

# Workforce Resilience with Dr. Bryan Sexton, followed by CEO Panel

J. Bryan Sexton, PhD Director, Duke Center for the Advancement of Well-being Science Duke University Health System





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#### Biological age is increased by stress and restored upon recovery

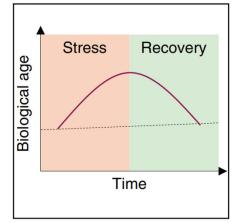
Jesse R. Poganiki, Bohan Zhangi, Gurpree S. Baht, S. Alexander Tyshkovskiy, Amy Deik, "Csaba Kerepes," Sun Hes Vim, Net T. Lus," Amin Happani, "C fong Gong," Anna M. Hedman, "Elika Andoll," Göran Pershagen, "Mill Catalrina Almqvist," Silver Morvath, "Mill James P. White, "Mill Yadam N. Gladyshev," Net Vinited of Genetic, Department of Motion. Bigdina and Warmer's Hospital, Hannyard Moderal School, Boston, Ma 0211s, USA "Disposition of Genetics, Department of Chronouse, Bigdina and Warmer's Hospital, Hannyard Moderal School, Boston, Ma 0211s, USA "Disposition of Chronic Andrews and Cartin, Cartin, Mill Yadam N. C. 27701, USA "Disposition of Chronic Andrews and Cartin, Cartin, Mill Yadam N. C. 27701, USA "Disposition of Chronic Andrews and Cartin (SEZTAN), Ebrois Loriand Research Network, Budapest, 1111, Hungary "Department of Haman Genetic, David Gelfers School of Moster, University of Calfornia, Los Angeles, Los Angeles, Ca 80005, USA "Allos Lake, San Dispo, CA, USA "Allos Lake, San Dispo, CA, USA "Selection of Chapteria and Chronic School, Boston of Chapteria and Chronic School, Boston Orbanic School, Boston Orbanic School, Boston School, School,

Aging is classically conceptualized as an ever-increasing trajectory of damage accumulation and loss of function, leading to increases in morbidity and mortality. However, recent in vitro studies have raised the possibility of age reversal. Here, we report that biological age is fluid and exhibits rapid changes in both directions. At epigenetic, transcriptomic, and metabolomic levels, we find that the biological age of young mice is increased by heterochronic parablosis and restored following surgical detachment. We also identify transient changes in biological age during major surgery, pregnancy, and severe COVID-16 in humans and/or mice. Together, these data show that biological age undergoes a rapid increase in response to diverse from of stress, which is reversed following recovery from stress. Our study uncovers a new layer of aging dynamics that should be considered in future studies. The elevation of biological age by stress may be a quantifiable and actionable target for future interventions.

INTRODUCTION

The biological age of organisms is thought to steadly increase over the life course. However, it is now clear that biological age groups age in not includely hinted to chronological age; individuals control in the methylation levels of various subsets of CpG sites over the life course. However, it is now clear that biological age groups age in notificately hinted to chronological age; individuals on the control of the course of control of the course of

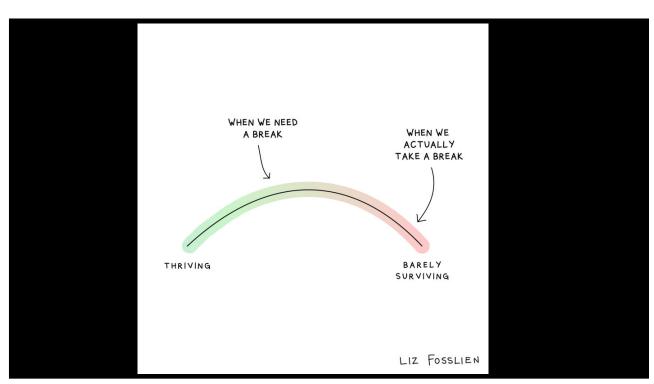
#### Graphical abstract



#### Highlights

- Biological age undergoes rapid fluctuations in mice and humans
- Severe stress induces increases in biological age that are reversed upon recovery
- Parabiosis, surgery, pregnancy, and COVID-19 transiently elevate biological age
- Biological age recovery rate may predict gerotherapeutics





