



Healthy Living with Lupus Symposium – *Lupus and Healthy Sleep*

09 December 2017

Stephanie Jackson, MD

Pediatric Neurologist / Sleep Specialist

Assistant Professor of Clinical Pediatrics

Riley Hospital for Children at IU Health

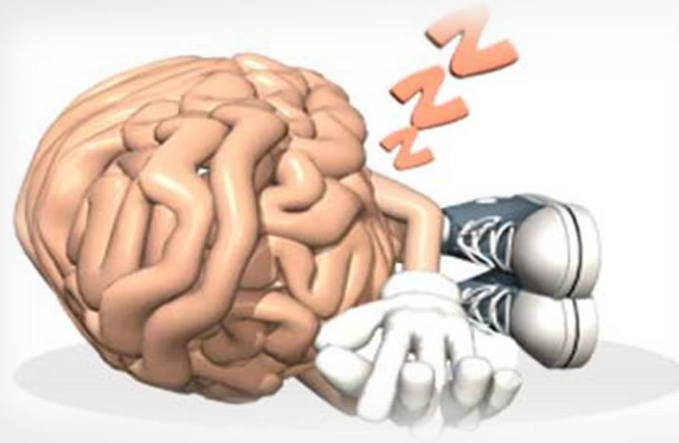
Objectives

- Understand how important sleep is when managing a chronic illness
- LEARN tips to get a good night's sleep
(even despite feeling poorly)

OVERVIEW

- *What* is sleep
- *Why* is sleep so important
 - What happens when we don't get enough sleep
- Common sleep problems in chronic disease
 - Sleep + Lupus
- "Healthy sleep hygiene"
- When to seek help for your sleep issues

What is Sleep?

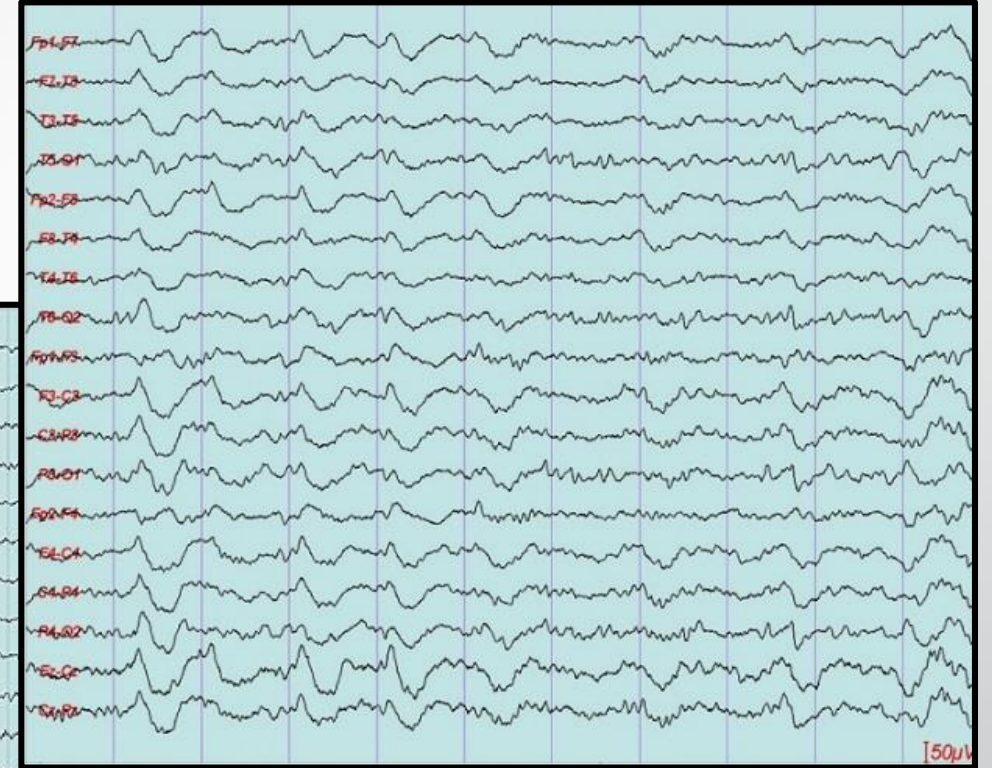


- It is NOT just Your brain “shutting off”
 - The sleeping brain is very active!
 - Controlled by a delicate balance of “neurotransmitters”

