

OUR PRIZE COMPETITION.

WHAT DO YOU UNDERSTAND BY *ARTERIAL TENSION*? EXPLAIN "HIGH AND LOW" BLOOD PRESSURE, WITH BRIEF DESCRIPTION OF SYMPTOMS, CAUSE, AND TREATMENT OF BOTH.

We have pleasure in awarding the prize this week to Miss Rachel Dodd, Woolwich Home for Ailing Babies, Plumstead, S.E.

PRIZE PAPER.

Arterial tension means the estimated force required to compress the arterial vessels so as to obliterate the pulse. The first three fingers of the right hand are placed on the artery so that pulsations can be felt in each. Pressure is then gradually applied with the finger nearest the heart; the pulsations felt by the other two fingers will gradually diminish, until, as the pressure is increased, the beat can be felt no longer.

The tension is gauged by the amount of pressure so required. It may be more accurately estimated by the sphygmomanometer.

Within the blood vessels there is always a great pressure, which rises with each heart beat, the pressure at a beat, in the large arteries, being sufficient to drive the blood to a height of six or eight feet. Such a pressure would damage delicate organs, speedily tear the arteries, and further cause an unbearable jar to the body, were it not for the elasticity of the arteries.

With a high blood-pressure, considerable pressure is required, and if taken with the sphygmomanometer it rises much above normal, which is between 110 to 120 mm. of mercury, under forty years of age.

Another characteristic is that the artery is full between the beats, and can be felt under the fingers like a whipcord. It also has a small pulse-wave.

In a full and bounding pulse the volume is increased, as is the frequency of the beats.

Symptoms.—Pulse full and hard, headaches, giddiness and nausea, gastric and mental disturbances, convulsions, the skin hot and dry, tongue is dry and furred, insomnia, constipation, and sometimes scanty urine.

Causes.—It is chiefly caused by the increase of toxins and lime salts deposited in the blood serum.

Acute infections, chronic intoxications (lead and gout), fevers, kidney diseases, cardiac lesions, over-indulgence in alcohol, cholelithiasis, and over-eating.

Treatment.—Removal of cause, and treat symptoms as they arise. Rest in bed in acute cases.

A careful, quiet life, with gentle exercise.

Regulate bowels by saline aperients, abstinence, plain diet, avoiding excess of meat.

A prolonged course of potassium iodide is usually prescribed, also a periodic administration of a mercurial purge is the most effective means of lowering high blood pressure. If dangerously high, nitroglycerine or nitrates are sometimes used.

In low blood-pressure, there is a low tension, as in a soft pulse, and the pulsation is easily obliterated by pressure, as in typhoid fever. A small or feeble pulse is when the beat feels smaller than is usual, showing that only a small amount of blood is being forced into the artery by each contraction of the heart. It is a sign of heart weakness. A thready pulse is an exaggerated form of the small pulse, and is a sign of great prostration. With a low, compressible, or soft tension pulse the outline of the artery is almost, if not quite, lost between the beats. It also has a large pulse-wave; each pulsation may seem a strong one, but it is very brief, and immediately collapses.

Symptoms.—Headache, lassitude, eyes may be open or closed (coma-vigil), low muttering delirium, sub-normal temperature, pulse rapid, feeble, or imperceptible, face drawn, skin pale, forehead covered with cold sweat on exertion, voice weak, and breathing shallow. Generally the patient lies on his back, heeding nothing. Extreme cases, hyperpyrexia.

Causes.—Debility of the heart, causing a relaxed condition of the arteries; nervous diseases; long-standing septic conditions; exhaustive fevers, such as enteric fever; diabetes, shock, and collapse.

Treatment.—The cause is treated. The patient's strength is maintained by nourishing foods, cardiac stimulants and alcohol when possible. Saline infusion is given in many cases, either by proctoclysis, subcutaneously, or intravenously, especially if hyperpyrexia or collapse is present. Cardiac stimulants, such as strychnine, strophanthus, pituitary or adrenalin chloride, raise the blood pressure by contracting the vaso-motor nerves.

Saline infusion eliminates toxins and raises blood pressure.

HONOURABLE MENTION.

The following competitors have received honourable mention:—Miss Jane Simmons and Mrs. Grace Taylor.

QUESTION FOR NEXT WEEK.

What is the difference between "rheumatoid arthritis," "neuritis," and "rheumatism"?

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