

Patient Handout: Control Breathing Exercises

Practice these techniques once or twice a day.

At the end of each breathing time, focus on your body and its tension. By the end of a week, you should see a noticeable difference in your tension, particularly in your neck and shoulders, and in the muscles around your jaw.

After one week's practice, try this activity while sitting or standing.

After one month of practicing, try this activity during a doctor's visit.

Once you've mastered controlled breathing, you can use it while driving to your doctor's office, sitting in the waiting room, or during a medical test or procedure. You can even use it while waiting to hear the results of a test. Use controlled breathing any time you start to feel tension.

Calming Breath (20 seconds):

1. Take a long, slow breath in through your nose, first filling your lower lungs, then your upper lungs.
2. Hold your breath to the count of three.
3. Exhale slowly through pursed lips while you relax the muscles in your face, jaw, shoulders, and stomach.

Calming Counts (1 minute):

1. Take a long, deep breath and exhale it slowly while saying the word *relax* silently.
2. Close your eyes and imagine your body beginning to relax.
3. Let yourself take ten gentle, easy breaths. Count down, starting with ten, with each exhalation. While you are breathing comfortably, notice any tensions, perhaps in your jaw or forehead or stomach. Imagine those tensions loosening.
4. When you reach one, open your eyes again.

Patient Handout: Progressive Muscle Relaxation

There are two steps in the self-administered Progressive Muscle Relaxation procedure: (a) deliberately tensing muscle groups, and (b) releasing the induced tension. This two-step process will be described, and then you will be introduced to the muscle groups and the sequence of training.

After learning the full PMR procedure, you will spend about 10 minutes a day maintaining your proficiency by practicing a shortened form of the procedure. As you practice the short procedure, you will be simultaneously learning cue-controlled relaxation. Ultimately, you will acquire something that will probably become an indispensable part of your daily life, and the initial drudgery of practice will be long-forgotten.

Tension-Relaxation Procedure

Step One: Tension. The process of applying tension to a muscle is essentially the same regardless of which muscle group you are using. First, focus your mind on the muscle group; for example, your right hand. Then inhale and simply squeeze the muscles as hard as you can for about 8 seconds; in the example, this would involve making a tight fist with your hand.

Note. Beginners usually make the mistake of allowing muscles other than the intended group to tense as well; in the example, this would be tensing muscles in your right arm and shoulder, not just in your right hand. With practice you will learn to make very fine discriminations among muscles; for the moment just do the best you can.

It can be very frustrating for a beginner to try to experience a fine degree of muscle separation. Because neglect of the body is an almost universal cultural attitude, it is usually very difficult to begin learning how to take responsibility for body "mechanics." So take heart and realize that learning fine muscle distinction is in itself a major part of the overall PMR learning process. PMR isn't just about tension and relaxation—it is also about muscle discernment.

But also relax a bit and realize that no part of the body is an isolated unit; the muscles of the hand, for example, do have connections in the forearm, so when you tense your hand there will always be some small tension occurring in the forearm. When PMR asks that the hand be tensed without tensing the arm, it is really speaking to the "clumsy" beginner who, out of total body ignorance, will unthinkingly tense everything in the whole arm.

So if you realize that you are simply in the beginner phase—rather than perceive yourself as somehow inept—then you can have the patience to discern the fine muscles with practice.

It's important to really feel the tension. Done properly, the tension procedure will cause the muscles to start to shake, and you will feel some pain.

Note. Be careful not to hurt yourself, as compared to feeling mild pain. Contracting the muscles in your feet and your back, especially, can cause serious problems if not done carefully; i.e., gently but deliberately.

Progressive Muscle Relaxation, stress management

Step Two: Releasing the Tension. This is the best part because it is actually pleasurable. After the 8 seconds, just quickly and suddenly let go. Let all the tightness and pain flow out of the muscles as you simultaneously exhale. In the example, this would be imagining tightness and pain flowing out of your hand through your fingertips as you exhale. Feel the muscles relax and become loose and limp, tension flowing away like water out of a faucet. Focus on and notice the difference between tension and relaxation.

Note. The point here is to really focus on the change that occurs as the tension is let go. Do this very deliberately, because you are trying to learn to make some very subtle distinctions between muscular tension and muscular relaxation.

