

abuse occurred was related to blunted hair cortisol, with the age group of 5-7 being the only age bracket related to lower hair cortisol.

**Discussion:** Sexual trauma was related to blunted hair cortisol, with specific considerations for the ages 5-7 pointing to a potential critical stage of development. With diversity in how cortisol results from HPA axis activation, this information suggests it's necessary to consider the heterogeneity of stress responses potentially presenting as both hyperactive and blunted function of the HPA axis while simultaneously considering the type, quantity, and age of trauma experienced.

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### Menstrual cycle changes in estradiol, stress reactivity, and emotion recognition

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**Background:** Previous research suggests that estradiol (E2) influences mood, but the mechanisms underlying these effects remain unclear. The current study measured affect and two proposed mechanisms – psychosocial stress reactivity and emotion recognition – in the early and late follicular menstrual phases, which differ in E2 levels.

**Methods:** 29 reproductive-aged women completed the Positive and Negative Affect Schedule – Extended (PANAS-X), a facial emotion recognition task, and the Trier Social Stress Test (TSST) in the early (EF; low E2) and late (LF; high E2) follicular phases. Visual analogue scales measured subjective stress, insecurity, rejection, irritability, and contentment throughout the TSST. Salivary E2 was measured during each menstrual phase, and salivary cortisol was assessed at baseline and at 10 and 20 minutes after the TSST.

**Results:** Positive affect ( $p = .012$ ) was significantly higher in the LF phase, and negative affect ( $p = .022$ ) was significantly higher in the EF phase. Accuracy for recognizing anger ( $p = .026$ ) was significantly higher in the EF phase but not for the other emotions assessed. Cortisol AUC with respect to increase was larger in the EF phase ( $p = .005$ ). Additionally, the change in E2 from the EF to the LF phase was associated with a decline in fear recognition accuracy ( $r = -.41$ ,  $p = .028$ ) and a decrease in post-TSST irritability ( $r = -.41$ ,  $p = .037$ ).

**Conclusion:** These findings suggest that menstrual cycle increases in E2 are associated with increased positive affect, decreased negative affect, more favorable cortisol responses to psychosocial stress, and decreased recognition of negative emotions.

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### Melatonin affects cognitive performance to emotional stimuli in emotional stroop task

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Melatonin modulates social behaviors including aggression and cognitive performance. Slotten and Krekling (1996) explored how melatonin administration affects cognitive tasks such as logical reasoning. In this study, they found melatonin slowed down reactions in tasks. However, it has been unclear whether basal melatonin modulates cognitive performance using stroop task and emotional stroop task.

In this study, we administered three types of light for one hour to normal participants. After that, we collected saliva and participants waited for one hour. They filled out the Positive and Negative Affect Schedule (PANAS) and the Stanford Sleepiness Scale (SSS) for three times during the experiment to measure the change in mood and

sleepiness. After answering the PANAS and SSS for the second time, participants completed the stroop task and emotional stroop task.

This study found melatonin modulates performance in emotional stroop task but not stroop task. Melatonin modulates the number of errors, response time to emotional stimuli and emotional stroop effect in emotional stroop task. Melatonin did not affect response time to neutral words. Furthermore, the effect of light on melatonin was not observed, but the effect of time on melatonin was observed.

We found that melatonin modulates cognitive performance to emotional words but not neutral words. High melatonin group reduced the number of errors and slowed down response to emotional stimuli compared with low melatonin group. Moreover, melatonin was influenced by time rather than light. It is expected to explore the relationship between melatonin and social behaviors using basal melatonin.

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### Accelerated epigenetic aging in suicide attempters

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Suicide attempts (SA) are associated with excess mortality of natural causes, putatively mediated in part by premature cellular senescence. Epigenetic age (EA) estimators of biological age have been previously demonstrated to strongly predict physiological dysregulation and mortality risk. Herein, we investigate if violent SA with high intent-to-die is predictive of epigenetics-derived estimates of biological aging. The genome-wide methylation pattern was measured using the Illumina Infinium Methylation EPIC Bead-Chip in whole blood of 88 suicide attempters. Subjects were stratified into two groups (low- [n = 58] and high-risk [n = 30]) based on SA method (violent or non-violent) and/or intent-to-die (high/low). Estimators of intrinsic and extrinsic EA acceleration, one marker optimized to predict physiological dysregulation (DNAmPhenoAge/AgeAccelPheno) and one marker optimized to predict lifespan (DNAmGrimAge/AgeAccelGrim) were investigated for associations to severity of SA, by univariate and multivariate analyses. The study was adequately powered to detect differences of 2.2 years in AgeAccelGrim in relation to SA severity. Baseline DNAmGrimAge exceeded chronological age by 7.3 years on average across all samples, conferring a mean of 24.6% increase in relation to actual age. EA acceleration markers did not differ between high-and low-risk suicide attempters. Thus, SA per se but not severity of SA is related to EA, implicating that excess non-suicidal mortality is unrelated to risk of suicide. Preventative healthcare efforts aimed at curtailing excess mortality after SA may benefit from acting equally powerful to recognize somatic comorbidities irrespective of the severity inherent in the act itself.

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