NAPPING/CONTROLLED REST POLICY & PROCEDURE DEVELOPMENT GUIDANCE

Version 1

COMPANY / ORGANIZATION XYZ

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Version Notes

This document will be updated periodically by the Fatigue Management Working Group (FMWG) to incorporate findings from the latest research on napping as well as data, observations and feedback gathered through the quality assurance and performance monitoring processes outlined in Company/Organization XYZ's Fatigue Management Program policy and procedures document. Please ensure you are using the most current version of this Napping/Controlled Rest policy and procedure document.

Napping/Controlled Rest Policy

The following sections and content are suggested as the minimum required to satisfy the requirements of regulation X, rule Y, industry standard Z, etc. Additional sections such as roles and responsibilities associated with the use of napping/controlled rest, scope of the policy and procedures, and objectives of the document may be considered. Additional content such as information on sleep, circadian rhythms and research on napping could also be included to reduce the information that needs to be shared during training or within other Company/Organization XYZ documents.

Definitions

Nap: Any brief period of sleep obtained in addition to the main sleep period.

Controlled Rest: A nap taken during a duty period that follows a set procedure that controls what is done before, during and after the nap. The terms *nap* and *controlled rest* may be used interchangeably in the context of activities taking place during duty periods.

Sleep Inertia: A physiological state that occurs after all sleep, including naps. This state is characterized by confusion, disorientation, low arousal, deficits in various types of cognitive and motor performance, and, usually, high levels of fatigue.

Fatigue Prevention Strategy: Actions that can be taken to reduce a future risk of fatigue and performance impairment.

Fatigue Countermeasure: Actions that can be taken to improve alertness and performance as well as reduce fatigue a person may already be experiencing even if they do not feel obvious signs of fatigue (e.g., head nods).

Policy Statement

Napping is the most effective non-pharmacological strategy for reducing fatigue and improving alertness[1] and performance[2] (fatigue countermeasure). Naps are also effective at preventing fatigue that may be experienced in the future such as during upcoming duty periods[3] (fatigue prevention strategy). Naps/controlled rest will be used during duty periods by Company/Organization XYZ as a fatigue prevention strategy and as a fatigue countermeasure.

Napping during off duty time will be suggested and encouraged for use as a fatigue prevention strategy as part of the fatigue management training. This training will also include information on the Napping/Controlled Rest policy and how to follow the Napping/Controlled Rest procedure.

Napping and controlled rest should not be used to replace a portion of, or a whole, main sleep period. Napping and controlled rest should only be used to supplement a main sleep period and everyone must strive to obtain as much good quality sleep as possible. Everyone should aim to obtain between 7 and 9 hours of good quality sleep in one main sleep period during the night time hours for every 24 hours of life. If this goal cannot be regularly achieved even when available sleep time is not a factor, the person experiencing the difficulties should consult a qualified sleep professional for assistance.

In addition to the above general points, the following specific points must be respected when napping/controlled rest is being used during duty.

- At least 1 person must be aware that someone or a number of people are napping. This person must remain awake and available to wake up the napper(s) if necessary and to assist with ensuring that sleep inertia does not interfere with safety after the nap.

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[1] Caldwell, J., Mallis, M., Caldwell, J.L., Paul, M., Miller, J., Neri, D. (2009). Fatigue countermeasures in aviation. Aviation, Space and Environmental Medicine, 80(1), 29-59.

[2] See for example: Rosekind M., Graeber R., Dinges, D., Connell, L., Rountree, M., Spinweber C., & Gillen, K.(1994). Crew factors in flight operations IX: Effects of planned cockpit rest on crew performance and alertness in long-haul operations. Moffett Field, CA: NASA Alnes Research Center; 1994; Report No: DOT/ FAA/92/24.

[3] See for example: Wingelaar-Jagt, Y., Wingelaar, T., Riedel, W., & Ramaekers, J. (2021). Fatigue in aviation: Safety risks, preventative strategies and pharmacological interventions. Frontiers in Physiology, 12: 712628.

