

## Lectures on Elementary Physiology in relation to Medical Nursing.

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### LECTURE I.

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**I**F the valves of the aorta are affected the condition is even more serious, because if the blood from the left ventricle is not easily pumped into the artery, and onwards through its continuing branches, but partly returns into the ventricle, the body is not properly nourished, and the strain upon the ventricle becomes increasingly dangerous. Its cavity, for example, as we saw recently, will become dilated, and will, therefore, still further lose its power of pumping the blood into the various organs. The consequence is, that disease of the aortic valves is, other things being equal, more serious than that of the other valves: and it is in cases of "aortic regurgitation," due to "incompetence of the aortic valves," that the occurrence of sudden heart failure and death is usually found. Patients who have this form of valvular disease suffer from a white, puffy appearance of the face, feet and ankles, due to the feebleness of the circulation of the blood through these parts, and a consequent condition of "dropsy," or effusion of fluid from the blood vessels into the tissues under the skin. The pulse is typically hard, irregular and jerky. You will, therefore, understand that in cases of aortic disease it is of the utmost importance to prevent the patient making any sudden movement, or engaging in any over-exertion. Every now and then you will see a report in the papers of some man or woman, past middle life, who, after hurrying to catch a train or an omnibus, and shortly after attaining his object, suddenly died. These persons, in the great majority of cases, prove to have been suffering from aortic disease and a dilated heart, which, so long as they lived and moved about quietly, was strong enough for all practical purposes, but which was always liable to collapse and give way directly an extra strain was thrown upon it.

But there are other diseases of the heart which are not necessarily dependent upon disease of the valves. The muscular tissue of which the heart is composed may, for example, suffer from what is termed "fatty degeneration." The muscle fibre becomes changed into fat and, therefore, the strength of its contraction is more or less impaired. If the process continues long enough, the contractile power of the organ is greatly diminished; the patient suffers from

increasing weakness, from coldness of the hands, feet and nose, and from occasional attacks of palpitation, breathlessness on exertion, and finally, and to an increasing extent, from dropsy of the limbs. This condition, you will understand from what has already been said concerning the importance of the muscular powers of the heart, is of very serious import, and its continuance and extension is inevitably fatal. The patients, therefore, who are suffering from this disease require not only to be very carefully treated in the way of diet and medicine, but they usually require to be most carefully watched, in case an attack of faintness should occur, say for instance, as the patient is crossing a crowded thoroughfare.

If such patients are confined to bed, the Nurse must remember that the weakened heart walls may, with any unusual exertion, suddenly cease to contract, and the patient may faint, or perhaps suddenly die. It is, therefore, of the first importance that they should be kept as much as possible from any sudden movement even in bed. A useful form of treatment, which for many years has been employed for patients suffering from degeneration or dilatation of the heart, consists of some form of gentle gymnastic exercises, varying from simple walking to the employment of dumb-bell or club movements. All these are designed to improve the muscular power of the body, and thus to remove from between the muscle-layers of the heart any superabundance of fat, or even to prevent the transformation of the muscle itself into fatty tissue. Unfortunately, this method of treatment, like many other good things, has from time to time been overdone, and has fallen into the hands of quacks, who have brought the method into temporary disrepute. Some fifteen years ago, an Institute was founded in London by a foreigner, and for the avowed purpose of healing heart and other diseases by regulated gymnastics. It found many imitators, and was speedily converted into a system of unmitigated quackery. The credulous were informed that the method was a marvellous new discovery, and that, in the most hopeless cases, cures were effected. The extravagance of such ignorant pretensions, and the great harm which the system caused to unsuitable cases, brought discredit on those who exploited it; and, unfortunately, also on a valuable method of treatment in some few cases of heart disease. It is well to remember that, in many patients, these exercises are most dangerous for absolute rest is essential in order to afford Nature time to restore the harmony between the nervous and muscular tissues of the heart, which is essential to its healthy action. The chief lesson to be learnt by the Nurse is, that in all cases

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