

## THE IMPORTANCE OF AMINO ACIDS IN GASTRIC DISEASES

To'rayeva Gulnoraxon Nosirovna

Assistant, Department of Medical and Biological Chemistry,  
Tashkent State Medical University

Rahimov Mirzo Ulug'bek Kozimjon ugli

Student of the 105th group, Faculty of General Medicine No. 1,  
Tashkent State Medical University

**Abstract:** Aminoacids play an essential role in various biological processes, including protein synthesis, energy metabolism, and immune function. They also serve as precursors for the synthesis of neurotransmitters, hormones, and other vital compounds in the body. This article discusses amino acids, their structure, types, and their medical importance—particularly in gastric diseases—providing information about glutamine, glycine, histidine, and other amino acids.

**Keywords:** gastritis, secretory, glutamine, glycine, proline, cell regeneration, arginine, Helicobacter pylori, neurotransmitters, antioxidants, monoaminocarbon, diaminocarbon, aminodicarbon, gastric microflora.

Aminoacids are organic compounds consisting of a hydrocarbon radical bound to an amino group ( $\text{—NH}_2$ ) and a carboxyl group ( $\text{—COOH}$ ). Depending on the number of “amino” and “carboxyl” groups and the type of radical attached, amino acids are classified as monoaminocarbon, diaminocarbon, or aminodicarbon acids, as well as aliphatic, aromatic, and heterocyclic types. Amino acids with one  $\text{—NH}_2$  and one  $\text{—COOH}$  group are called monoaminomonocarbon acids. They are formed by replacing a hydrogen atom in a carboxylic acid molecule with an amino group. Therefore, amino acids are often named empirically. In rational nomenclature, the word “amino” is added to the name of the corresponding carboxylic acid.

Historically, amino acids also have traditional names: aminoacetic acid is called glycine, aminopropionic acid — alanine, and aminoisopentanoic acid — valine. Amino acids containing one  $\text{—NH}_2$  and two  $\text{—COOH}$  groups are called dibasic amino acids, such as aspartic acid (amino-succinic acid). According to systematic nomenclature, the carbon atom of the carboxyl group is numbered first, followed by the carbon attached to the amino group, and so on. For example, glycine — 2-aminoacetic acid; valine — 2-amino-3-methylbutanoic acids

### Amino acids help reduce inflammation in gastric diseases

Amino acids accelerate repair processes in the body and reduce inflammation. They aid in the regeneration of gastric cells and strengthen protective mechanisms. By regulating metabolism, amino acids help limit harmful processes during gastric disorders. They also contribute to restoring the balance of microflora. For example, glutamine increases cellular energy and activates anti-inflammatory antioxidants. It plays a key role in improving the gastric mucosa.

Studies have shown that glutamine strengthens the gastric mucosa and helps neutralize harmful substances.

### **Amino acids play a key role in restoring the gastric mucosa**

The gastric mucosa is crucial for protecting the body from harmful substances and acids. Amino acids assist in the formation of structural compounds necessary for the regeneration of this protective layer. As the main components of protein synthesis, amino acids enable the renewal and recovery of damaged gastric tissues. Glycine, glutamine, and proline promote the regeneration of the gastric mucosa by supporting cell regeneration and tissue growth.

### **Amino acids help restore gastric microflora**

Amino acids are essential nutritional sources for the body and play an important role in maintaining and restoring microflora. They help restore the balance of microorganisms after antibiotic therapy and support gastric health. Glutamine and arginine are particularly significant, as they nourish cells and support microflora restoration processes.

### **Amino acids strengthen the immune system in gastric diseases**

Amino acids are the body's main building materials, enabling cell renewal and indirectly strengthening the immune system especially during gastric diseases. Disorders in stomach and intestinal function can weaken immunity.

### **Amino acids help mitigate these issues and support the body's overall resistance**

Foods rich in amino acids—such as meat, fish, eggs, and legumes—are beneficial for preventing gastric diseases.

### **Amino acids improve nutrient absorption in gastric disorders**

Amino acids transform into specific compounds in the body, helping renew cells and supporting metabolism. They also enhance nutrient absorption. When the stomach is damaged, amino acids aid in the proper absorption of proteins, fats, and vitamins, increasing the body's overall energy level.

### **Stomach diseases and recovery**

Excess levels of stomach acids or their damage can harm cells. Amino acids stimulate cell regeneration and reduce inflammation associated with the disease.

### **References:**

1. Abdullayev R. (2017). "Mechanisms of the effect of amino acids on gastric function."
2. Karimova N. (2019). "Biologically active substances in the treatment of gastric diseases."
3. Muminov A. (2020). "Amino acids and gastrointestinal system disorders."
4. Nurmatov K. (2021). "The role of amino acids in the restoration of the gastric mucosa."
5. Sharipov I. (2016). "Peptides and amino acids: a new approach to gastric diseases."

6. Yuldashev F. (2018). “The role of amino acids in medicamentous therapy.”
7. O. Ya. Neyland. Organic Chemistry. Moscow: “Vysshaya Shkola”, 1990, pp. 615–634.