

How Do You Breathe?

A goodly percentage of individuals could be undoubtedly extremely surprised, if not slightly offended, were you to politely inform them that they did not correctly perform that function required before any other at all upon their initial entry into the world—namely, the act of breathing.

But yet if applied to a very large majority of people such a statement would contain considerably more truth than fiction, since a large proportion of civilised beings do not exercise their lung powers in the same manner as Nature evidently intended them to, the result being consumption, bad colds, as well as all manners of chest disorders.

One would naturally ask—Why should this state of things be? and the nearest reply to the question would be contained in the statement that the artificial methods to which people nowadays resort in this matter, as well as in many others, has a great deal to do with it.

Take a savage, for instance, who has hardly any recourse to anything that is in the least artificial or opposed to Nature, he is seldom, if ever, attacked with chest diseases; but yet he wears hardly any clothing, and his chest, being uncovered, cannot be impeded by garments which are too tight, and which would hinder the natural expansion which is necessary to its healthy development.

But we are not savages, and consequently we must wear clothes; but if we take a proper amount of chest and lung exercise by means of a correct method of breathing, and avoid wearing garments which are too tight across the chest, not only will speech be rendered more clear, the singing voice more melodious and full-toned, but many a cold and chest complaint will necessarily be avoided.

So many people, when they want to take an extra deep breath for the purpose of raising their voices, draw in the extra amount of wind required through their open mouths, thereby deliberately reversing the natural method of breathing. In calm and regular breathing the fresh air is taken in through the nostrils, and the foul carbonic acid gas from the lungs is ejected through the mouth. Consequently, if fresh air is taken in through the mouth it prevents the complete exhalation of vitiated breath, and only a very small quantity of pure air can find its way into the lungs at all.

It is a good plan upon rising in the morning to go to the window and taken in ten or twelve slow, deep breaths through the nostrils, and slowly emit them through the mouth. By using these exercises, fresh air is taken down into the lowest extremities of the lungs, and the foul air, or rather gas, is expelled; but with people who never make a habit of breathing in this manner fresh air never reaches the lower portions of the lungs at all, and the fetid breath remains there and poisons the whole system.

Professional singers are, as a rule, fairly free from lung complaints, and this happy state of health is invariably attributed by them to the fact that their profession has necessitated them acquiring the correct method of breathing. A well-trained vocalist invariably takes in a long breath through his nose during a

pause in his song, and before taking it he will first exhaust all the breath in his lungs through the mouth, so that he may have room for a greater volume, since the warm breath in his lungs will be expanded with the heat of his body, and so in a double sense would leave less room for the cold air just inhaled.

It may not be generally known that in singing the production of different notes is by the placing of the breath against various positions on the palates. The nearer to the teeth the breath is placed the lower should be the note, and when the breath is directed towards the back of the nose, which is called the soft palate, then the note should be high. A singer who has had a considerable amount of practice is able to pitch any note required from his knowledge of how and where—on the roof of the mouth—to place the breath carrying the sound.

No amount of practice, though, would enable any individual to use the breath in this delicate manner unless proper control was gained in the first instance, and so may be seen at a glance the immense desirability, from many more points than those apparent to a singer, of cultivating a correct and natural method of breathing.

Another good breathing exercise recommended by a well-known teacher of singing is that of lying flat on the back, placing the hands firmly upon the abdomen, and by firm pressure expelling the air from the body through the mouth, and then taking in a slow but deep breath through the nostrils, an exercise which may be repeated many times with good effect.

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Sleep and Sleeplessness.

(By Dr. C. Stanford Read.)

What is the theory of sleep, and what are the causes which produce sleep? We cannot say that scientists have definitely settled such questions, but there are factors in the causation of sleep that we are certain of, and as they point out to us how in many ways we will combat sleeplessness, it will be interesting and instructive to speak of them. When we sleep our brains become supplied with less blood than during waking hours. How this is brought about is puzzling. We know that too much blood in the brain makes us wakeful, which is easy to understand. The brain contains within it huge numbers of nerve-cells, which are naturally stimulated to work by a large supply of nourishment contained in, or brought by, the blood, therefore, to secure rest for a nerve-cell, its supply of nourishment should be reduced to a minimum. Thus a bloodless condition of the brain will predispose to sleep, whereas a brain too well supplied with blood will tend towards greater activity. For example, a hot-bath, dilating all the vessels of the skin, will render the brain more bloodless and predispose to rest; and a hot room causing the same dilation of the vessels of the skin, soon induces an intense longing for sleep.

