



LEADER GUIDE

SLEEP SELF-STUDY TO OPTIMIZE SLEEP DURATION

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Human Performance Resources by CHAMP (HPRC) brings the best and most recent evidence-based information on human performance optimization (HPO) to the military community. This Leader Guide offers strategies for unit leaders, trainers, providers, and practitioners seeking to share performance-based information with the Service Members they work with. The guide includes an HPO tool, research that supports it, and strategies for implementing it in a 1:1 session, hip-pocket training, formal presentation, or casual conversation with those you lead. If you have questions about using this guide, reach out to our subject-matter experts through HPRC's Ask the Expert portal at www.hprc-online.org/ask-the-expert.



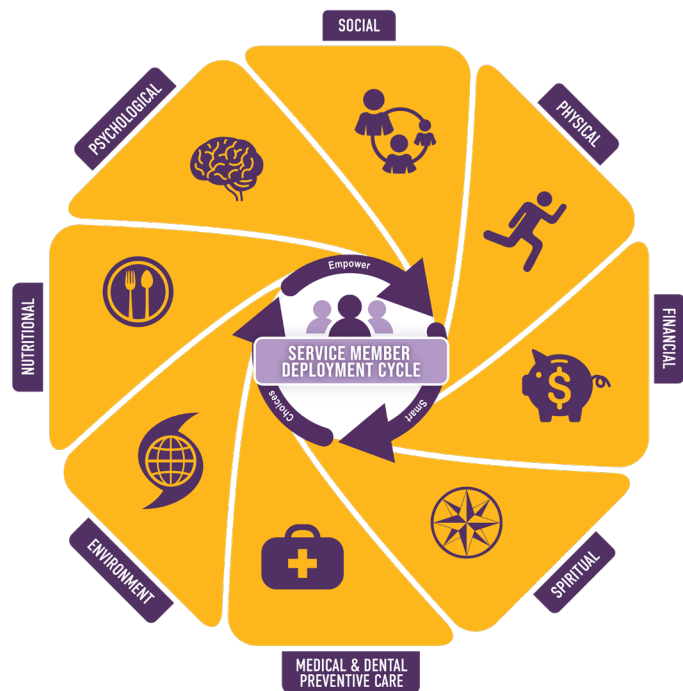
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WHAT IS HUMAN PERFORMANCE OPTIMIZATION (HPO) AND TOTAL FORCE FITNESS (TFF)?

HPO is the process of achieving and sustaining a state of readiness that helps Service Members bring their best selves to any goal or mission—both in and out of uniform. Total Force Fitness (TFF) represents all of the dimensions that contribute to health and performance. TFF serves as a “holistic” compass that helps guide Service Members’ efforts to focus on the domains that are key to maintaining health and sustaining HPO. HPO enables Service Members with different goals, jobs, and responsibilities to work toward reaching and maintaining an optimal level of performance and sustain health and readiness.

This Leader Guide summarizes available evidence of the importance of good sleep habits for military health and performance. It also provides tips and suggestions for leaders on how to use the self-check tool effectively.



Sleep is essential to military health, wellness, and performance. Most people, including Service Members, need 7–9 hours of sleep every night or every 24 hours (when on night operations). Identifying your sweet spot within this wide range can help you set specific goals for sleep duration. Once you know how many hours of sleep you need, you can adjust your schedule to meet that goal most days of the week. In addition, you can learn how to pay off sleep debt after one or several nights of not getting enough sleep.

HPRC recommends the Sleep Self-study as an effective way to learn how many hours of sleep you need. It's not the type of sleep study that requires specialized equipment that records your breathing and brain activity. It's simple: Select a week when you can wake up without an alarm clock.

You can do this study during a regular workweek if needed. Or, you can do it over leave. The essential requirement for a successful sleep self-study is to find a time when you can sleep as long as you need for a few days.

HPRC also created the 10-Day Sleep Diary as a companion tool for the Sleep Self-study. Using a sleep diary can help Service Members pinpoint their unique sleep needs and learn how their daily habits impact their sleep quality and duration.

