

Breath of fresh air

*People inhale and exhale without even thinking about it, but it is possible to reduce stress and improve your energy levels by breathing correctly. Fiona Agonbar, author of *Endless Energy*, tells you how*

Breathing is something that you may take for granted, yet many of us in the Western world are not breathing properly. This might sound strange – but it is true. Stress and poor posture can lead to bad habits such as shallow breathing, or you may be generally breathing too fast. Learning to breathe properly can have a dramatic effect on your health and fitness – and can certainly help you get the best out of any workout routine. This is because breathing correctly encourages a better exchange of gases in your body, so that oxygen uptake is more efficient. This in turn gives you more energy and stamina. So, how exactly should you breathe – and what effects will it have on your body?

The breath of life

When you inhale, you absorb oxygen, which is essential for all the systems in your body to work properly. Oxygen penetrates your lung tissues, is then dissolved into your blood, pumped by your heart through tiny capillaries, then taken to every cell to give you energy to burn your food. As you exhale, you breathe out the waste gases, which include carbon dioxide. Most people think that you need more oxygen for energy. What you actually need is a balance of oxygen and carbon dioxide.

If you breathe too rapidly, you breathe off too much carbon dioxide, which will make your system too alkaline. A certain level of carbon dioxide is necessary for your cells to maintain the correct level of acidity. When at rest, or relaxing, many people have the

sensation that they are not getting enough oxygen. The response to this may be to yawn, or to breathe faster.

However, this means that carbon dioxide is breathed off too quickly, making the oxygen delivery to the body less efficient. To improve oxygen delivery when relaxing, you need to slow down your breathing.

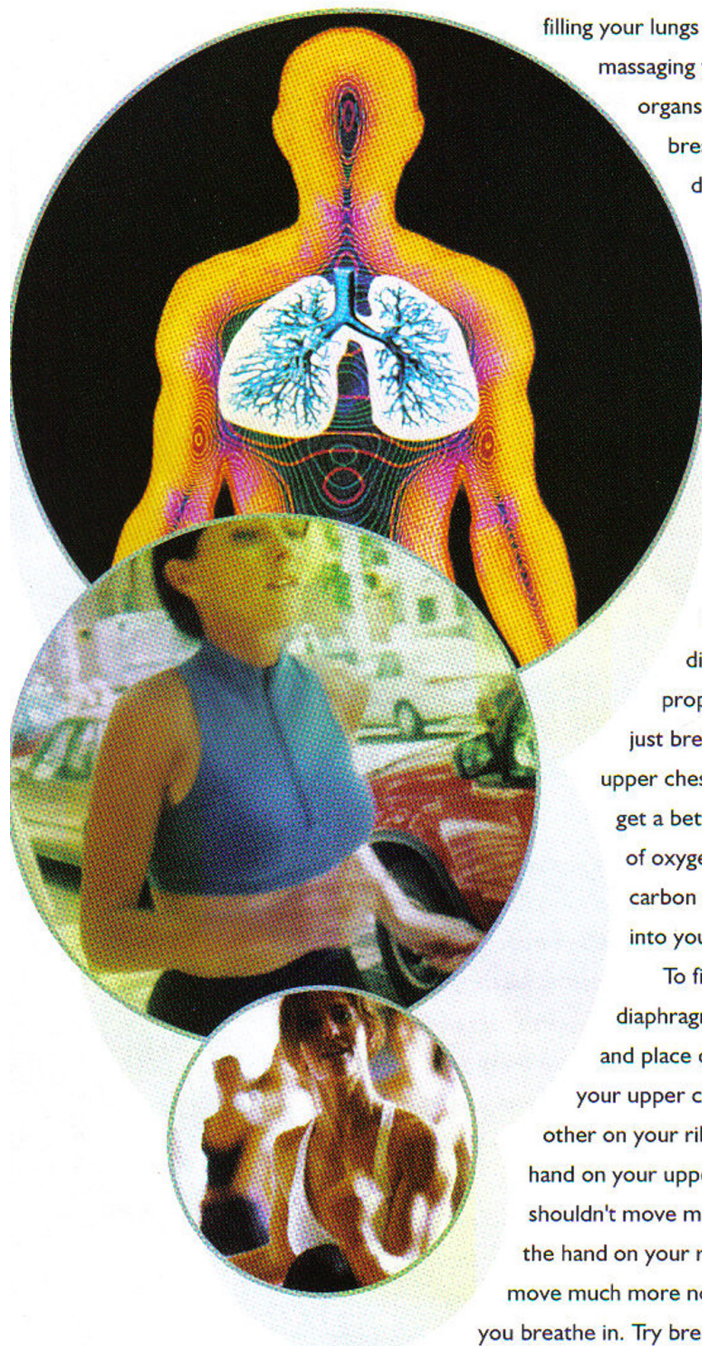
Depending on the situation, your autonomic nervous system will change your breathing rate. This is largely driven by your unconscious. For example, you may notice that if you are concentrating, your breathing will slow down or even stop for a few seconds.

