

**Hormonal Imbalance: Causes and Effects**

Student's Name or Students' Names

Department Affiliation, University Affiliation

Course Number: Course Name

Instructor's Name

Assignment Due Date

## **Hormonal Imbalance: Causes and Effects**

Hormones are compounds that are chemical messengers and are produced in the body's endocrine glands. Hormones play a crucial role in maintaining various metabolic processes, and imbalance can cause adverse issues in the body, including inability to cope with stress, lack of sleep, and even infertility. According to Roop (2018), many factors in the current world contribute to the vulnerability to anxiety, depression, irritability, and mood swings, thus contributing to hormonal imbalance. These imbalances affect women more than men. Here is a review of the various causes and effects of hormonal imbalance.

### **Causes of Hormonal Imbalance**

One cause of hormonal imbalance is prolonged stress. During stressful events, the body adjusts through biochemical responses such as releasing cortisol hormones (Çay, 2017). Cortisol levels often increase during stressful episodes but return to normal when the threat is gone. However, prolonged stress causes cortisol levels to remain elevated for a long period, thus affecting other hormones, including reproductive and growth hormones. Besides, poor diet is one of the major causes of hormonal imbalance. According to Mazza et al. (2024), dietary intake patterns, including consumption of foods with high glycemic index, fasting, and excessive intake of calories, affect the levels of circulating hormones such as leptin and insulin. Consumption of high-caloric foods has been associated with insulin resistance, while high-saturated fatty acids diets lead to leptin resistance. Also, the intake of certain essential nutrients (e.g., iron, iodine, and selenium) is crucial in regulating thyroid hormones.

Additionally, medications, including hormone-based contraceptives, corticosteroids, and birth control pills, create artificial states that interfere with the body's natural hormone levels (Segarra et al., 2023). Hormone-based contraceptives such as estrogen, serotonin, and

progesterone also cause hormonal imbalance (Segarra et al., 2023). Exposure to endocrine disruptors such as chemicals in household products, plastics, and pesticides also affects hormonal balance. Besides, inadequate sleep affects the production and regulation of insulin, cortisol, and growth hormones. Other factors that may affect hormonal balances include the presence of certain medical conditions such as adrenal gland disorders, polycystic ovary syndrome (PCOS), thyroid disorders, and diabetes.

### **Effects of Hormonal Imbalance**

Hormonal imbalance affects various body functions. One of the effects of hormonal imbalance is that it increases stress levels and causes sleep disturbance. An imbalance in cortisol levels affects sleep cycles, moods, mental health, and stress levels. Also, Roop (2018) noted that fluctuation in estrogen levels may lead to restlessness, anxiety, and sleep disturbance. Lack of sleep affects the production of other hormones, such as leptin. Roop (2018) noted that leptin deficiency caused by decreased sleep increases appetite, thus resulting in metabolic conditions such as obesity and overweight. Also, increased leptin concentration can affect ovulation, resulting in irregular menstruation and decreased fertility in women (Roop, 2018). Obesity that results from hormonal imbalance affects reproductive functions, whereby obese women are susceptible to polycystic ovary syndrome, infertility, subfecundity, and menstrual dysfunction. According to Calcaterra et al. (2024), obesity disrupts the hypothalamic-pituitary-gonadal (HPG) axis, causing hormonal imbalance in women and affecting reproduction. An imbalance in other hormones, such as testosterone and progesterone, affects fertility in women and men. Besides, an imbalance in thyroid hormones affects the body's basal metabolic rate. Hypothyroidism is associated with dry skin, hair loss, depression, and weight gain. Other effects of hormonal

imbalance include hair loss, impaired growth, digestion, depression, skin issues, bone health, fatigue, and mood swings.

### **Conclusion**

In conclusion, hormone balance is crucial for effective body functioning. Any imbalances of hormones may affect fertility, digestion, hair growth, stress levels, sleep, bone health, and body weight. The cause of hormonal imbalance may include exposure to endocrine disruptors, lack of sleep, poor diet, and medical conditions. Understanding the causes and effects of hormonal imbalance is crucial to guide appropriate lifestyle modifications and medical interventions to maintain hormonal equilibrium.

## References

- Calcaterra, V., Verduci, E., Stagi, S., & Zuccotti, G. (2024). How the intricate relationship between nutrition and hormonal equilibrium significantly influences endocrine and reproductive health in adolescent girls. *Frontiers in Nutrition, 11*.  
<https://doi.org/10.3389/fnut.2024.1337328>
- Çay, M. (2017). The effect of cortisol levels increasing due to stress in healthy young individuals on dynamic and static balance scores. *Northern Clinics of Istanbul, 5*(4).  
<https://doi.org/10.14744/nci.2017.42103>
- Mazza, E., Troiano, E., Ferro, Y., Lisso, F., Tosi, M., Turco, E., Pujia, R., & Montalcini, T. (2024). Obesity, dietary patterns, and hormonal balance modulation: Gender-Specific impacts. *Nutrients, 16*(11), 1629–1629. <https://doi.org/10.3390/nu16111629>
- Roop, J. (2018). Hormone imbalance- a cause for concern in women. *Research Journal of Life Sciences, Bioinformatics, Pharmaceutical and Chemical Sciences*.  
<https://doi.org/10.26479/2018.0402.18>
- Segarra, I., Menárguez, M., & Roqué, M. V. (2023). Women's health, hormonal balance, and personal autonomy. *Frontiers in Medicine, 10*.  
<https://doi.org/10.3389/fmed.2023.1167504>



**MyPaperWriters.net**  
Custom Writing at its Best

Contact Us for a High-Quality, Original Biology Paper.

Order Now

