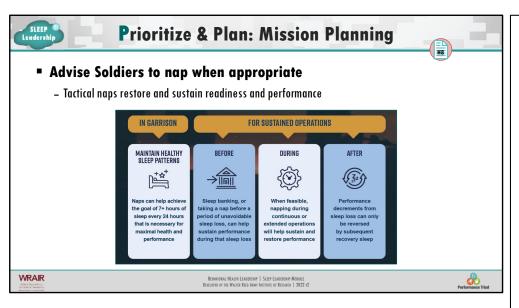
 Sleep recovery is the deliberate planning and execution of extended sleep following periods of sleep restriction. Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]

- It is important to note that sleep recovery is not a 1-to-1 exchange.
- You need more days to recover than days where sleep was lost.
- Consistently getting less sleep than you need takes even longer to recover from.

Record your own notes here:



[REFERENCES:

See Appendix B, pg A-58-A]



Discuss how to incorporate naps into mission planning.

[SLIDE BUILDS]

1. Direct participants to tactical napping handout.



[DIRECT PARTICIPANTS TO HANDOUT 8 – "Tactical Napping"]

Discuss how to incorporate good nap habits.

[CLICK TO ADVANCE]

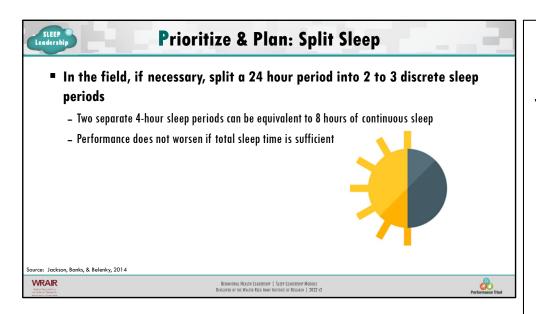
- When it comes to tactical naps, there are several considerations.
 - If you're not having problems with your sleep but you aren't getting 7 to 8 hours, add a nap in the late morning or early afternoon to make up for it (or at least several hours before bedtime)
 - However, if you are planning to go on a mission during normal sleep hours, use tactical napping to give yourself an extra edge so that you don't place yourself and others at risk.
 - If you're having problems at night getting to sleep or staying asleep, avoid napping. Otherwise you might actually make it harder to fall asleep at night.



 As a leader, it's important to consider the role that naps can play in sustaining Soldier performance and facilitating their recovery after a mission. But remember that they have to be able to sleep in a safe location – not in front of, underneath or behind a vehicle.

- · How long should the nap be?
- You may have heard that naps should be either 20-30 minutes or 90 minutes.
- For people who are not too sleep deprived, a 30 min nap can refresh them and they won't feel groggy afterwards because it's too short to have them fall into deep sleep.
- A 90 min nap will allow a full cycle of sleep without feeling groggy.
- However, many people are so sleep deprived that even a short nap means they will fall into deep sleep quickly and might wake up feeling groggy.
- Deep sleep is not a bad thing it's actually the most restorative and the best for performance and health.
- So if someone naps and wakes up groggy, they need to counteract this disorientation with alerting factors such as bright sunlight or caffeine gum. These factors can help offset the grogginess (or sleep inertia) that someone might otherwise feel while helping them gain the benefit of a nap.
- Naps are not always beneficial. If you have a sleep problem they reduce your sleep drive at night but can be useful in helping you catch up if you are sleep deprived.

Record your own notes here:



[REFERENCES:

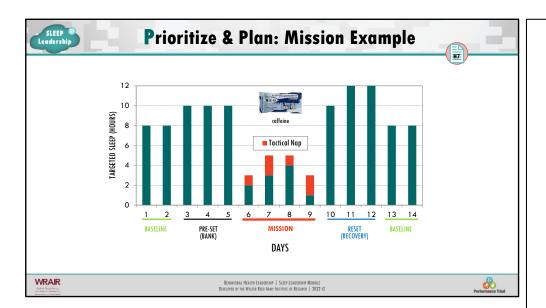
See Appendix B, pg A-58-A]

Record your own notes here:



Describe how splitting sleep can aid in getting sufficient sleep in garrison and in the field.

