

The whole act of breathing is known by the term *respiration*; and it is repeated in a healthy person fourteen or fifteen times every minute, about one respiration to every heart beat. You will often be required to note the respiration of patients; and, besides the frequency of the repetition, there are several other things which it will be well for you to remark. I quote again here from a valuable lecture of Mr. Croft's:—

"Some diseases are characterised by quick breathing, some by slow, some by very irregular breathing, some by a catching in inspiration, some by a long expiration. The breathing in some will be noisy, accompanied by a variety of sounds; and you should take note of those sounds. Have you ever heard the '*crowing*' sound of affections of the voice tube? You will be very much struck by it whenever you hear it, and you will ever after associate it with the formidable disease of which it is the sign.

"You must distinguish the whoop of the whooping-cough; the whistling and squeaking sounds of specific disease of the voice tube; the peculiar wheezing sounds attending the asthmatic patient. You must have heard of stertorous breathing—breathing accompanied by *loud snoring* inspiration, and by flapping out of the cheeks in expiration. It is very alarming, denoting unconsciousness, insensibility from some cause. Listen for it in cases of apoplexy, and in cases of severe injury to the head, including the brain. If you ever hear similar breathing, *stertorous*, coming on *unexpectedly* in a case you are watching, be sure it is your duty at once to report what you have observed. That breathing denotes that some important change has happened—that a case has taken a 'turn,' and for the worse. Now, if a Nurse neglects to report a change of this sort, she is very much to blame. I beg you to remember this. In some cases the change from slow, steady breathing, like that of a person in deep natural sleep, is slow and gradual—*little by little* the breathing comes to be stertorous. A Nurse may be excused for not recognising the exact time when the breathing became unnatural, but she will be culpable if she does not soon observe the change. I have known Nurses say, 'Oh, I supposed it was all right.' I have been very suspicious that those Nurses were asleep at their posts. Now you see, in this matter of the breathing, the Nurse's observation becomes very important. She may, if she performs her duty properly, give timely warning of approaching danger. She may, by her carelessness or want of observation, fail to give that warning.

"The odour of breath is another subject for observation. Is it sweet, like chloroform or apples? is it spirituous? This should always be ascertained in cases of accidents or apoplexy. Is it foul, as in the case of gangrene of lung? Temperature of breath, whether hot or cool."

The quantity of air taken in by the lungs in one hour amounts to 26,000 cubic inches; and, when you consider the manner in which it acts upon the blood, you will perceive how important it is that it should be pure and able to perform this function properly, and perhaps a few words on the principal change which occurs in the air by respiration will not be misplaced here. You know that arterialisation of the blood is effected by getting rid of the carbonic acid and taking in oxygen instead. In quite the same way does the air we breathe become deteriorated. It parts with oxygen and receives instead carbonic acid. During sleep you absorb more oxygen than carbonic acid gas is given off; this is called the reserve fund, and acts as a

supply towards the wear and tear of the day. You must not fancy that atmospheric air consists entirely of oxygen; a very large proportion of it is nitrogen gas, which seems to be a sort of vehicle for the oxygen, and undergoes very little change of quantity by the act of breathing. It is, therefore, necessary that there should be always a sufficient supply of oxygen to replace the constant consumption of it which is going on. This subject of ventilation is one of the deepest interest to Nurses; but it has been so ably dealt with in most of the manuals on Nursing, that I do not intend myself to enter upon it at length. I will only remind you that in a Ward of a Hospital there are many more sources of air deterioration than in private houses in general. All the emanations from the sick and all dressings give off gas of varying factor, &c. Nevertheless, it is not necessary that the Ward of a Hospital should be close or ill ventilated.

But it does require some ingenuity and attention on the part of a Nurse to keep a Ward at the same time wholesome as regards the air, and of a proper temperature for the occupants. This is especially difficult in winter; and though I would not for a moment be thought to countenance any want of ventilation, there is no doubt that in the large Ward of a Hospital there must be some slight individual sacrifice to the good of the many. The greater part of the patients are introduced, probably for the first time, into a perfectly ventilated apartment; and as the opening and shutting of the windows generally devolves on a Probationer Nurse, under the "Sister's" directions, it is not the pleasantest part of her duty to the sick to combat their imperfect appreciation of the blessings of fresh air. They often grumble unnecessarily, but they do sometimes suffer, and that severely, from "general orders" as to the windows, so though it is not in your power, even if it were your wish, to reverse these orders, bestow on the sufferers in these cases a little of the consolation which goes so far to alleviate ills which must be endured.

It is possible to breathe highly impure air without being aware of it; and it is more dangerous to inhale poisonous air in a very diluted form, and for a lengthened period, than to be exposed to it in a more concentrated form for a short period.

To test for injurious percentage of carbonic acid gas in a room, take a vessel, which will hold ten ounces of water, and fill it in the room the air of which you wish to test. You empty the vessel; it is then full of the air to be examined. Pour in half-an-ounce of lime water, and shake up: if there is a large amount of carbonic acid gas present, the lime water will become milky, from the carbonic acid gas combining with the lime to form the carbonate of lime, which is chalk.

[previous page](#)

[next page](#)