**NAME: NZEOCHA CHIAMAKA CATHERINE**

**MATRIC NUMBER: 17/MHS01/216**

**COURSE CODE: BCH 313**

**COURSE TITLE: MEDICAL BIOCHEMISTRY 2**

**QUESTIONS**

WRITE ON THE FACTORS THAT AFFECT DRUG METABOLISM

FACTORS AFFECTING DRUG METABOLISM

The drugs taken into the body undergo a series of biochemical reaction, in order to make them more polar to be excreted. Some factors on the other hand, affect this metabolism causing either a slow or fast rate of metabolism or no metabolism at all. These factors are divided into the internal and external factors. The internal factors are; genetics, age, sex, hormones and diseases while the external factors are; diet and environment.

1. AGE: as one gets older, metabolic rate generally slows down. This is as a result of a loss of muscle tissue and changes to hormonal and neurological process. Meanwhile, during development, children go through periods of growth with extreme rates of metabolism.
2. GENETICS: the rate of metabolism in a family could be faster or slower than another as a result of genetic traits. Some families have faster biochemical metabolic rate than others with some genetic disorders also affecting metabolism. Following genetic variation, some people are slow acetylators with the N-acetytransferases.
3. HORMONES: some hormones are involved in drug metabolism. Also, some hormonal imbalance such as; hypothyroidism and hyperthyroidism can affect metabolism.
4. EVIRONMENTAL FACTOR: environmental changes such as; increased heat or cold forces the body to work harder to maintain its normal temperature and this therefore, increases the biochemical metabolic rate.
5. DIET: food changes metabolism. Foods that contain complex mixtures of pytochemicals, such as fruits, vegetables, herbs, spices and teas have greatest potential to induce or inhibit the activity of drug metabolism. Cytochrome P450 is also sensitive to dietary effects.
6. DISEASE: some diseases affect drug metabolism. For instance, the major site for drug metabolism is the liver, hence, diseases of the liver affects metabolism of drugs. Drug metabolism may depend on histological changes in the liver like in liver cirrhosis, acute or chronic hepatitis or on their origin like in viral, toxic or immunological liver disease. It could also be influenced by the severity of liver dysfunction. The enzyme cytochrome P450, its isoenzymes and conjugation pathways may be affected differently by these liver conditions and specific probe drugs must be used in order to study the effects on disease on each enzyme of drug metabolism.