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BCH 204

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

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

Answers

1. Biological value (BV) is a measure of the proportion of absorbed protein from a food which becomes incorporated into the proteins of the organism's body. It captures how readily the digested protein can be used in protein synthesis in the cells of the organism.
2. Net protein utilization (NPU)

Amino acid score

Critique

Protein efficiency ratio (PER)

Net protein ration

Relative Nutritive value (RNV)

Nitrogen balance index.

I. **Net protein utilization (NPU):** like biological value, NPU estimates nitrogen retention but in case by determining the difference between the body nitrogen content of animals fed no protein and those fed a test protein. The value divided by the amount of protein consumed is the NPU which is defined as the “percentage of dietary protein retained”.

Since NPU and BV are based upon the estimates of ‘retained nitrogen’, they should measure the same thing except that in the calculation of NPU the denominator is the total protein eaten whereas in the calculation of BV it is the amount absorbed. BV would be expect to be higher than NPU b the amount of nitrogen lost owing to the lack of digestibility (lack of absorption).

**Ii. Protein efficiency ratio (PER)**:The PER was the first method adopted for routine assessment of the protein quality of foods. To find the PER of a protein, researchers take the weight gain of the test subject and divide it by the test subject’s intake of a particular protein during the testing period. Until very recently, it was the preferred method of the USDA for evaluating proteins. Although the USDA has switched to the PDCAAS when determining the percent of the U.S. recommended daily allowance for protein displayed on food labels, the FDA still utilizes the PER for some regulations.

**Iii. The protein digestibility corrected amino acid score;** The score uses the essential amino acid requirements of preschool-age children (greater than one year but less than four years of age), because they are considered the most nutritionally demanding age group.