SLEEP 101 : THE BASICS
SLEEP
WHAT IS IT?

JUST 8 HOURS OF UNCONSCIOUSNESS
OR SOMETHING MORE?
SLEEP PERIOD AND PREFERRED PHASE
SLEEP CONTINUITY
MICRO AROUSALS
SLEEP ARCHITECTURE
SLEEP PERIOD = TIME IN BED (TIB)
SLEEP CONTINUITY MEASURES

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value</th>
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<tbody>
<tr>
<td>TIME IN BED (TIB)</td>
<td>478 MIN (~8hrs)</td>
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<tr>
<td>SLEEP LATENCY (SL)</td>
<td>30 MIN</td>
</tr>
<tr>
<td>NUMBER OF AWAKENINGS (NWAK)</td>
<td>6</td>
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<tr>
<td>WAKE AFTER SLEEP ONSET (WASO)</td>
<td>60 MIN</td>
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<tr>
<td>TOTAL SLEEP TIME (TST)</td>
<td>388 MIN (~6.5 hrs)</td>
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<td>SLEEP EFFICIENCY (SE%)</td>
<td>82%</td>
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NOTES: NOT ALL AWAKENINGS ARE THE SAME
HOURS VS. MINUTES VS. SECONDS
MICROAROUSALS
MICROAROUSALS
PATIENT WITH SLEEP APNEA

PATIENT WITH INSOMNIA

GOOD SLEEPER
SLEEP ARCHITECTURE MEASURES

STG1 10%
STG2 60%
STG3 3%
STG4 7%
REM 20%

NOTE: RL AND SWS-L
HOW ARE THE STAGES OF SLEEP CLASSIFIED?
WHAT IS THE FUNCTION OF SLEEP?
ALLAN RECHTSCHAFFEN

“IF SLEEP DOES NOT SERVE AN ABSOLUTELY VITAL FUNCTION,

THEN IT IS THE BIGGEST MISTAKE THE EVOLUTIONARY PROCESS EVER MADE.”
ANY IDEAS ABOUT THE FUNCTION(S) OF SLEEP?
POSSIBLE FUNCTIONS OF SLEEP

- ENFORCED IMMOBILITY
- CONSERVATION OF EFFORT & ENERGY
- PROMOTION OPTIMAL PERFORMANCE
- GROWTH & TISSUE RESTORATION
- AUGMENTATION OF IMMUNE FUNCTION
- MEMORY CONSOLIDATION
- MOOD REGULATION
- CNS BETA-AMYLOID CLEARANCE **
HOW MUCH SLEEP DOES ONE NEED?

THE POPULATION MODE IS ABOUT 7.5 HOURS
THE PROBLEM

THE PROBLEM WITH USING POPULATION NORMS IS THAT “INDIVIDUALS MAY SEEK MORE SLEEP THAN THEY NEED WHEN IDIOGRAPHIC SLEEP NEEDS ARE DEFINED BY NOMOTHETIC GOALS” (KENNETH LICHSTEIN, 2010)
SAY WHAT?
PROBLEMS ARRISE WHEN THE INDIVIDUAL GOVERNS WHEN AND HOW MUCH THEY SLEEP BASED ON "UNIVERSAL NORMS".
A NOMOTHETIC

HOW MUCH SHOULD ONE SLEEP?
BY NATURE 5 HOURS, BY CUSTOM 7,
BY LAZINESS 9 AND BY WICKEDNESS 11.
THE PROBLEM

THE PROBLEM IS THAT BOTH TOO LITTLE AND TOO MUCH SLEEP MAY BE DELETERIOUS TO ONE’S HEALTH, FUNCTIONING, AND SENSE OF WELL BEING.

A BALANCE MUST BE STRUCK
SLEEP NEED

SLEEP ABILITY

SLEEP OPPORTUNITY
WHAT HAPPENS WHEN THINGS ARE OUT OF BALANCE?
WHEN NEED IS MORE THAN ABILITY,
THIS IS INSOMNIA OR A CRD OR OTHER SLEEP DX
International Classification of Sleep Disorders

Insomnia

Idiopathic
Psychophysiological
Paradoxical

Narcolepsy
Sleep Disordered Breathing (SDB)

Sleep apnea (Hypopnea, CSA, OSA)
Snoring
Upper airway resistance syndrome

Restless leg syndrome / Periodic limb movement disorder

Hypersomnia

Circadian rhythm sleep disorders

Delayed sleep phase syndrome
Advanced sleep phase syndrome
Non-24-hour sleep-wake syndrome
Jet Lag

Parasomnias

REM sleep Behaviour disorder
Sleep terror
Sleepwalking
Bruxism
Bedwetting
Sleep talking
Sleep sex
Exploding head syndrome

Sleeping sickness
Fatal Familial Insomnia
WHEN NEED IS LESS THAN ABILITY, THIS IS LIKELY THE PHENOMENON OF SHORT SLEEP
WHEN NEED AND ABILITY ARE MORE THAN OPPORTUNITY,
THIS IS INSUFFICIENT SLEEP SYNDROME (SLEEP DEPRIVATION)
SO THAT’S A GENERAL CONCEPTUAL FRAMEWORK
LET’S LOOK AT THINGS WHEN THEY’VE BEEN FULLY FRAMED