

## PIERCEY NEUROLOGY LLC

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# INTRODUCTION to BIOFEEDBACK

Biofeedback is a complementary medicine technique in which you learn to control physiologic activity, such as your heart rate, using your mind. With the help of a biofeedback specialist, you are connected to electrical sensors that measure and receive information (feedback) about your body (bio). The biofeedback sensors teach you how to make subtle changes in your body, such as relaxing certain muscles, to achieve the results you want, such as reducing pain.

In essence, biofeedback gives you the power to use your thoughts to control your body, often to help with a health condition or physical performance. Biofeedback is often used as a relaxation technique. <http://www.mayoclinic.com/health/biofeedback/MY01072>

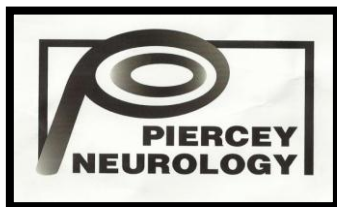
This is an introduction to a sampler of relaxation techniques originally created by David Danskin, Ph.D. at the Counseling Center of Kansas State University. The series is created to help you learn how to voluntarily relax your mind and your body without the use of sensors. Audio files are available for each exercise at their website <http://www.k-state.edu/counseling/student/biofedbk/bfsample.html>

Try them all, one at a time, giving yourself a few moments between each one in order to experience them fully before moving on to try the next. It takes only about 1-2 minutes for each one.

To begin, sit in a chair with your back rather straight. This helps support your body with a minimum of muscle energy as you become more and more relaxed. Also, learning to relax while sitting up makes it easier to transfer the new skill to your daily life. Place your feet flat on the floor. Rest your hands comfortably in your lap. You are now ready.

**1** Take a deep breath. And, as you slowly let it out, let your eyes close and feel yourself begin to relax, already. As you continue to breathe normally, think and feel the word "calm" with each exhalation of your breath. "Calm". Let your eyes remain closed as this will cut down on distractions and help you learn to relax more rapidly.

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**2** This is an active exercise. You will tense some specific muscles while letting your other muscles relax. Focus your attention on the feelings of tension that come from those tensed muscles. Then you will release the tensed muscles all at once and notice how those muscles feel as you allow them to relax more and more. You will learn to become aware of the difference between tension and relaxation and you will learn to just let yourself relax more deeply when you need to, any time, any place.

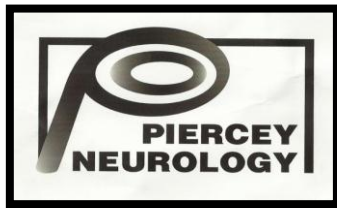
Gently shift your attention to your hand lying in your lap. Clench your fists. While holding them clenched, pull your forearms up against your upper arms as far as you can. Pull your forearms up tight enough so you can feel the large muscle in your upper arms, the bicep, tighten. Hold it. Relax; just let your arms flop down into your lap, and notice the difference between tension and relaxation. With practice, you will learn to just allow yourself to relax more deeply when you need to.

Gently shift your attention to your head and raise your eyebrows. At the same time, imagine moving your scalp down to meet your eyebrows. Don't worry if you can't feel your scalp; many people can't. Release that tension all at once. Just allow your forehead to smooth out.

Once again, raise your eyebrows and feel the muscles that are tense. Now try to let about half of the tension go from your forehead while keeping the remaining tension at a constant, even level. Now, let half of that tension go and hold the remaining tension steady. And release half of that; half of that, so you are maintaining just a tiny level of tension. And let all of that tension go. Learning to relax the forehead can be a key to relaxing much of the rest of your body even though you may not feel that the forehead muscle is tense.

Now, tense all the muscles in your body, but do them in this sequence. Raise the tip of your toes as if to touch your shins and hold that while tensing your thighs, your buttocks. Take a deep breath and hold it. Clench your fists and tighten your upper arms. Grit your teeth and close your eyes tight. Hold it so you're tense all over. Now, let go all at once. Don't ease off, but just let go and feel the tension leaving your body.

<http://www.k-state.edu/counseling/student/biofedbk/sample2.html>



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**3** In the exercises you've been doing, so far, you have been quite active -- actually tensing and releasing muscles. Now, you will learn a more passive form of relaxation. For the next method, mentally repeat the phrases to yourself while just allowing yourself to imagine and feel what that phrase suggests to you. Just continue sitting back with your eyes closed and let your mind and body relax deeply and comfortably.

I feel quite quiet.

My feet feel heavy, heavy and relaxed.

My calves, my knees, thighs and hips feel heavy, relaxed and comfortable.

My solar plexus and the whole central portion of my body feel relaxed and quiet.

My neck, my jaws, and my forehead feel relaxed; they feel comfortable and smooth.

My shoulders, arms, and hands feel heavy, relaxed and comfortable. My arms and hands are heavy and warm.

My hands are warm.

My hands are warm, relaxed and warm.

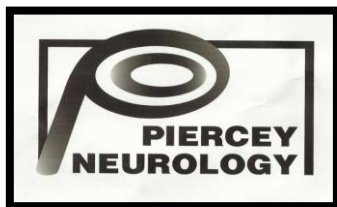
I feel quite quiet.

My mind is quiet.

I withdraw my thoughts from the surroundings and I feel serene and still.

My mind is calm and quiet and I feel an inward quietness.

<http://www.k-state.edu/counseling/student/biofedbk/sample3.html>



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**4** This is a visual exercise. Picture a very calm, peaceful scene -- a scene that might help you relax even more deeply. Below is a scene that has helped many people relax. Try it out. However, if you have some other favorite place, real or imagined, which might help you relax even more, just ignore the scene I'm describing and go to your favorite place. The goal is to find a scene that helps you relax quickly.

