

SLEEP DEPRIVATION IN THE WORKPLACE

The Silent Epidemic

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Cleansing

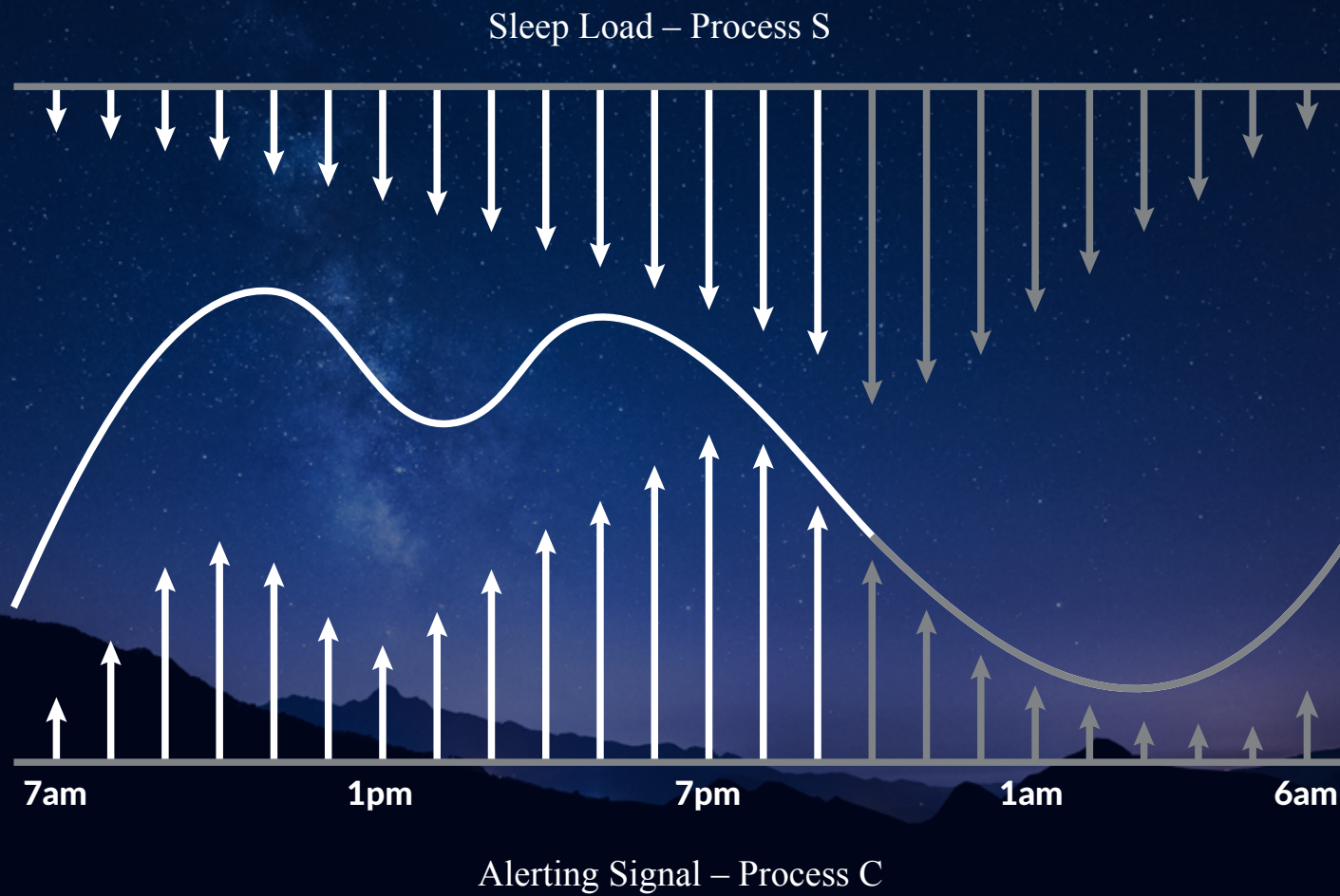


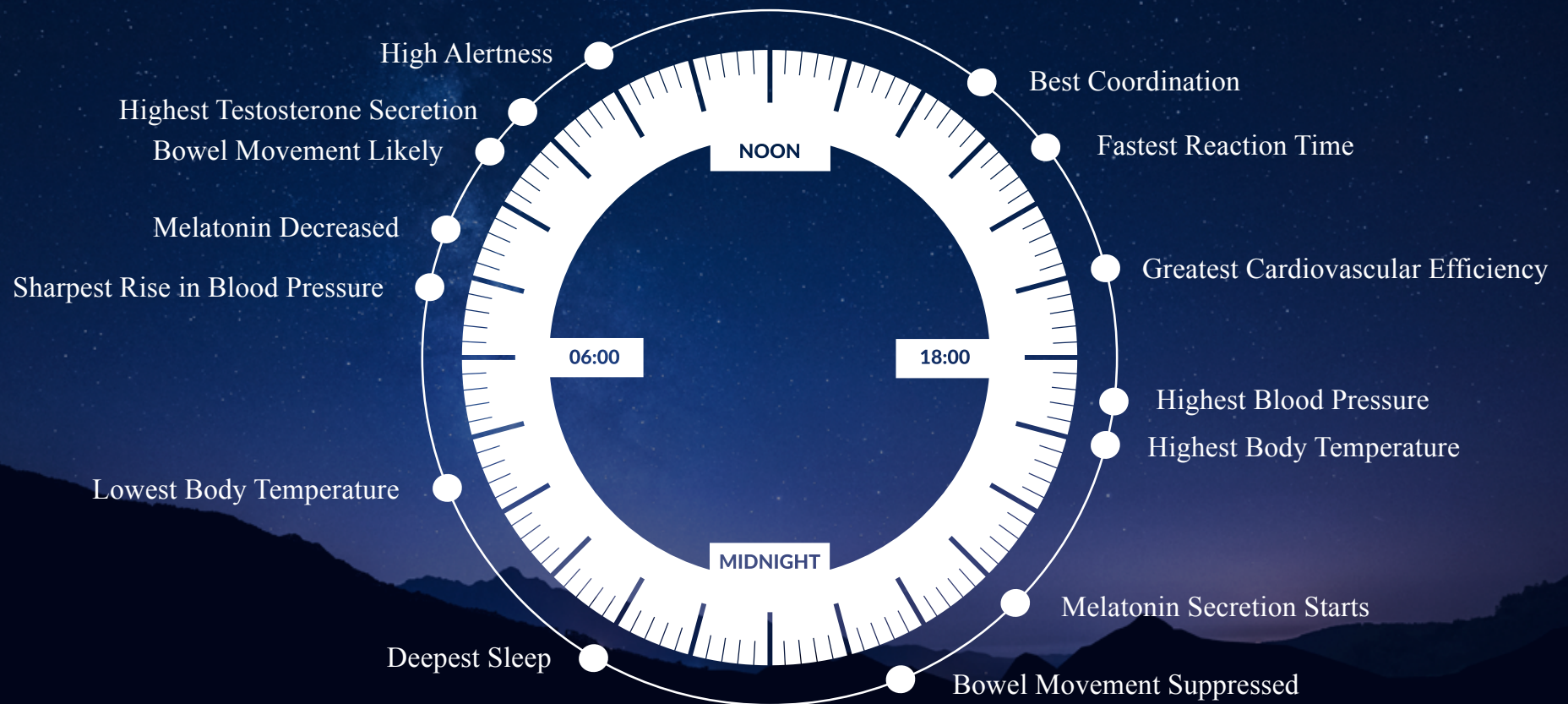