- 1. Describe how splitting sleep can aid in garrison and the field.
 - Another way you can bank sleep is to manage sleep in the field using split sleep periods.
 - Split sleep can be used when it isn't feasible to get a full 7-8 hours of sleep at one time.
 - You can split your sleep into 2 to 3 separate chunks over a 24 hour time period.
 - More sleep hours accumulated over a 24 hour period will aid in sleep banking, accounting for long work hours and recovering from the field.
 - As long as you're obtaining sufficient total sleep time over 24 hours, your performance will be sustained. It may not sound ideal but it's a solution.





Work through an example mission sleep plan.

1. Work through an example mission sleep plan.

Here's an example of a sleep plan leading into and recovering from a 4-day mission requiring disruption in the normal sleep routine.

- 2. Baseline and pre-set (bank).
 - Although it would be ideal if Soldiers were getting 8 hours of sleep before the mission ("baseline"), we have already identified that most are probably not getting 8 hours and so they should "bank" sleep for 10 hours for the 3 days leading into the mission.

[NOTE: If they note that they can't sleep for 10 hours all at once, tell them they can use naps or split sleep to add up to 10 hours].

 This can be done up to 2 weeks in advance by getting 8 or more hours of sleep in advance of the mission.

- 3. During the mission.
 - During this example mission with 1 to 4 hours of sleep in a 24 hour period, Soldiers should use tactical naps to compensate (as much as operational demands allow).
 - Although only sleep replaces sleep, during the mission, caffeine can be a targeted way to boost alertness and performance.



[DIRECT PARTICIPANTS TO HANDOUT 7"-Operational Caffeine Use"]

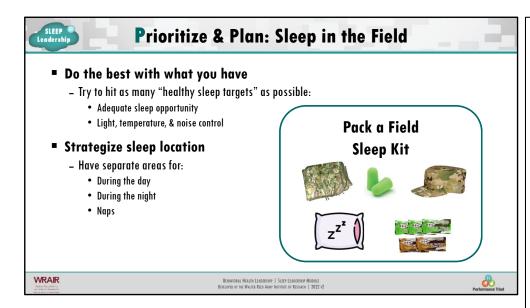


- 200 milligrams of caffeine at specifically planned times has been shown to be most effective.
- The Army developed Military Energy Gum. It's available on Amazon and is in some MRE's. Gum works well because caffeine is absorbed directly through the cheek and enters the blood stream in 5 min.
- In contrast, when you get caffeine through coffee or energy drinks, the caffeine takes longer to reach you. It goes through the stomach, and takes 15-20 minutes before it has an effect.
- However, if Soldiers have built up a tolerance, the performance effects won't be as impactful.
- Note [in the handout] how caffeine is adjusted depending on how much sleep is occurring in a 24 hour period.
- Avoid too much, caffeine, however. You may crash before the mission ends.

3. Recovery and return to baseline.

- After the mission, Soldiers should get as much sleep as possible.
- In this example, that means at least 10 hours of sleep for 3 days using regular sleep and naps.
- After the recovery period, Soldiers should return to a typical sleep routine with 8 hours of sleep per day.
- Soldiers should also consider cutting down on caffeine for typical garrison duty days.
- Strategizing for sleep success can improve overall mission effectiveness and performance.

Record your own notes here:





Describe how to plan for sleep in the field.

[SLIDE BUILDS]

1. Describe how to plan for sleep in the field.

[CLICK TO ADVANCE]

- We realize you often don't have control over all the elements in the field, or even time to implement everything you'd like to.
- Prioritizing and planning for sleep includes thinking about how to set up the environment during field exercises.
- Your mantra in the field regarding sleep should be "Do the best you can with what you've got."
- Prioritize hitting as many healthy sleep targets as you can.
- Try to make sure Soldiers have opportunities to sleep and that they get the best sleep conditions possible in terms of sleeping surface, light, air quality, noise, and temperature (remember: SLANT).