Secondly, we can soothe nerve-cells, not by depriving them of food supply, but by guarding them from outside stimulation. Thus we close our eyes, shut-

ting out light; we turn a deaf ear to sounds, and seek to turn our thoughts from any anxiety or worries of the past day. What is it that sleeps? First of all, sight fails, even though the eyes are open, as in the case of the hare, which sleeps open-eyed. Then hearing fails, then smell, and last of all, touch is dulled. Yet sleep is not merely the lapse of these; it only includes them, for it is possible to walk about asleep, to sit up in bed, hold conversations, and, as is well known, somnambulists will carry out most complex acts while wrapped in slumber. Only a part of the brain rests, therefore, and that part is probably our consciousness, while the unconscious portion of our mind guides us safely through the long hours of the night. It is this unconscious mind which often during sleep usurps the functions of the conscious part, and on the activity of which depends our dreams, sleep-walking, and the marvellous phenomena evinced in hypnosis. Our consciousness, wearied by effort, needs repose, and sleep is the means of refreshing it, and with our consciousness at rest, all the nerve-centres rest to a greater or less extent along with it. A weak, poorly-trained brain is easily tired, and soon needs sleep; while often the more highly-educated brain can endure much fatigue without requiring any repose.

Sleep is the only time when consciousness can be said to rest, because during our whole waking hours, we are busy thinking, generating ideas, etc. and, therefore, repair and restoration to the normal power must be brought about by sleep. Nerve-cells cannot go on working without rest, with maybe a few exceptions. The heart and lungs go on working till life is ended, but the heart-beats and respirations become markedly slower during sleep, as if partial rest were needed along with the higher centres of the brain. We thus find that exercise of mind, any of the special centres, and to sleep for the purpose of rest and recovery of muscular power, can all predispose to sleep.

There are other possible theories, such as the theory that a poison is produced during waking hours which dulls nerve-centres and so induces sleep, during which the poison is discharged, but it does not serve any useful purpose to discuss such here.

Sleeplessness may be due to the vessels of the brain being too full of blood, or, on the other hand, to excessive bloodlessness. Too much blood seems to stimulate nerve-cells to activity instead of repose, and too little blood causes an erratic activity which prevents sleep. In this way excessive mental or physical labour causes sleeplessness. Emotions of any kind tend to cause insomnia, probably from stimulation of the intellectual centres to greater efforts. Anaemic people often feel sleepy in the daytime when walking about, but sleepless at nights when lying down. This is due to

a want of muscular tone in the walls of the arteries of the brain, so that by mere gravity the blood tends to leave the brain when the upright position is assumed, and hence the desire for sleep, whereas when the head is laid low on the pillow, the blood tends to flow abnormally into the brain and cause wakefulness. Such a condition is soon bettered by a course of suitable medicine calculated to improve the state of the blood.

In full-blooded people a hot bath or even a warm foot-bath is useful, removing blood from the brain to the dilated vessels of the skin. We often feel strongly disposed to sleep, and not to work after a meal, and this removal of blood from brain to stomach suggests a useful aid of sleeplessness, viz., the taking of some hot Benger's food or some preparation just before bedtime. A hot-bottle is not always a mere luxury, for to those who suffer from cold feet it is a necessity for the production of sleep. Many derive great benefit from a little hot toddy the last thing at night, and this is especially beneficial to those getting on in years. The sleepless brain-worker should indulge in some manual labour before retiring to rest, so as to tire the muscles well. Tea and coffee should be forbidden at night to those who find difficulty in sleeping, as they are both brain stimulants. The well-worn methods of aiding sleep by counting figures, listening to monotonous sounds, etc., have of course their value, as they tend to relieve the mind from dwelling on weightier matters. Drugs for sleeplessness are much abused, and probably none of them are free from liability to produce harm; they should never be indulged in, except on medical advice. Lastly, let me state that sufferers from sleeplessness, who have tried many methods of inducing sleep and failed, should try the effects of hypnosis. The results thereby attained are marvellous and the dangers none when undertaken by experienced operators, so let my readers try and look on this method of cure with an unprejudiced eye, and, if necessary reap the benefit therefrom.

Golden Hints for the Nursery Notebook.

BAD BURNS.

For the burn itself, spread boracic ointment on lint, and lay this over until the doctor arrives. Boric ointment and lint should find a place in every nursery. Get the little one into bed as soon as possible. Cover warmly, and apply hot-water bottles to the feet and abdomen. If conscious, it is a good plan to give a little hot milk.

TO TAKE A PILL.

Don't place the pill itself too far back in the mouth; put it on the front of the

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