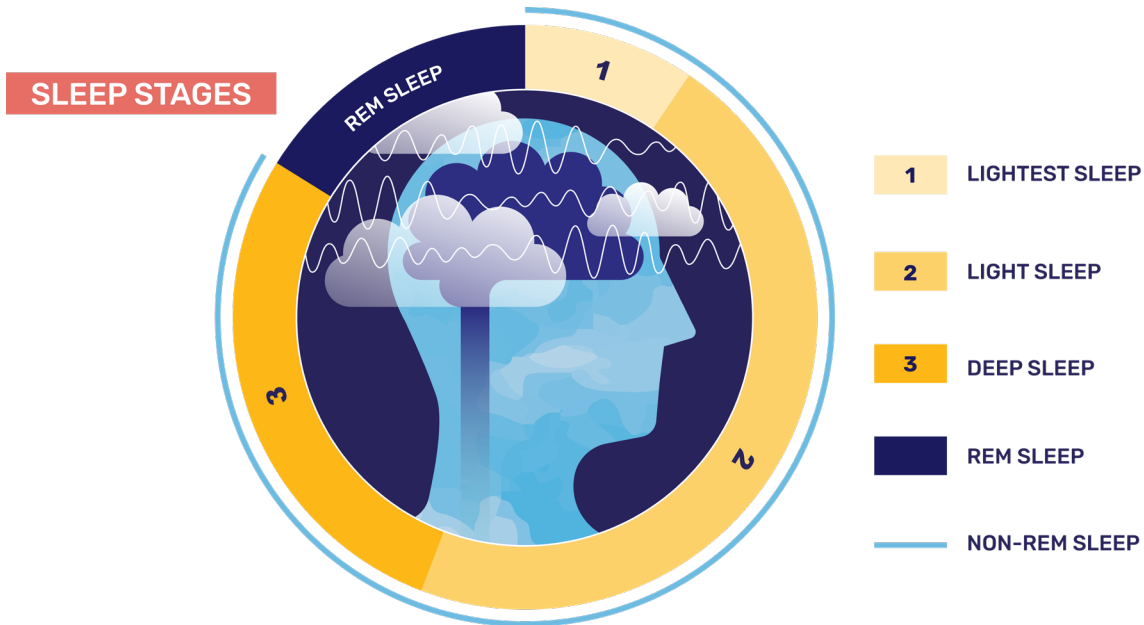
This guide is intended to empower you to encourage other Service Members to schedule their Sleep Self-study and use the Sleep Diary.

OBJECTIVES

- Discuss the different sleep stages and their impact on a good night's sleep
- Describe how to plan and execute the Sleep Self-study
- Demonstrate how to use HPRC's Sleep Diary during the Sleep Self-study

SLEEP STAGES AND THE IMPORTANCE OF ADEQUATE SLEEP DURATION

Sleep is comprised of 4 stages based on changes that happen in the brain and body during sleep.¹ Stages 1, 2, and 3 promote progressive muscle relaxation and slowing of brain activity, eye movement, and heart and respiratory rates.¹ The 4th stage is named from the rapid eye movement (REM) that occurs during it.¹



	STAGE 1	STAGE 2	STAGE 3	REM SLEEP
	HEART STARTS TO SLOW DOWN	HEART RATE DROPS FURTHER	LOWEST HEART RATE	HEART RATE SIMILAR TO WAKING RATE
	BREATHING STARTS TO SLOW DOWN	BREATHING RATE DROPS FURTHER	LOWEST BREATHING RATE	BREATHING RATE IS FASTER & IRREGULAR
	MUSCLES START TO RELAX OCCASIONAL TWITCHES	MUSCLES FURTHER RELAX	MUSCLES ARE FULLY RELAXED	MUSCLES TEMPORARILY PARALYZED
	EYE MOVEMENT SLOWS DOWN	EYE MOVEMENT STOPS	EYE MOVEMENT STOPS	RAPID EYE MOVEMENT FROM SIDE TO SIDE
	BRAIN SLOWS DOWN FROM WAKEFULNESS EASY TO WAKE UP	BRAIN CONTINUES TO SLOW DOWN HARDER TO WAKE UP	BRAIN ENTERS SLOW-WAVE SLEEP EVEN HARDER TO WAKE UP	INTENSE BRAIN ACTIVITY VIVID DREAMS