Stay relaxed for about 15 seconds, and then repeat the tension-relaxation cycle. You'll probably notice more sensations the second time.

Muscle Groups

You will be working with most all the major muscle groups in your body, but for convenience you will make a systematic progression from your feet upwards. Here is the most popular recommended sequence:

- Right foot
- Right lower leg and foot
- Entire right leg
- Left foot
- Left lower leg and foot
- Entire left leg
- Right hand
- Right forearm and hand
- Entire right arm
- Left hand
- Left forearm and hand
- Entire left arm
- Face
- Neck and shoulders
- Abdomen
- Chest

Note. If you are left-handed, you might want to begin with your left foot, and so on.

The Full PMR Schedule

It is recommended that you practice full PMR twice a day for about a week before moving on to the shortened form (below). Of course, the time needed to master the full PMR procedure varies from person to person.

Here are some suggestions for practice:

- Always practice full PMR in a quiet place, alone, with no electronic distractions, not even background music.
- Remove your shoes and wear loose clothing.
- Avoid eating, smoking, or drinking. It's best to practice before meals rather than after, for the sake of your digestive processes.
- Never practice after using any intoxicants.
- Sit in a comfortable chair if possible. You may practice lying down, but this increases the likelihood of falling asleep.
- If you fall asleep, give yourself credit for the work you did up to the point of sleep.
- If you practice in bed at night, plan on falling asleep before you complete your cycle. Therefore, consider a practice session at night, in bed, to be in addition to your basic practice.
- When you finish a session, relax with your eyes closed for a few seconds, and then get up slowly. (Orthostatic hypotension—a sudden drop in blood pressure due to standing up quickly—can cause you to faint.) Some people like to count backwards from 5 to 1, timed to slow, deep breathing, and then say, "Eyes open. Supremely calm. Fully alert."

Shortened form of PMR:

In the shortened form of PMR, you will (a) work with summary groups of muscles rather than individual muscle groups, and (b) begin to use cue-controlled relaxation.

The summary muscle groups. The four summary muscle groups are as follows:

- 1 Lower limbs
- 2 Arms, Shoulders, and Neck
- 3 Face
- 4 Abdomen and Chest

Instead of working with just one specific part of your body at a time, focus on the complete group. In Group 1, for example, focus on both legs and feet all at once.

Cue-controlled relaxation.

Use the same tension-relaxation procedure as full PMR. In addition, focus on your breathing during both tension and relaxation. Inhale slowly as you apply and hold the tension. Then, when you let the tension go and exhale, say a cue word to yourself (below). This will help you to associate the cue word with a state of relaxation, so that eventually the cue word alone will produce a relaxed state.

Many people find that cue-controlled relaxation does not have to depend on only one word; it may actually be more helpful in some situations to use a particular phrase. Some suggestions for cue words/phrases are:

- Relax
- Let it go
- It's OK
- Stay calm
- All things are passing

Summary

Initially, you should practice the shortened form of PMR under the same conditions as you practiced full PMR. After about a week of twice-daily practice you will then have enough proficiency to practice it under other conditions and with distractions.

Diaphragmatic Breathing

You may have noticed that when you are under a lot of stress your breathing changes. Some of the more common changes that people report are:

- Breathing more rapidly than usual.
- Breathing more shallowly than usual.
- Feeling short of breath.

In fact, when you are stressed or anxious, your breathing may change whether or not you are aware of it. These changes can lead to other symptoms of anxiety, such as increased heart rate or a feeling of panic. In fact, it appears that a change in the way people breathe may be one of the primary causes of panic attacks.

Whether or not you experience panic or notice any particular changes in the way you breathe under stress, it can be useful to know something about the way that breathing works and to have an effective exercise designed to slow and deepen your breathing.

The Nature of Breathing

When we think about breathing we most often think about the lungs. But in fact the lungs cannot inflate and deflate on their own. Unlike the heart, the lungs are not made up of muscle tissue. They require the action of other muscles in order to operate. There are two sets of these muscles: one set is responsible for expanding the chest and the other set pulls down on the diaphragm. Neither set is actually attached to the lungs.

