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MEDICAL LABORATORY Science

Medical Biochemistry II

Bot 204

### 1) Biological Value of Proteins

This is a measure of the proportion of absorbed protein from a food which becomes incorporated into the proteins of the organism's body, it's also the basis of its amino acid content in relation to human and its beyond its composition and digestibility.

It captures how readily the digested protein can be used in protein synthesis in the cells of the organism. Since proteins are the major source of nitrogen in food, Biological Value measures the proportion of this nitrogen absorbed by the body which is then excreted.

The ratio of nitrogen incorporated into the body over nitrogen absorbed gives a measure of protein usability.

### 2. List and explain the various methods of assessment of protein quality

**Biological Value:** This is defined as the percentage of absorbed nitrogen retained in the body. It is considered the method by Thomas (1909), Mitchell (1924), and Mitchell and Garman (1926). A complete evaluation of the dietary protein includes measurement of the biological value and the digestibility. This can be obtained by measuring the fecal and urinary nitrogen of a subject fed a test protein diet and then correcting for the amount excreted when a nitrogen-free diet is fed.

$$BV = \frac{1 - (F - F_0) - (U - U_0)}{1 - (F - F_0)} \times 100$$

NE Protein Utilization. This procedure can estimate nitrogen retention, but does so by measuring the difference between the body nitrogen content of animals fed no protein and those fed a test protein.