Consolidation



Restorative

The Functions of Sleep







Prevalence of Sleep Deprivation

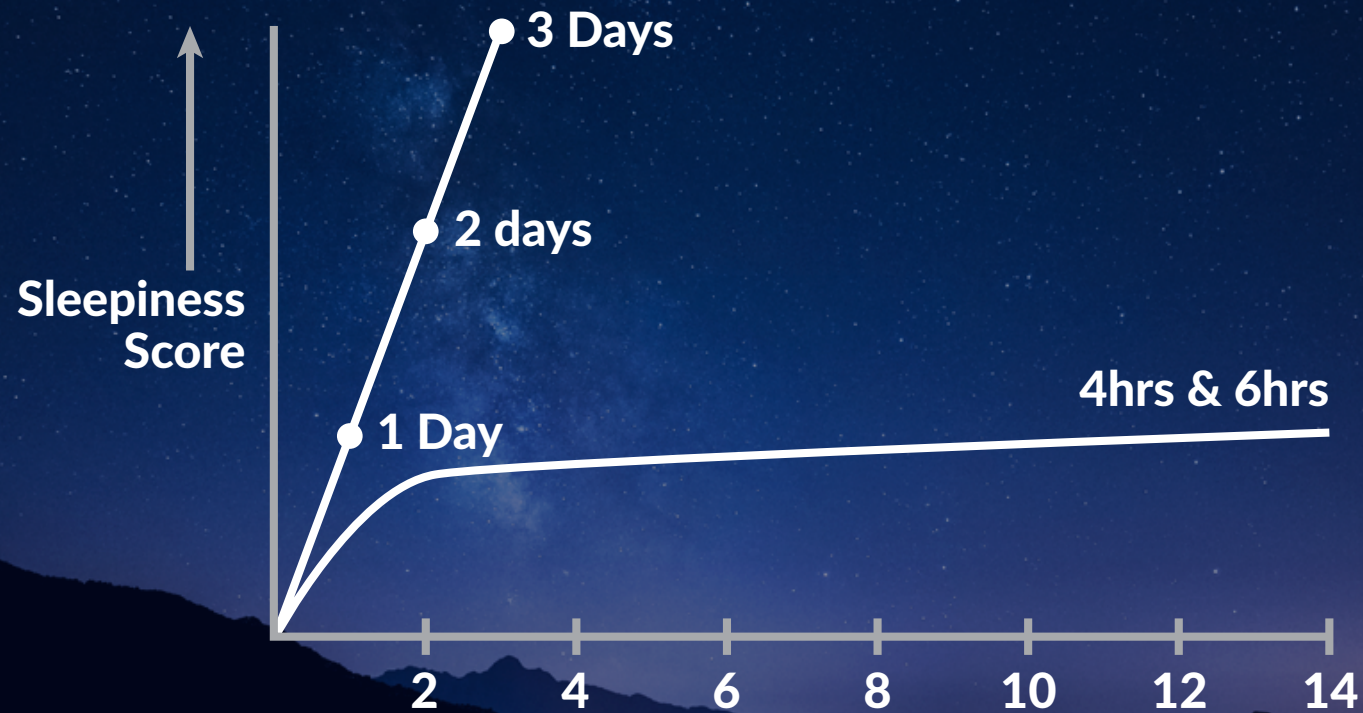


“Insufficient sleep is a
public health epidemic.”

