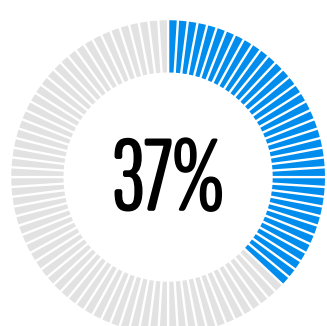
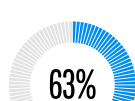


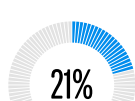
SLEEP, SODIUM, AND CVD SLEEPINESS: IMPACT ON DAILY ACTIVITIES



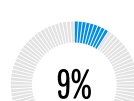
US Adults Reporting That Sleepiness Interferes With Daily Activities



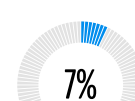
Rarely/never



A few days a month



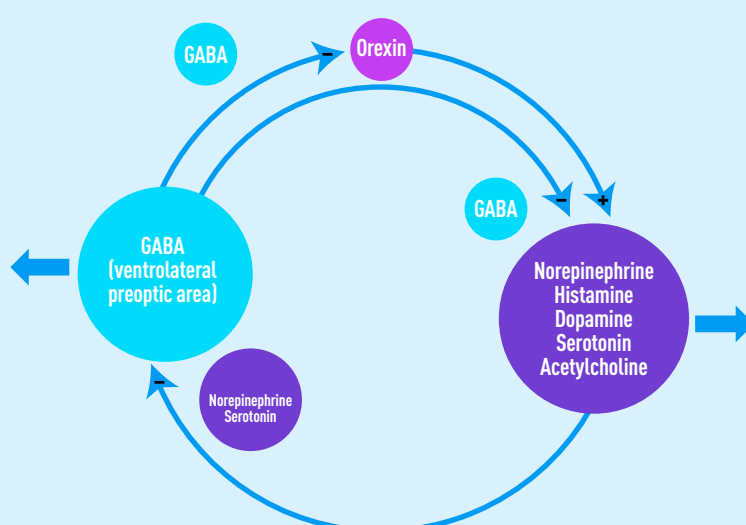
A few days a week



Every day/almost every day

National Sleep Foundation. 2002 Sleep in America Poll. At: <http://www.sleepfoundation.org/2002poll.html>.

SLEEP, SODIUM, AND CVD HYPOCRETIN STABILIZES THE SLEEP/WAKE SWITCH



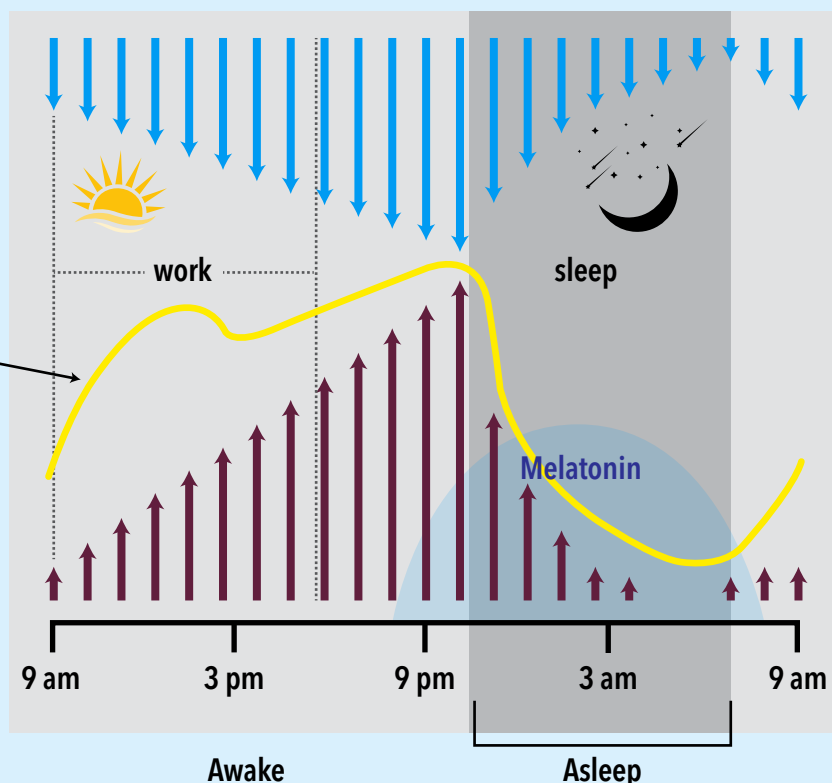
Adapted from Saper et al. Trends Neurosci. 2001;24:726.

SLEEP, SODIUM, AND CVD PHYSIOLOGIC DETERMINANTS OF SLEEPINESS

Sleep Drive

Wake Propensity

Circadian Drive for Wakefulness



Courtesy of Michael Thorpy, MD.

SLEEP, SODIUM, AND CVD COMMON CAUSES OF SLEEPINESS

SLEEP-WAKE DISORDERS

DISORDERS OF SLEEP-WAKE REGULATION

- Idiopathic hypersomnia
- Insomnia
- Kleine-Levin syndrome
- Narcolepsy

DISORDERS OF SLEEP DISRUPTION

- OSA
- Periodic limb movement disorder
- Restless legs syndrome

DISORDERS OF CIRCADIAN RHYTHM

- Shift-work sleep disorder
- Delayed or advanced sleep phase syndrome
- Non-24-hour sleep-wake rhythm disorder

INSUFFICIENT SLEEP

MEDICATION EFFECTS

*EDS AND CV RISK

In a population-based prospective study, elderly (65 years of age) with no history of coronary heart disease or stroke with EDS frequently had an increased risk of coronary heart disease and stroke over a median follow-up of 5.1 years.

EDS is also associated with increased cardiovascular risk and mortality in the general population, mainly elderly.

In a different study, the relationship between EDS and increased cardiovascular risk was independent of any history of CVD.

In the same study, EDS was associated with an increased risk of cardiovascular mortality but not cancer-related mortality, over six years of follow-up.

Studies of younger adult participants with EDS have shown increased risk of vascular death, ischemic stroke, and myocardial infarction; ischemic heart disease; and incident stroke and incident coronary heart disease.

Jennum, et al., Sleep Medicine Reviews, Volume 58, 2021, 101440, 1087-0792. M. Blachier, et al. Excessive daytime sleepiness and vascular events: the Three City Study Ann Neurol, 71 (2012), pp. 661-667. *EDS: Excessive Daytime sleepiness

SLEEP, SODIUM, AND CVD DIETARY SALT AND SLEEP

Aldosterone Excess
High Dietary Salt Intake

Sodium and Fluid Retention

Increased Parapharyngeal Edema

Increased Upper Airway Resistance

Worsening Obstructive Sleep Apnea