

Practical Notes on Invalid Feeding.

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XI.—WATER AND COOLING DRINKS.

Although water cannot build up the dry parts of tissue substance, it enters so largely into the composition of the body that it ranks deservedly as a true food. Three-fifths of the body-weight consists of water, and no part of the body is absolutely water-free. By the three eliminating organs of the body—the skin, the lungs, and the kidneys—there is a daily loss of water, which depends in amount largely upon the amount of work performed, and also upon the temperature at which the body is kept. If no water is supplied to make good this loss, life cannot be maintained for more than two or three days, and the sufferings of death from thirst are very intense. To make good this loss, about $3\frac{1}{2}$ pints are required by the body daily, and of this amount one-third is taken with the food which is eaten, and two-thirds are taken in the form of beverages. Roughly speaking, about one-half of the food taken by a person in health consists of water. Lettuces contain 96 per cent. of water, and even such a dry substance as uncooked rice contains 15 per cent. of water.

The functions of water in the body are many. It acts as a solvent of food; it carries the dissolved nutrients to the various parts of the body; and it acts as a carrier of the waste products of combustion which must be eliminated from the body.

Thirst is a call of Nature for water, and it is a call which should be obeyed excepting in a few exceptional cases. It is found that in dropsy, if the amount of water is restricted, the condition of the blood is more concentrated, and the balance is restored by water draining from the tissues into the blood-vessels. In cardiac diseases moderation is ordered, because an increase in the volume of blood increases the work of the heart. So, too, after accidents or operations attended with much hæmorrhage, the amount of fluid must be restricted in spite of the thirst of which the patient complains, for the pressure of a large volume of blood on the blood-vessels is liable to reopen the wounds.

The quality of water is equal in importance to the quantity of it. The chief danger of impure water lies in the organic impurities, many of which are capable of giving rise to specific diseases. Infected water is really more dangerous than infected milk, for the water passes out of the stomach so quickly that it is unaffected by the gastric juice. The chief water-borne diseases are enteric, cholera, diarrhœa, and parasitic growths. The avoidance of risk is a simple matter. It has been proved that the ordinary domestic filters fail to keep back organic impurities or to destroy them, yet not one can sur-

vive being boiled for five or ten minutes. The briskness of water is due to the solution of carbonic acid, and during the process of boiling this gas is driven off, so that boiled water always tastes flat. The briskness can be restored by pouring the water rapidly from one jug to another, holding the one high above the other. It can, however, be more effectually restored by using a seltzogene, or a Sparklets apparatus.

Freezing does not have the same effect upon organic impurities as boiling does, so that ice is just as impure as the water from which it is made, and ice should not be given unless the purity of its source is assured. Ice is useful in relieving thirst and stopping vomiting, besides having various uses in the sick-room as an external application. Neither ice nor iced drinks should be given with food, as the coldness arrests the process of digestion.

Water may be served in such a way that it is a vehicle for a small amount of nutriment, and, at the same time, is more pleasing to the palate of an invalid. The simplest method is in the form of eau sucrée. It consists of pouring half-a-pint of boiling water on three lumps of sugar, and, when cold, restoring the briskness as already described.

Barley-water contains slightly more nourishment, but its value as an invalid's beverage is apt to be over-rated. To make it, take two tablespoonfuls of pearl-barley, and wash it in a pint of cold water. Pour on it two quarts of boiling water, and allow it to boil in a stew-pan until it is reduced to a half. Strain it, and sweeten it with from eight to twelve lumps of sugar, and flavour it with a little lemon-juice, and serve when cold.

Toast-water is cooling and refreshing. A slice of stale bread must be carefully toasted, so that it is of a deep brown without being charred. It should then be put in a jug and covered with a quart of boiling water. Sugar and lemon-juice should be added according to taste, and when it is cold it should be strained and served.

Lemonade and orangeade may be made very simply by the following recipe, using a lemon or an orange according to which drink is required. Take a lemon and peel very thinly the yellow part of the rind with as little pith attached as possible. Put it into a jug and add the juice of the lemon, and from eight to twelve lumps of sugar. Pour a quart of boiling water over these ingredients in the jug, and set a saucer over the top. When the drink is cold, strain it and serve.

A variety of cooling drinks can be made by using fresh fruit. It was shown in the paper on Vegetables and Fruits that the amount of nutriment in fruits is very small, and consists chiefly of sugar. The chief value of fruit lies in the mineral constituents. When cooked there is a great loss of these constituents and of the sugar, which is of no consequence if the syrup is eaten with the fruit.

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