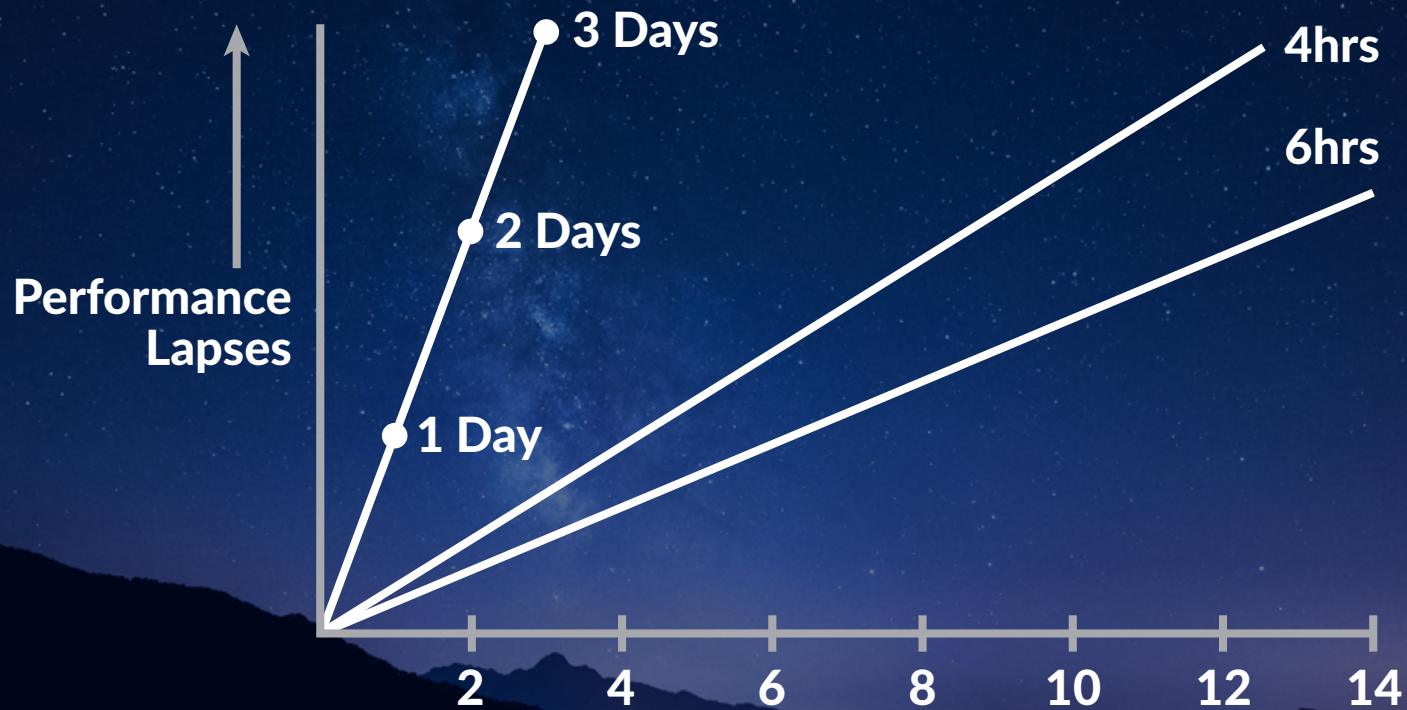
– Centers for Disease Control and Prevention

TRUE or FALSE?

Humans can function just fine
on 4-6 hours of sleep



Why We Lack Insight



Why We Lack Insight

TRUE or FALSE?

Sleep does not affect my
overall physical health



Gottlieb D. Arch Intern Med 2005;165:863-68
Hasler G. Sleep 2004;27(4):661-6
Laugsand L. Circulation 2011;124:2073-81
Taylor D. Sleep 2005;28(11):1457-64c

7.5x

Obesity

1.45x

Heart Attack

1.7x

Diabetes

HEALTH



559 additional calories consumed

What would you say if:

I told you I could take a previously healthy millennial and without changing their diet or medications make them pre-diabetic in one week?



Decreased glucose tolerance



Decreased insulin secretion



Increased
evening cortisol
concentrations



Increased
sympathetic nervous system
activity

TRUE or FALSE?

Sleep does not affect my safety



20% of all serious
car crash injuries



70% more likely
to be involved in
workplace accidents



Sleep Deprived
vs. well rested

SAFETY

Level of sleep deprivation	B.A.C. Equivalent
24 hours without sleep	.1%
4-5 hours per night for 7 nights	.1%
6 hours per night for 10-12 nights	.1%

Effects of Sleep Deprivation



Three Mile
Island



Space Shuttle
Challenger



Exxon Valdez

High Profile Accidents

1,550

Fatalities

40,000

Nonfatal injuries per year

Drowsy Driving Events

274,000

Insomnia related
workplace accidents

\$32,062

Average cost of insomnia related
accident

\$31B

Combined value of
workplace accidents

Sleep Deprivation's Impact on Safety

TRUE or FALSE?