Conversely, constant stress will trigger what is known as the "fight and flight" mechanism, designed to help you flee from dangerous situations. You will breathe very rapidly, from your upper chest area, which is fine if you are exerting yourself. However, if you are not doing any physical activity and you are still breathing like this, this is bad news. If you breathe off too much carbon dioxide because you are breathing too rapidly (hyperventilating), this can eventually lead to health problems, including panic attacks, insomnia, numbness in your hands, muscle twitching, aches and pains, wanting to yawn frequently, dizziness, faintness and fatigue. You need to ensure that you return to normal, slow breathing after the stress has passed.

Using your diaphragm

To breathe correctly, you need to use your diaphragm. This is a large, sheet-type muscle attached to your ribs. The diaphragm works like a piston if used correctly,





Breathe for me
Above: The correct breathing patterns are all important when exercising. Breathe from the diaphragm and breathe in through the nose, exhaling through the mouth. Proper breathing improves not only the quality of health but also the quality of your work out

filling your lungs with air and massaging your internal organs. When you breathe out, your diaphragm raises into a cone shape and when you breathe in, it lowers, to ensure that your lungs are fully inflated. So if you use your diaphragm properly and don't just breathe from your upper chest, you will get a better exchange of oxygen and carbon dioxide into your system.

To find your diaphragm, lie down and place one hand on your upper chest and the other on your rib cage. The hand on your upper chest shouldn't move much, whereas the hand on your rib cage should move much more noticeably when you breathe in. Try breathing in slowly for a count of four, and then out

again for a count of four, keeping the motion smooth and rhythmic. It's important to get used to this action, so that when you are doing any form of exercise, you can make sure that you use your diaphragm when you breathe.

What about oxygen and aerobic exercise?

The Collins English dictionary defines the word aerobic as: "any system of sustained exercise designed to increase the amount of oxygen in the blood and strengthen the heart and lungs".

So, when you do an aerobic or cardiovascular exercise – such as running or cycling – it is an activity that actually raises the level of your heartbeat. As your heart beats faster, it consequently makes

you breathe faster and encourages more oxygen into your blood.

How should I breathe during exercise?

For non-cardiovascular exercises, it is advisable to breathe in through your nose. This is because small hairs in your nostrils filter out any pollution and also help to warm the air before it hits your lungs. Breathing in through your nose also stops you from taking in great gulps of air and hyperventilating. Some people like to then breathe out through the mouth when exercising, to quickly rid the lungs of stale air.

If you are doing a cardiovascular exercise you will automatically start to breathe faster through your mouth as your heart beat rises; this helps to get air into the lungs quicker. Most importantly, because aerobic exercise induces temporary hyperventilation, which increases adrenalin production, make sure that you return to normal, slower breathing as you cool down, using your nose, not your mouth. Otherwise you will be washing out too much carbon dioxide, which may make you feel dizzy or even sick.

Your breathing rate at rest should be around 10-12 in-breaths per minute, no faster. It is always helpful to breathe in when you need extra energy. So, if you are lifting a weight, for example, breathe in to lift, and then breathe out on the extra exertion as you stretch or hold. Then remember to breathe normally (because at this point you are concentrating and it is very easy to forget to breathe), and finally breathe out as you lower.

There is a good scientific reason for breathing in on the exertion. As Bill Feeney, Deputy Director of the Yoga for Health Foundation (01767 627271) and ex-professional footballer, track athlete and squash coach explains: "You breathe in on the exertion because your in-breath stimulates your autonomic nervous system, associated with adrenalin and the 'fight and flight' activity.

"This gives you the energy that you need. You should then breathe out as you relax, as this involves the parasympathetic nervous system, which means that it is a deactivating breath."

Remember, your breathing is largely driven by your unconscious, but you can override it and learn to breathe properly, using the tips given above. Shallow breathing gives you the least benefit, so aim to breathe deeply, using your diaphragm and remember to return to slow breathing, using your nose when you cool down.