

## The Pulse.

By MRS. KATHARINE H. PETER.

What is the pulse? The blood flows through the arteries, propelled from the seat of life—the heart. Each beat of the heart sends the blood forward to do its work of nourishing the body, and this throbbing motion—caused by the swelling and contracting of the elastic walls of the arteries from the blood squeezed into them by each contraction of the ventricles of the heart—is named the pulse. It is felt in all the arteries of the body, but more particularly in some than others.

The pulse most usually felt is the radial one at the wrist, but there may arise occasions in which that cannot be reached, as, for example, with a burnt child, when the whole arm and hand is bandaged. The pulse can then be taken in the ankle, or at the temples of the forehead, or in the neck on the carotid artery.

The blood has been beautifully called the "river of life," and if it is remembered that when this river ceases to flow the patient ceases to live it will at once become clear how very important it is, and what a practical part of nursing it is, that the nurse should so use her perceptions and training that when she places her fingers on a pulse, she can learn immediately from the character of the pulse in what condition the patient is, and what means must be taken to improve that condition, if it should be unsatisfactory.

A great part of a nurse's duty is to watch the patient, and so enable the doctor to come to a better conclusion as to what is the matter with him, but unless she can watch intelligently and report accurately, she will fail in this object.

Any new probationer may be capable of counting a pulse and registering the number of beats per minute, but only the experience of constant practice, combined with perception and intelligent study, can enable a nurse to recognise, from the state of the pulse, when changes occur in a patient's condition, and the complications that may arise.

Let us then consider some of the points to be noticed that will largely help to teach us to recognise the changes that mark the ebb and flow of this "river of life."

Note the pulse rate, or frequency. To understand this fully it is necessary to say a few words about the temperature of the human body. The normal temperature of a healthy person varies throughout the day from 97 to 99 deg. What is natural in health is accentuated in disease. The actual normal temperature is placed at 98 deg., and the corresponding normal

pulse is 72, and the respiration 18, per minute. For every degree of fever the pulse should rise 10 and the respiration 4.

Now supposing there are 2 deg. of fever: *i.e.*, 100 deg., and the pulse rises to 92, we may feel that is satisfactory, as there is no greater rise than is naturally caused by the amount of fever present. But if a temperature of 100 deg. has a pulse of perhaps 120 or higher, then the nurse at once knows that is too quick to be accounted for by the fever, and the question is what causes it? Generally, a weak heart, which is a warning that stimulants may be needed. This is especially the case with pneumonia, when the heart has great strain upon it, and the pulse is a sure guide, showing when the strain is becoming too great, and special help is needed to keep it going. So the nurse has discovered that the heart is hurrying along, not because there is fever, but because it is weak.

It may perhaps be asked, "Why should a quick pulse show a weak heart?"

When the heart is weak it has to hurry to get the work done, on the same principle that a strong horse can easily carry in one load the same quantity that a weak horse would require to take in several journeys. This being the case the pulse will not only be quick, but also feeble.

There are exceptions to every rule, and there are cases where a quick pulse does not signify a weak heart, and this is so with scarlet fever. Also there are a few instances in which there is a very quick pulse without fever, as in exophthalmic goitre. Again it may be found that the pulse is too slow. The temperature may be normal, but the pulse only 40 per minute. This should make the nurse equally on her guard and watchful for the cause. Certain drugs, if taken in too large quantities, lose their good effects, and give rise to poisonous symptoms. To this class belongs digitalis. This is a powerful heart medicine, but it is a drug that requires very careful watching, as it seems to do great good for some time and then may suddenly do great harm, and one of the first signs of digitalis poisoning is the sudden development of a very slow pulse. If digitalis poisoning were allowed to continue it might cause faintness, sickness, giddiness, and perhaps death. Therefore, if a patient taking this medicine should suddenly develop such a slow pulse the nurse would omit a dose or two of the medicine until the doctor could come and give his instructions.

Typhoid fever has a naturally slow pulse compared with the temperature. With a temperature of 102 deg., a pulse of 90. The poison

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