[CLICK TO ADVANCE]

- Make sure there is a separate area for sleep, even if you have to stay close to the action.
- One way to ensure sleep for both those who work at night and those who work during the day are to have separate sleeping areas.

Record your own notes here:



- Sleeping under a field desk or on a treatment table may seem fine, but you'll have better sleep if you've got a cot set up separately from where you work.
- Think about setting up nap spaces away from busy areas where Soldiers can catch up on sleep and take a tactical nap when they are able to.
- Finally, consider putting a Field Sleep Kit on your packing list.

[CLICK TO ADVANCE]

 This should have ear plugs, your PC or an eye mask to block light, an Army woobie for warmth, a pillow for comfort and possibly caffeine gum for tactical caffeine use.

[NOTE: There are camping pillows that are compact and lightweight.]

Record your own notes here:





Discuss how to handle prolonged periods of mental stress.

[SLIDE BUILDS]

- 1. Review techniques for addressing prolonged mental stress
 - Even when leaders do everything to promote a healthy sleep environment, there may be times on a deployment when the situation is so uncertain and tense that it can be difficult to get to sleep or stay asleep.
 - There are some tips for getting through these periods of prolonged mental stress.

[CLICK TO ADVANCE]

- Try journaling. Write down thoughts and feelings of the day and of the future.
- If you find yourself ruminating about certain thoughts or feelings, writing them down can help get them out of your head and onto paper. This may be particularly helpful for things that might not be within your control.

[CLICK TO ADVANCE]

- For things that are within your control, try writing a list of tasks needed to be accomplished so you don't have to worry about forgetting the details.
- Place paper and pen near your bed. That way, if something occurs to you at night you can use paper rather than an electronic device that can expose you to blue light or tempt you to start scrolling



2. Discuss relaxation techniques for prolonged mental stress using handout #9.

[CLICK TO ADVANCE]

- Finally, there are several relaxation techniques that can help.
- These are provided in the handout.



[NOTE: DIRECT PARTICIPANTS TO HANDOUT 9-"Sleep under Stressful Conditions: Quick Guide"]

- First, try focusing your attention through a breathing exercise. This breathing exercise can help steady the mind when someone feels stressed by thoughts or feelings.
- Second, progressive muscle relaxation is an easy way to help you physically relax.
- Finally, self-guided imagery can be helpful for increasing a sense of calm and feeling of ease.

Record	VOUR	OWE	notor	horo	
Record	your	OWI	notes	silere	•



For recovery

- Prioritize sleep in recovery to-do lists
- Following night work, avoid exposure to bright light/sunlight in order to sleep during the day
 - · Use dark, wrap-around sunglasses to lessen effects of bright light
- Avoid using alcohol to sleep

After recovery

- Avoid long term use of sleep aids
- Get back to a normal sleep schedule

WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 V2





Describe how to plan for sleep after being in the field.

[SLIDE BUILDS]

1. Describe how to plan for sleep after being in the field.

[CLICK TO ADVANCE]

- Prioritizing and planning for sleep includes what to do when you get back from the field.
- Often, you haven't been on your normal sleep schedule.
- Talk to your Soldiers about prioritizing sleep. If you provide a list of things they need to do, tell them what should happen first.
- For example, everyone needs a haircut, but they need to make sure they get sleep first- then they take the trip to the barber.
- They need to sleep more than usual after they get back from the field in order to catch up (and pay down their sleep debt).
- If you've been working during the night, encourage the use of dark, wrap-around sunglasses.
- Avoiding exposure to sunlight or other bright light after night work will enable Soldiers to sleep better during the day to start recovery.

Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



 Avoid using alcohol to fall asleep. Like we talked about before, it may help you fall asleep, but it actually interferes with good sleep quality.

[CLICK TO ADVANCE]

- Some Soldiers find sleep medications are helpful for them to get back on track initially. This is fine, but it should be for short-term use only.
- Encourage your Soldiers to get back to a normal schedule as soon as possible.

