

Resilience – what it is and what it isn't

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Disclosures

- Nothing to disclose.

Definition

- Resilience

- The capacity to withstand or to recover quickly from difficulties; toughness
- The ability of a substance to spring back into shape; elasticity

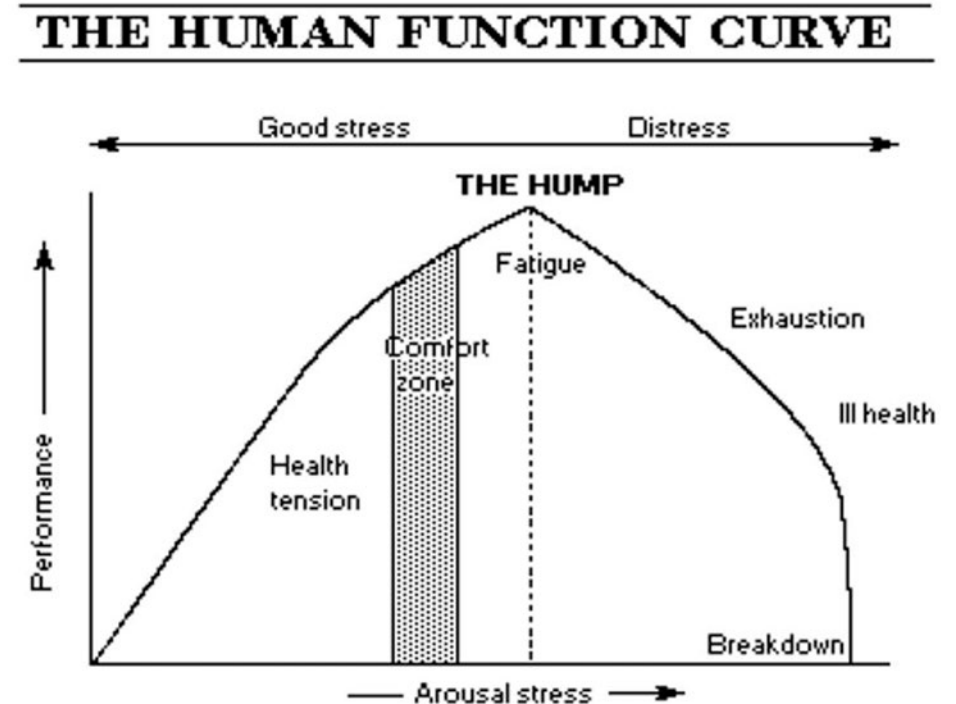
- Definitions from Oxford Languages

Marker of wellness

- A tale of two broken legs
- Stress savings account
 - Physical stress
 - Mental/Emotional stress

Marker of wellness

- Measured during stress
- What we do is stressful
- How we do what do can and does add additional stress



