

Breathing and anxiety information sheet

In our body there is a physiological system that plays a main role in the body's level of stress. Breathing is a powerful determinant of physical state. While breathing is mostly automatically controlled (just as most of the body's other mechanisms are), it can also be put under voluntary control. Factors such as stress and our general mood can also alter our breathing.

Your breathing directly reflects the amount of tension in your body. When tense, breathing is usually shallow and rapid, and occurs high in the chest. When relaxed, breathing is deeper and from the abdomen. Abdominal breathing engages the diaphragm (a large muscle which separates the chest from the abdomen). When breathing in, the diaphragm contracts and pushes down on the stomach, forcing the stomach out. It is difficult to be tense and do diaphragmatic breathing at the same time.

Breathing physiology and physical symptoms of over-breathing

When we are anxious our breathing rate goes up and a number of changes begin to occur in our body. Our body needs oxygen to survive. When you take in a breath of air, oxygen is taken into the lungs and into the blood. The blood travels around your body and transports the oxygen to your cells. The cells use oxygen to make energy. Carbon-dioxide (CO₂) is produced as a waste product which is released back in to the blood, transported to the lungs and exhaled.

In order for the body to run efficiently, there needs to be a balance between oxygen and CO₂. **This balance is maintained chiefly through the rate and depth of breathing.** Breathing too much will increase levels of oxygen in the blood and decrease levels of CO₂, because the oxygen is not used at the same rate that it is taken in. Breathing too little will decrease levels of oxygen and increase levels of CO₂. The appropriate rate of breathing when calm and relaxed is around 10 - 14 breaths per minute.

When a person is anxious they tend to overbreathe (aka 'hyperventilation') which causes an increased amount of oxygen to come into the body. This upsets the balance between oxygen and CO₂ and causes a drop CO₂. As a result, blood vessels begin to narrow and the amount of blood going to the brain is decreased. Although we are actually taking in more oxygen, we are getting less to certain areas of the brain and body. A reduction of oxygen to the brain may cause dizziness, light-headedness, confusion, breathlessness. It causes an increase in heart rate to pump more blood around, numbness and tingling in our hands or feet, and we may feel cold and clammy.

Overbreathing can also lead people to feel exhausted as rapid breathing for extended periods requires more energy and effort. People who overbreathe tend to breathe from the chest. This results in tightness of the chest and chest pains as the chest muscles are overworked and are smaller than the diaphragm. People who overbreathe also tend to sigh a lot or repeatedly yawn. When this occurs, they are taking in large

quantities of oxygen and getting rid of CO₂ which upsets the balance of oxygen and CO₂ required for relaxed breathing.

When people are overbreathing, they tend to feel as if they are choking or experience a smothering sensation, as though they are not getting enough air. In fact, this is the opposite of what is happening - as the person is actually getting too much oxygen. As with the other symptoms associated with anxiety, these changes are **NOT HARMFUL**. Sometimes people are concerned that if they overbreathe for too long they may eventually collapse or faint. Fainting almost never occurs as a result of overbreathing. When it does, it tends to occur in people who have a biological predisposition making them more likely to faint.

Gaining control over your breathing

Gaining control over your breathing is an important skill to develop. It is essentially a calming technique and as such the technique must be practiced consistently in order for you to benefit fully. The first thing is that it is important to learn diaphragmatic breathing. Once this is mastered, the 'Breath Counting' or 'Letting Go of Tension' exercises are a very good way of achieving a deep state of relaxation quickly. These breathing techniques will enable you to help your body to relax. In order to achieve the ideal breath rate of 10 to 14 breath cycles per second, 'Controlled Breathing' is helpful and can help train people out of the habit of overbreathing.

Breathing awareness

1. Close your eyes. Place your right hand on your abdomen and your left hand on your chest.
2. Without trying to change your breathing, notice how you are breathing. Which hand rises as you inhale – the one on your chest or belly?

If your abdomen expands as you breathe in, you are breathing from your diaphragm. If your belly does not move or moves less than your chest, you are breathing from your chest. In order to shift from chest to abdominal breathing make one or two full exhalations that push air from the bottom of your lungs. In doing so, you will create a vacuum that will draw in a deep breath engaging your diaphragm on your next inhalation.

Breath counting

1. Sit up straight in a comfortable position with your arms and legs uncrossed
2. Breathe in deeply into your abdomen. Pause before you exhale.
3. As you exhale, count "one" to yourself. As you continue to inhale and exhale, count each exhalation.
4. Continue counting your exhalations in sets of ten for five minutes.
5. Notice your breathing gradually slowing, your body relaxing, and your mind calming.

Letting go of tension

1. Sit comfortably in a chair with your feet on the floor
2. Breathe deeply into your abdomen and say to yourself, "Breathe in relaxation". Pause before you exhale.
3. Breathe out from your abdomen and say to yourself, "Breathe out tension". Pause before you inhale.
4. Each inhalation is an opportunity to become aware of tension in your body.
5. Each exhalation is an opportunity to let go of tension.
6. Some find it helpful to visualise the relaxation entering their body and the tension leaving their body.

Breathing for symptom control

As previously stated, we ideally breathe at a rate of 10 to 14 breaths-per-minute. This exercise will help you to learn to breathe at a set rate of breathing and can help train people out of the habit of overbreathing. The instructions below are for **12-breaths-per-minute** but the timing can be altered to suit.

1. Say the word "in" for two seconds.
2. Say the word "out" for two seconds.
3. Pause for one second.
4. Continue to repeat "in" for two seconds and "out" for two seconds, followed by a one-second pause.