Record your own notes here:

Prioritize & P

Prioritize & Plan: Reverse Cycle PT

Maximize morning sleep by shifting PT to the right

- Aligns better with circadian rhythm
- Improves mood, morale, motivation, cognitive functioning and reduces stress
- Reduces risk of injuries



ource: Thompson, Jones, & Thornburg, 2017

WRAIR

BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 V2





Discuss reverse-cycle PT.

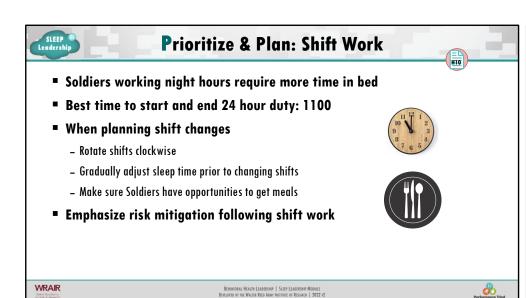
Discuss reverse-cycle PT.

- One way your unit can set itself up for success with sleep banking and recovery from field exercises is to conduct reverse cycle physical training.
- A reverse cycle PT schedule allows for maximum sleep in the morning by moving your physical training to the afternoon. For example, at Ft Carson, they shifted reporting to work at 0800 and conducting PT from 1600-1730.
- This cycle is better aligned with the body's natural circadian rhythm.
- It especially benefits the youngest Soldiers, whose biological drive is to go to bed and wake up later.
- Afternoon physical training schedules not only allow for additional sleep, improving mood, morale, cognitive functioning and stress levels, but they've also been shown to decrease rates and risk of injuries.

Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



(

Discuss the nuances of planning for sleep around nonnormal work duty hours.

[SLIDE BUILDS]

- 1. Discuss the nuances of planning for sleep around non-normal work duty hours.
 - As we've discussed, field exercises may require Soldiers working non-standard duty hours which are outside of a typical nighttime sleep routine.
 - Other examples of shift work include staff duty or shift work schedules like you have with hospital staff.
 - Know the sleep-work cycles of your Soldiers, and do what you can to compensate for any disruption to their normal sleep cycle.

[CLICK TO ADVANCE]

- Soldiers who need to sleep during the day need to allow for more time in bed to obtain adequate sleep.
- More time in bed is needed because sleeping during the day goes against our natural circadian rhythms and results in greater difficulty falling asleep and more microawakenings.
- Since it's hard to stay asleep for long during the day, you can also split sleep, as we've discussed.
 - Try to have one long sleep period in the morning and another in the afternoon during the typical lull in wakefulness.



- Similar to tactical napping in the field, you can also supplement with shorter naps during the day.
- Similar to the field, try to maintain separate sleeping areas for shift workers to minimize disruptions.
- 2. Discuss changing shift work schedules and how to best prepare in advance.

[CLICK TO ADVANCE]

- The brain's circadian rhythm is at its lowest point during the hours of 0500 and 0900.
- Staff duty should not end during or near that window of time.
- If it does, you may be putting Soldiers on the road at a time when they are at the greatest risk for having an accident.



[DIRECT PARTICIPANTS TO HANDOUT 10 – "Suggestions for Staff Duty or CQ Shifts"]

 If you can't change the schedule, consider having your Soldiers nap prior to departing or have someone else drive them home.

[CLICK TO ADVANCE]

- Another way to mitigate risk when planning shift work is to rotate schedules clockwise so that Soldiers go from normal day-time duties, to late evening duties, to overnight duties.
- Soldiers can also gradually adjust their bedtime prior to upcoming changes to their schedule to make it a less drastic shift.
- Make sure Soldiers have opportunities to get meals in order for sleep to not be disrupted by hunger or trying to make normal chow times.