What we do is stressful



How we work is stressful

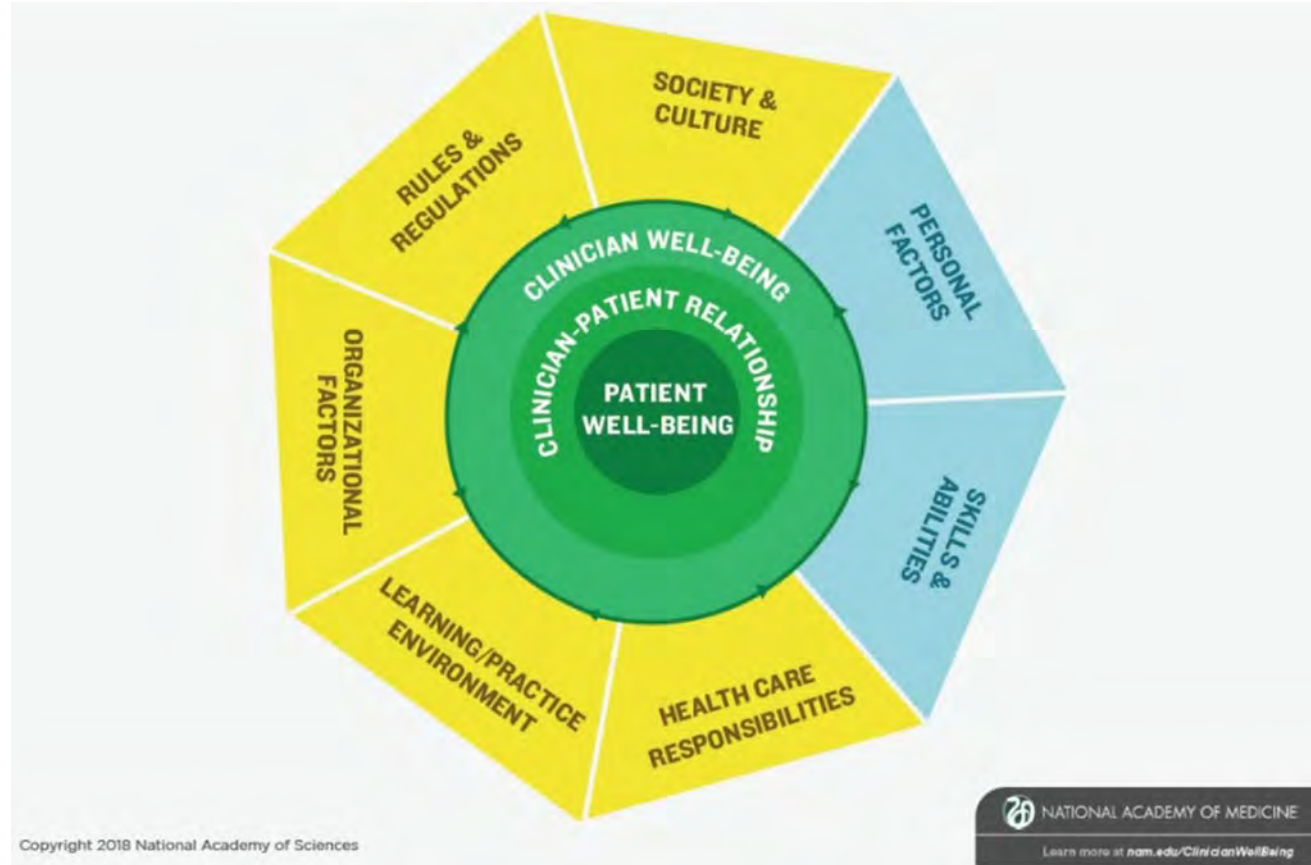
- 25-30% of US healthcare workers report working regularly at night
- Circadian rhythm disruption
 - Cortisol response
 - Increased inflammation
 - Decreased empathy
 - Increase negative emotions and interpersonal conflicts
- Sleep deprivation leads to resilience deprivation!!

Pulse check

- This talk is not about never taking call or working at night again. People are going to get ill and injured at 2:00 am.
- This talk is not about not doing hard things. Important things are hard things.
- We are a mission driven people, who see our mission as being outside of ourselves.
- This talk is about acknowledging that what we do is hard and has a physiologic impact on our body.
- Then asking ourselves, how can we be the best we can be so we can do the best we can?

Can we handle the truth?

- Disconnection from purpose
 - Burnout
 - EMR
 - Moral Injury
- Disconnection from people
 - Culture
 - No psychological safety
- Unhealthy bodies
 - No focus on recovery
 - Untreated illness



The question then becomes, how do we build, cultivate and maintain provider well-being in a system inherent with stress and fatigue?

Resiliency!