Sleep does not affect my
overall performance



National Sleep Foundation 2007;Women and Sleep
Taylor D. Sleep 2005;28(11):1457-64c

2x

Chance of
missing work

3x

Likelihood of
getting a cold

10x

Increased risk
of depression

PRODUCTIVITY



21.8%

Insomnia Prevalence

\$2,280

Value of individual
lost productivity

253M

Days of lost
productivity nationwide

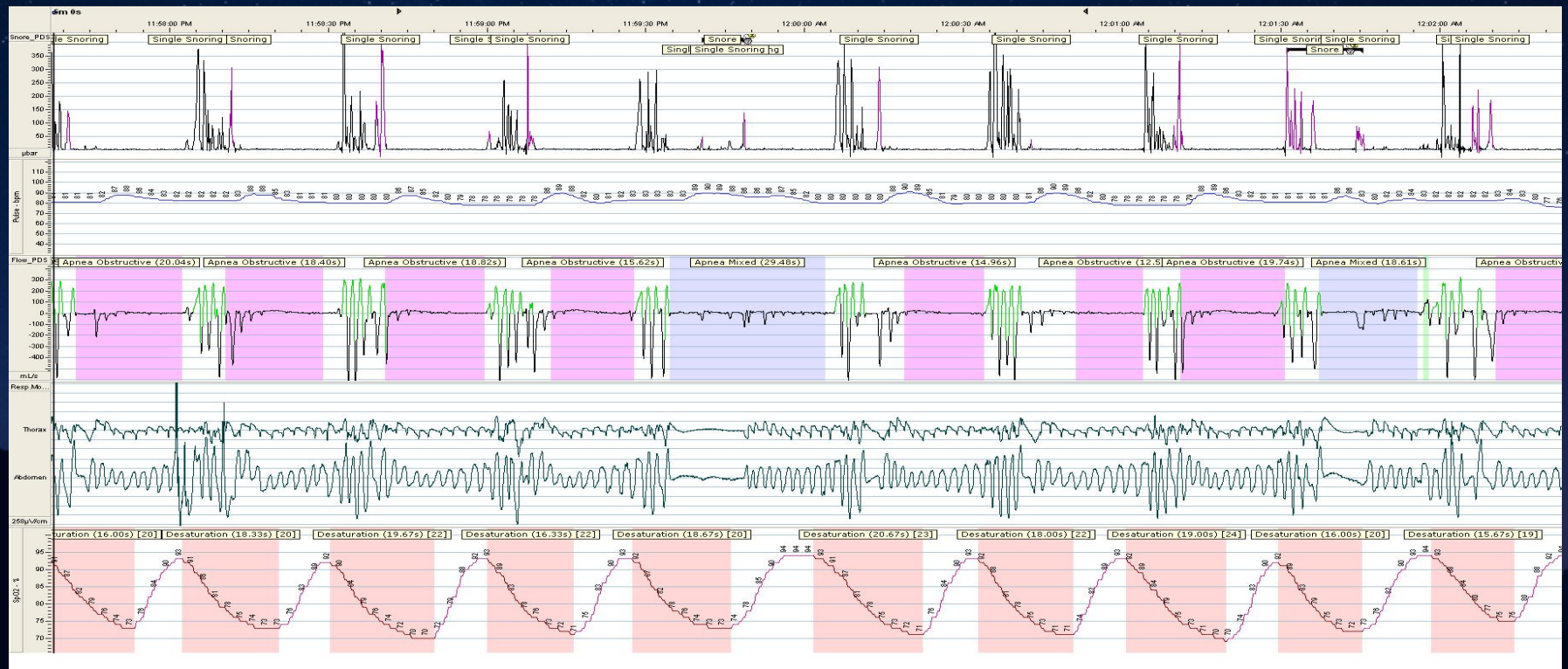
Sleep Deprivation's Impact on Productivity

TRUE or FALSE?

Sleep apnea is only a matter of inconvenient snoring



What is Sleep Apnea



Sleep Apnea associated Co-Morbidities

72% Diabetes

76% Heart Failure

57% Coronary Artery Disease

63% Stroke

49% Atrial Fibrillation

77% Obesity

83% Hypertension

45% Depression

Sleep Disorder Prevalence and Impacts

Sleep Disorder	US Population Affected	Costs
Sleep Deprivation	40%	\$411 Billion In lost productivity
Insomnia	20%	\$84 Billion In healthcare costs
Sleep Apnea	18%	\$165 Billion In healthcare costs

“Sleep deprivation is the **#1 under addressed** health issue today”

Sleep Deprivation

DIAGNOSIS:
History / Sleep Log
Actigraphy

THERAPY:
Behavior change
Sleep Hygiene
Cognitive Behavioral Therapy

Insomnia

DIAGNOSIS:
History / Sleep Log
Actigraphy

THERAPY:
Cognitive Behavioral Therapy
Sleep Hygiene
Medical / Psychiatric illness
therapy

Sleep Apnea

DIAGNOSIS:
History
Sleep Study

THERAPY:
CPAP / Oral devices
Sleep Hygiene
Cognitive Behavioral Therapy

Prevalent Sleep Disorders



What Is The Solution?

PROJECT Z

Comprehensive Sleep Health Solutions



Comprehensive and
clinically validated
sleep health assessment



Education to help
users better understand
their sleep health issues



Web App to address
Insomnia using Cognitive
Behavioral Therapy



Simple, consumer
focused pathway to
treat sleep apnea

ProjectZ Apnea Care



Patients connect for free with a Sleep Data sleep health coach to get started on their journey to restful & restorative sleep



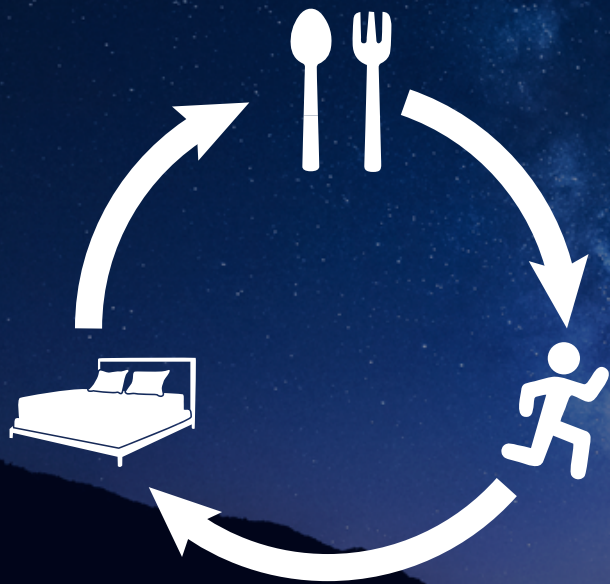
Sleep Data facilitates a telemedicine consult with a board certified physician to analyze a patient's sleep



