



# BIOFEEDBACK

## What is Biofeedback?

Biofeedback is a learning process that helps us develop skills in controlling various body functions such as muscle tension, blood flow and heart rate. These skills are useful in reducing the painful results of stress such as headaches, anxiety, insomnia, etc.

Biofeedback training uses instruments that are very sensitive and can let you know when you are getting tense or relaxed even before you actually feel it. Eventually the changes can be detected and regulated without the use of biofeedback equipment at all.

Chances are you have used biofeedback yourself. You've used it if you have ever taken your temperature or stepped on a scale. The thermometer tells you whether you're running a fever, the scale whether you've gained weight. Both devices "feed back" information about your body's condition. Armed with this information, you can take steps you've learned to improve the condition.

Biofeedback is often aimed at changing habitual reactions to stress that can cause pain or disease. Many clinicians believe that some of their patients and clients have forgotten how to relax. Feedback of physical responses such as skin temperature and muscle tension provides information to help patients recognize a relaxed state. The feedback signal may also act as a kind of reward for reducing tension. It's like a piano teacher whose frown turns to a smile when a young musician finally plays a tune properly.

## Physiological Measurements in Biofeedback

Biofeedback instruments are highly sensitive electronic devices that monitor physiological processes. Signals from the body are amplified by the instrument and converted into usable information.

Biofeedback instruments may have meters, lights, computer displays, or tones that present the information to the trainee. Most of the current devices use computers that allow various ways to present the feedback.

## Examples of Some Widely Used Measurements:

### Temperature Biofeedback

Blood flow or temperature biofeedback is a primary tool for general relaxation training. The temperature feedback instrument shows when blood flow is increasing by showing an increase in finger temperature. Because blood flow in the hands responds to stress and relaxation the client learns to relax by watching the rise and the fall of temperature. The client becomes aware of internal feelings associated with relaxation and will learn to voluntarily produce this state.

## Electromyography

Another commonly used biofeedback instrument, the electromyography (EMG) measures muscle tension monitored with sensors placed on the skin over appropriate muscles. EMG feedback is used for general relaxation training and is the primary tool for the treatment of tension headaches, pain reduction, and muscle spasms.

## The Electrodermal Response

The Electrodermal Response (EDR) or Galvanic Skin Response (GSR) feedback devices measure sweat gland activity of the fingertips or palm a response that is highly sensitive to emotions or thoughts. GSR feedback is used for general relaxation training and to help the client identify significant stressors and to reduce their impact through desensitization training.

## Electroencephalograph

A fourth biofeedback instrument, the Electroencephalograph (EEG) records information about brainwave activity monitored from sensors placed on the scalp. Changes in brainwaves reflect changes in processes of attention and in state of arousal from sleep to alert wakefulness. This type of training has been used for general relaxation and mind quieting, as well as for gaining attention control.

## Heart Rate Variability

Our most popular type of biofeedback. This instrument (HRV) measures the inter-beat intervals of the heart. When those intervals are closely tied to respiration/breathing, people usually feel calmer and more centered. This training is often used for anxiety and stress reduction, test anxiety and other performance anxieties.

## **What to Do**

University of Idaho students may receive stress management and biofeedback services through the Student Counseling Center. An initial appointment consists of a 50-minute session for evaluation and assessment. If stress management or biofeedback training is seen as appropriate, a number of different options are discussed.

These may include:

- ◆ Participating in a stress management group
- ◆ Individual, one-to-one biofeedback training
- ◆ Self-guided work with reading and/or relaxation tapes

In both the group and one-to-one training a number of self-management techniques are taught such as:

- ◆ Abdominal breathing
- ◆ Progressive relaxation
- ◆ Imagery
- ◆ Symptom charting
- ◆ Cognitive techniques

In addition, time is spent assessing sources of stress and reviewing the effectiveness of various techniques. To strengthen relaxation skills, home practice is also encouraged.

For more information or to schedule an appointment, call the Counseling & Testing Center (Mary E. Forney Hall, Rm. 306, 1210 Blake Ave.) at 208-885-6716. Website: [www.uidaho.edu/ctc](http://www.uidaho.edu/ctc)

All appointments are confidential.