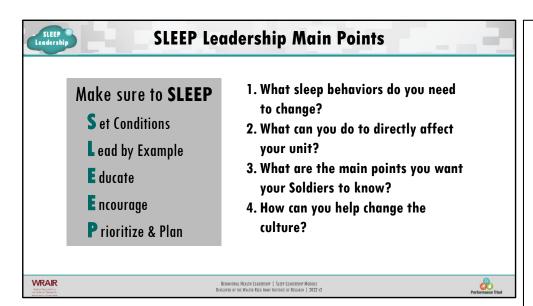
[CLICK TO ADVANCE]

- As a leader, you should be aware of duty day requirements for Soldiers who are working night shifts that may interrupt their sleep opportunities.
- For example, a Soldier working 1400 to 0200 should not be required to report for a 0900 meeting. This puts the Soldier, and consequently your unit, at risk.

Record your own notes here:

[REFERENCES:

See Appendix B, pg A-58-A]



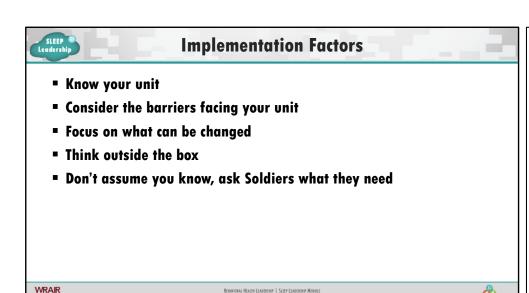


Summarize SLEEP skills.

- Discuss and review SLEEP skills.
 - Let's review the main points of sleep leadership.

[NOTE: After reviewing each component, go through each question on the right allowing participants to answer correcting misinformation. Refer to note-taking page of the handouts if they want to write down the answers to each question.

- **Set conditions**. Strive to create an optimal sleep environment by controlling surface, light, air quality, noise, and temperature, and reduce stress.
- **Lead by example**. Demonstrate good sleep habits and maintain a consistent work-rest schedule.
- Educate. Know how to use caffeine effectively and alcohol responsibly, know about sleep problems and options regarding professional support if needed.
- Encourage. Check in with your Soldiers regularly and encourage effective sleep habits.
- Prioritize & plan. Ensure Soldiers have enough time to attend to their personal lives and combine sleep banking, tactical naps, and recovery strategies in mission planning.
- Cultural change is needed in the Army and you are a vital part. Leaders at all levels play an important role, and you will have the potential to have an even greater impact throughout your career.



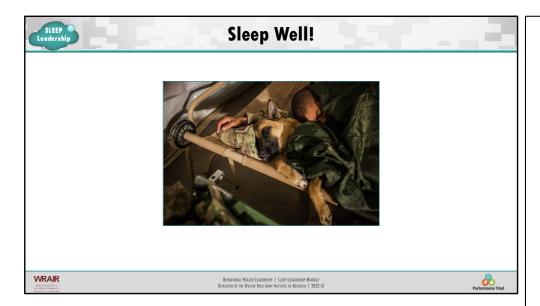
BEHAVIORAL HEALTH LEADERSHIP | SLEEP LEADERSHIP MODULE
DEVELOPED BY THE WALTER REED ARMY INSTITUTE OF RESEARCH | 2022 v2

Record your own notes here:



Discuss implementation factors for leaders.

- 1. Discuss Sleep Leadership implementation factors.
 - Let's look at some things to consider as you build and begin your implementation strategy.
 - First, you want to know your unit. Learn about the different sections and their responsibilities to the overall mission.
 What the demands are on leaders at all levels and the section as a whole. So part of your strategy might be to just talk to people.
 - You'll also want to consider the barriers facing your unit.
 What are the requirements on the unit as a whole. This can change based on the mission, environment, manning and other factors. And although these factors can change, Soldiers' need for sleep remains a constant so considering the barriers is a moving target and will have to be done regularly.
 - Focus on what can be changed. It's great to change policy and culture but that can take time. In the meantime don't lose sight of the immediate things you can effect to improve Soldier sleep.
 - Don't be afraid to think outside the box. The Army is ever evolving so don't be afraid to suggest new strategies to the leadership.
 - Be willing to ask for and listen to the ideas of Soldiers and leaders alike to come up with different strategies to increase sleep knowledge and practice.





Conclude training.

