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# **Sleep Under Fire: A Multi-Disciplinary Approach to Sleep Issues In Military Children**

**Air Force Lt Col Justyna Wadolowski, DO, MS  
Director, DBFRC PACAF  
Kadena AB, Japan**

**Air Force Maj Adam Hodge, PhD  
Chief of Psychology, DBFRC PACAF  
Kadena AB, Japan**

**7 May 2026  
1445-1545 ET**

UNCLASSIFIED



# Presenter(s)



Lt Col Justyna T. Wadolowski, DO, MS

Director, Developmental-Behavioral  
Family Readiness Center PACAF

Kadena AB, Japan

DSN: 315-630-4092

[justyna.t.wadolowski.mil@health.mil](mailto:justyna.t.wadolowski.mil@health.mil)

Maj Adam S. Hodge, PhD

Chief of Psychology, Developmental-  
Behavioral Family Readiness Center  
PACAF

Kadena AB, Japan

DSN: 315-634-3422

[adam.s.hodge@health.mil](mailto:adam.s.hodge@health.mil)



# Air Force Lt Col Justyna Wadolowski, DO



Lt Col Justyna T. Wadolowski is the Director of Developmental and Behavioral Family Readiness Center – PACAF. In this capacity she directs 4 pediatric specialty providers while serving patients at 5 Medical Treatment Facilities across the INDOPACOM AOR. She is the sole AF Child and Adolescent Psychiatrist in the Western Pacific and provides consultation and education services to 17 schools across the region. She is also the Regional AF lead for DHA Child and Family Behavioral Health Team and serves as the deputy Chief of Medical Staff at 18<sup>th</sup> Medical Group.

Additionally, Lt Col Wadolowski is directly involved with the ongoing training and mentoring of AF Child and Adolescent Psychiatrist. With over 19 years of experience, Lt Col Wadolowski's CONUS and OCONUS duties include flight command, Group Practice Management, Medical Readiness, A/E, Staff Psychiatrist, Medical and Regional Director roles.



# Air Force Maj Adam Hodge, PhD



Maj Adam S. Hodge is the Chief of Psychology for the Developmental and Behavioral Family Readiness Center – PACAF. In this capacity, he provides individual, group, and family therapy services as well as psychological testing across the INDOPACOM AOR. He is the sole AF Child and Adolescent Psychologist in the Western Pacific and provides consultation and education services to 17 schools across the region.

Maj Hodge graduated from the University of North Texas Counseling Psychology program with an emphasis in Child and Family Psychology. He attended residency at Wright-Patterson AFB in Aug 2022. Maj Hodge is an avid researcher, leading and contributing to several grant-funded research projects and has published over 30 peer-reviewed research articles primarily in the fields of Positive Psychology and the Psychology of Religion and Spirituality.



# Disclosures



- Drs. Justyna Wadolowski and Adam Hodge have no relevant financial or non-financial relationships to disclose relating to the content of this activity.
- The views expressed in this presentation are those of the authors and do not necessarily reflect the official policy or position of the Department of War, nor the U.S. Government.
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- Commercial support was not received for this activity.
- Portions of this activity were developed with assistance from OpenEvidence on 1 Apr 2026 for educational purpose. All AI-assisted outputs were reviewed and verified by Lt Col Justyna Wadolowski, Maj Hodge, and DHA J-7 CEPO for accuracy, balance, and independence prior to release. Prompts/outputs were stored outside the organization.



# Learning Objectives



At the conclusion of this activity, participants will be able to:

1. Identify common sleep issues and risk factors affecting children and adolescents, particularly in military families.
2. Explain the developmental importance of sleep and consequences of sleep insufficiency across pediatric domains.
3. Apply multidisciplinary strategies to improve pediatric sleep outcomes.



# Poll Question



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How often do you assess sleep during pediatric visit?

- Always
- Often
- Sometimes
- Never



# What is Sleep And Why Do We Need It

- Vital and naturally recurring state of reduced consciousness and decreased responsiveness to external stimuli that is essential for human health and functioning.
- Key functions of sleep
  - Neurodevelopment
  - Memory Consolidation and Learning
  - Emotional/Mental Health
  - Cardiovascular Health
  - Endocrine Regulation
  - Immune Function
  - Glymphatic System



# Amount of Sleep Recommended By Age



- The recommended length of sleep, according to the American Academy of Sleep Medicine:
  - 4-12 months of age – 13-16 hours
  - 1-2 years of age – 11-14 hours
  - 3-5 years of age - 10-13 hours
  - 6-12 years of age – 9-12 hours
  - 12-17 years of age – 8-10 hours



# How Much Do Children Actually Sleep?

- Sleep insufficiency varies by the age group and increases with the age
  - Infants 4-11 months of age - 40.3% get less than recommended sleep
  - Children age 1-2 years - 35.4% get less than recommended sleep
  - Children age 3-5 years - 33.3% get less than recommended sleep
  - Children age 6-12 years - 57.8% get less than recommended sleep
  - Children age 13-18 years - 72.7% get less than recommended sleep



# Poll Question



- In your experience, which age group of military-connected children seems to struggle the most with getting enough sleep?
  - A) Infants (4-11 months)
  - B) Toddlers/Preschoolers (1-5 years)
  - C) School-age children (6-12 years)
  - D) Teens (13-18 years)



# How Much Do Children Actually Sleep?

- The gap between the recommended sleep duration vs actual sleep received by pediatric population has been increasing.
- Between 1905 and 2008 the overall sleep duration in children and adolescents has declined by over an hour per each night of sleep
- Sleep insufficiency has become even more prevalent over the last two decades



