

Answer the questions using Protein Booklet 1: Introduction to Structure and Function (pages 3-18).

1. What are the subunits of proteins called? amino acids
 They are small molecules. Proteins are flexible chains made from these subunits.

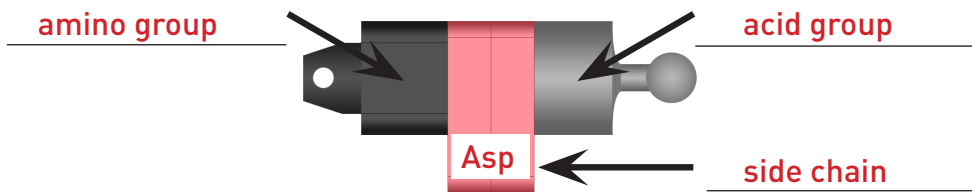
2. Explain how a person gets these subunits into their cells to make new proteins.

People eat protein in their food. That protein, either from plants or animals, contains amino acids.

In the stomach, the protein is broken down into its amino acids. Those amino acids are carried away to other parts of the body by the blood. Cells in the body, like muscle cells, take up the amino acids and put them together in a different order. This makes a new and different protein.

3. How many different amino acids are there? 20

4. Here is a model of an amino acid. Label the 3 parts of the molecule.



5. The amino acid above is pink (acidic). What is this amino acid's full name? aspartic acid

6. Write the abbreviation for the amino acid on the model above.

7. Is this pink amino acid hydrophobic or hydrophilic? hydrophilic

8. If a protein chain was surrounded by water, would you expect to find a pink amino acid in the middle of the folded protein? Or on the outside surface of the protein? Explain your thinking.

Pink, or acidic amino acids are hydrophilic and more likely to be found on the outside of the protein. Because hydrophilic amino acids are charged, they attract water molecules that are also charged.

9. Name 3 hydrophobic amino acids. Answers will vary. All yellow

amino acids are hydrophobic: methionine, proline, valine, cysteine, alanine, phenylalanine, tryptophan, glycine, leucine, isoleucine.

10. Number the amino acids correctly in the diagram on the right.