An easy-to-use sleep recorder will be shipped directly to patient's home. No waiting on doctor's appointments or overnight stays in a sleep laboratory



Based off patient's results, Sleep Data will facilitate a personalized treatment plan and support patients through the process



“Eating the right foods provides energy for your workout and improves the quality of your sleep. In turn, a sound night of sleep makes you more likely to eat right the next day. **This is why the real magic lies at the intersection between eating, moving, and sleeping.**”

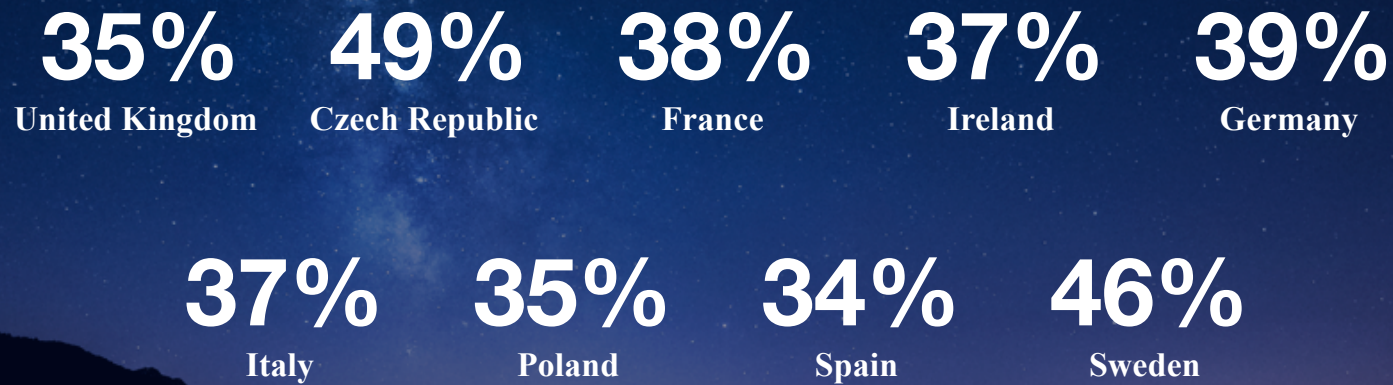
- Tom Rath, *Eat Move Sleep: How Small Choices Lead To Big Changes*



Welcome to ProjectZ:
Better Sleep Starts Here

rgnext.optisom.com

Company Code: rgnextsleep



An International Problem

76%
are grumpy

65%
poor performance

86%
poor concentration

84%
increased appetite

Increased Prevalence of Issues Among Poor Sleepers

Health



\$16 BILLION

Spent by US companies on healthcare
expenses related to sleep

Safety



\$31 BILLION

Cost of sleep related workplace
accidents & mistakes

Productivity



\$63 BILLION

Lost by US companies due to lower
productivity caused by poor sleep

The Cost of Sleep Deprivation



PROJECT Z

Sleep Health Solution



The American College of Physicians recommends that all adult patients receive cognitive behavior therapy for insomnia as the initial treatment for chronic insomnia disorder.

"Online Cognitive Behavioral Therapy is **Effective in Treating Chronic Insomnia**"

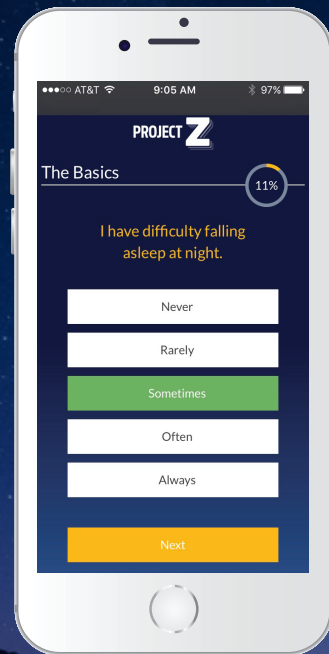
- American Academy of Sleep Medicine

A Proven Solution

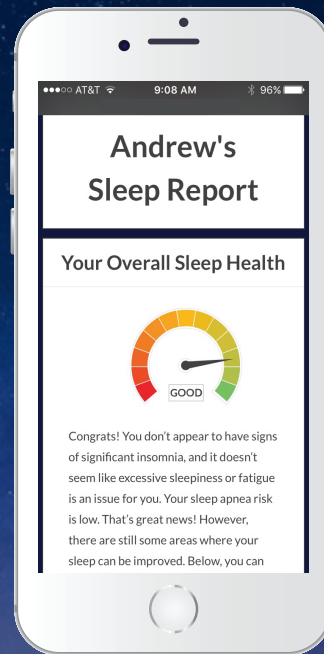


- 300 specialists in Cognitive Behavioral Therapy for insomnia (CBTi) nationwide
- Primary care physicians overwhelmed
- Insufficient number of sleep specialists