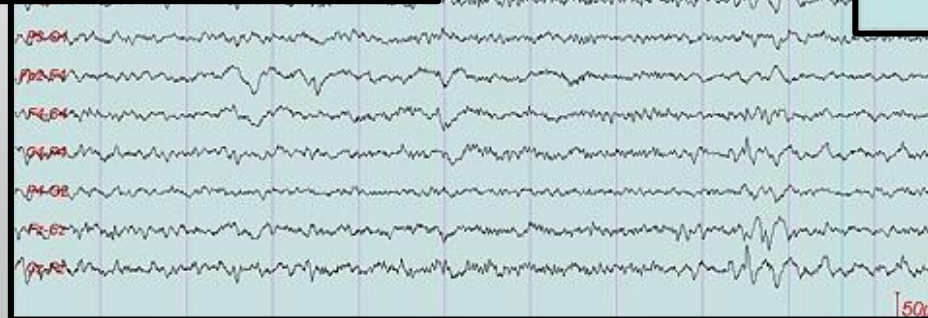
What is Sleep?



AWAKE



DEEP SLEEP



REM SLEEP

Sleep is very important

- Otherwise we would have evolved to no longer do it!
 - We sleep ~ 8 hours/day = ~ 56 hours/week = full time Job!
 - ~1/3 of our lives = 25 years for a 75 year-old person!



- "Sleep is the golden chain that ties health and our bodies together"
-Thomas Dekker
- "The beginning of health is sleep"
- Irish proverb
- **"Disease and sleep keep far apart"**
-Welsh proverb
- "Sleep ... great nature's second course, chief nourisher in life's feast"
-Shakespeare
- **"Healthful, soothing slumber that rests muscles, nerves, and brain is one of nature's greatest rejuvenators"**
-Harvey Diamond

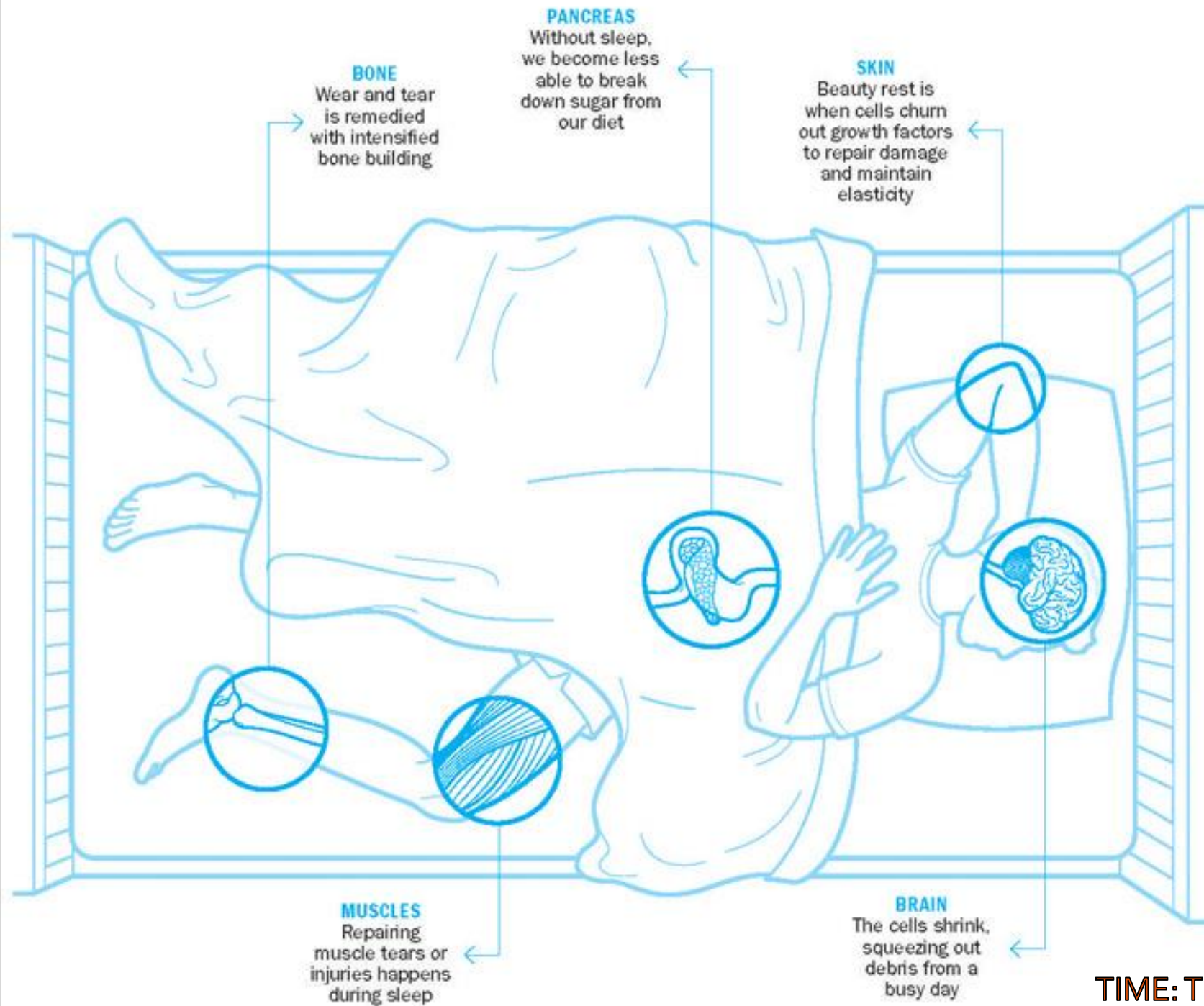
A Lot goes on when we sleep!

