Name: Asuk Marvellous A

Matric No: 17/MHS01/067

What do you understand by primary or simple obesity

How does congenital syndrome and drug therapy affect obesity

Outline the aetiology of cancer and its molecular basis

**OBESITY**: A nutritional disorder in which excess body fat is accumulated.

1. ***Primary/ Simple Obesity/ Type I***: This type of Obesity is not caused by any disease. It is obesity resulting when caloric intake exceeds energy expenditure and lack of physical activity.
2. ***How does congenital syndrome and drug therapy affect obesity***.

The Secondary/ Type II Obesity is caused by clinical disorders like congenital syndrome and drug therapy.

Some of these congenital syndromes result in abnormal release of certain hormones and alter their metabolic activity on fat further leading to Obesity.

Some examples of congenital syndromes include;

*Cushing syndrome, hypothyroidism, polycystic ovarian disease*

* *Hypothyroidism*: **Hypothyroidism** is associated with decreased thermogenesis, decreased metabolic rate, and has also been shown to correlate with a higher body mass index (BMI) and a higher prevalence of obesity
* *Cushing Syndrome*: This leads to and increase in the levels of cortisol produced in the body. And Excessive action of fatty acids and cortisol causes insulin resistance and increase the hepatic secretion of glucose and VLDL. Furthermore, **cortisol** can decrease the uptake of LDL by the liver. Cortisol in the presence of relatively high insulin concentrations can promote the deposition of energy and lead to obesity.
* ***PCOD****, or Polycystic Ovary Disease*: is a kind of hormonal disorder that affects one in 10 women.Symptoms include menstrual irregularity, excess hair growth, acne and obesity.

Drug Therapy Causing Obesity

Common drugs that cause unwanted pounds include corticosteroids, antidepressants, diabetes medications such as insulin or those containing **sulfonylureas**, some heartburn drugs, hormone therapy/contraceptives, and anti-seizure drugs such as Depakote®.

1. Outline the aetiology of cancer and its molecular basis

**Aetiology of Cancer**

Cancer is the uncontrolled growth of abnormal cells anywhere in the body.

Anything that may cause a normal body cell to develop abnormally potentially can cause cancer; general categories of cancer-related or causative agents are as follows: chemical or toxic compound exposures, ionizing radiation, some pathogens, and human genetics.

* *Genetic Factors*: A number of specific cancers have been linked to human genes and are as follows: breast, ovarian, colorectal, prostate, skin and melanoma
* *Chemical or toxic compound exposures*:  Benzene, asbestos, nickel, cadmium, vinyl chloride, benzidine, N-nitrosamines, tobacco or cigarette smoke (contains at least 66 known potential carcinogenic chemicals and toxins), asbestos, and aflatoxin#
* *Ionizing radiation*: Uranium, radon, ultraviolet rays from sunlight, radiation from alpha, beta, gamma, and X-ray-emitting sources
* *Pathogens*: Human papillomavirus (HPV), EBV or Epstein-Barr virus, hepatitis viruses B and C, Kaposi's sarcoma-associated herpes virus (KSHV), Merkel cell polyomavirus, *Schistosoma* spp., and *Helicobacter pylori*; other bacteria are being researched as possible agents.
* Other causes of cancer include *Environmental Factors*

**The molecular basis of cancer**

Discussion of the causes of cancers necessarily involves an examination of the molecular machinery in cells that guides the basic processes of proliferation (increase in cell number by cell division) , differentiation (cell specialization into different tissue types), and apoptosis (programmed cell death). Those processes are guided by two innate programs in cells, the genetic code and the epigenetic code. In cancer each of those codes ultimately becomes altered regardless of whether the disease originated with an external or internal factor. Indeed, a fundamental characteristic of a tumour cell is that it begets a tumour cell. In other words, cancer, once manifest becomes an inherited disease of the cell and is therefore self-perpetuating.

The hereditary nature of cancer at the cellular level explains why alterations have been found in both the genetic and the epigenetic codes in tumour cells. The number of alterations seen in the coded programs increases as tumours progress to more advanced stages. Their existence and accumulation also explain why principles of evolutionary theory provide insights of practical significance for cancer biology.