# Whose Sleep is At Risk?



- 
- Children with neurodevelopmental disorders
  - Racial/ethnic minority groups
  - Children from low socioeconomic backgrounds
  - Children with chronic medical/mental health conditions
  - Military related children



# Poll Question



- What do you think is the biggest environmental challenge for military children when it comes to sleep?
  - A) Changes in routine
  - B) Parental deployment or absence
  - C) Moving to new locations
  - D) Other (please share in chat)



# Are Military Children Different



- Biologically – no
- Environmentally - yes
  - Factors affecting their environment
    - ✓ Higher exposure to stress
    - ✓ More disruptions in routine
    - ✓ Greater emotional uncertainty



# Sleep of Military Connected Children



- Risk Factors:
  - Parental deployment
  - Parental health
  - Frequent relocations
  - Disrupted family routines and structure



# Factors Affecting Sleep in Military Connected Children



- Protective Factors:
  - Positive parental view of military service and greater preparation for upcoming deployment
  - Strong family/social support
  - Parental sensitivity and effective parenting practices
  - Access to military community resources



# Causes of Sleep Insufficiency (1 of 3)



- Medical
  - Epilepsy
  - Gastroesophageal reflux
  - Obstructive Sleep Apnea
  - Parasomnias, Circadian Rhythm Disorders
  - Restless leg syndrome
  - Attention Deficit/Hyperactivity Disorder (ADHD), Anxiety, Depression
  - Autism Spectrum Disorder (ASD)
  - Post-Traumatic Stress Disorder (PTSD)
  - Mineral/Vitamin Deficiencies



# Causes of Sleep Insufficiency (2 of 3)



- 
- Behavioral Factors
  - Parental and Family Factors
  - Environmental and Societal Factors



# Causes of Sleep Insufficiency (3 of 3)



- Pharmacological
  - Various medications can affect the sleep architecture and/or sleep duration and contribute to sleep issues
    - ✓ Stimulants
    - ✓ Antidepressants
    - ✓ Antipsychotics
    - ✓ Antihistamines
    - ✓ Antiepileptics



# Effects of Sleep Deprivation



- Cognitive:
  - Poor attention
  - Memory deficits
  - Executive dysfunction
- Emotional:
  - Anxiety
  - Depression
  - Irritability
- Physical:
  - Obesity
  - Weaker immune system
  - Lack of energy
- Behavioral:
  - Impulsivity
  - Increase in risk-taking behavior
  - Increase in injuries



# Ways To Improve Sleep (1 of 6)



- Behavioral
  - Reduce digital media at least 60 min before bedtime
  - Remove devices from bedrooms overnight
  - Enable “do not disturb” setting during sleep hours
  - Use parental controls to enforce time boundaries
  - Maintain consistent sleep/wake cycle routine, including weekends
  - Ensure bright light exposure in the mornings to reinforce circadian rhythm
  - Create a cool, dark, quiet sleep environment



# Ways To Improve Sleep (2 of 6)



- Behavioral
  - For children older than 5 years of age who have trouble sleeping at night, avoid daytime naps
  - Cognitive behavioral therapy for Insomnia (CBT-I)
  - Avoid vigorous activity right before bedtime
  - For children who use videos to fall asleep, substitute with meditation apps, sound machines or quiet music



# Ways To Improve Sleep (3 of 6)



- Pharmacological
  - Avoid stimulant use (including caffeinated beverages) in the evening
  - There are hypnotic or sedative medications that are FDA approved for the treatment of insomnia in children
  - Medications used off label with limited evidence:
    - ✓ Antihistamines
    - ✓ Alpha-agonists
    - ✓ Z-drugs
    - ✓ Sedating antidepressants
    - ✓ Benzodiazepines
    - ✓ Antipsychotics
    - ✓ Tricyclic antidepressants



# Ways To Improve Sleep (4 of 6)



- Pharmacological and nutritional supplementations:
  - Melatonin
  - Vitamin D
  - Zinc
  - Folate/B12
  - Magnesium
  - Omega 3- fatty acids
  - L-threonine



# Poll Question



- Have you or families you work with tried any digital tools or apps to help with sleep? If so, which ones? (Please share in the chat)
  - A) Yes, and they were helpful
  - B) Yes, but not much impact
  - C) No, but interested in learning more
  - D) No, and not interested



# Ways To Improve Sleep (5 of 6)

- Media:

Digital Cognitive Behavioral Therapy for insomnia (dCBT-I) delivered via apps and web-based platforms – most evidence-based

dCBT-I apps with published positive evidence in pediatric population

- Sleep Ninja - ages 10-16

- Dr. Lulababy - infants to teens

Other dCBT-I apps

- Sleepio – some adolescent data

- SHUTi – primarily adult population

- CBT-I Coach (VA) designed for adults but used adjunctively



# Ways To Improve Sleep (6 of 6)

- Mindfulness/meditation apps
  - Headspace
  - Calm
- Other media
  - Moshi – 3-8 years (sleep stories)
  - Sound/White noise machines
  - Sleep music
- Others
  - Weighted blankets – most evidence in children with ADHD
- Screen based media generally not recommended as the light emitting e-readers suppress melatonin and delay sleep onset



# Key Takeaways



- Sleep duration in children and adolescent has been decreasing over the years with teens being most affected.
- Sleep deprivation is a significant issue negatively impacting pediatric population and associated with negative effects on the overall well being.
- The best way to target sleep issues is through a multidisciplinary approach that encompasses behavioral interventions, environmental modifications, circadian/light therapy, limited use of electronic media devices and pharmacological support if needed to address the multiple factors contributing to sleep disturbance.



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