- Certain genes get turned on ONLY during sleep
- Hormone release
 - Growth Hormone
 - Important for Bone growth, muscle mass (muscle vs. fat ratio in adults)
 - Luteinizing hormone
 - Initiation of Puberty
 - Blood sugar control

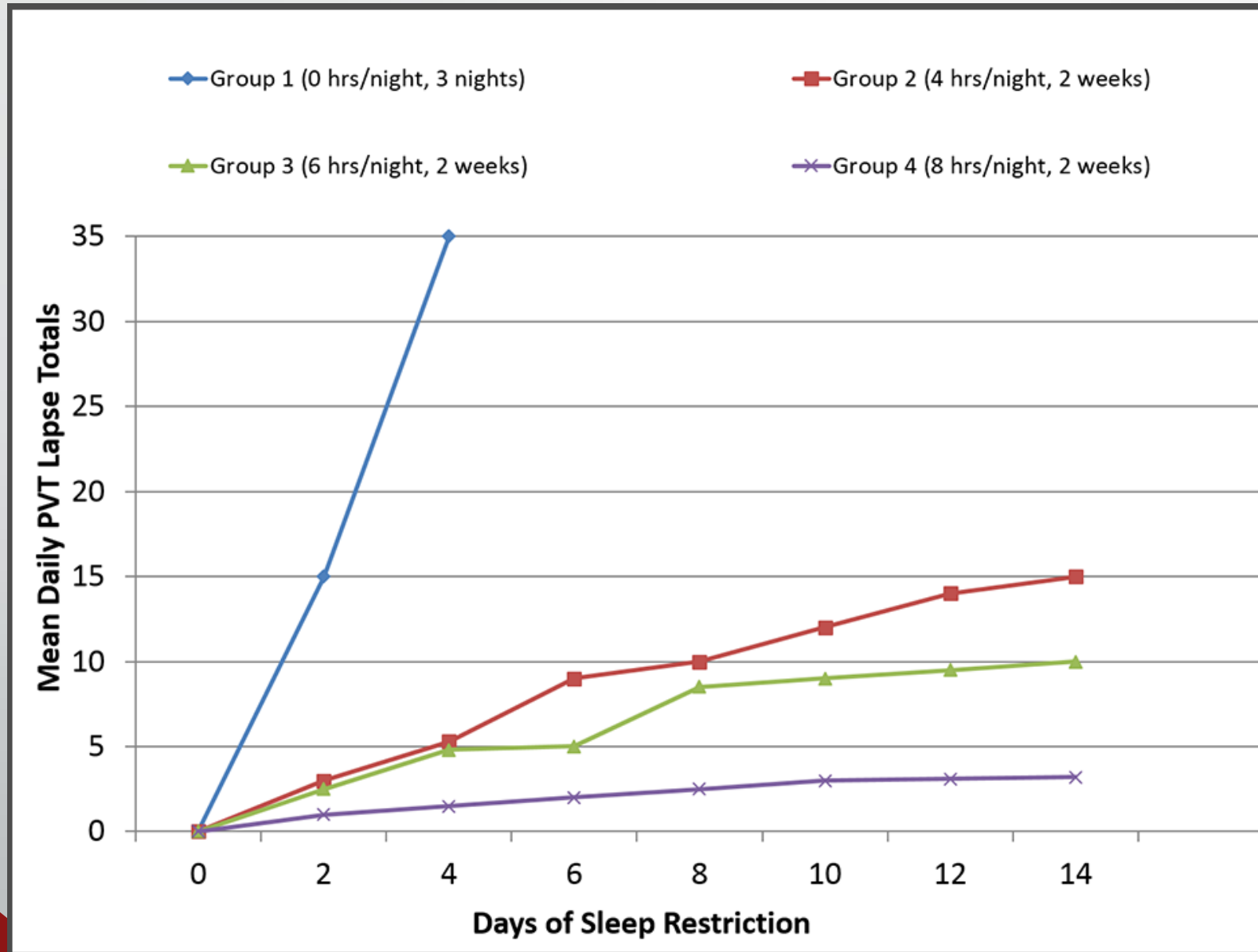
A Lot goes on when we sleep!