Consider the chest muscles first. Most of us have observed that when we breathe in, our chest expands. This seems perfectly natural: air is being brought into our lungs, and as a consequence the chest gets bigger. This appears obvious, but in fact it gets the order backwards. Instead, when we breathe in the muscles of the chest cause the ribcage to expand. This makes a larger space inside the chest cavity. The lungs are, in a sense, pulled open to fill this space. The air already inside the lungs spreads out, making the air pressure inside less than the air pressure in the world outside. As a result, some of the air outside is pulled down into the lungs. So it isn't true that air fills the lungs and as a result the chest gets bigger. Instead, the chest gets bigger and as a result air fills the lungs.

The second set of muscles operates the diaphragm. The diaphragm is a sheet of tissue that divides the inside of your trunk into two cavities: the chest and the abdomen. The chest contains your heart and lungs. The abdomen contains your stomach, intestines, liver, and kidneys (as well as a few other bits and pieces). You can think of the diaphragm as a rubber floor dividing a two story building. This floor can move up and down, depending on the action of the muscles attached to it.

When you breathe in using your diaphragm, the muscles pull the floor downward. This creates a larger cavity in the chest, causing the lungs to expand and pull air down into them. The lowering of the floor also causes the space below, the abdominal cavity, to be squashed a bit. As a result, your stomach protrudes forward. When you breathe out, the abdomen returns to normal.

Both sets of muscles help you to breathe, but at times you may use one set more than the other. When most people are under stress, they tend to rely more on the chest muscles. The diaphragm moves much less. The result is that the breathing speeds up, the upper lungs are filled more than the lower lungs, and usually the overall volume of air taken in is reduced. Some people do not become aware that their breathing has changed. Others may develop a feeling of shortness of breath.

One of the functions of breathing is to expel carbon dioxide. Rapid, shallow breathing can cause carbon dioxide to be expelled faster than it is produced, resulting in lower levels of carbon dioxide in the blood. This makes the blood more alkaline, which in turn contributes to many of the unpleasant physical symptoms of anxiety. These difficulties can usually be reversed if the individual slows and deepens the breathing by increasing the movement of the diaphragm.

The Exercise

This breathing exercise has several goals:

- To help you become more aware of which set of muscles you rely upon the most.
- To increase your sensitivity to changes in your breathing when they occur.
- To provide you with a brief procedure to reestablish diaphragmatic breathing.

In this exercise you will be using both your diaphragm and your chest to breathe. It may help to imagine that you have four lungs instead of two. Imagine that you have two lungs in your stomach, which are controlled by your diaphragm, and two lungs in your chest, controlled by your chest muscles. You will be inflating these two sets of lungs at different times.

To begin, sit in a straight chair or lie on your back on a bed or the floor. Make yourself as comfortable as possible. Loosen any clothing that may be constricting your waist. Place one hand on your upper chest and the other on your abdomen. Close your eyes.

1. Begin by breathing in as deeply as possible using your diaphragm. You will feel your stomach expand like a balloon, while the hand on your chest remains still. You can imagine that you are inflating the lower set of lungs deep in your stomach, while letting your upper lungs rest.
2. Next, breathe in further by expanding your chest. Your stomach should remain inflated and the hand on your chest should be pushed upward and outward. Imagine that you are inflating your upper set of lungs while leaving the lower set full.
3. Next, relax and allow the air to flow out. This should be a completely passive process. You have to tense your muscles in order to breathe in, but to breathe out all you have to do is let go. Do not blow or push the air out. Just let it go. You will feel both your stomach and your chest deflate. Don't worry whether your chest or stomach deflates first. Let them both go.
4. Finally, once you have exhaled, allow yourself to wait for a few seconds before starting the whole process over again. Don't prevent yourself from breathing in if you feel you need to or want to, but do wait until you feel the beginnings of a desire for more air before you breathe in. Normally this pause will last between four and fifteen seconds.
5. Now repeat the whole process. Breathe in with the stomach, in with the chest, relax and breathe out, pause. And again. Continue for several minutes.

Guidelines for Practice

This exercise does not take long to learn, but it does take a lot of practice before you begin to experience the benefits it can provide. For now, practice it at least twice a day for several minutes each time. There is no need to continue for longer than five minutes or so, though longer practice sessions are not harmful.