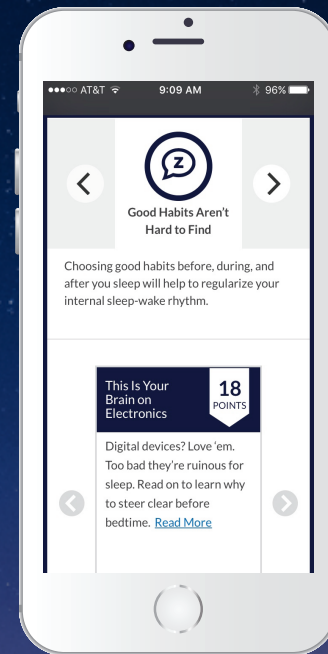
Access Is The Issue



Take 5 minute sleep
health assessment



Receive a personalized
sleep health report



Complete customized
CBT program to
improve sleep health

ProjectZ Key User Experience



INSOMNIA Shift Work

Bedtime Anxiety Delayed Sleep Phase Syndrome

Hypnotic Dependence Chronic Stress

SLEEP DEPRIVATION

Advanced Sleep Phase Syndrome Sleep Hygiene

Sleep Apnea Jet Lag

Identifying The Cause



Personalized Sleep Health Plan

PROJECT **Z**

Shannon's Sleep Report



Your Overall Sleep Health



You are experiencing symptoms of insomnia and sleepiness or fatigue. Fortunately, you appear to be at low risk for sleep apnea. We're recommending that you meet with your doctor to evaluate your insomnia symptoms. ProjectZ can help with your insomnia treatment, too. Below, you can read the rest of your sleep report and some suggestions for better sleep, compliments of ProjectZ.

Better Sleep. We Promise.

When life gets hectic, your sleep is often the first thing that suffers. Fortunately, our bodies quickly respond when we take time to invest in our sleep health. Our physicians have developed simple, effective steps to target your specific sleep issue and make immediate improvements. Over the next 14 days, we invite you to try out three of our sleep health units for immediately improved health.



Dealing with Shift
Work



Re-Train Your Brain



Get the Mood Just
Right

The reward? More sleep. Better sleep. And you'll feel happier, too.