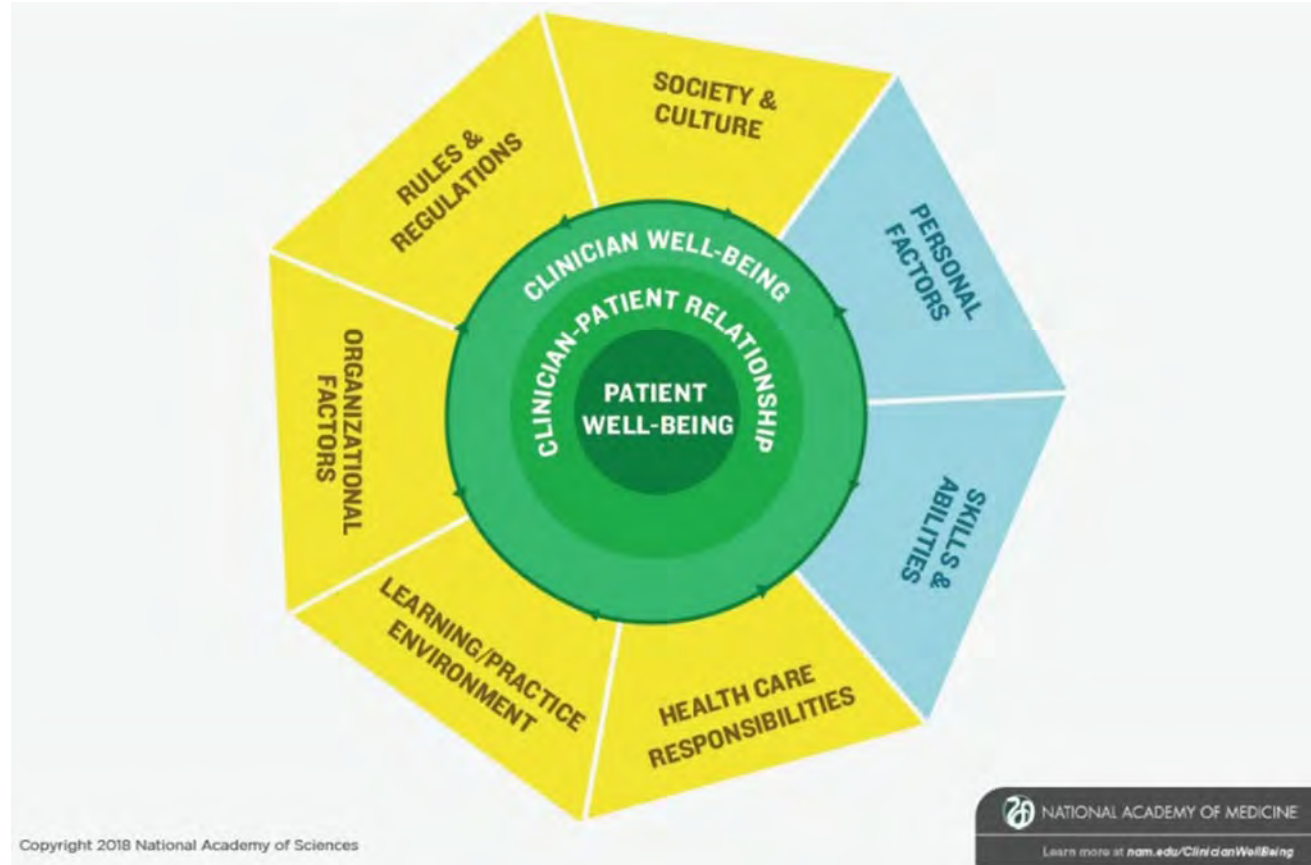
Two sides of the coin

- Reduce the number of balls = Identify and reduce the non-inherent stressors (individual and system)
- Become better at juggling = Work on technique. Assess strengths and weaknesses then practicing to strengthen both (individual and system)



How do we build resiliency?

