

plagirism report

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Maintaining Homeostasis

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Maintaining Homeostasis

A hormone is a substance that is excreted by body organs to sustain its functions. Hormones help in maintaining the body balance by regulating catabolic and anabolic reactions. The catabolic response is the breaking down of large molecules to become small molecules that release energy in the body. Hormones involved in a catabolic reaction are adrenaline, glucagon, cytokines, and cortisol. Adrenaline increases the rate of heartbeat and opens the trachea to increase air volume in the lung when exercising. Glucagon, on the other hand, helps in the breakdown of glycogen to increase the level of glucose in the blood. It responds effectively when the blood has a low glucose level. Cortisol hormones react to the stress of the body when the blood has a low oxygen level by increasing the levels of glucose in the blood.

The anabolic reaction uses the energy caused by a catabolic response to joining small molecules to the large ones. Hormones involved in the anabolic reactions are insulin, oestrogen, and testosterone. Insulin controls ²the level of glucose in the blood by promoting the uptake of glucose into the blood cells. Testosterone is essential in strengthening the muscles and the bones. Finally, the oestrogen hormone increases metabolism and fat deposition in the anabolic reaction. The hormones help in maintaining the homeostasis of the body.

The urinary system of a human being is a group of organs that eliminate excess wastes from the body. It encompasses the kidney, urethra, bladder, and Ureter. The excess waste removed from the urinary system is in the form of urine. The urinary system works with other systems to maintain homeostasis.

The excess fluids in the form of urine released from the body are excreted from the nephron. The nephron has various parts involved in filtration, reabsorption, and secretion.

Glomerulus in the nephron filters blood plasma from the urine: The proximal tubule of the nephron excretes specific molecules to maintain homeostasis and the glucose, potassium, and amino acids necessary for the organism are reabsorbed in the blood by the proximal convoluted tubule.

By reducing ¹the excess loss of water in the body, there is homeostasis. The anti-diuretic hormone reduces the excess loss of water in urine. It ensures that the athlete has enough water. Aldosterone hormone, on the other hand, helps in decreasing urine production by retention of water. Conservation of water is a result of the absorption of sodium by the nephron. Aldosterone hormone aid in the excretion of potassium and reabsorption sodium to maintain the balance of the body.

Kidneys maintain homeostasis of the body through the release of urine from the nephrons. The parts of nephron aid in reabsorption of essential ions like bicarbonate in the blood and excretion of harmful hydrogen ions (Atherton,2015). Therefore, they help in acid-base regulation.

The athlete could be gaining more weight due to the consumption of more calories than what the body requires. He could also be losing weight due to consuming fewer calories compared to the calories lost in the exercises.

In conclusion, weight gain or weight loss of a person may not rely on metabolic reactions. It depends on the consumption of calories in the body. However, the metabolic response of the body helps in maintaining the homeostasis because the release of glucose in the blood sustains energy. As a result of various metabolic reactions, excess wastes excrete out of ¹the body in the form of urine. The urinary system, therefore, collaborates with other parts of the body to maintain homeostasis.

References

- Atherton, J. C. (2015). Role of the kidney in acid–base balance. *Anaesthesia & Intensive Care Medicine*, 16(6), 275-277.
- Bergan-Roller, H. E., & Sheridan, M. A. (2018). The growth hormone signalling system: insights into coordinating the anabolic and catabolic actions of growth hormone. *General and comparative endocrinology*, 258, 119-133.
- Meng, Y., Wu, H., Yang, Y., Du, H., Xia, Y., Guo, X., ... & Niu, K. (2015). Relationship of anabolic and catabolic biomarkers with muscle strength and physical performance in older adults: a population-based cross-sectional study. *BMC musculoskeletal disorders*, 16(1), 202.

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