- Fat burning
 - Sleep is important in balancing:
Leptin ("I'm full" hormone) and **Ghrelin** ("I'm hungry" hormone)
 - 1 night of sleep deprivation → increased ghrelin release
- Memory consolidation / Learning
 - Dreams

Schmid, Sebastian M., et al. *Journal of Sleep Research* 2008



Effects of Sleep deprivation

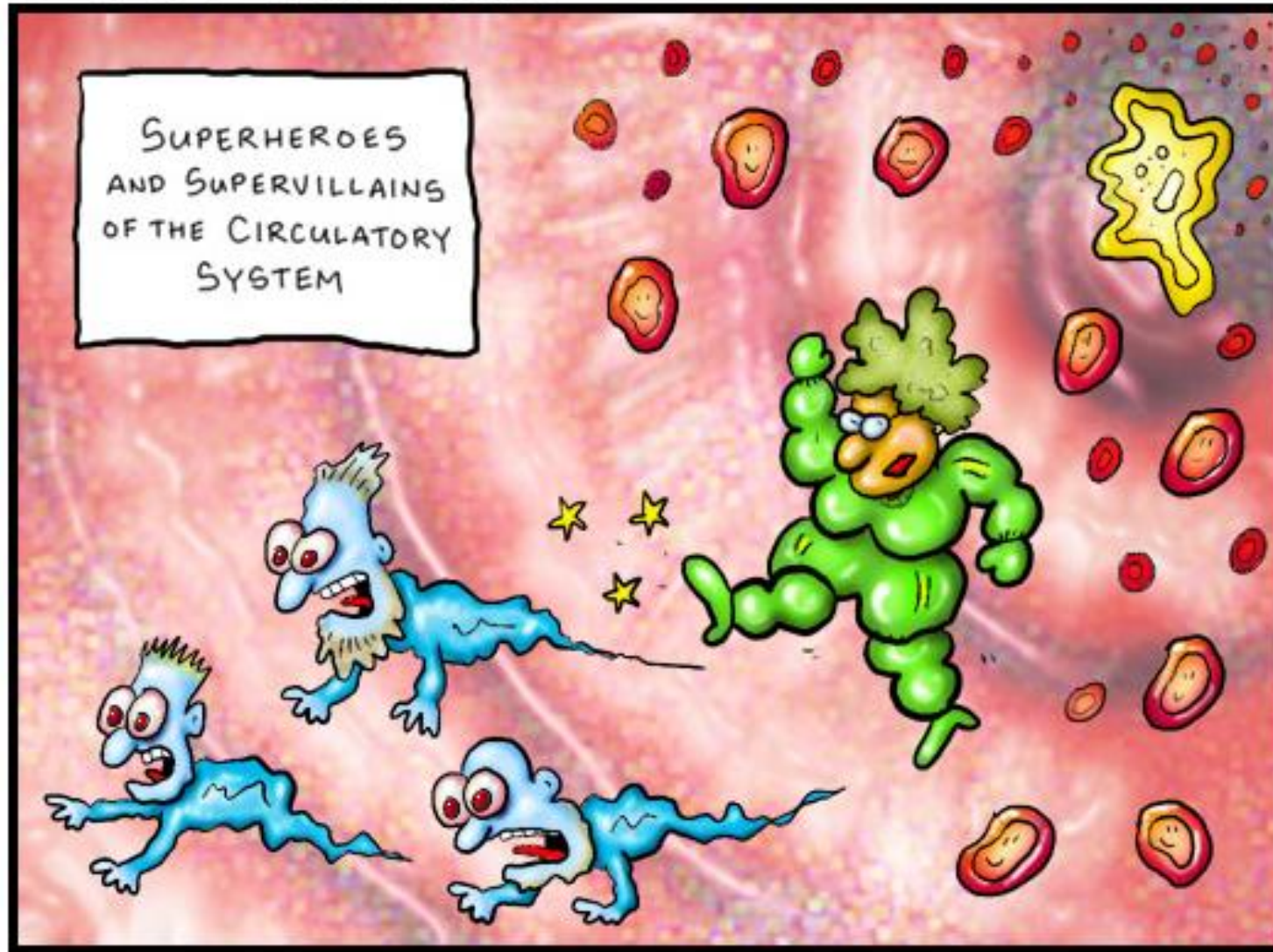


Sleep + Inflammation



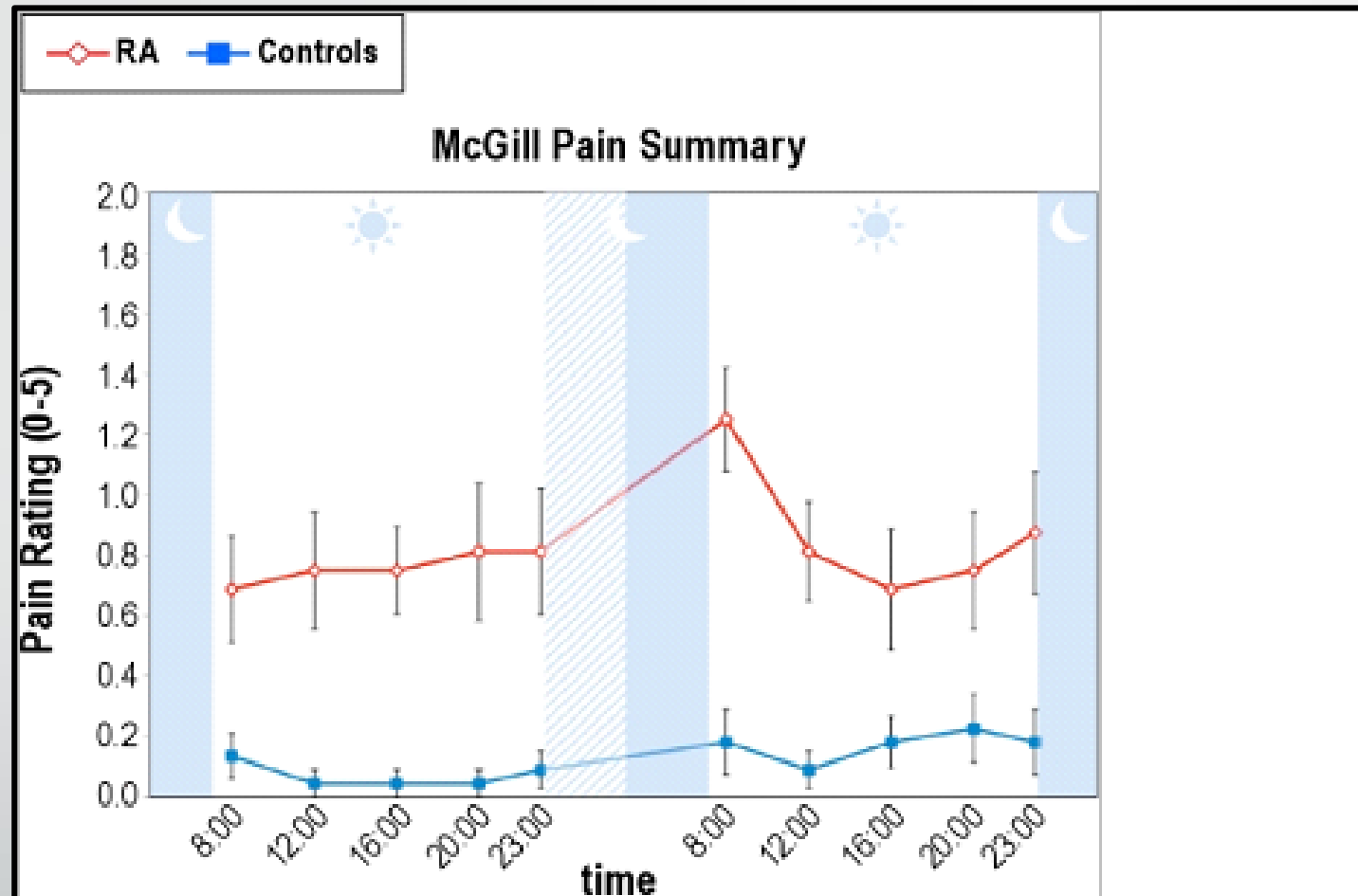
- During sleep: “Clean up” of toxic buildup of cellular waste
 - **Free Radicals** are the “trash” our cells produce
 - **Antioxidants** clean up the free radicals
 - **Sleep** allows our body to produce **more antioxidants**
 - **Sleep loss** → → buildup of toxic free radicals → → **cells die**
- Cytokines (*key molecules in inflammation & infection*) induce sleep
 - Maybe because sleep is an important part of the infection-fighting process?
- Less sleep → Lower immune response
 - Flu vaccine study