- Connection with self
 - Purpose
 - Introspection
 - Knowing limits/boundaries
- Connection with people
 - Support
 - Value
- Healthy body
 - Sleep
 - Exercise
 - Nutrition
 - Medical care



Connection with Self: Mindfulness

- Interoception
 - Awareness of sensations within the body, how the body feels
- Emotional Regulation
 - Ability to calm one's own storm
- Introspection
 - Internal assessment of self

Mindfulness based interventions

- Mindfulness Based Stress Reduction
 - Meditation therapy
 - Developed in the 1970's at the University of Massachusetts
 - 8-week online program

CENTER FOR MINDFULNESS

Mindfulness Programs

[Mindfulness Tools 4-Week Online Course](#)

[Mindfulness for Managing Pain: a 4-Week Online Course](#)

[Herramientas de Mindfulness: Un curso en línea de 4 Semanas](#)

[MBSR 8-Week Online Live](#)

[MBCT 8-Week Online Live](#)

[MBCT and MBSR: The Differences](#)

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MINDFULNESS PROGRAMS

Spring 2024 Courses

- 8-week MBSR & MBCT courses begin week of April 1 (registration is open)
- 4-week courses begin in April (registration is open)

[8-Week Mindfulness-Based Stress Reduction \(MBSR\)](#)

Experience the original 8-Week Mindfulness-Based Stress Reduction (MBSR) program developed at the Stress Reduction Clinic at UMass Memorial Medical Center by Jon Kabat-Zinn. Since 1979 more than 25,000 people have completed this evidence-based training.

[MBSR Course Schedule](#)

[REGISTER](#)

Mindfulness Based Stress Reduction

- Mindfulness Based Stress Reduction

- Effective
- Increases grey matter hippocampus
 - Learning
 - Memory
 - Emotional Regulation
- Decreases amygdala reactivity
 - Downregulation during emotional processing
- Reduces anxiety, depressive symptoms, reduce feelings of stress, increased athletic performance, increased ability to concentrate and focus, increased working memory capacity

8-week Mindfulness Based Stress Reduction induces brain changes similar to traditional long-term meditation practice – A systematic review



Rinske A. Gotink^{a,b,c}, Rozanna Meijboom^b, Meike W. Vernooij^{a,b}, Marion Smits^b, M.G. Myriam Hunink^{a,b,d,*}

Mindfulness practice leads to increases in regional brain gray matter density

Britta K. Hölzel^{a,b,*}, James Carmody^c, Mark Vangel^a, Christina Congleton^a, Sita M. Yerramsetti^a, Tim Gard^{a,b}, Sara W. Lazar^a

Impact of short- and long-term mindfulness meditation training on amygdala reactivity to emotional stimuli

Tammi R.A. Kral^{a,b,c}, Brianna S. Schuyler^{b,c}, Jeanette A. Mumford^{b,c}, Melissa A. Rosenkranz^{b,c}, Antoine Lutz^{a,c,e}, Richard J. Davidson^{a,b,c,d,f}

Enhanced Stress Resilience Training

- Modified from Mindfulness Based Stress Reduction program, specifically with feasibility for surgical trainees in mind
- Developed by Dr. Carter Lebares, director of the UCSF Center for Mindfulness in Surgery
- <https://mindfulsurgeon.ucsf.edu/>

Enhanced Stress Resilience Training

Table 2
Practical and conceptual differences between ESRT-1^a and ESRT-2^b.