## Well-Being Redefined

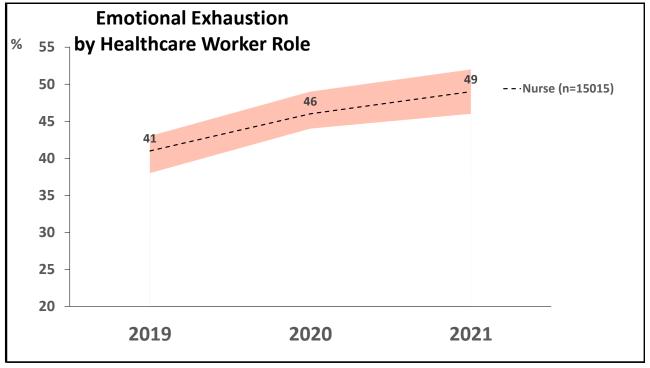
The ability to "do stuff"

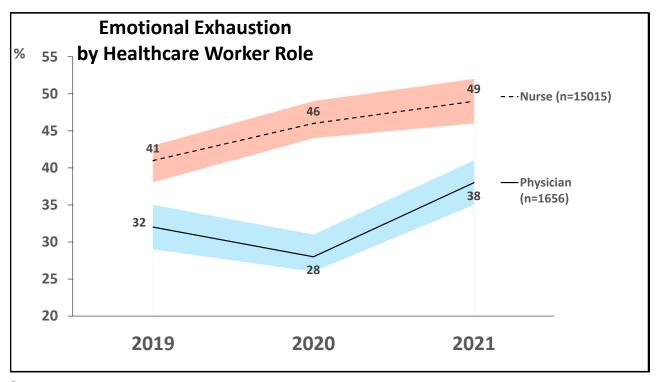


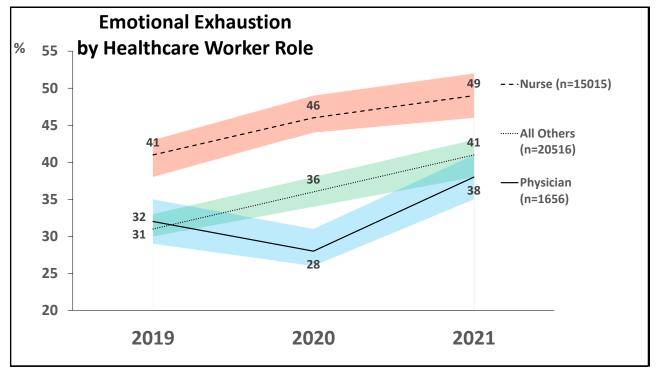
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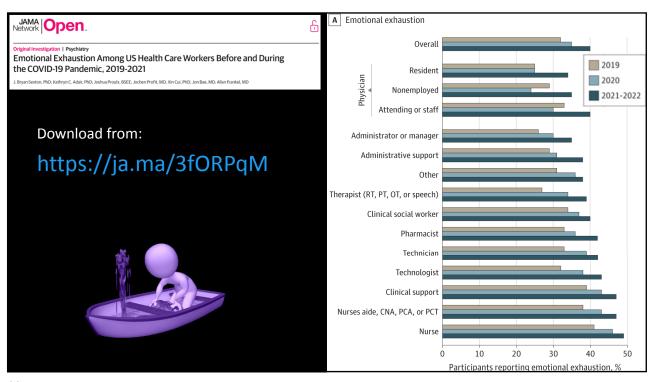