1. Conclude training.

- We hope this training has been informative, and that you'll be able to take what you now know to improve your own sleep and that of your Soldiers.
- If you need more information or additional resources, we are here to support you.
- Thank you for your time and participation!





Appendix B: References

8-A

 Adapted from Hirshkowitz M, Whiton K, Albert SM, Alessi C, Bruni O, et al. (2015). The National Sleep Foundation's sleep time duration recommendations: methodology and results summary. Sleep Health, 1(1):40–43. https://doi.org/10.1016/j.sleh.2014.12.010

10-A

 Adapted from: Kryger, M. H. et al. (2016). Principles and Practices of Sleep Medicine. Philadelphia, PA: Elsevier.

11-A

- Krueger, P. M. & Friedman, E. M. (2009). Sleep duration in the United States: A cross-sectional population-based study. *American Journal of Epidemiology*, 169(9), 1053-1063, https://doi.org/10.1093/aje/kwp023
- · WRAIR Land Combat Study, 2011

<u>12-A</u>

- Williamson, A. M., & Feyer, A. M. (2000). Moderate sleep deprivation produces impairments in cognitive and motor performance equivalent to legally prescribed levels of alcohol intoxication.
 Occupational and Environmental Medicine, 57(10), 649–655. https://doi.org/10.1136/oem.57.10.649
- National Highway Traffic Safety Administration (2016). ABCs of BAC. Washington, DC: NHTSA.
- Dawson, D., & Reid, K. (1997). Fatigue, alcohol and performance impairment. *Nature*, 388(6639), 235. https://doi.org/10.1038/40775
- Van Dongen, H. P., Maislin, G., Mullington, J. M., & Dinges, D. F. (2003). The cumulative cost of additional wakefulness: dose-response effects on neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation. *Sleep*, 26(2), 117–126. https://doi.org/10.1093/sleep/26.2.117

14-A

- Wesensten, N. J., Killgore, W. D., & Balkin, T. J. (2005). Performance and alertness effects of caffeine, dextroamphetamine, and modafinil during sleep deprivation. *Journal of Sleep Research*, 14(3), 255–266. https://doi.org/10.1111/j.1365-2869.2005.00468.x
- LoPresti, M. L., Anderson, J. A., Saboe, K. N., McGurk, D. L., Balkin, T. J., & Sipos, M. L. (2016). The impact of insufficient sleep on combat mission performance. *Military Behavioral Health*, 4(4), 356-363. https://doi.org/10.1080/21635781.2016.1181585
- Van Der Helm, E., & Walker, M. P. (2012). Sleep and affective brain regulation. Social and Personality Psychology Compass, 6(11), 773–791. https://doi.org/10.1111/j.1751-9004.2012.00464.x
- Seelig, A. D., Jacobson, I. G., Smith, B., Hooper, T. I., Boyko, E. J., Gackstetter, G. D., ... & Millennium Cohort Study Team. (2010). Sleep patterns before, during, and after deployment to Iraq and Afghanistan. Sleep, 33(12), 1615-1622. https://doi.org/10.1093/sleep/33.12.1615
- Wright, K. M., Britt, T. W., Bliese, P. D., Adler, A. B., Picchioni, D., & Moore, D. (2011). Insomnia as predictor versus outcome of PTSD and depression among Iraq combat veterans. *Journal of clinical psychology*, 67(12), 1240–1258. https://doi.org/10.1002/jclp.20845



Appendix B: References

14-A cont.