DOCTOR FUN



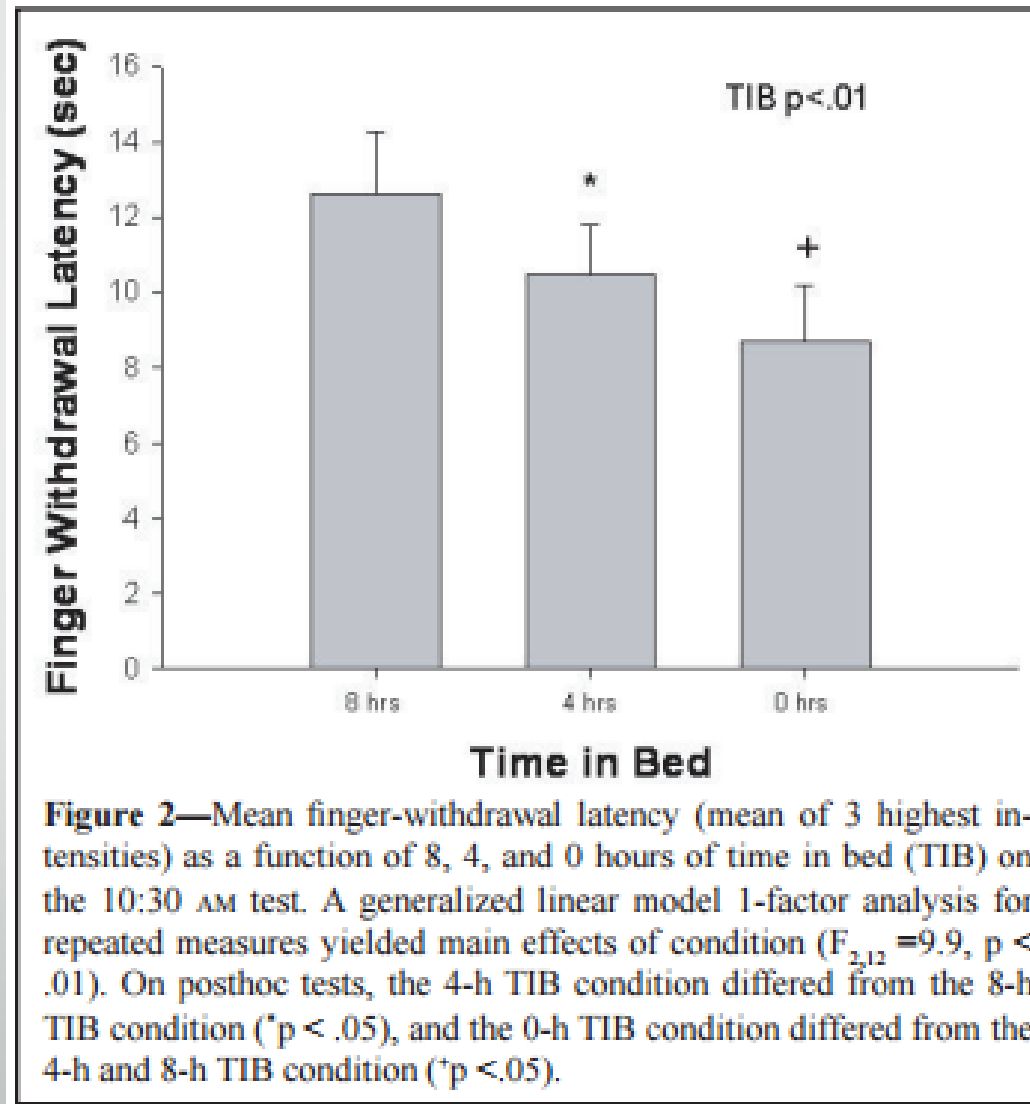
Auntie Oxidant kicks out the Free Radicals.