Modification	Traditional MBSR	ESRT-1 ^a	Purpose of Modification	ESRT-2 ^b	Purpose of Modification
Practical					
Class number	9wk: Intro session + 8wks	8 wk: Intro + Wk 1 combined	(L) 8wk summer gap in didactics	6 wk: Intro + Wk 1 combined	(C) Minimize clinical disruption
Class duration	2.5 h: experiential, inquiry-based, breaks, didactics, metaphors	2 h: experiential, explicit, focused discussions and didactics, no break	(L) Protected time, preserve 80 h work-week, educational and OR time	1.5 h: experiential, explicit, non-inquiry, 5min intellectual content, handouts	(L, C) Better scheduling, more acceptable, more accessible
Retreat	8 h silent retreat, meditation center	2–3 h: ‘Medi Hike’, nature preserve	(C) Request for fresh air and exercise	No change	Strong positive feedback
Assigned daily practice time	45 min daily	20 min daily formal practice	(C) 20min effective in others, responsive to time-compressed surgical lifestyle	20min ideal, goal is consistency, informal practice o.k.	(C) ‘Failing’ at 20 min, added to participant stress
Conceptual					
Class content	1.5 h: Meditation 1 h: breaks, sharing, didactics, Inquiry-based	1.5 h: Meditation 30min: shortened didactics, no break, limited sharing	(L) Preserve experiential focus, shorten class time	1 h: meditation 30min: explicit concepts, not inquiry based	(C) Capitalize on culture of skills training, fast learners
Emphasis	Insight, life-long learning about self, world. Enhances health broadly.	Skill set for stress resilience, in general.	(C) Application to life, relationships, training, career longevity.	Resilience skill set, specific work application, conceptual scaffold	(C) Growing distress and burnout, modeling ESRT in work, life.
Contextualization	Broader application of concepts and skills to all interactions	Application to personal and professional situations	(C) Skills applied to surgeons’ life and work	Emphasize applied techniques, all day, various scenarios	(C) Explicit skills for explicit situations, need for modeling
Expectation	Committed formal practice goal	Daily practice mostly formal, less informal	(C) Reinforce ‘some is better than none at all’.	Train formally, but ‘Live your practice’. Informal practice, anywhere, all day	(C) Capitalize on natural tendency for discipline, repetition and ritual

(L) = logistical modification, (C) = cultural modification.

^a ESRT-1 = 8 weekly, 2-h classes.

^b ESRT-2 = 6 weekly, 90-min classes.

Enhanced Stress Resilience Training

- Although no effect in perceived stress, there was a reduction in physiologic distress, with 30-40% relative reduction in CTRA (Conserved Transcriptional Response to Adversity, a stress-related RNA profile)
- Improvements in executive function and mindfulness scores and decreases in emotional exhaustion and depersonalization scores at 50 or 32-week follow up

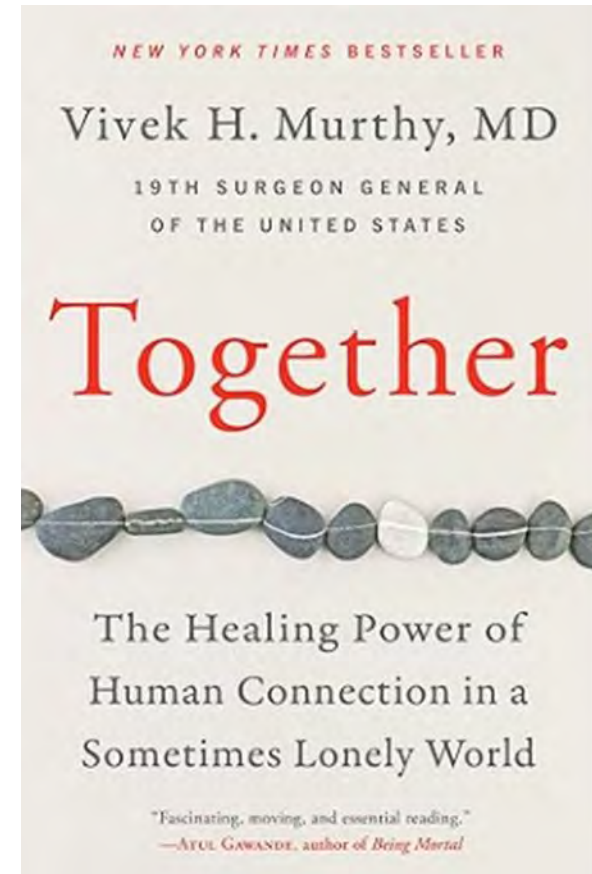
Enhanced Stress Resilience Training in Surgeons

