PROCEDURE

Biofeedback

Biofeedback uses sensors and guided practice to help you control certain body responses.

PURPOSE
Improve control of selected body functions

PROCEDURE TYPE
Therapeutic; bedside sensor monitoring with guided practice

WHERE IT IS DONE
Outpatient clinic or rehabilitation centre

ANAESTHESIA
None

HOW LONG IT TAKES
Usually 30 to 60 minutes

PREPARATION
Usually none; follow facility instructions about medicines and clothing

RECOVERY
Immediate; driving and usual activities are generally allowed

MAIN RISKS
Temporary discomfort, frustration, or skin irritation

RESULTS
Skill changes noticed during sessions or after repeated practice

Overview

Biofeedback is a form of training that helps you become more aware of body functions that usually happen automatically. These may include muscle tension, breathing, heart rate, skin temperature, sweating, or brain-wave activity.

Sensors measure one or more of these functions. A screen, sound, or light then gives you immediate feedback. You practise changing the measured response using methods such as slower breathing, muscle relaxation, movement, or focused attention.

For example, a screen may show that a pelvic floor muscle is tightening when you are trying to relax it. You can then adjust what you are doing and see the effect in real time.

Common types include:

Biofeedback sensors usually record activity rather than send electricity into your body. It is not

hypnosis, and you remain awake and in control throughout the session.

- Muscle biofeedback , which measures muscle tightening using electromyography, or EMG
- Pelvic floor biofeedback , which helps retrain muscles involved in bowel or bladder control
- Thermal biofeedback , which measures skin temperature
- Heart-rate or breathing biofeedback , which tracks changes during paced breathing
- Neurofeedback , which uses an electroencephalogram, or EEG, to measure brain-wave activity

Why the procedure is performed

Biofeedback may be offered when learning to control a body response could improve symptoms or function. It is usually one part of a wider treatment plan rather than a stand-alone cure.

It is commonly used in pelvic floor rehabilitation. This may include difficulty coordinating the muscles needed for a bowel movement, loss of bowel control, or some urinary problems. The training can show whether you are tightening, relaxing, or coordinating the relevant muscles correctly.

Biofeedback may also be used as part of care for:

The research evidence is stronger for some uses than for others. Different forms of biofeedback are not interchangeable. Ask what type is being proposed, what outcome it is intended to improve, and how progress will be measured.

- Tension-type headaches or migraine
- Long-term pain
- Stress-related muscle tension
- Anxiety or difficulty relaxing
- Teeth grinding or jaw-muscle tension
- Rehabilitation after some injuries
- Selected attention, sleep, or neurological concerns

Who should and should not have it

Biofeedback may be suitable if your symptoms involve a body response that can be measured

and retrained. It also requires active participation. You will usually need to practise the techniques between appointments.

It may be especially useful when you find it hard to identify which muscles you are using. The visual or sound signal can make an otherwise hidden body response easier to understand.

Biofeedback is not a replacement for assessing unexplained, severe, or changing symptoms. A medical evaluation may be needed before training begins.

The session may be delayed or changed if you have:

Tell the team if you have an implanted electrical device. Most biofeedback equipment only records signals, but the specific device and sensor system should be checked.

Physical, communication, or learning needs do not automatically rule out biofeedback. The display, instructions, positioning, or pace may often be adapted.

- Broken, irritated, or infected skin where adhesive sensors would be placed
- Severe pain that prevents safe participation
- An active pelvic or anorectal infection when an internal sensor is planned
- Recent surgery affecting the area being assessed
- Difficulty understanding or responding to the feedback without suitable support

How to prepare

The treating facility's own instructions take priority because preparation differs by the type of biofeedback.

Most sessions do not require fasting or changes to regular medicines. Do not stop a prescribed medicine unless the clinician responsible for it has told you to do so.

Wear loose, comfortable clothing. For muscle biofeedback, you may need to uncover the area where sensors will be attached. Avoid applying heavy skin creams or oils over that area unless your facility says they are acceptable.

Pelvic floor sessions may have specific instructions about eating, using the toilet, or completing a bowel diary. Ask beforehand whether an internal rectal or vaginal sensor is planned.

