

Biofeedback

What is biofeedback?

Biofeedback is a process that uses your body's own signals like heart rate and body temperature to bring about healthy changes.

Are there different kinds of biofeedback?

Yes. There are many kinds, but these are some of the most common ones:¹

Biofeedback Type	What It Measures
Thermal	Skin temperature
Electromyography (EMG)	Muscle tension
Neurofeedback ²	Brain wave activity
Heart rate	Heart rate
Blood pressure	Blood pressure
Heartmath ^{®3}	Heart rate variability—how the time gap between each heart beat changes over a short period of time

How does biofeedback work?

Biofeedback can improve health issues that are caused or worsened by stress. Using a two-step process, biofeedback can help you relax and reduce your stress.¹

1. The first step usually involves paying attention to your body signals such as heart rate, blood pressure, or tension in your muscles. You can determine your heart rate by finding your pulse and counting how many times your heart beats within a minute. Average heart rates are usually between 60 and 100 beat per minute. If you're an athlete, it might be lower.⁴ More advanced tools such as sensors or electrodes are required to measure muscle tension or other body or brain functions.
2. The second step involves trying to alter your body signals. Once you know your heart rate or level of muscle tension, you can experiment with improving them and measure your success. Your health care provider may be able to give you suggestions on how to get started. For example, he or she might tell you to focus on taking slower, deeper breathes or imagining a calm and pleasant nature scene. This may help your body and mind relax, which can cause your heart rate to slow down.

Over time, biofeedback may help you decrease your blood pressure, lower muscle tension and pain, and improve other areas of your health. It is a simple idea, but like most things it takes some time and practice.

What if I find biofeedback training too difficult?

At first it may seem difficult or even impossible to imagine that you can affect your own blood pressure, heart rate, or other processes in your body. You have to try it to believe it! Just like

our muscles get bigger and stronger through physical training, so does our ability to control things in our bodies that once seemed out of our reach.

Biofeedback tools can make the learning process fun and enjoyable. Some tools are similar to a video game. In one example, a sensor is placed on a tight, hard to relax muscle while you look at a rose bud on the computer screen. The bud starts out closed but opens if you relax the muscle even a little bit. With practice, you will find that it gets easier to relax the muscle and make the flower bloom. Eventually, you will not need the computer program to relax your muscle.

What can biofeedback help with?

Biofeedback is often used along with other treatments to help with a variety of physical and mental health problems.

Research shows that biofeedback is helpful for the following health issues:⁵

- Urinary incontinence (weak bladder) in females and males
- Anxiety
- Attention deficit hyperactivity disorder (ADHD)
- Headaches in adults
- High blood pressure
- Jaw problems

Research suggests that biofeedback also likely helps with the following issues:

- Alcohol or substance abuse
- Arthritis
- Chronic pain
- Epilepsy (seizures)
- Constipation
- Migraine headaches in children
- Trouble sleeping
- Traumatic brain injury
- Some pelvic pain in women

Biofeedback may help with many other health concerns. Ask your health care team if biofeedback can help you.

Are there any risks?

In general, biofeedback is very safe in the hands of a trained provider.¹ If you have a mental health condition, check with your health care team to see if biofeedback is safe for you.

How can I find a biofeedback provider?

You can also search the following websites for a biofeedback provider in your area:

- The Association for Applied Psychophysiology and Biofeedback (AAPB): www.aapb.org
- The Biofeedback Certification Institute of America (BCIA): www.bcia.org
- International Society for Neurofeedback and Research (ISNR): <https://www.isnr.org/>.

For you to consider:

- What personal or health goals would you like to accomplish in the near future?
- Do you think biofeedback can help you reach your goals?
- Are you interested in meeting with a health care provider to talk about biofeedback? If so, whom will you contact?

The information in this handout is general. **Please work with your health care team to use the information in the best way possible to promote your health and happiness.**

For more information:

ORGANIZATION	RESOURCES	WEBSITE
University of Wisconsin Integrative Health Program	A variety of Integrative Whole Health handouts on your surroundings	https://www.fammed.wisc.edu/integrative/resources/modules/
The Association for Applied Psychophysiology and Biofeedback (AAPB)	More detailed information on biofeedback	www.aapb.org
International Society for Neurofeedback and Research (ISNR)	More detailed information on neurobiofeedback	https://www.isnr.org/
University of Maryland website	More detailed information on biofeedback	http://umm.edu/health/medical/altmed/treatment/biofeedback
HeartMath® Website	More detailed information on HeartMath®	https://www.heartmath.com/

This handout was adapted for the University of Wisconsin Integrative Health Program from the original written for the Veterans Health Administration (VHA) by Alexandra Ilkevitch MD, Honorary Fellow, Integrative Health Program, University of Wisconsin Department of Family Medicine and Community Health. It is based in part on a tool for clinicians, "Biofeedback," written by Shilagh A. Mirgain, PhD and Janice Singles, PsyD. The handout was reviewed and edited by Veterans and VHA subject matter experts.



References

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