p<0.01), lower inter-breath-intervals (3.9 vs. 4.7 seconds per breath, p<0.01), and more breathing variability than in sleeplab AHI<5 group but less than in AHI>15 group.
**Conclusion:** HRV and respiratory-based measures can assess sleep in the ICU. The findings of increased discordant sleep in the ICU might stem from limitations of the models, fundamental changes in sleep biology during critical illness, pharmaceutical drugs, sleep fragmentation, and/or associated pathology in the ICU.
**Support (if any):**

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### EFFECTS OF SLEEP-EXTEND ON GLUCOSE METABOLISM IN WOMEN WITH A HISTORY OF GESTATIONAL DIABETES: A PILOT STUDY

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**Introduction:** Experimental and epidemiological data have linked insufficient sleep to increased diabetes risk. Women with a history of gestational diabetes (GDM) have a 7-fold greater risk of developing type 2 diabetes. This pilot study explored the feasibility of a sleep extension intervention in women with a history of GDM and short sleep, and the effects on glucose metabolism.
**Methods:** Women age 18–45 years with a history of GDM (at least 1 year postpartum) and actigraphy confirmed short sleep duration (<7h/night) on weekdays were randomized at a ratio of 1 control (healthy living information) to 2 cases (6 weeks of "Sleep Extend" intervention: use of a Fitbit, weekly digital content, interactive tools, and coach delivered feedback in order to increase sleep duration). An oral glucose tolerance test (OGTT), 7-day actigraphy recording and questionnaires were obtained at baseline and 6 weeks (at the end of the intervention).
**Results:** Twelve women (mean (SD) age 40.3 (4.5) years) participated (n=8 Sleep Extend, n=4 control). Compared to baseline, nightly sleep duration increased in Sleep Extend group (+30.6 (48.8) minutes) but decreased in the control group (-6.8 (22.9) minutes). Both fasting and 2-h glucose levels from OGTT increased in both groups but were greater in the control group (Sleep extend vs. healthy living: fasting glucose +2.1 (9.8) vs. +12.8 (7.3) mg/dL; 2-h glucose +8.2 (21.9) vs. +20.0 (19.4) mg/dL). Self-reported sleep quality improved in both groups. When compared controls, Sleep Extend participants reported improved fatigue symptoms (Promis fatigue score change -5.1 (9.3) vs. 7.0 (1.0), p=0.008), and self-reported physical activity tended to increase (+1614 (3659) vs. -2900 (3922) MET-minutes/week). Combining all participants, an increase in sleep duration correlated with a decrease in fatigue (r= -.62, p=0.04) and anxiety symptoms (r= -.69, p=0.02).
**Conclusion:** Sleep extension through coaching and use of remote monitoring is feasible in women with a history of GDM. It appears to decrease fatigue and may improve glucose metabolism and physical activity.
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### UTILIZING RISK SCORE ASSESSMENT TO MAXIMIZE SLEEP RESEARCH PARTICIPANT SAFETY DURING THE COVID-19 PANDEMIC

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**Introduction:** Research study recruitment has been profoundly affected by the COVID-19 pandemic, demonstrated by significant delays or pauses. Various guidelines pertaining to in-person visits have applied to research. Some call for exclusion of participants that the CDC has labeled "at increased risk".1 For obstructive sleep apnea (OSA) studies, these guidelines have caused a sharp decrease in the number of new participants. This decrease is due to high rates of OSA comorbidities including obesity and diabetes. New evidence-based risk scores have been developed using individual- and community-level factors. The use of more refined COVID-19 risk scores can help protect patient safety while allowing research to continue.
**Methods:** The risk score assessment used for this study (COVID-19 Mortality Risk Calculator; Johns Hopkins University, Baltimore, MD)2 is evidence-based and uses a set of risk factors and community-level pandemic dynamics in the state of residence.3,4 It was compared to the list of CDC medical conditions that are considered to put an individual "at increased risk." Both measures were calculated retrospectively on current participants to determine how many could safely attend in-person visits based on each risk assessment method.
**Results:** Sample characteristics of the 110 participants were: mean age: 49.5±13.7(24–76); mean BMI: 32.3±5.3(20.9–46.1); mean AHI: 24.3±21.4(5.1–110). Mortality Risk Calculator scores were: 91(82.7%) close to/lower than average [Level 1]; 12(10.9%) moderately elevated; 6(5.5%) substantially elevated; 1(0.9%) high; and 0(0%) very high [Level 5]. Using CDC guidance, 63 (57.3%) had at least one at-risk condition and 47 (42.7%) had 0. Using only Level 1 of the Risk Calculator would allow an additional 28 (25%) participants to attend in-person visits; using Levels 1 and 2 would allow an additional 40 (37%) participants.
**Conclusion:** Policies based on CDC at-risk conditions resulted in higher levels of participant exclusion in research during the COVID-19 pandemic than use of an evidence-based Mortality Risk Calculator. This analysis shows that researchers can use risk-adjusted scores to make informed decisions about study participation that balances both participant safety and research study progress.
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### INCREASED NIGHTMARES DURING THE COVID-19 PANDEMIC: EXPLORING THE ROLE OF RESILIENCE AND EMOTIONS

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**Introduction:** COVID-19 had a tremendous impact on many aspects of our lives and has caused an increase in stress and mental health issues in many people. We have recently found that there was an increase in nightmares during the pandemic in young adults. Since emotions have been associated with both resilience and nightmares, the objective of this study was to investigate the role of resilience and emotional changes in the increase in nightmares observed during the pandemic, in a group of young adults.
**Methods:** Resilience, emotions and nightmares were assessed using the Connor-Davidson Resilience Scale-10, the Differential Emotions Scale-IV and an adapted version of the Pittsburgh Sleep Quality Index. Measures were administered to 209 young adults (18–25 years old, 76.1% females). Hierarchical multiple regression models were computed to examine the unique contribution of changes in positive and negative emotions during the pandemic to the increase in nightmares during the pandemic. Analyses were controlled for nightmares and emotions prior to COVID-19, and for gender. The sample was separated in two groups: resilient and less resilient young adults.