Stage 1 of non-REM sleep is the lightest sleep. It marks the transition from wakefulness to loss of consciousness. During this stage, brain activity starts to slow, heart and respiratory rates slightly drop, and muscles begin to relax. It's fairly easy to wake during stage 1, but if the person remains undisturbed for 1–5 minutes, they'll progress into the next stage. You spend about 5% of your total sleep time in this stage.¹

Stage 2 brings further slowing of brain activity and heart and respiratory rates. Muscles continue to relax, and eye movement completely stops. It becomes a bit harder to wake up, but stage 2 is still considered light sleep. Stage 2 lasts 10–25 minutes and takes up about 45% of your total sleep time.¹

Stage 3, known as deep sleep, promotes maximum muscle relaxation and the lowest heart and respiratory rates of all 4 stages. Eyes remain immobile during this stage. Brain activity shows a specific pattern known as slow waves.¹ For this reason, this stage can also be called slow-wave sleep (SWS).^{1,2}

Stage 3 is essential for the restorative sleep. It allows the body to heal, recover, and repair.² Important hormones peak during this stage and others reset back to their baseline levels.² Stage 3 sleep is also important for immune system function and brain-waste removal.³ In a good night's sleep, you should spend about 20–25% of your total sleep time in Stage 3.¹

REM Sleep is a unique stage characterized by brain activity similar to wakefulness levels and increased heart and respiratory rates.¹ As the name suggests, the eyes move quickly from side to side, but the body is completely paralyzed.¹ It's common to experience vivid, intense dreams during REM sleep, but body paralysis prevents people from acting out their dreams.¹ REM sleep is important for learning, memory, and overall mental performance.⁴ REM sleep also takes up about 20–25% of your total sleep time.¹

Going through all 4 sleep stages completes one sleep cycle, and you go through 4–6 cycles per night.^{1,5} In the first half of the night, people get more stage 3 sleep than REM sleep.⁵ But in the second half of the night, this ratio reverses.⁵

When you sleep later than usual, you don't get all the Stage 3 sleep time you need.⁵ But, if you wake up earlier than usual, you give up REM sleep time.⁵ As deep sleep and REM sleep are equally important for health, wellness, and performance, Service Members should strive to meet their personal sleep requirements as often as possible.^{1,5}

Here are the main take-home messages regarding sleep duration and quality:

- Sleep is not a single entity but is comprised of 4 different stages.^{1,5,6}
- Sleep quality relates to cycling through all 4 sleep stages and spending enough time in each of them.⁵
- Stage 3 and REM sleep are particularly important. A good night's sleep consists of spending 20–25% of sleep time in Stage 3 and another 20–25% in REM sleep.^{1,6}
- Changing bed times and wake-up times impacts the duration of Stage 3 and REM sleep, which affects mental and physical performance.⁵
- Getting the recommended 7–9 hours of sleep every night ensures you spend enough time in each stage.⁵

HPO TOOLS: SLEEP SELF-STUDY AND SLEEP DIARY

SLEEP SELF-STUDY

The main goal of a sleep self-study is to learn how many hours of sleep you need to wake up rested and energized. Your sweet spot can fall anywhere within the 7–9-hour range. It's rare, but some people do fall slightly outside this range. But less than 6 and more than 10 hours of sleep are considered unhealthy durations. Once you learn how many hours of sleep you need each night, you can set consistent wake-up and bed times.