Accept 14 Day Challenge

The Personalized Sleep Health Solution

Advanced Sleep Phase Syndrome

Conditioned Arousal

Delayed Sleep Phase Syndrome

Hypnotic Dependence

Insomnia

Obstructive Sleep Apnea

Shift Work

Sleep Deprivation

Sleep Hygiene

Stress

PROJECT
Z

A.M. Light

ASPS Therapy

DSPS Therapy

Jet Lag Protocol

Sleep Apnea

Sleep Apnea Education

Shift Work Therapy

Relaxation Exercise

Sleep Compression

Sleep Deprivation Education

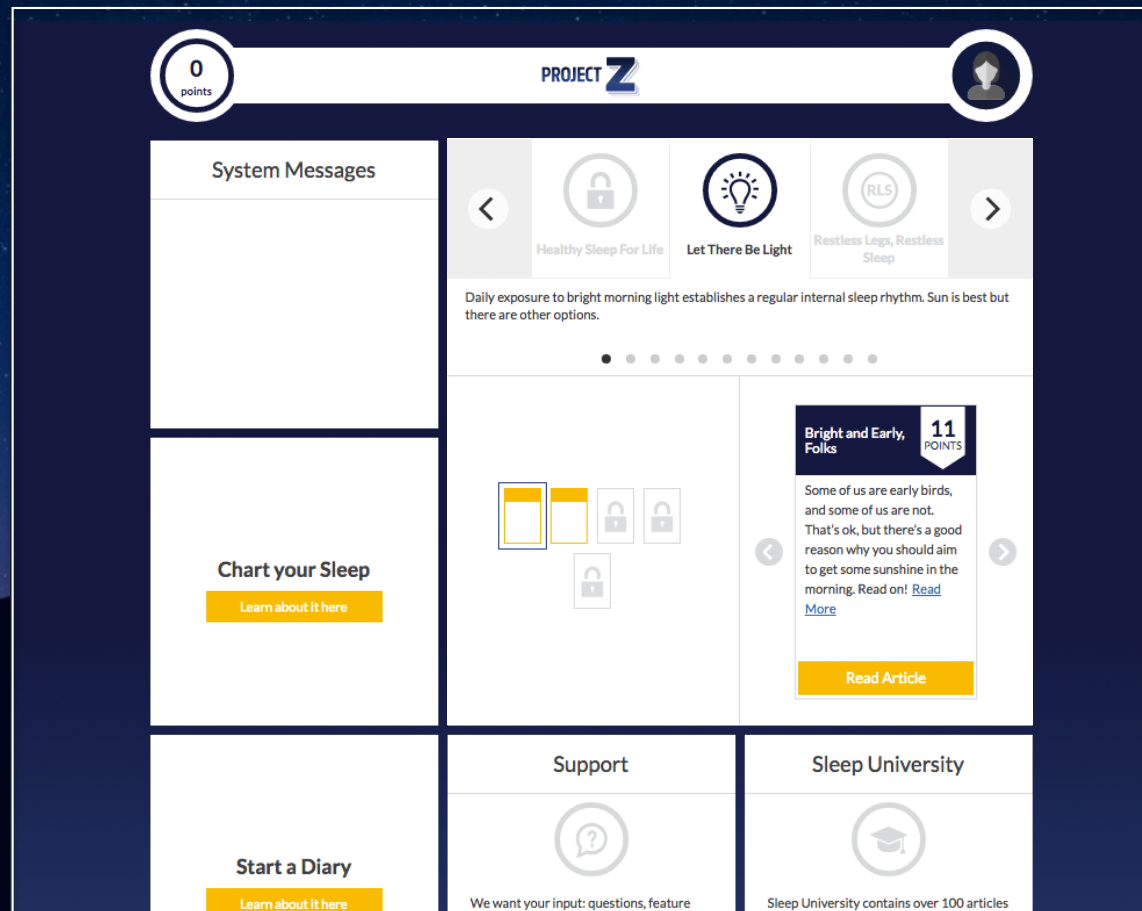
Sleep Diary

Sleep Hygiene

Worry Exercise

Stimulus Control

Clean and Concise User Interface



Actionable Challenges To Improve Sleep Health

Three overlapping challenge cards are displayed against a dark blue background with a starry night sky and silhouetted mountains. The central card is titled '101: Create a Bedtime Routine' and offers 150 points. It includes a description of the challenge and a 'Read Article' button. To its left is a card titled 'Kick Off The Tick Tock' with a partially visible description. To its right is a card offering 90 points with a partially visible description.

Kick Off The Tick Tock

Lie down in b
your room. D
clocks? No?
news: they
home.

101: Create a Bedtime Routine

150 POINTS

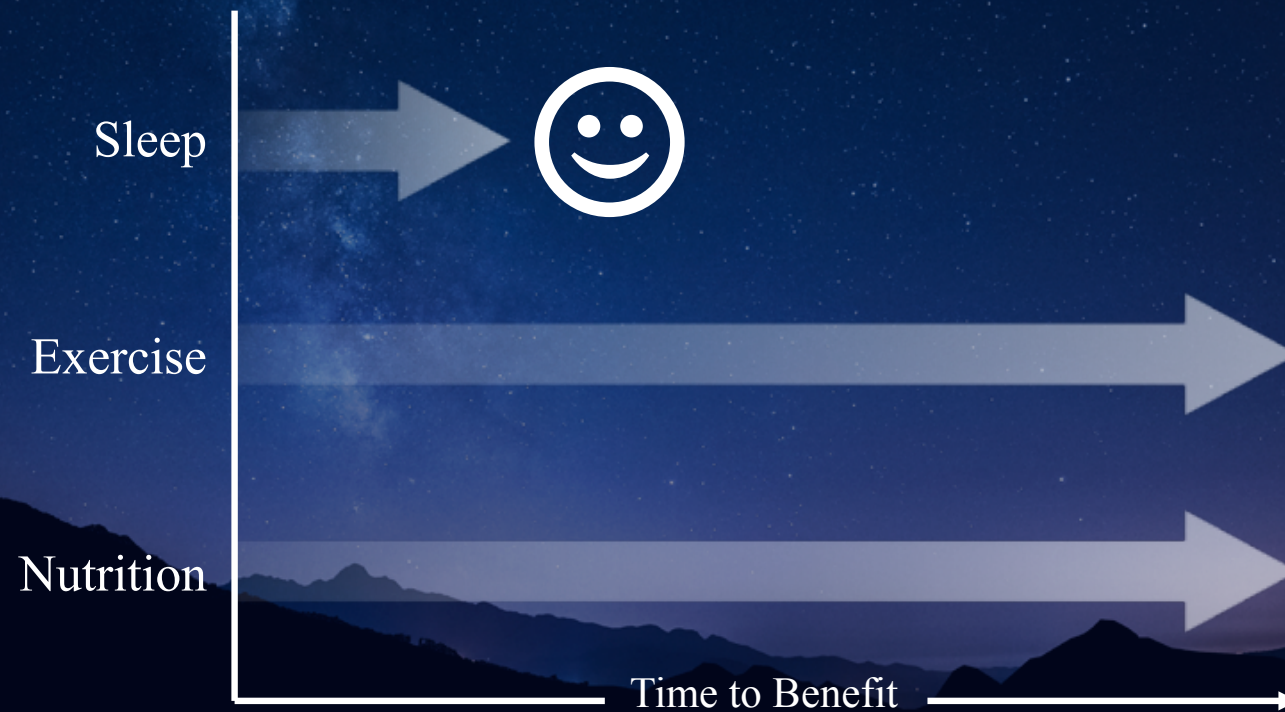
Read "How to Develop a Sleep Routine" to better understand why and how to develop a sleep routine.

[Read Article](#)

90 POINTS

a real thing.
learn what it
ould care. It'll
ter!