- Napping/controlled rest may be used as needed at any time of the 24 hour day. In other words, its use will not be restricted to the night time hours.
- The FMWG may develop a list of situations where a nap/controlled rest may be used as a fatigue prevention strategy. If such a list is developed, the Napping/Controlled Rest policy will be revised to include the list. Until such a list is developed, the Napping/Controlled Rest procedure will be followed when a nap/controlled rest is used as a fatigue prevention strategy **and** as a fatigue countermeasure.
- A maximum of 2 naps/controlled rest periods will be allowed, the total duration of which will be limited to 2 hours to reduce the risk of people using them to make up a portion of their 7 to 9 hour main sleep period. The duration of any specific nap will be as long as operationally feasible and up to 2 hours.
- At least 15 minutes of mentally and physically stimulating activity must be completed immediately after every nap/controlled rest period. These activities must be independent of all work and duty period activities, must not be safety critical and should only be for the purpose of reducing the effects of sleep inertia. Two appropriate activities may be for the napper to do a series of “jumping jacks” and then to verbally describe a favourite past time to the person who remained awake and who’s responsibility it is to ensure that nappers are not suffering from sleep inertia to the extent that performance will be impaired and safety will be compromised if the napper re-engages in duty period activities.
- All naps/controlled rest will be recorded and reported to the FMWG.
- The duration of time used for a nap/controlled rest period is considered on duty time and part of the overall work period as defined by Company/Organization XYZ’s Scheduling Practices policy and procedure document (this document describes limits, practices and requirements for the hours of work).
- **National Napping Day (March 13, 2023) will be promoted through a communication strategy.**

Guidelines for a Napping/Controlled Rest Procedure

A company-specific Napping/Controlled Rest Procedure should address, at a minimum, the following questions:

- How will employees know when they **should** take a nap as a fatigue prevention strategy?
- How will employees know they **need** to take a nap as a fatigue countermeasure? e.g., if their Karolinska Sleepiness Scale (KSS) exceeds 7?
- How will an employee notify an awake person that they will be napping?
- Will employees be able to nap whenever they like or will they have to request a nap? If they need to request a nap, how do they do so?
- How will management decide if a nap is allowed? e.g., what operations need to be delayed to allow for a nap
- How will the napper know when to wake up?
- If all/both employees are fatigued at the same time, how will they decide who naps? Can both nap if they have requested a colleague or management's assistance with the nap? If so, how do they engage them to assist with the napping procedure?
- What actions, including ones that ensure operational safety, must be completed prior to a nap? e.g., if all/both employees are self-managing their naps, will a job briefing be done before the nap?
- What actions, including ones to ensure operational safety, must be completed after a nap? e.g., will a job briefing be done after the 15 minute sleep inertia dissipation time?
- What activities will be allowed/suggested to dissipate sleep inertia?
- Will a self assessment of fatigue (e.g., using the KSS) be completed after each nap?
- What will be done if 15 minutes is not enough to dissipate sleep inertia?
- What data should be recorded and reported to the FMWG? e.g., a note that a nap was used, fatigue risk factors that necessitated the nap, contributing conditions to the fatigue, effectiveness of the nap (pre and post nap KSS), difficulties with using the procedure
- How will the nap location be determined? e.g., where in the operational setting, what time or point during a trip or work period, which building, what physical location, etc.
- Are there any locations or circumstances that should be explicitly stated as inappropriate for naps? e.g., 10 minutes before any safety critical activity (i.e., within the sleep inertia dissipation period)

- How will the napper be able to recline or lie on their side and get comfortable?
- Who is responsible for each component of the napping procedure? That is, after reading the procedure, it should be very clear who does what.
- How and when will the FMWG update this document?

Training Required to Support the Napping/Controlled Rest Policy & Procedure

At a minimum, the overall fatigue management training should cover the following topics related to napping/controlled rest:

- Napping/controlled rest is the most effective non-pharmacological strategy for reducing fatigue and improving performance
- The physiological state of sleep inertia and its associated risks
- The three rules of napping: (1) Some sleep is better than no sleep, (2) More sleep is always better, (3) Sleep inertia must be mitigated after all sleep
- Even short periods of light sleep can reduce fatigue and restore performance, and naps should not be avoided if a person feels they cannot enter deep sleep during naps
- The circadian timing effect on the ability to nap
- How to optimize sleep during a nap by modifying the micro-environment (e.g., using eye masks, putty-style ear plugs, reclined position or preferably on one's side to improve breathing) and by preparing the mind and body for a nap (e.g., invoking the relaxation response and suppressing the fight-or-flight response)
- The duration of naps and their relation to sleep inertia: Although there is some truth to the idea of a power nap being 20 minutes long, this duration does not apply to everyone nor does it apply to any one person all the time. The idea behind this duration is that with 20 minutes of sleep, you might obtain some stage 1 and 2 sleep and wake up with less sleep inertia than waking up from stage 3 sleep which tends to occur after 20 minutes of sleep. In actual fact, it is very difficult to gauge exactly when a person will enter stage 3 sleep. If you need a duration for your nap, sleeping for less than 20 minutes or greater than 80 minutes can sometimes reduce the risk of sleep inertia.

- Assessing fatigue and performance and readiness to re-engage in duties after a nap/ controlled rest
- Caffeine and its effect on the ability to nap
- Using caffeine and napping together as a *Nappuccino*