HOW IT WORKS

The first requirement for a successful sleep self-study is sleeping as long as you need and waking up without an alarm clock. It might be easier to conduct a self-study when you are on leave. After you find the ideal week, follow these tips for success:

- **Wake up without an alarm clock.** Your goal is to let your body decide how much sleep it needs.
- **Get sunlight exposure after you wake.** Stepping outside for 10–15 minutes as soon as you wake can help you fall asleep faster at night.
- **Avoid caffeine after 2 pm.** You can also try to avoid caffeine altogether and notice how your alertness and tiredness levels change.
- **Limit tobacco close to bedtime.** Like caffeine, nicotine can make it hard to fall asleep—even when you're tired.
- **Avoid alcohol within 4 hours of bedtime.** Alcohol might make you feel drowsy and help you fall asleep, but it reduces your sleep quality.
- **Nap during the day if you feel the need to do so.** But avoid long naps and napping close to bedtime.
- **Stop stimulating activities within 1 hour of bedtime.** Activities that increase your arousal levels—video games, movies, and books with emotional content—can make it hard to calm your mind and fall asleep.
- **Avoid exposure to screens within 1 hour of bedtime.** Bright light from handheld devices can make it hard to fall asleep.
- **Go to sleep when you get tired.** Listen to your body, and don't procrastinate once you start to feel drowsy.
- **Track your sleep.** Your main goal during a sleep self-study is to learn how much sleep your body needs to fully rest and recover.

What to expect during the Sleep Self-study. Let your body teach you how much sleep it needs. You should not set a goal for how many hours of sleep you get. Simply observe what happens when you allow your body to sleep as long as it needs.

- When you get less sleep than you need, you accumulate [sleep debt](#). If that's the case, you can expect to sleep longer and nap more frequently during the first few days. That's your body making up your sleep debt.
- Don't worry if you feel you're sleeping too much. Healthy people can't oversleep. Once sleep debt is paid off, you'll learn your sweet spot for sleep duration. This will probably happen toward the end of the Sleep Self-study.
- You might notice that you can't sleep longer or you wake up feeling tired, despite sleeping for 7–9 hours. These might indicate insomnia or sleep apnea, common sleep disorders among Service Members. Pay attention to the signs below, and seek a healthcare provider as soon as possible.
 - ➔ Insomnia: trouble sleeping and staying asleep, waking up much earlier than desired despite the opportunity to sleep longer, constant fatigue, low physical and mental performance during the day
 - ➔ Sleep apnea: loud snoring, waking up gasping for air, night sweats, frequent urination, constant fatigue

How to use what you learn during the Sleep Self-study. After you pinpoint your sweet spot for sleep duration, adjust your schedule accordingly.

- Choose a wake-up time that works for you most days of the week, including weekends.
- Set a sleep time that allows you to meet your daily sleep requirements.
- Add 30 minutes to your needed sleep hours to find your bedtime. It's common to take up to 20–30 minutes to fall asleep. If you need 7.5 hours of sleep, your bedtime should be 8 hours before your wake time.
- Use the [HPRC Sleep Habits Self-Check](#) to identify tips to improve your sleep quality and duration.

- 3 Moderately energized
 - 2 Slightly energized
 - 1 Not at all energized
- Track activities that happen in the morning
 - Start a new row at noon

What you can expect after using the HPRC Sleep Diary. After tracking your sleep for several days, here's what you can expect to learn about your sleep:

- How long you usually take to fall asleep.
- The impact of specific habits on your sleep quality and duration.
 - Some people find it difficult to fall asleep if they exercise close to bedtime, but others might benefit from it.
 - Caffeine timing, medication, and dietary supplements can impact sleep in different ways.
- Your ideal sleep duration.



STRATEGIES FOR SUCCESS

Review these tips to help you present the Sleep Hygiene Self-Check to participants. These tips can help them see its value, fully engage, and thoroughly benefit from the activity.

Why should they care? Start with a hook! Service Members are ready to learn when they understand the material will help them deal with real-life situations that range from mission-essential tasks to their personal lives, interests, or hobbies.



