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**MATRIC NO**: 18/MHS01/160

**COURSE**: BCH204

**DEPARTMENT** : ANATOMY

**ASSIGNMENT:**

1. WHAT DO YOU UNDERSTAND BY THE TERM ''BIOLOGICAL VALUE OF PROTEINS"

2. LIST AND EXPLAIN THE VARIOUS METHODS OF ASSESSMENT OF PROTEIN QUALITY

**BIOLOGICAL VALUE OF PROTEIN**

The biological value (bv) of a food is the percentage of absorbed protein from the food that is retained in the body and is therefore available for incorporation into the proteins within the body of the organism that consumed it. It captures how readily the digested protein can be used in protein synthesis in the cells of the organisms.

**METHODS OF ASSESSMENT OF PROTEIN QUALITY**

1. **PROTEIN EFFICIENCY RATIO (PER):** It is the ratio of grams of body weight gain (in specified time) to the grams of protein consumed. The animal proteins are called first class protein because they can maintain nitrogen Balance while the plant protein are called second class protein because they do not maintain nitrogen balance.

 **PER =** Gain in body mass (g) ÷ Protein intake(g)

1. **BIOLOGICAL VALUE:** It determines protein quality by measuring how efficiently the human body uses dietary protein. Specifically, BV measures the nitrogen (largely obtained from dietary protein) that is retained in the body and theoretically used in tissue and muscle formation, and divides it by total amount of nitrogen absorbed from dietary protein.
2. **NET PROTEIN UTILIZATION (NPU) :** It determine the percentage of amino acids consumed that are eventually converted into proteins and utilized by the body. To maximize NPU values, dietary protein sources must both be easy to digest and provide an effective ratio of essential amino acids. NPU values are usually measured indirectly using protein intake vs. nitrogen excretion.
3. **PROTEIN DIGESTIBILITY CORRECTED AMINO ACID SCORE (PDCAAS) :** Itmeasures protein quality based on human essential amino acid requirements and our ability to digest it. The test protein is compared to a standard amino acid profile and is given a score from 0-1, with a score of 1.0 indicating maximum amino acid digestibility.
4. **NITROGEN BALANCE:** is commonly referred to as the net difference between the intake (and/or the effective absorption) of nitrogen contained in the diet and its excretion.