Imagine that it is a calm, peaceful summer day. You're out on a meadow. You have a soft, cotton blanket that you spread on the smooth ground and you are lying on that blanket. The sun is off to one side so you can comfortably look up at the blue sky and the clouds in it. If it is too warm, imagine a nice cool breeze that keeps you comfortable. Watch the clouds moving slowly overhead. Lying on your back on the soft meadow. Clouds slowly drifting overhead. Notice the edges of the clouds. The contrast with the blue sky. Feel the calm and peace all around you and within you.

Now, just let that scene slowly drift away -- let it go. Come back to the feelings of pure relaxation. Notice where you feel most relaxed. How your mind might have slowed down. Perhaps you are drifting or feel some other sensation associated with relaxing. As you breathe out, just let those remaining bits of tension drift out of your body.

<http://www.k-state.edu/counseling/student/biofedbk/sample4.html>

**5** Now you're going to learn how to breathe your tensions away. Gently, focus on your feet. Feel all the sensations there -- feet and socks inside your shoes, pressure on the floor and any other sensations.

Now, as you take a deep breath, breathe all those feelings and sensations up into your lungs and then exhale them away. Deep breath in, bringing all those sensations into your lungs and exhale them away.

Now, breathe in all those tensions in your legs and hips -- big breath in and exhale those tensions away. All the tensions into your lungs and exhale them away. Your shoulders, arms, and hands -- go ahead and breathe the tensions in them away. Now, your neck, jaws, eyes, and forehead. Breathe away the tensions in them.

Now with two last deep breaths, you can go back and breathe away any residual tensions.

<http://www.k-state.edu/counseling/student/biofedbk/sample5.html>



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**6** You can maintain an even deeper relaxation by equalized breathing. Breathe in to a count of 4 and out to a count of 4.

Go ahead, now, and breathe in, 2, 3, 4.

And, out, 2, 3, 4.

In, 2, 3, 4.

And, out, 2, 3, 4.

As you do this kind of breathing, perhaps you notice that the air coming into your nostrils at the tip of your nose is slightly cooler than the air you breathe out. So you have cool air in and warm air out. Cool air in, 2, 3, 4. And warm air out, 2, 3, 4. Go ahead and do this type of breathing on your own.

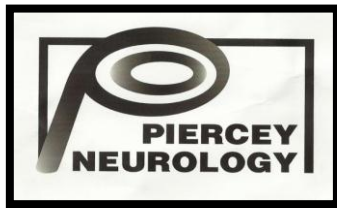
<http://www.k-state.edu/counseling/student/biofedbk/sample6.html>

**7** Warmth and relaxation go together. So, one way to increase feelings of relaxation is to help yourself feel warmer.

Imagine yourself lying on a floor that has a deep, heavily padded rug. It's comfortable just lying there. Now, imagine a warm, thermal blanket rolled up against the bottoms of your feet. Feel the warmth of the blanket against the bottoms of your feet. As you begin to feel that warmth, imagine the blanket beginning to unroll very slowly so that you feel the warmth move across your toes and down across the tops of your feet. And, it continues to unroll very slowly across your ankles and up your shins. Your knees. And the warmth spreads up your thighs. Across your hips. And up across the trunk of your body. Your neck. And the blanket comes to rest against your chin, so you are warm all over.

Just feel that warmth gently helping relax your body more and more.

<http://www.k-state.edu/counseling/student/biofedbk/sample7.html>



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**8** Liquid relaxation. Gently focus your attention on the top of your head. Imagine a liquid pouring onto your head and gently spreading across your scalp. It gently spreads across your forehead and down around your entire head. Now it's spreading across your shoulders and with it you can feel your shoulders relax more and more. Around your hips and down your legs and, finally pours around your feet, so you are covered with liquid.

While remaining relaxed, notice the ways your physical sensations changed as you practiced these techniques. Changes in your emotions. Your thoughts.

When you get relaxed, you need to activate your body slowly. So, become aware of your body on the chair, and your feet on the floor. Slowly take 5 deep breaths, and let them out. As you breathe in, imagine pure energy flowing into your body as you become more alert. Know that you will have energy and be calm and at peace when you finally activate. After your 5 breaths, wiggle your fingers and toes and open your eyes when you are ready.

<http://www.k-state.edu/counseling/student/biofedbk/sample8.html>

Some of the techniques may help you relax more than others. That's normal. Use the techniques that work best for you. Be patient. You've spent a number of years learning how to get tense over the normal and stressful events of your day. Now you are learning a more relaxed way to go through the day -- a way for your body to be more relaxed and your mind more alert. Practice the exercises daily with the goal of being able to achieve deeper feelings of relaxation. You will have developed your own inner skills and can practice wherever and whenever needed.

### **Additional resources about biofeedback and mind body therapy:**

The Association for Applied Psychophysiology & Biofeedback. <http://www.aapb.org/>

*The Relaxation and Stress Reduction Workbook, 5th edition.* By Martha Davis, Elizabeth Robbins Eshelman, and Matthew McKay. Oakland, Calif.: New Harbinger Publications, 2000.

*The Wellness Book: The Comprehensive Guide to Maintaining Health and Treating Stress-Related Illness.* By Herbert Benson and Eileen M. Stuart. New York, N.Y.: Simon and Schuster, 1992.

*Coming to Our Senses: Healing Ourselves and the World Through Mindfulness.* By Jon Kabat-Zinn. New York, N.Y.: Hyperion, 2005.