Sleep + Pain



Effects of partial night sleep deprivation on self-reported pain as indexed by the McGill Pain Summary in patients with rheumatoid arthritis and control patients. The shaded area represents the sleep interval during the night, whereas the hatched area represents the sleep deprivation interval. Mean \pm SEM (error bars).

Sleep + Pain



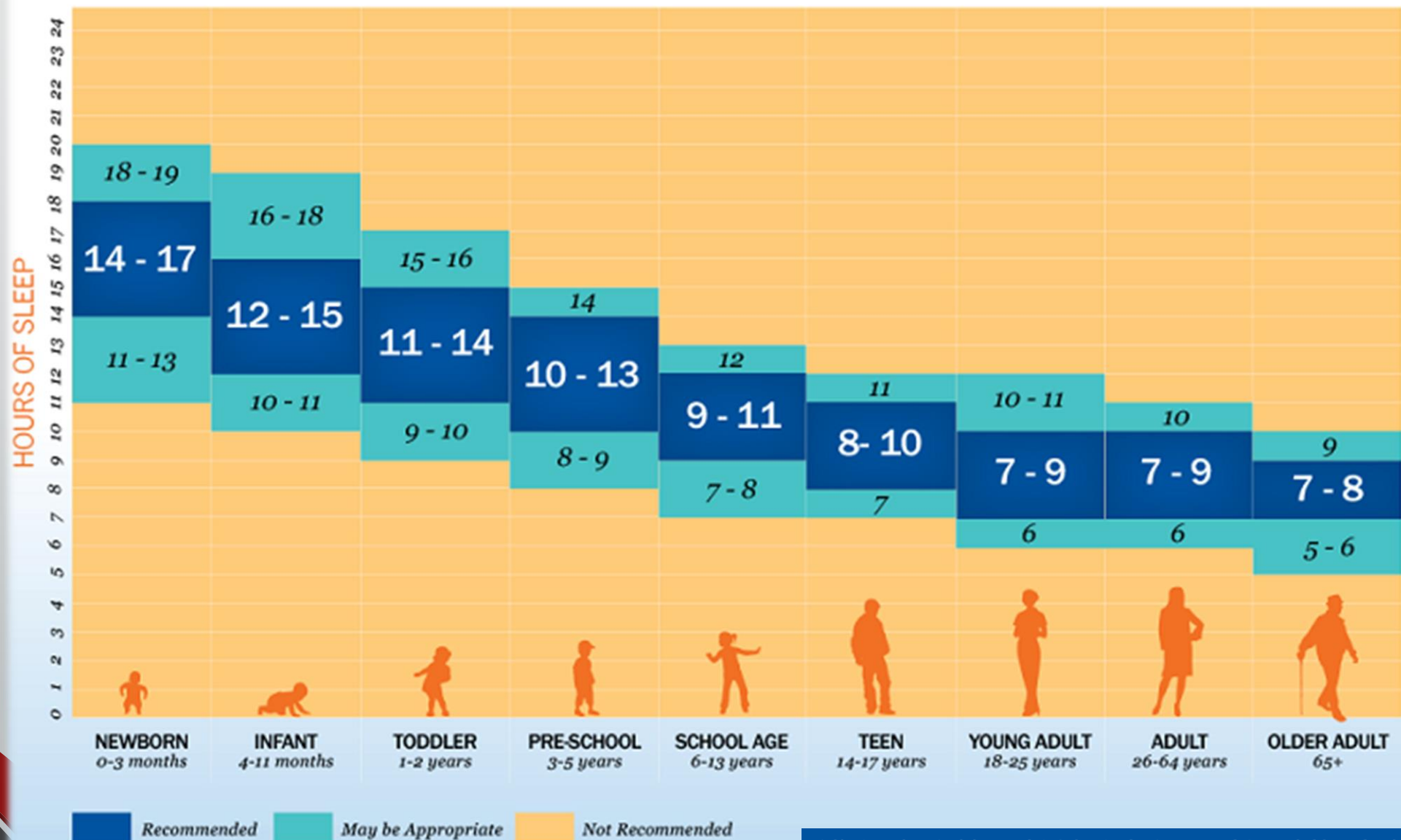
Effects of Chronic sleep loss

- Heart disease / heart attack
- High blood pressure
- Diabetes
- Obesity
- Stroke
- Depression / Anxiety
- Colorectal + Breast Cancer
- Earlier death



How Much Sleep Do We Need?

SLEEP DURATION RECOMMENDATIONS



Common sleep disorders in chronic medical conditions

- Fatigue / Excessive sleepiness
 - Medications
 - Mood disorder
- Insomnia
 - Medications
 - Mood disorder
 - Pain
- Obstructive Sleep Apnea
 - Inflammation plays a role
- Restless legs syndrome
 - Associated with low iron storage
 - Can ask to check ferritin level (>75)
 - *Never supplement iron without guidance from a medical professional (It can be toxic!)*

Sleep + Lupus

- FATIGUE is extremely common (86% in one study) – *Zoanana-Nacach et al, 2000*
 - How much of this is related to poor sleep at night?
- Depression has a role
- Vitamin D has a role?
- RLS may be up to 3X more common - *Valencia-Flores et al, 1995*
 - But steroid therapy may offer benefit
- Breathing abnormalities may be more common – *Iaboni et al, 2006*
- Physical activity seems to be helpful

Healthy sleep hygiene

- Keep a regular schedule
