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NURSING SCIENCE

PHYSIOLOGY ASSIGNMENT

200 LEVEL

RENAL SYSTEM DISEASES

Renal system disease, any of the diseases or disorders that affect the human urinary system. They include benign and malignant tumors, infections and inflammations, and obstruction by calculi

Diseases can have an impact on the elimination of wastes and on the conservation of an appropriate amount and quality of body fluid. Many of the manifestations of renal disease can be accounted for in terms of disturbance of these two functions, and the alleviation of symptoms in those renal diseases that cannot be cured depends on knowledge of how these two functions are affected.

The eliminatory process does not, of course, end with the formation of urine; the urine has to pass down the ureters to the bladder, be stored there, and voided, usually under voluntary control. The whole mechanism can be deranged by structural changes in the lower urinary tract, by infection, or by neurological disorders that lead to abnormal emptying of the bladder. Disturbance of the lower urinary tract is an important cause of pain and distress, notably during pregnancy and in the elderly; and it can lead to serious and progressive damage to the kidneys, either by interfering with the drainage of urine or by allowing bacterial infection to have access to the kidney.

Renal disease in its diverse forms can lead to bodily deficits or excesses of water, sodium, potassium, and magnesium, and also to protein deficits occasioned by great losses of protein in the urine. Inability of the kidney to function normally may lead to retention in the blood of the waste products of protein metabolism, such as urea and uric acid, and of other nitrogenous compounds such as creatinine. There may be abnormally high levels of phosphates in the blood, which in turn can lead (for reasons about which there is still some disagreement) to low blood levels of calcium. The calcium deficiency can cause tetany, a condition marked by muscular spasms and pain, and calcium may be lost from the bones in the process of restoring normal calcium levels in the blood and tissue fluid. For descriptive purposes, changes in volume, changes in composition, and protein depletion of renal origin will be discussed separately, but these disturbances can and often do coexist.

Examples of diseases hat can affect the renal system is listed below

Bladder cancer.

Urinary tract infection.

Renal cell carcinoma.

Bartter syndrome.

Bright disease.

1. Kidney Stones Form from Substances in Urine

Click to play an animation of kidney stone formation in the urinary tract

The kidneys produce urine to eliminate waste. Kidney stones can form when mineral and acid salts in the urine crystallize and stick together. If the stone is small, it can pass easily through the urinary system and out of the body. A larger stone can get stuck in the urinary tract, however. A stuck kidney stone causes pain and can block the flow of urine.

2. Urinary Incontinence Is the Loss of Bladder Control

Click to play an animation of the sphincter weakening and causing bladder control issues

Most bladder control issues arise when the sphincter muscles of the urethra are too weak or too active. If the sphincter muscles are too weak, a cough or sneeze can cause urination. Sphincter muscles that are too active can trigger a sudden, strong urge to urinate with little urine in the bladder. These issues are diagnosed as urinary incontinence (UI). Women experience UI twice as often as men. It becomes more common with age.

3. Fluid-filled Cysts Can Develop in the Kidneys

Click to play an animation of cyst formation on the kidneys

A simple kidney cyst is a rounded pouch or a closed pocket that is usually filled with fluid. In polycystic kidney disease (PKD), clusters of cysts form inside the kidneys and take the place of the normal tissue. The affected kidneys become enlarged and work poorly. PKD is an inherited condition that often leads to kidney failure, requiring dialysis or kidney transplantation. Acquired cystic kidney disease (ACKD) typically affects people already on dialysis from chronic kidney disease. In ACKD the kidneys do not enlarge and no other symptoms occur.

4. Chronic Kidney Disease Can Lead to Kidney Failure

A comparison of healthy and diseased kidneys

In chronic kidney disease (CKD), the kidneys are damaged and unable to filter blood properly. This damage can lead to a build-up of waste substances in the body and to other problems, including kidney failure. The most common causes of CKD include diabetes, heart disease, and high blood pressure. A diseased kidney may look smaller and have a granular surface.