PLAN AND PREPARE

- How can you grab participants' interest and make them curious to learn more about the importance of sleep? How can you help them want to study their sleep patterns and how different factors impact their sleep?
 - Many Service Members might believe that sleep is overrated or not mission-critical. Helping them understand the importance of sleep before trying this activity can help them be open to studying how to optimize their sleep.
 - If you suspect your audience isn't open to studying their sleep patterns at this time, review [HPRC's Leader Guide: The impact of sleep on Total Force Fitness](#). It provides research on the value of sleep that you can use to highlight the importance of improving sleep habits.
 - Brainstorm and share personal stories, relatable experiences, or popular anecdotes your participants could be familiar with. Use them to highlight the impact of sleep on something they value.



EXECUTE

- Share your most attention-grabbing personal story, relatable experience, or popular anecdote that highlights the impact of sleep.
- Explain that, although there are best practices regarding sleep, what works best for others might not work best for them. Taking the time to study their sleep patterns can help them optimize their sleep to perform at their best!
- Consider using review [HPRC's Leader Guide: The impact of sleep on Total Force Fitness](#) *first* to present ways sleep might be impacting their performance.



How would this have helped in the past? Service Members learn best when topics are provided with clear, real-world examples for application.



PLAN AND PREPARE

- Helping Service Members identify the impact sleep has had on their past performance can help them understand the importance of a sleep self-study.
- Review the information on **sleep stages and the importance of adequate sleep duration** above. Brainstorm common examples your audience may have experienced that amplify the importance of getting a full-night's sleep. Specifically:
 - ➔ How a lack of **Stage 3 Deep Sleep** might have impacted their body's ability to heal, recover, and repair.
 - ➔ How a lack of **REM Sleep** might have impacted their mental performance, including memory and ability to learn or focus.
- Brainstorm common examples of things that might impact their ability to get adequate sleep. For example alcohol, bright lights, caffeine, screen time, etc.



EXECUTE

- Present the information on the different **sleep stages and the importance of adequate sleep duration**.
- When reviewing **Stage 3 Deep Sleep** and **Stage 4 REM sleep**, provide relatable examples to help them understand the costs of not getting optimal sleep.
 - ➔ **Stage 3 Deep Sleep's** impact on their body's ability to heal, recover, and repair. Examples are:
 - » **Immune system function** Feeling sick after a poor night's sleep
 - » **Brain waste removal** Experiencing brain fog
 - ➔ **Stage 4 REM Sleep** impacts mental performance, including memory and the ability to learn or focus. Examples are:
 - » Attention loss when talking to someone
 - » Unable to focus on work
- Ask participants to reflect on times they shifted their going to bed or wake-up times. What impacts did they notice?
- Present the instructions for the Sleep Self-study. Help participants reflect on how each of the steps might have impacted their sleep in the past. For example:
 - ➔ Caffeine keeping them awake
 - ➔ Staying up late scrolling social media on their phone
 - » Binge-watching episodes or videos
 - » Drinking alcohol and then not waking refreshed

How will this help them achieve future goals? Service Members are ready to learn when they understand the material will help them deal with real-life situations that range from mission-essential tasks to their personal lives, interests, or hobbies.



PLAN AND PREPARE

- Review how not getting **Stage 3 Deep Sleep** or **Stage 4 REM Sleep** might have hurt them in the past. Then, help them reflect on the possible future impacts of continuing to miss out on this sleep.
- Think on why your audience should care about prioritizing sleep.
- How will getting **Deep Sleep** or **REM Sleep** help them improve at the things they deeply value? Or, what're the potential costs of not prioritizing sleep to what they deeply value?
- How can you help them see how prioritizing sleep can bring about positive benefits?
- Consider any “wake-up call” or “aha” insights you realized about the importance of sleep. Also, address any barriers you faced and how you overcame them.



