

What is Biofeedback?

Biofeedback is a technique where you are connected to electrical sensors that help you receive information about your body. This feedback helps you make subtle changes in your body, such as relaxing certain muscles, to achieve the results you want, such as reducing pain. Biofeedback gives you the ability to practice new ways to control your body, often to improve a health condition or physical performance.

Types of Biofeedback

A therapist could use a variety of biofeedback methods depending on your health problems and goals. Biofeedback types include:

- **Brain waves.** This type uses scalp sensors to monitor your brain waves using an electroencephalograph (EEG) Also may be referred to as Neurofeedback. More research is needed to consider this a treatment for a brain injury but this approach shows promise as a treatment for some symptoms.
- **Breathing.** During respiratory biofeedback, bands are placed around your abdomen and chest to monitor your breathing patterns and respiration rate.
- **Heart rate.** This type uses finger or earlobe sensors with a device used to detect blood volume changes (photoplethysmograph). Or sensors placed on your chest, lower torso or wrists use an electrocardiograph (ECG) to measure your heart rate and how your heart rate varies.
- **Muscle contraction.** This type involves placing sensors over your skeletal muscles with an electromyograph (EMG) to monitor the electrical activity that causes muscle contraction.
- **Sweat gland activity.** Sensors attached around your fingers or on your palm or wrist with an electrodermograph (EDG) measure the activity of your sweat glands and the amount of perspiration on your skin, alerting you to anxiety.
- **Temperature.** Sensors attached to your fingers or feet measure blood flow to your skin. Because your temperature often drops when you're under stress, a low reading can prompt you to begin relaxation techniques.

Biofeedback Devices

You can receive biofeedback training in physical therapy clinics, medical centers and hospitals. A growing number of biofeedback devices and programs also are being marketed for home use, including:

- **Interactive computer programs or mobile devices.** Some types of biofeedback devices measure physiological changes in your body, such as your heart rate activity and skin changes, by using one or more sensors attached to your fingers or your ear. The sensors plug into your computer. Using computer graphics and prompts, the devices may then help you master stress by helping you to pace your breathing, relax your muscles and think positive self-statements about your ability to cope. Studies show that these types of devices might be effective in improving responses during stress and inducing feelings of calm and well-being.

Another type of biofeedback therapy involves wearing a headband that monitors your brain activity while you meditate. It uses sounds to let you know when your mind is calm and when it is active to help you learn to control your stress response. The information from each session can be stored on your computer or mobile device so that you can track your progress over time.

- **Wearable devices.** One type involves wearing a sensor on your waist that monitors your breathing and tracks your breathing patterns using a downloadable app. The app can alert you if you are having prolonged tension, and it offers guided breathing activities to help restore your calm.

The Food and Drug Administration (FDA) has approved a biofeedback device, Resperate, for reducing stress and lowering blood pressure. Resperate is a portable electronic device that promotes slow, deep breathing. However, the FDA does not regulate many biofeedback devices marketed for home use.

Before trying biofeedback therapy at home, discuss the types of devices with your care team to find the best fit. Be aware that some products might be falsely marketed as biofeedback devices, and that not all biofeedback practitioners are legitimate.

Why it's Done

Biofeedback, sometimes called biofeedback training, is used to help manage many physical and mental health issues, including:

- Anxiety or stress
- Asthma

- Attention-deficit/hyperactivity disorder (ADHD)
- Chemotherapy side effects
- Chronic pain
- Constipation
- Fecal incontinence
- Fibromyalgia
- Headache
- High blood pressure
- Irritable bowel syndrome
- Raynaud's disease
- Ringing in the ears (tinnitus)
- Stroke
- Temporomandibular joint disorder (TMJ)
- Urinary incontinence

Biofeedback appeals to people for a variety of reasons:

- It's noninvasive.
- It might reduce or eliminate the need for medications.
- It might enhance the benefits of medications.
- It might help women who can't take medication during pregnancy.
- It helps people feel more in control of their health.

Risks

Biofeedback is generally safe, but it might not be appropriate for everyone. **Biofeedback devices might not work properly on people with certain medical conditions, such as heart rhythm problems or certain skin conditions. Be sure to discuss it with your doctor first.**

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