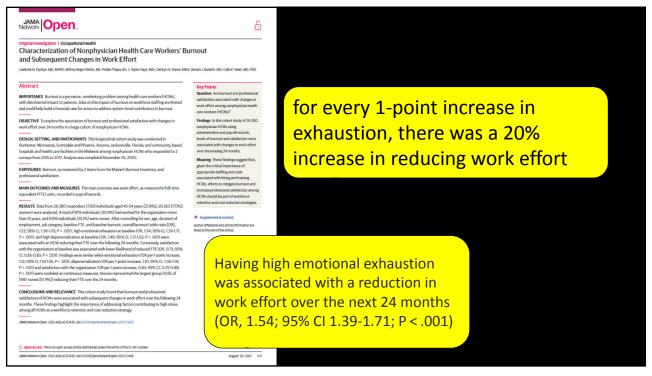


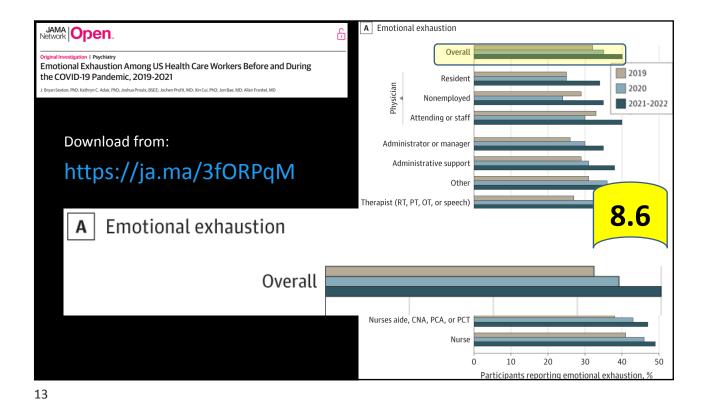


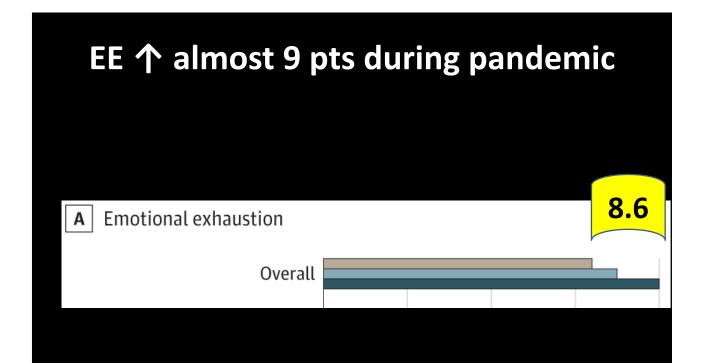


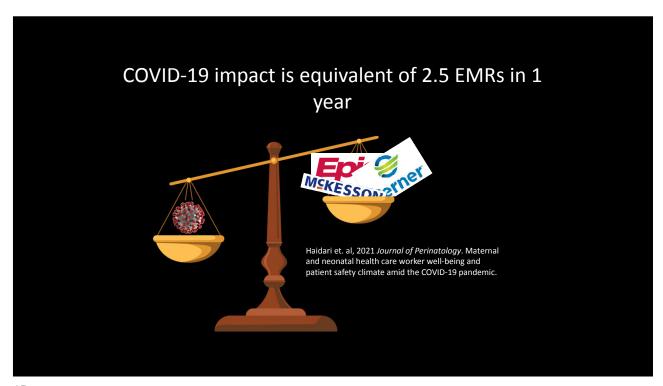












# Burnout is intense, can we cause it to go down?

## **Bite-Sized Well-being**

- Burnout
  - Prevalent
  - Bad for patients & workforce
  - Treatable using evidence-based tools

we packaged the best available evidence for busy health care workers BSWB:

- Simple
- Brief
- Recovery comes quickly
- Benefits endure







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**CAWS Packaged Well-being Interventions** 

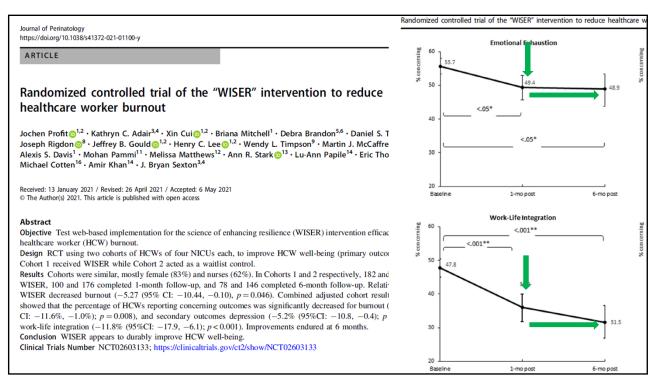
text messages: WISER

Zoom: WELL-B





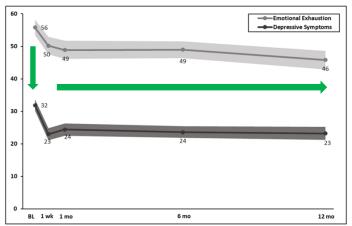






#### Bite-Sized Well-Being: Randomized Clinical Trial of WISER

Figure 2. Effect of WISER for emotional exhaustion and depressive symptoms at 1-week, 1-, 6-, 12-month post intervention (100-point scale)



Dots in the middle line: Point estimates from mixed-effects models for each time point; Shaded areas: 95% Confidence intervals from mixed-effects models. BL: Baseline; 1 wk: 1-week post intervention: 1 mo; 1-month post intervention: 6 mo; 6-month post intervention: 12 mo; 12-month post intervention: 12 mo; 12-month post intervention: 12 mo; 12-month post intervention: 12 mo; 13-month post intervention: 12 mo; 13-month post intervention: 13 mo; 13-month post intervention: 14 mo; 15-month post intervention: 15 mo; 15