EXECUTE

- Point out how a lack of **Stage 3 Deep Sleep** or **Stage 4 REM Sleep** is often used as an excuse for poor behavior. “I lashed out at you because I’m just tired.” Although sometimes sleep is out of your control, everyone owes it to themselves, the mission, their loved ones, and their future health to make sure they’re doing all they can to apply good sleep habits.
- Help participants reflect on what they value most: their career, their health, their relationships. How can getting **Deep Sleep** or **REM Sleep** help them live out their values?
- Share your values and how optimizing sleep helps you now and, hopefully, in the future. Note any “wake-up call” or “aha” insights you experienced. Transition from this to the importance of studying their sleep so they can optimize sleep in the future.

How can they create their own strategy to do the Sleep Self-study? Service Members learn best when topics are provided with clear, real-world examples for their application.



PLAN AND PREPARE

- It can be challenging for your audience to find a time to do the Sleep Self-study.
- Brainstorm potential barriers they might feel are roadblocks to trying it. How they can address those barriers? Consider work, family, mission demands, etc.
- Also brainstorm any potential opportunities that might make it easier for them to do the Sleep Self-study.
- Review the **HOW IT WORKS** section for the Sleep Self-study. Which instructions will be most challenging for your audience? Brainstorm some ways they might be able to do them.
- Also review the Sleep Diary instructions. Be prepared to explain the worksheet as an additional tool to help them track their sleep and sleep-impacting behaviors. Consider other tools, such as wearables or apps, your audience can use.



EXECUTE

- Explain to them that you'll work with them to find a way to try the Sleep Self-study.
- Present the Sleep Self-study instructions and provide the reasoning behind each point.
- Lead a discussion about potential barriers and opportunities to do the sleep self-study.
 - Encourage your audience to brainstorm with one another how to overcome potential barriers.
 - If working with a group, discuss if there are ways they can support each other to do the study.
 - Have them reflect on their values and goals. Remind them that optimizing sleep can help them accomplish those goals in both the short term and, especially, in the long term!
- Present the Sleep Diary as a tool to help them track sleep and sleep-impacting behaviors. Lead a discussion about other ways they can use the tool.
- Have them leave with a clear, personalized plan for when and how they'll do the sleep study. Encourage them to be as specific as possible, including exact dates.

What's working? What isn't? Don't forget to follow up! Make sure to check in after participants have done the Sleep Self-study. Help them review what they learned and troubleshoot how to optimize their sleep moving forward.



PLAN AND PREPARE

- Help participants discuss what they learned from doing the Sleep Self-study.
- What patterns have they noticed? How can they use this information to optimize their sleep in the future?
- If they weren't able to do it, help them identify what got in the way. What they can learn from that? Help them explore if they want to try it again and what changes they can make to be successful.
- Identify any local health providers that can help your participants with insomnia or sleep apnea if they realize they may have one of these conditions. To learn more about insomnia and potential resources, check out HPRC's article [Insomnia: What are its signs and how to get help](#).
- Consider using HPRC's [Sleep Habit Self-Check](#) to help them identify other research-based habits to help optimize their sleep.



EXECUTE

- After the participants have had time to do the Sleep Self-study, have a follow-up session to discuss what they learned and what are their next steps.
- Have them review and discuss their sleep diary (or other method of sleep tracking) with you or each other.
- Have each participant identify what they learned about their sleep patterns. When do they get their best sleep? What behaviors hurt their sleep? What behaviors might help their sleep?
- Help any participants who weren't able to do the study identify what got in the way. What they can learn from that?
 - Do they have family or work demands that they need to address to allow them to optimize sleep?
 - Do they have any counterproductive habits that are hurting their sleep?
 - Explore if they might have insomnia or sleep apnea, and encourage them to seek help from a healthcare provider.
 - Help them explore if they want to try again and what changes they can make to be successful.
- Introduce the HPRC's [Sleep Habit Self-Check](#) as another tool to help identify other research-based habits that can help optimize their sleep.



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