Iterative Adaptation and Biopsychosocial Effects in 2 Small Randomized Trials

Carter C. Lebares, MD,✉ Troy N. Coaston, BS *, Kevin L. Delucchi, PhD,† Ekaterina V. Guvva, BS,*
Wen T. Shen, MD,* Adam M. Staffaroni, PhD,‡ Joel H. Kramer, PsyD,‡ Elissa S. Epel, PhD,†¶
Frederick M. Hecht, MD,§¶ Nancy L. Ascher, MD, PhD,* Hobart W. Harris, MD, MPH,*
and Steven W. Cole, PhD||*

Connection with People

- Emotional support
 - Shoulder
- Instrumental support
 - Resources
- Informational support
 - Advice
 - Mentoring
 - Information



Connection with People

- Fewer depressive symptoms
- Mitigates/minimizes burnout
- Increased ability to cope with stress
- Decreases absenteeism
- Increases motivation

Healthy Body

- Sleep
- Exercise
- Nutrition
- Medical care

Sleep

- Essential behavior
- Reversible state of reduced consciousness
- Body temperature, heart rate, respiratory rate decrease
- Adults need between 7 and 9 hours per night***

Sleep Deprivation



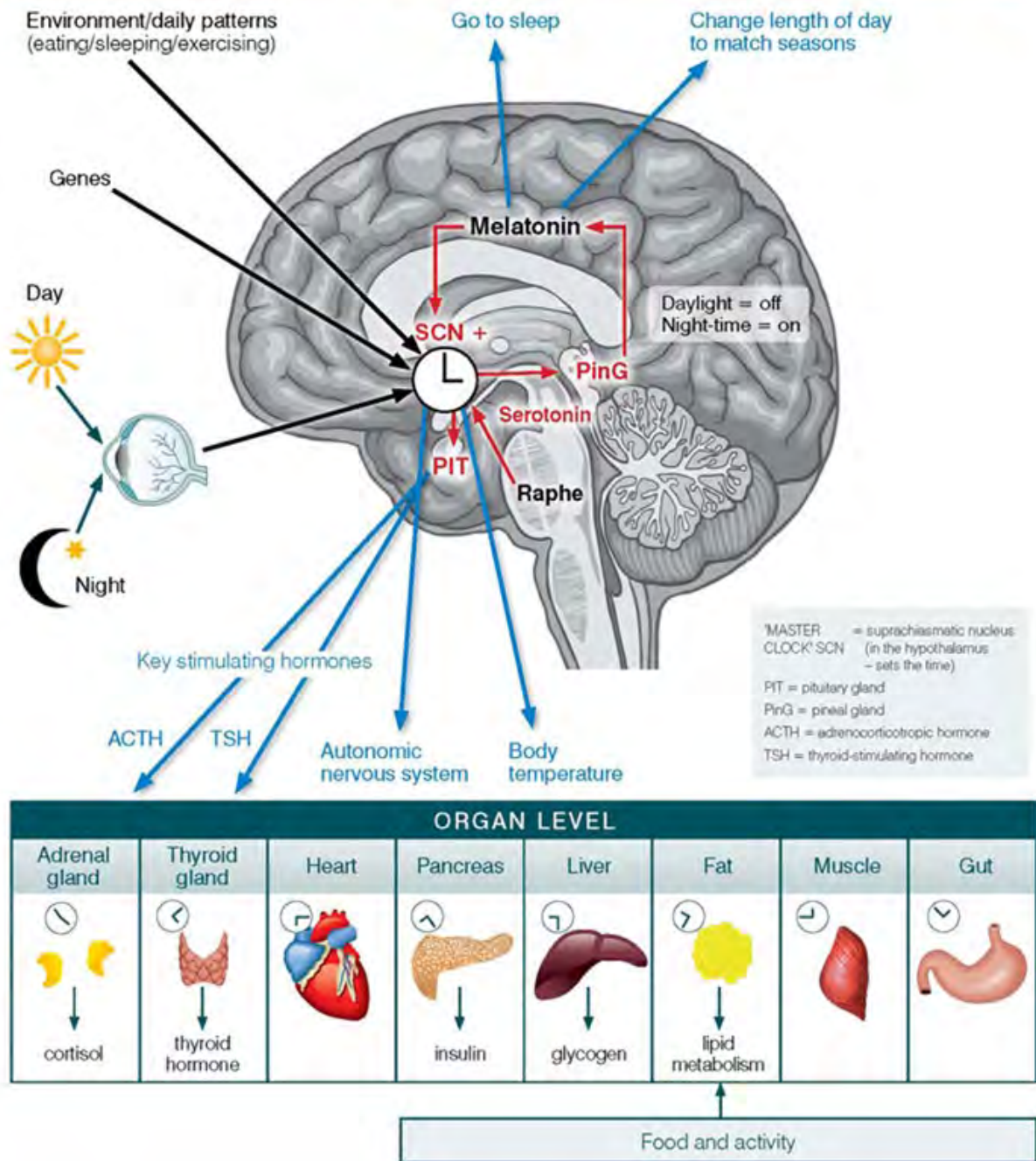
**Extended wake periods
beyond 16-18 hours**



