

A SUMMARY OF THE FUNCTIONS OF THE BLOOD

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For some time the writer has felt the need of a summary of the functions of the blood. In our text books of physiology there is no comprehensive list of such functions given. Some of the texts mention only three functions, while a few texts mention about six. There are a number of other functions of blood that should have been mentioned at least in the advanced texts of physiology.

The list of functions given in this paper has been gathered from various sources and the writer does not claim that the list is exhaustive. In naming the various functions, there will be no attempt at any explanation in a number of cases, for the sake of brevity, a mere mention of the functions having been considered sufficient.

Some of the functions of the blood are as follows:

1. Oxygen is carried by the haemoglobin of the red corpuscles.
2. Carbon dioxide is removed from the tissues of the body through the blood stream.
3. A number of other waste products are carried by the blood, such as excessive proteins and sugars.
4. The blood carries nourishment to the tissues of the body.
5. The blood regulates the osmotic pressure of the body. Osmosis is a factor in the absorption of foods.
6. It regulates the chemical composition of the body
7. It contains substances that aid in coagulation.
8. It regulates the temperature of the body.
9. It regulates the amount of liquid in the body.
10. It is the source of lymph.
11. It aids in the maintenance of turgidity.
12. It carries hormones.
13. The white corpuscles have the power of phagocytosis.
14. The blood contains various kinds of antibodies.
 - (a) The opsonins act upon foreign cells, causing them to be ingested by the phagocytes. How this is done is not known.
 - (b) Lysins act upon foreign cells, causing them to dis-

solve or disintegrate.

- (c) Bactericidal substances act upon bacteria, killing them, or at least inhibiting their growth.
- (d) Precipitans react with foreign protein in solution to form a precipitate.
- (e) Agglutinins act upon foreign cells, and cause them to clump.
- (f) Antitoxins neutralize the poisons of some exotoxins of nature.

Some authorities urge that there are not six kinds of antibodies, but only one substance that acts in various ways. Other writers believe that all the antibodies are present in small quantities in normal blood. Whether they are normal constituents of blood or have come as a result of previous infections is not clear.

Few authorities believe that the blood is transporting agent in the registration of somatic changes in the germ cells. The majority of scientists believe that body cells are more or less dependent, and that the germ cells are independent. A smaller group of scientists hold that the germ cells are also dependent, that is, they too are influenced by their surroundings. Dr. M. Guyer ("Being Well Born", page 251) says "There is a conceivable path of connection, not wholly fanciful, between the vital constituents or genes of the tissue cells and their distant brethren in the germ cells."

In conclusion: Fifteen functions have been listed in this paper. By classifying the functions in various ways, it is possible to reduce the number and also to increase it. The writer predicts the future discovery of other functions of this marvelous tissue of the body.