- Barnes, C. M., & Doty, J. (2010). What does contemporary science say about ethical leadership? *Military Review, 90*(5), 90-93.
- Barnes, C. M., Gunia, B. C., & Wagner, D. T. (2015). Sleep and moral awareness. *Journal of Sleep Research*, 24(2), 181–188. https://doi.org/10.1111/jsr.12231
- Luxton, D. D., Greenburg, D., Ryan, J., Niven, A., Wheeler, G., & Mysliwiec, V. (2011). Prevalence
 and impact of short sleep duration in redeployed OIF soldiers. Sleep: Journal of Sleep and Sleep
 Disorders Research, 34(9), 1189–1195. https://doi.org/10.5665/SLEEP.1236
- Simonelli, G., Mantua, J., Gad, M., St Pierre, M., Moore, L., Yarnell, A. M., Quartana, P. J., Braun, A., Balkin, T. J., Brager, A. J., & Capaldi, V. F. (2019). Sleep extension reduces pain sensitivity. Sleep Medicine, 54, 172–176. https://doi.org/10.1016/j.sleep.2018.10.023
- Opp, M. R. (2009). Sleeping to fuel the immune system: mammalian sleep and resistance to parasites. *BMC evolutionary biology*, *9*(1), 8. https://doi.org/10.1186/1471-2148-9-8
- VanHelder, T., & Radomski, M. W. (1989). Sleep deprivation and the effect on exercise performance.
 Sports medicine (Auckland, N.Z.), 7(4), 235–247. https://doi.org/10.2165/00007256-198907040-00002
- Faraut, B., Boudjeltia, K. Z., Vanhamme, L., & Kerkhofs, M. (2012). Immune, inflammatory and cardiovascular consequences of sleep restriction and recovery. Sleep medicine reviews, 16(2), 137–149. https://doi.org/10.1016/j.smrv.2011.05.001
- Sabia, S., Fayosse, A., Dumurgier, J. et al. Association of sleep duration in middle and old age with incidence of dementia. Nature Communications, 12, 2289 (2021). https://doi.org/10.1038/s41467-021-22354-2
- Gordon, A. M., Mendes, W. B., & Prather, A. A. (2017). The social side of sleep: elucidating the links between sleep and social processes. *Current Directions in Psychological Science*, 26(5), 470–475. https://doi.org/10.1177/0963721417712269
- Mantua J, Naylor J, Ritland B, Mickelson C, Bessey A, et al. (2020) Sleep Loss During Military Training Reduces Testosterone in U.S. Army Rangers: A Two-Study Series. *International Journal of Sports and Exercise Medicine*, 6:169. https://doi.org/10.23937/2469-5718/1510169
- Centers for Disease Control and Prevention. (2018, August 8). Sleep and Chronic Disease. Retrieved September 22, 2022, from https://www.cdc.gov/sleep/about_sleep/chronic_disease.html

15-A

- LoPresti, M. L. et al. (2016). The impact of insufficient sleep on combat mission performance. Military Behavioral Health, 4, 356-363. https://doi.org/10.1080/21635781.2016.1181585
- Wesensten, N. J., & Balkin, T. J. (2013). The challenge of sleep management in military operations. US AMEDD Journal, Oct-Dec, 109-118.
- Army Public Health Center. (2015). Health of the Force Report. Aberdeen, MD: APHC.

17-A

 Van Dongen, H. P., Maislin, G., Mullington, J. M., & Dinges, D. F. (2003). The cumulative cost of additional wakefulness: dose-response effects on neurobehavioral functions and sleep physiology from chronic sleep restriction and total sleep deprivation. *Sleep*, 26(2), 117–126. https://doi.org/10.1093/sleep/26.2.117

Appendix B: References

<u>21-B</u>

- Golrou et al. (2018). Enhancement of sleep quality and stability using acoustic stimulation during slow wave sleep. *International Clinical Neuroscience Journal*, *5*, 126-134.
- Onen, S. H. et al. (1994). Prevention and treatment of sleep disorders through regulation of sleeping habits. Presse medicale, 23, 485-489.

