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ASSIGNMENT

1) obesity is a medical condition in which excess body fat has accumulated to an extent that it may have a negative effect on health. It is defined by body mass index (BMI) and further evaluated in terms of fat distribution via the waist-hip ratio and total cardiovascular risk factors. BMI is closely related to both percentage body fat and total body fat. Obesity is most commonly caused by a combination of excessive food intake, lack of physical activity, and genetic susceptibility. A few cases are caused primarily by genes, endocrine disorders, medications, or mental disorder.

BMI= $\frac{\text{weight in kg}}{\text{Height in meters}^2}$

2) Secondary obesity occurs as a result of an underlying medical condition that causes an abnormal adding of weight to a point where it becomes harmful. Most cases are "exogenous", resulting from excess energy intake relative to energy expenditure over a prolonged period of time. However, some cases of obesity are "endogenous", associated with hormonal, genetic, or syndromic disorders. The development of obesity in syndromic conditions typically occurs after infancy. These syndromes are characterized by cognitive impairment, dysmorphic features, and anomalies of major organs. So therefore a ride in the appearance of these congenital syndromes can affect the occurrence of obesity (secondary).

In obese patients, modifications in body constitution (higher percentage of fat and lower percentage of lean tissue and water) can affect drug distribution in the tissues. For drugs that are almost equally soluble in water and oil (methyl xanthines, aminoglycosides), the Volume is slightly increased in the obese patients. The other main factors involved in drug diffusion in the tissues are binding to plasma and tissue proteins, and regional blood flow. In the obese patient the binding of drugs to albumin does not seem to be altered... Although the cardiac output and total blood volume are increased in the obese patient, the blood flow per gram of fat is less than in nonobese patients.

3) Cancer is caused by accumulated damage to genes. Such changes may be due to chance or to exposure to a carcinogens (The substances that cause cancer). A carcinogen may be a chemical substance, such as certain molecules in tobacco smoke, etc . The cause of cancer may be environmental agents, viral or genetic factors. The causes of cancer can be in the various ways;

a) biological or internal factors, such as age, gender, inherited genetic defects and skin type

b) environmental exposure, for instance to radon and UV radiation, and fine particulate matter

c) occupational risk factors, including carcinogens such as many chemicals, radioactive materials and asbestos

d) lifestyle-related factors like tobacco, alcohol, UV radiation in sunlight, some food-related factors, such as nitrites and poly aromatic hydrocarbons generated by barbecuing food).

The molecular basis of cancer

The normal operation 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 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.