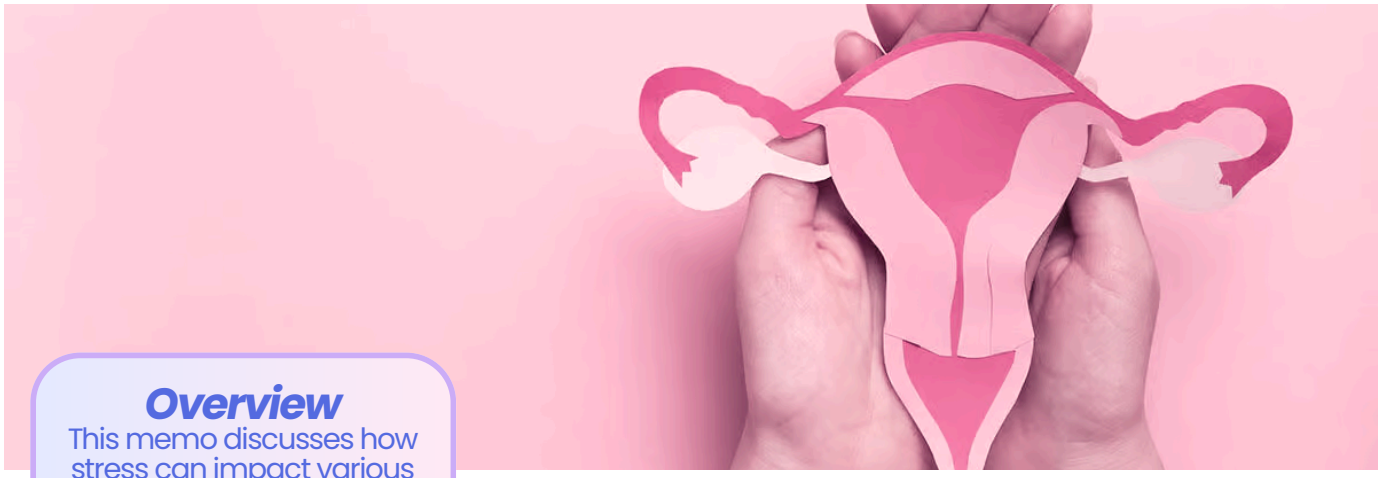
MONTHLY MEMO:

THE WEIGHT OF STRESS: A WOMEN'S HEALTH PERSPECTIVE



Overview

This memo discusses how stress can impact various aspects of women's health, including menstruation, fertility, pregnancy, and weight.

How does stress impact menstruation?

There is a lack of in-depth research involving cortisol and its relationship to menstruation but menstrual patterns can be significantly influenced by stress through stress's impact on the body's hormonal balance. When experiencing stress, the hypothalamic-pituitary-adrenal (HPA) axis is activated, producing a chain reaction of hormones that trigger the release of cortisol, which is commonly known as stress hormone. These increased levels of cortisol can interfere with the hypothalamic-pituitary-gonadal (HPG) axis, which regulates reproductive hormones such as progesterone and estrogen. This interference can disrupt an individual's "normal" menstrual cycle, leading to different irregularities.

Some common menstrual irregularities associated with stress include:

- Delayed or missed periods: High cortisol levels can suppress the release of necessary hormones for ovulation, creating delayed or missed menstrual cycles.
- Longer or shorter cycles: Stress can cause fluctuations in cycle length, making tracking and being prepared for periods unpredictable.
- Heavier or lighter bleeding: Hormonal imbalances can also lead to changes in the uterine lining, causing variations in menstrual flow.

Using stress-reduction techniques such as regular physical activity, adequate sleep, and mindfulness techniques can help regulate hormonal balance. It's also important to consult a healthcare provider when dealing with stress and menstrual irregularities.

IMPORTANT:

Stress is the body's physiological and psychological response to demands (stressors), involving the sympathetic nervous system and HPA axis, which release stress hormones like cortisol. While short-term stress aids adaptation, chronic stress can harm health.

Allostatic Load

Allostatic load refers to the cumulative wear and tear on the body resulting from chronic stress and repeated activation of physiological stress responses. It is measured using biomarkers such as cortisol levels, blood pressure, heart rate variability, inflammatory markers. Higher allostatic load is associated with increased risk of cardiovascular disease, immune dysfunction, and other stress-related health issues.

*Sources & links to corresponding websites are cited at the end of this memo.

Fertility & Pregnancy Impacts

Chronic stress can significantly affect reproductive health, contributing to infertility, miscarriage, and various pregnancy complications. When the body is under prolonged stress, it releases increased levels of cortisol, a hormone that can disrupt the regularity of menstrual cycles and inhibit ovulation, thereby reducing the chances of conception. In men, elevated stress levels have been linked to decreased sperm quality and motility, which can further impede fertility.

During pregnancy, sustained stress may elevate the risk of miscarriage and lead to complications such as preterm birth and low birth weight. High cortisol levels can affect placental function and fetal development, potentially resulting in spontaneous pregnancy loss. Additionally, maternal stress has been associated with an increased likelihood of developing conditions like preeclampsia and gestational hypertension, which pose risks to both mother and child. Furthermore, prenatal exposure to stress hormones can have long-term effects on a child's cognitive and emotional development.

Addressing stress through interventions like cognitive-behavioral therapy (CBT), mindfulness practices, and building strong social support networks can improve reproductive outcomes. Women who engage in stress-reduction programs during fertility treatments often experience higher success rates compared to those with elevated stress levels. Therefore, incorporating stress management strategies is a crucial component of reproductive healthcare.

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Relative Energy Deficiency in Sports (RED-S) Syndrome

Relative Energy Deficiency in Sport (RED-S) occurs when a female athlete does not consume enough energy to support both training and essential bodily functions. This energy imbalance disrupts metabolism, menstrual cycles, bone health, cardiovascular function, and overall well-being. While RED-S expands on the Female Athlete Triad, it underscores that under-fueling affects multiple systems, not just reproductive and skeletal health.

Women with RED-S often experience fatigue, poor performance, increased injury risk, mood disturbances, and prolonged recovery. Chronically low energy availability can lead to amenorrhea (loss of menstrual cycles), infertility, osteoporosis, and an increased risk of stress fractures, leaving many female athletes vulnerable to long-term health complications. Hormonal imbalances, including reduced estrogen levels, further depreciate bone strength and cardiovascular health.

Addressing RED-S involves increasing energy intake, adjusting training loads, and identifying disordered eating behaviors. Early intervention is crucial to prevent irreversible damage. Greater awareness among athletes, coaches, and healthcare providers is essential to safeguarding women's health in sports.

Stress and Weight Changes

Cortisol is a stress hormone that acts as our internal alarm clock, telling your body when to wake up and when to wind down. It also acts as a blood pressure and inflammation regulator in the body. Cortisol, when heightened, can lead to the release of extra insulin, which causes more fat to be stored around the abdomen.

Unfortunately, one way we react to stress is by eating food that is not nutritionally valuable, which can also lead to weight gain if we are not expending energy to burn those calories. The act of overeating as a response to stress tends to impact women more than men as women experience more drastic hormonal changes in reaction to distressing events. Stress-related weight gain can be managed by changing the nutritional value of the snacks we eat when we feel stressed out. If instead of reaching for ice cream, cookies, or another unhealthy snack, we reach for fruit or vegetables instead, we can limit the amount of weight gained as a result of stress.

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