

OUR PRIZE COMPETITION.

IN WHAT WAYS MAY A PATIENT'S BREATHING BE AFFECTED, AND WHAT IS THEIR SIGNIFICANCE?

We have pleasure in awarding the prize this week to Miss Winifred M. Appleton, University College Hospital, Gower Street, W.C.1.

PRIZE PAPER.

The derivation of respiration comes from Latin, meaning—*re*, again, and *spiro*, I breathe. The movement results by alternate expansion and contraction of the chest walls by the acts of inspiration and expiration. Contraction of the diaphragm causes inspiration, and elastic contraction of the lungs causes expiration.

In dealing with illness it is essential to have a comprehensive observation of respiration, based upon medical and nursing knowledge; its object is to bring the oxygen of the air into contact with the blood, thus anatomically the lungs and heart are so closely placed and intimately associated in the work of blood circulation that when one becomes weakened and diseased the other is almost always affected.

Three main types of breathing are:—Infantile, mostly by diaphragm; adult male, which works in addition the lower costal muscles (abdominal); and adult female, in which upper part of chest moves more than lower (thoracic).

Inspection of the chest shows alteration in shape and movement; whether one side is larger or more contracted than the other, or has a deficient movement; also if the intercostal spaces are unduly sucked in.

Disproportionate use of one side of chest suggests disease in another; deformities or diseases, as rickets and curvature, are apt to impair the action of respiratory organs; the pectoral and abdominal muscles may be induced to assist in raising ribs and in act of expiration.

Examination by stethoscope reveals moist and dry crackling sounds, known as rhonchi and râles, which may be due to obstruction of bronchial tubes by accumulation of mucus, or a thickening of mucous membranes; and spasmodic contraction of their muscle fibres causes wheezing.

Interrupted or cog-wheel breathing may be due to obstruction to entry of air, nervousness, irregular muscular action, or cardiac affections.

Dyspnoea is difficult or bad breathing, when respiration is unduly rapid; shortness of breath, and it is performed with effort.

If the patient is obliged to sit up in order to breathe, as in cardiac and pulmonary disease, the condition is termed *Orthopnoea*.

Asphyxia, caused by obstruction of air passage, first resembles dyspnoea, later convulsive expiratory movements occur, colour livid, with veins of neck swollen, finally pupils are widely dilated, and, slowly gasping, patient dies.

Snoring may be caused by adenoids in pharynx. Croup, asthma, and diphtheria often cause alarming attacks of dyspnoea by narrowing of air passages, which may have to be relieved by urgent tracheotomy.

Breathlessness may be due to any condition which renders blood impure and deficient in oxygen, such as pneumonia, phthisis, emphysema, bronchitis, fluid in pleural or pericardial cavities, enlarged tonsils and adenoids, or by growths diminishing the breathing space. The complications of bronchitis and dropsy frequently disturb the respiration in heart disease.

In cases of shock, respiration is often irregular and slow.

In peritonitis, is thoracic, rapid and shallow.

In pleurisy breathing is short and rapid, to avoid pain of deep respiration.

Aneurisms or tumours cause breathlessness by pressure on bronchial tubes and vessels.

Disease of mitral valves causes congestion of lungs and disturbed respiration.

Snuffling is due to nasal obstruction, either mucous or by polypus.

Cheyne-Stokes respiration, a serious form of breathing, often a sign of approaching death, is met with in diseases of brain and membranes, of heart and blood-vessels, lungs, kidneys; also in acute fevers, sunstroke, morphine poisoning and senile decay. It is characterised by alternating periods of very rapid and slow movements, followed by a complete pause.

Asthma means severe paroxysms of difficult breathing.

Many general diseases interfere either directly or indirectly with respiration, particularly Bright's disease, and the coma at the end of diabetes.

Stertorous breathing (loud snoring noise) occurs in cases of brain disease.

Bad breath, offensive in odour, may be caused by bad teeth, constipation, tonsillitis, indigestion, the foetid condition of bronchiectasis, by ulceration of nasal bones, and gangrene of the lungs.

HONOURABLE MENTION.

The following competitors receive honourable mention:—Mrs Farthing, Miss Catherine Wright, Miss P. Thomson, Miss M. Wright.

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