Do not expect that this exercise will be any help during especially stressful times until you have practiced it regularly for a period of weeks. For the first few weeks it is best to practice at times when you are reasonably calm and relaxed. During this period you are simply trying to build up your experience with the exercise. If you try to use it when you are particularly tense you will most likely find it very frustrating. Avoid this for now.

You can practice almost anytime. Some of the most common times for people to practice are: in bed before getting up or before going to sleep, during commercial breaks

while watching television, during breaks at work, in the car before turning on the ignition, at home just before going out, and just before meals.

For the first few weeks place your hands on your chest and stomach while doing the exercise. This will help you to feel the movement and let you know whether you are doing the exercise properly.

If you find that the exercise makes you feel dizzy or gives you a tingling sensation in your hands or feet, or if you develop other symptoms of anxiety, it may be that you are breathing too quickly. Concentrate on slowing down each of the stages, and let yourself pause longer after the exhalation. You will be getting a lot more air than usual during this exercise, so you can breathe much more slowly than you usually do.

If you find it difficult to breathe using your diaphragm, don't give up! This exercise may be especially helpful for you, though it will take you longer to learn how to do it well. Often those who have the most difficulty benefit the most once they master the technique.

If you experience any lasting problems with the exercise, discuss them with your therapist or trainer.

If you find this difficult...

Some people find it very difficult to start breathing with the diaphragm. They try and try, but their stomachs just stay flat and don't move. If you have this difficulty, do not despair. Continued practice will very likely enable you to overcome the problem. Meanwhile, some body positions may help. Note that if you have any type of back or orthopedic problem you should avoid overextending yourself with these body positions.

- If you are sitting down, clasp your hands behind your back. Slowly and gently raise them upward while holding them against your back. Stop just before it begins to feel uncomfortable. Hold your hands in this position. You should find that you will begin to breathe using your diaphragm automatically.
- If you are sitting down or lying on your back, hold your arms out to the sides so that both of your elbows and both shoulders are along a straight line. This tends to restrict your ability to expand your chest, and your diaphragm will begin to work more readily.
- If you are lying on your stomach, prop your head on your hands with your elbows pointed outward. Once again, you should find that you begin to breathe using the diaphragm. This position has the advantage of giving you feedback: as your diaphragm begins to work you will feel your stomach press down against the bed or floor when you inhale.

After a few weeks of practice

Within a few weeks you may find yourself becoming more conscious of how you breathe. You may, for example, become acutely aware of when you are breathing using only your chest muscles. This is normal. In fact, it is part of the purpose of the exercise. At these times, practice the four-stage breathing exercise briefly in order to get your diaphragm working again. This is virtually guaranteed to feel awkward and unnatural at first, like any new physical skill. If you practice often enough, however, it will become easier.

The goal is not to have you doing four-stage (in, in, out, pause) breathing all the time. Instead, the goal is to make you more aware of chest breathing when you are doing it, and to have you easily and naturally begin using your diaphragm more.

Once you have mastered the basic exercise, it is time to start doing something more challenging. Do not frustrate yourself by moving to these more advanced exercises too quickly. If it takes you two months to master the basic exercise, this will be time well spent. When you are ready, try the following:

- Begin practicing the exercise with your eyes open and your hands at your sides. If you can do this, then you are ready to begin practicing in public. Try it while seated in a mall, a restaurant, a theatre, or a meeting.
- Practice four-stage breathing while standing. You will need to have your hands in position again for the first few attempts. Once you have mastered this, practice walking while doing the exercise. Work toward walking without having your hands in position. If you are a runner, practice the exercise while running. Those who are particularly good at this find that the increased oxygen supply can help their running and reduce cramping.
- Begin practicing the breathing before entering situations that you know will be stressful, such as job interviews, difficult meetings, highway driving, or socializing with people you don't really enjoy. Beware, however: most people find that they need a lot of practice before breathing in these situations helps.
- Finally, and **ONLY** once you have experienced a lot of success with the technique, you might try diaphragmatic breathing when you are already tense. If you decide to try this, start small. Begin with situations that are only mildly stressful. Gradually work your way toward more difficult situations once you have achieved success with milder situations.

Do not expect that the technique will be very helpful with a full-blown anxiety attack. With time, you may find that you become more aware of the initial symptoms of a coming anxiety attack. Then you can use the breathing exercise to reduce or avoid the attack before it becomes severe.