

required so that the proteid may be used entirely to repair tissue. Experiments on tuberculous patients show that they should eat daily about

4½ ounces of proteids
5 " " fats
10½ " " carbohydrates.

Such amounts would be furnished by the following:—

	Proteids	Fats
Meat, 4½ ounces.....	1 ounce	½ ounce
One egg, 2 ounces....	¼ "	⅓ "
Milk, 3 pints.....	2 "	2½ "
Porridge, plateful....	⅓ "	"
Bread, 8 ounces.....	1 "	"
Butter, 2 ounces.....	Trace	1½ "

4½ ounces 4½ ounces

A man in health requires:—

Proteid.....3½–4½ ounces.
Fat.....1½–2½ "
Carbohydrate...15–18½ "

Besides these important considerations viz. the object aimed at in a diet for patients suffering from tuberculosis and the relative nutritive value of the different food materials at hand, other matters worthy of attention are those pertaining to digestion, assimilation, and excretion, those concerned with the preparation of foods including cooking, etc. These are wide subjects however and can only be dealt with very briefly.

The digestion of food takes place through a number of chemic changes brought about in the alimentary canal by the action of certain ferments usually known as enzymes. With these, then, alterations are produced mechanically, the food being broken up into fine sub-divisions is digested in such a way

that the useful portions may be assimilated while the remainder passes off as refuse. The enzymes are complex substances the exact chemic nature of which has not as yet been accurately determined. Of these the most important are (1) the *ptyalin* chiefly found in the salivary secretion, its work being to convert starch into sugar, (2) the *pepsin* chiefly found in the gastric juice, its function being to convert proteins to peptones, (3) the *amylase* of the pancreatic juice, for converting starch into sugar, (4) the *trypsin* also of the pancreatic juice useful for splitting proteins into simple products, and (5) the *steapsin* of the pancreatic juice for digesting fats.

After a food is digested it is absorbed. This material absorbed may enter directly into the blood or may pass into the lacteals before reaching the blood stream and the real nutritive value of a food material is determined not only by the amount of nutritious ingredient which it contains, but also by the proportion of those ingredients which can be digested, assimilated, and used by the body. Other things being equal foods furnishing nutrients which can be most easily and completely utilized by the body are the most desirable since they will not throw unnecessary work on the various organs. Many kinds of food in the natural state hold the most valuable nutrients in such a form that the digestive juice cannot easily work upon them. These are so changed in the process of cooking that they become easily digestible. Thus the importance of proper cooking can hardly be over estimated.

Regarding then the ingredients of food and the ways in which they are used in the body the following summary may be given:

Nutrient Ingredients (or Nutrients) of Food.

Food as purchased contains	Edible portion..... e.g., flesh of meat, yolk and white of eggs, wheat, flour etc.	Nutrients..	Water Protein Fats Carbohydrates Mineral Substances
	Refuse e.g., bones, entrails, shells, bran, etc.		

Uses of Nutrients in the Body.

Protein.....	forms tissue	All serve as fuel to yield energy in the form of heat and muscular power.
e.g., white (albumen) of eggs, curd (casein) of milk, lean meat, gluten of wheat, etc.		
Fats.....	are stored as fat	
e.g., fat of meat, butter, olive oil, oils of corn and wheat, etc.		
Carbohydrates.....	are transformed into fat	
e.g., sugar, starch, etc.		
Mineral Matters.....	share in forming bone, assist in digestion, etc.	
e.g., phosphates of lime, potash, soda, etc.		