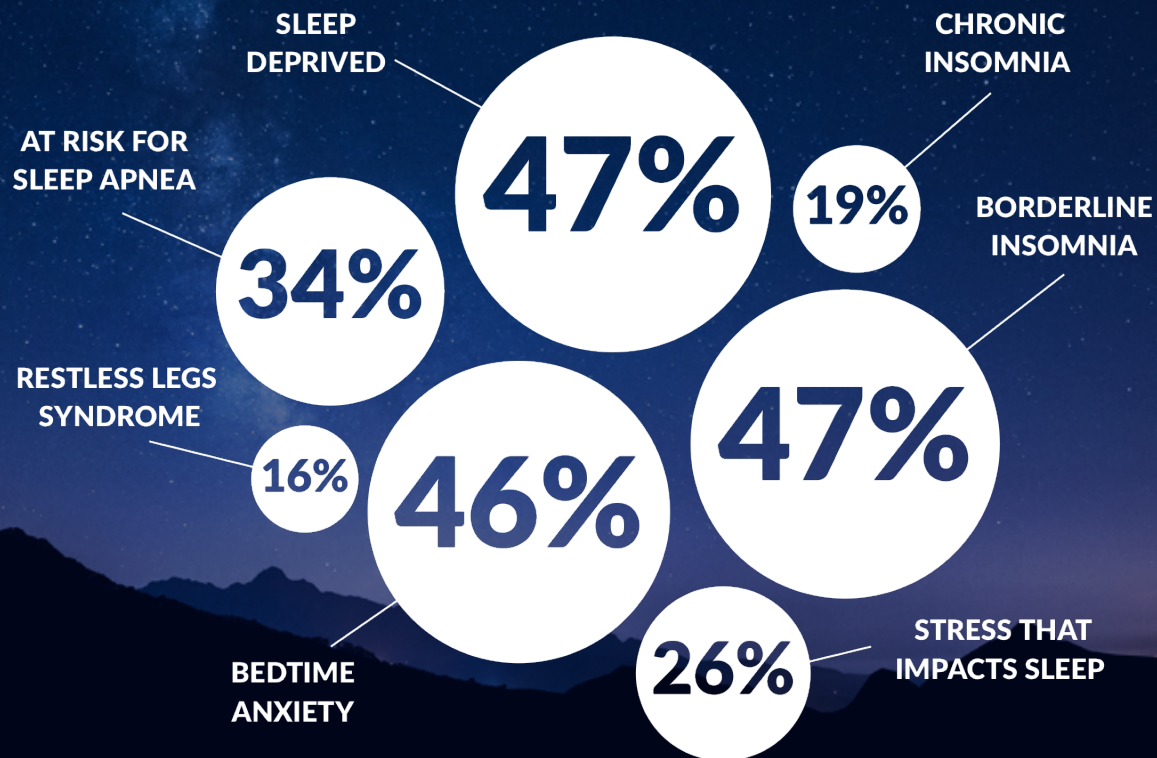
Immediate Positive Benefit





54%
PARTICIPATION

Morrison Healthcare Sleep Issues Breakdown



Prevalence of Significant Sleep Issues

70%

of employees suffered
from one or more significant
sleep health issues

47%

of employees suffered
from two or more significant
sleep health issues

25%

of employees suffered
from three or more significant
sleep health issues

Baseline Sleep Time

< 5 hours	7%
5-6 hours	33%
6-7 hours	42%
7-8 hours	17%
8+ hours	1%

After completing ProjectZ

82%

achieved ≥ 2 hours more sleep
per week

47%

achieved ≥ 3.5 hours more
sleep per week

Reported results

98%

Felt the program was
personalized

83%

Reported improved
sleep

77%

Reported improved
overall health

Validated ROI & Outcomes

67%

success in resolving
symptoms of insomnia

71%

reduction in
daytime sleepiness

6.5x

ROI based on
productivity gains alone

AIMS - Measures the presence and severity of Insomnia

ESS - Clinically validated measure of daytime sleepiness

WLQ - Clinically validated measure of productivity limitations

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Insomnia	20%	\$84 Billion In healthcare costs	63% Stroke 49% Atrial Fibrillation
Sleep Apnea	18%	\$165 Billion In healthcare costs	77% Obesity 83% Hypertension 45% Depression

“Sleep deprivation is the **#1 under addressed** health issue today”

Treatment Options For OSA

Permanent weight loss

Continuous positive airway pressure (CPAP)

Oral appliances

Oral and/or maxillo-facial surgeries

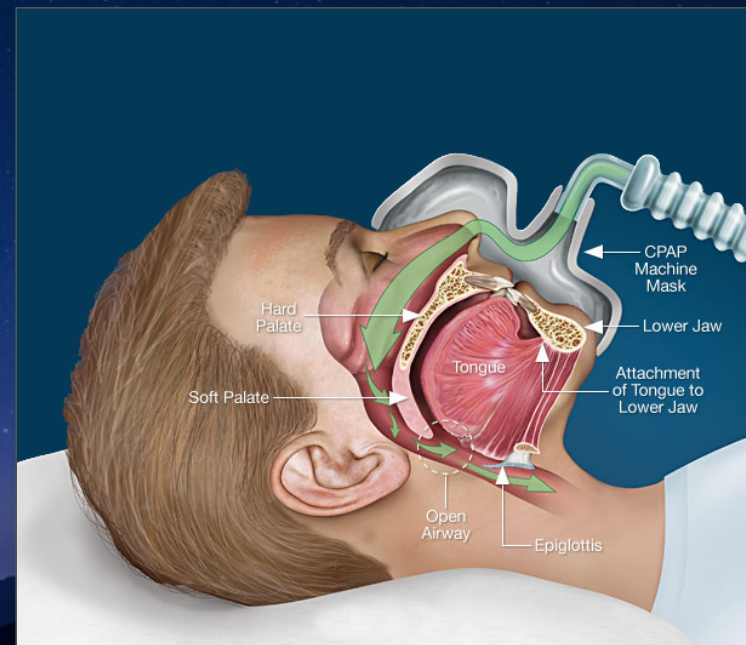
Tracheostomy

Hypoglossal nerve stimulator

Treatment Options For OSA

CPAP stands for
Continuous
Positive
Airway
Pressure

Splints open the airway so
you can breath.



CPAP Therapy For OSA

Applied via nasal mask
Acts as pneumatic splint
Compliance limits utility
Mask fit crucial

What are **Respiratory Events**

Apnea – no airflow ≥ 10 seconds

Hypopnea – reduced airflow ≥ 10 seconds, usually associated with oxygen desaturation or evidence of arousal

AHI – Apnea Hypopnea Index

AHI = The number of times you stop breathing in an hour:

5 - 14 = Mild

15 - 30 = Moderate

31 - 50 = Severe

50+ = Very Severe