- ***Same bedtime + wake time 7 days/week***
 - The brain likes consistency!
 - So much of what happens in our body is on a rhythm/cycle
- *Have a relaxing bedtime routine*
- Avoid electronics close to bedtime & during the night
 - Blue light tells the brain to “Stay awake!”



Healthy sleep hygiene

- Avoid caffeine within 6 hours of bedtime
 - *Nicotine and Alcohol are bad ideas too*
- Exercise
 - Vigorous exercise may be best earlier in the day
 - At bedtime, light exercise / Yoga may be best
- Your bed should only be for sleeping and intimacy
 - "If you can't sleep, then get up and do something instead of lying there and worrying. It's the worrying that gets you, not the loss of sleep"
- No TV, Reading, Homework, etc



-Dale Carnegie

Healthy sleep hygiene

- Keep your room dark, quiet, and cool
- Use natural light to your advantage
 - Dim light in the evenings
 - Bright light exposure in the mornings
- Avoid large meals at bedtime
 - Your GI tract has a circadian rhythm and wants to rest at night – Let it!
 - A light snack is OK
- Avoid naps during the day - *Unless age-appropriate*



When to seek help



- Snoring *or* pauses in breathing during sleep
 - May need an overnight sleep study
- Lots of problems falling asleep
 - If it consistently takes >30 minutes
 - If medication is required
 - *There may be something else going on*
- Lots of problems staying asleep
- Excessive sleepiness despite sleeping all night
- If mood symptoms are impacting your life

Questions?

