Paper Title

Name

Institution

**Metabolism**

While catabolism and anabolism are the two most important steps in metabolism, various hormones play their role in the effective functioning of the body. In the case of anabolism, the hormones that play their role are estrogen, insulin, testosterone, and various growth hormones while in case of catabolism the hormones are cytokines, glucagons, and cortisol. If there is any disturbance in these hormones, then the entire metabolism is affected severely (Health, 2019). The human kidney contains thousands to millions of nephrons, each of these nephrons is made up of blood vessels the main responsibility of these blood vessel is to move the substances back and forth to filter out the wastes and to maintain water balance in the body. Some of the main structures inside the nephron are responsible for removing water from the blood, and once it is removed, it is reabsorbed into the body when needed. Once the requirement is completed, then that water along with all the toxins of the body is secreted from the body (Sciencing, 2019). Hormones in the body further regulate the secretion of urine. Antidiuretic hormone is one such hormone which is basically secreted by the pituitary gland, the function of this particular hormone is to regulate the amount of water that is reabsorbed the collecting ducts.. the antidiuretic is a component which helps to maintain and also decrease the volume of the urine and antidiuretic hormone is the main example of this substance inside the body. It is a hormone that is secreted by the later of the pituitary gland when the plasma osmolyte increases inside the body. This high concentration of plasma osmolarity is felt by the osmoreceptors that are present in the hypothalamus which will further instigate the later part of the pituitary gland to produce ADH which will act on the nephrons to reduce the plasma osmolarity and increase urine osmolarity. ADH increases the permeability of water through the collecting duct; this leads to water reabsorption and also reduce the urine production (Couses.lumenlearning.com, 2019).

Aldosterone is basically helpful in cardiovascular health, and they are produced in the adrenal glands which are present on the upper part of the kidneys. This hormone helps in maintaining the blood pressure of the body. It basically sends signals to colon and kidneys that will further enhance the sodium content in the bloodstream or the potassium amount that is present in the urine. It also helps the blood to reabsorb sodium in order to increase the volume (Hormone.org, 2019). Kidneys play an important role in maintaining the acid-base balance in the body. The bicarbonate buffer system that is present in the kidneys is an acid-base homeostasis mechanism that balances the CO2 and carbonic acid in order to maintain the pH of the body (Osmosis. 2019).

Different mechanisms in the body play different functions. All of these systems work antagonistically in order to maintain the balance of the body. Among all the systems the metabolism is the most important one because it provides the energy to the rest of the body. To do that there many organs and hormone which play their role effectively in the body. Kidneys in this system are quite vital because they help to excrete urine along with all the toxic substances; this will further help to maintain the temperature of the body properly. So all these systems and functions must work properly for healthy living.

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