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## **EE** ↑ almost 9 pts during pandemic

**CAWS Packaged Well-being Interventions** 

text messages: WISER ↓ EE 10 pts

Zoom: WELL-B ↓ EE ?? pts

## **EE** ↑ almost 9 pts during pandemic

**CAWS Packaged Well-being Interventions** 

text messages: WISER ↓ EE 10 pts

Zoom: WELL-B ↓ EE 14 pts

# **Session Layout (RAFT):**





- Research: Share the evidence
  - Assessment: your WELL-B check-in
  - Feedback: your WELL-B report
  - Tool: your WELL-B activity



### Well-being Essentials for Learning Life-Balance (WELL-B)



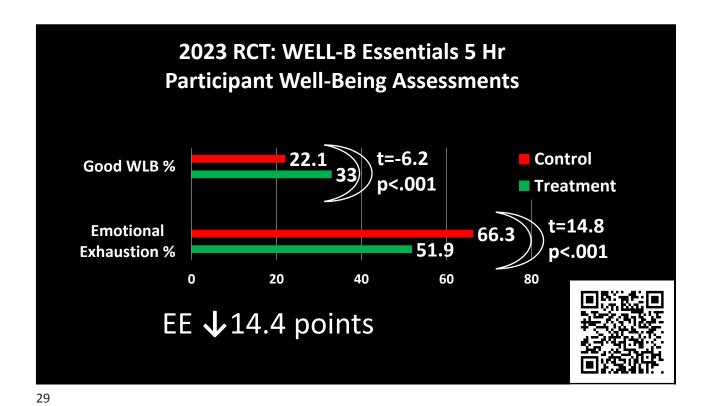
## **Series Layout (5 hours)**

- 10:00 Session 1: Gratitude as Easy Well-Being: New Science on an Old Practice
- 10:00 Session 2: Work-Life Integration: Measuring & Understanding Health Care Worker Well-Being
- 10:00 Session 3: The Voice in Your Head isn't Always Kind: Evidence-Based Self-Compassion
- 10:00 Session 4: Science of Wow: Cultivating Awe and Wonder as a Well-Being Strategy
- 10:00 Session 5: Group-level well-being, Follow-up, sharable resources and extended Q&A (30 min)

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# Please get your mobile phone ready









**5** hrs WELLB Essentials **bit.ly/wellbduke** 



12 hrs of monthlies: bit.ly/wellbmonthly



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# Duke Monthly Well-Being Webinar Series: bit.ly/wellmonthly —1 bite-sized tool each month, 1 hr cont ed, recorded, with Q&A

JANUARY Emotional Exhaustion before and During Covid: The need for Bite-Sized Well-Being

**FEBRUARY** Neuroscience of Hope

MARCH Best Reset Button Available: The Science of Sleep with Tips and Tricks

**APRIL** Bite-Sized Well-Being: Three Good Things

MAY Signature Strengths at Work

JUNE Bite-Sized Mindfulness: Being Present in the Age of Distraction

JULY Dealing with Difficult Colleagues: Assessing, Understanding and Improving Teamwork

AUGUST Grief, Growth or Both?: A Primer on Recovery after Emotional Upheaval

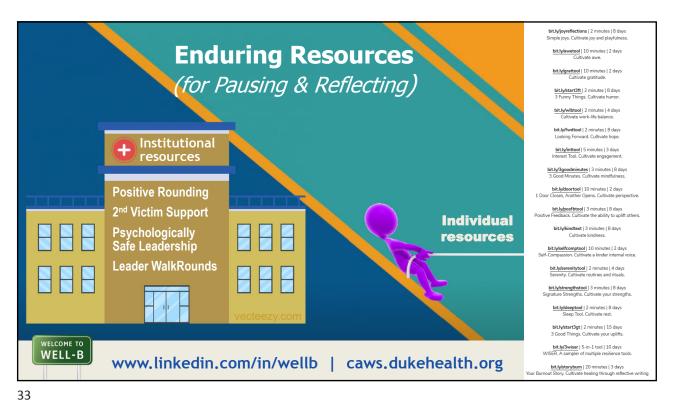
**SEPT** The Funny Thing about Well-being: Evidence for Humor

OCTOBER Evidence-based Sleep Hygiene: Advanced Insights on Rest for the Weary

NOVEMBER Relationship Resilience: The Science and Practice of How Other People Matter

**DECEMBER** Enhancing Resilience: Survival of the Kindest

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