Etiology

Insufficient duration
Insufficient continuity
Abnormal architecture

Setting the 24-hour circadian rhythm



Effects of Disrupted Circadian Rhythm

- Cortisol response
 - Hyperglycemia
 - Hyperphagia
- Inflammation
 - Increase IL-1, IL-6, CRP, TNF- α
 - Increase cardiovascular disease
- Immune system
 - Decrease antibody production
 - Decrease NK and CD8 T cell function
 - Increased risk of cancer

Effects of Disrupted Circadian Rhythm

- Decreased empathy
- Increase interpersonal conflicts
- Negative emotions
- Feelings of depression
- Suicidal ideation

Impact of Acute Sleep Deprivation on Sarcasm Detection

Gaétane Deliens^{1,2,3}*, Fanny Stercq³*, Alison Mary², Hichem Slama², Axel Cleeremans¹, Philippe Peigneux², Mikhail Kissine³

If you measure it, it will improve

- Sleep tracker
- Sleep mask
- Weighted Blanket
- Stopping screens one hour before bed
- No alcohol within 2-4 hours
- No caffeine within 8 hours
- Room temperature 65-68 degrees

Recap: Internal Individual Well-being

- How you strengthen the person to work in the environment
 - Resiliency training
 - Meditation
 - Therapy
 - Gratitude journaling
 - Sleep optimization
 - Prioritize personal health

Rx for Today - Individual

- “Step on the scale”
 - Where is your connection with yourself?
 - What do you find enjoyable to do? Your favorite hobby? Have you engaged in that activity in the past week?
 - Have you purposefully taken 5 deep breaths with your eyes closed this week?
 - Have you taken inventory of your feelings at any point in the last week?
 - Do you have a personal mission statement? Do you feel like you know what your purpose is?
 - Make a plan – 2 things.
 - Mission statement
 - Identify one change you will make this week to improve the connection with yourself and your plan for accountability.

Stop Throwing Balls

- How you structure the environment
 - Work hours
 - Staffing
 - Psychological safety
 - Culture
- Maximize efficiency in tasks which knowingly separate people from their purpose
 - EMR
 - Billing

Rx for Today - Individual

- “Step on the scale”
 - Where is your physical health?
 - Have you seen a primary care physician within the past 12 months?
 - Have you gotten any exercise in the past week?
 - How much sleep did you get last night? Do you feel rested?
 - Did you drink water yesterday?
 - Fitness/sleep/diet tracking?
 - Did you eat at least 2 fruits or vegetables yesterday?
 - Make a Plan – 2 things
 - Doctor’s appointment
 - Pick one other thing you want to change for this week and the way in which you will stay accountable.

Rx for Today - System

- Step on the scale – Ask the questions!
 - Work hours
 - Workload of call
 - EMR hours
 - Support systems in place?
 - Culture
- Maximize efficiency in tasks which knowingly separate people from their purpose
 - EMR
 - Billing

Reality



Thank you

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