22-A

- Toblin, R. L., Anderson, J. A., Riviere, L. A., McGurk, D., & Sipos, M. L. (2016). The Impact of Unit Membership on Smoking Among Soldiers. *Military medicine*, 181(1), 16–20. https://doi.org/10.7205/MILMED-D-15-00063
- Kranabetter, C., & Niessen, C. (2016). How managers respond to exhausted employees. *Journal of Personnel Psychology*, 15(3), 106–115. https://doi.org/10.1027/1866-5888/a000157

<u>25-B</u>

- OTSG. (2015). The Performance Triad guide.
- Centers for Disease Control and Prevention (CDC) (2012). Energy drink consumption and its association with sleep problems among U.S. service members on a combat deployment -Afghanistan, 2010. MMWR. Morbidity and mortality weekly report, 61(44), 895–898.
- Toblin, R. L., Adrian, A. L., Hoge, C. W., & Adler, A. B. (2018). Energy Drink Use in U.S. Service Members After Deployment: Associations With Mental Health Problems, Aggression, and Fatigue. *Military medicine*, 183(11-12), e364–e370. https://doi.org/10.1093/milmed/usy205

26-B

• Costello et al (2014) The effectiveness of melatonin for promoting healthy sleep: A rapid evidence assessment of the literature. *Nutrition Journal*, 13(1), 106. https://doi.org/10.1186/1475-2891-13-106

29-A

- Gunia, B. C., Sipos, M. L., LoPresti, M., & Adler, A. B. (2015). Sleep leadership in high-risk occupations: An investigation of soldiers on peacekeeping and combat missions. *Military Psychology*, 27(4), 197-211. http://dx.doi.org/10.1037/mil0000078
- McDonald, J., Ganulin, M., LoPresti, M., & Adler, A. (2019). Sleep knowledge, goals, and habits in soldiers. Sleep Health. 5(4), 426-428. https://doi.org/10.1016/j.sleh.2019.04.006

37-A

• Adapted from: Maidment, G. (1999). Thermal physiology. In Ernsting, J. et al. (Eds). Aviation Medicine (pp. 203-214). Oxford: Butterworth-Heinemann.



Appendix B: References

38-A

See

https://ephc.amedd.army.mil/HIPECatalog/Uploads/DownloadableProds/600_Performance%20Triad%20Leadership%20Guide%202015728.pdf

39-A

• HQDA. (2016). Sleep management in the operational environment. In A leader's guide to Soldier health and fitness (p. 2-1). ATP 6-22.5.

42-A

 Rupp, T. L., Wesensten, N. J., Bliese, P. D., & Balkin, T. J. (2009). Banking sleep: Realization of benefits during subsequent sleep restriction and recovery. Sleep, 32, 311–321. https://doi.org/10.1093/sleep/32.3.311

<u>43-A</u>

• Jackson, M.L. et al. (2014). Investigation of the effectiveness of a split sleep schedule in sustaining sleep and maintaining performance. *Chronobiology International*, *31*, 1218-1230.

<u>44-A</u>

 Jackson, M. L., Banks, S., & Belenky, G. (2014). Investigation of the effectiveness of a split sleep schedule in sustaining sleep and maintaining performance. *Chronobiology international*, 31(10), 1218–1230. https://doi.org/10.3109/07420528.2014.957305

48-A

US Army, Physical readiness training moves to afternoons: JTF Carson to switch to reverse cycle.
 (2014, December 15). Retrieved September 23, 2022, from
 https://www.army.mil/article/140061/physical readiness training moves to afternoons jtf carson to switch to reverse cycle#:~:text=The%20reverse%20cycle%20duty%20day,reduce%20exposure%20to%20colder%20temperatures

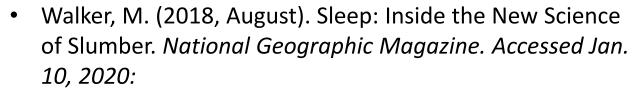
47-A

- Hagenauer et al. (2009). Adolescent changes in the homeostatic and circadian regulation of sleep.
 Developmental Neuroscience, 31, 276-284. https://doi.org/10.1159%2F000216538
- Thompson et al. (2017). Sleep banking: Improving fighter management. Military Review, Jan-Feb, 91-97.

48-B

OTSG. (2015). The Performance Triad guide.

Appendix C: Recommended Reading



https://www.nationalgeographic.com/magazine/2018/08/science-of-sleep/

 Harvard Online Sleep Resources: http://healthysleep.med.harvard.edu/