Bring information about your symptoms, triggers, and current treatments. A headache, bowel, bladder, pain, or stress diary may help set a starting point.

What happens during the procedure

The practitioner will explain what is being measured and where the sensors will go. You can ask to stop at any time.

Sensors may be attached to your skin with adhesive pads or bands. Depending on the treatment, they may be placed on the forehead, fingers, chest, abdomen, back, or over a muscle.

Pelvic floor biofeedback may use surface sensors near the anus or genitals. Some sessions use a small sensor in the rectum or vagina. Biofeedback for bowel coordination may also involve a thin pressure-measuring catheter in the rectum. The practitioner should explain this and obtain your consent before placement.

The equipment turns the measurement into a graph, number, sound, or animation. You will then practise a task, such as:

You can watch how the signal changes and adjust your technique. The practitioner may repeat the exercise and give you a home practice plan.

A session often lasts 30 to 60 minutes. Several sessions may be needed because the aim is to learn a skill you can use without the equipment.

- Relaxing or tightening a particular muscle
- Coordinating abdominal and pelvic floor muscles
- Breathing at a slow, steady pace
- Using imagery or focused attention
- Changing posture or movement

Recovery and what to expect afterward

Biofeedback should not cause significant pain. Adhesive sensors may pull slightly when removed. Internal pelvic sensors can cause pressure or mild, brief discomfort.

You can usually eat normally after the appointment. Biofeedback does not normally affect digestion unless your facility has given separate instructions for pelvic floor testing or treatment.

Most people can return to usual activity immediately. You may be asked to practise breathing, relaxation, or muscle exercises at home.

Because biofeedback does not usually involve sedation, you can normally drive yourself home. If another procedure or sedating medicine is being used at the same visit, follow the facility's

driving instructions.

You can generally return to work or school the same day. Some people prefer a short break after an emotionally demanding relaxation or pain-management session.

Risks and possible complications

Biofeedback is generally low risk. Possible problems include temporary skin irritation from adhesive sensors, discomfort from an internal sensor, tiredness, or frustration while learning the technique.

Focusing closely on breathing, heart rate, pain, or anxiety can sometimes make you feel more aware of uncomfortable sensations. Tell the practitioner if the exercises make you dizzy, distressed, or unwell. The technique can usually be paused or adjusted.

Incorrect pelvic floor practice may reinforce unwanted muscle tightening. For this reason, the feedback should be interpreted by someone trained in the problem being treated.

Biofeedback may delay effective care if it is used instead of appropriate medical assessment or treatment. Continue prescribed treatment unless your healthcare team agrees to change it.

Results and follow up

You will see the measured response during the session, but meaningful improvement often takes repeated practice. Progress may be judged by both the sensor readings and changes in daily symptoms or function.

Your practitioner may review whether you can use the skill without watching the screen. For pelvic floor treatment, this may include improved muscle coordination rather than simply producing a stronger contraction.

Keep any requested symptom or practice diary. At routine follow-up, discuss what has improved, what remains difficult, and whether the treatment goal is still appropriate.

If there is little benefit after the planned course, the next step may be a different biofeedback method, another form of rehabilitation, further assessment, or another treatment.

Alternatives

Alternatives depend on why biofeedback was offered.

Home relaxation or breathing exercises without sensors are easier to access and may cost

less. However, you do not receive an objective signal showing whether your body response is changing.

Physical therapy without biofeedback can teach movement, strengthening, relaxation, and pacing. It avoids equipment but may provide less precise information about muscles that are difficult to feel, particularly the pelvic floor.

Medicines may help headaches, pain, anxiety, constipation, or bladder symptoms. They can be easier to use but may cause side effects and do not necessarily teach a lasting self-management skill.

Psychological therapies , including cognitive behavioural therapy, address thoughts, emotions, and behaviours linked with symptoms. They may be more suitable when these factors are the main concern, but they do not provide the same real-time physical measurements.

For bowel or bladder problems, alternatives may include dietary changes, toilet-position training, laxatives, bladder training, other pelvic floor therapy, medicines, injections, or surgery. The trade-offs range from slower or less targeted improvement to medication side effects or the greater risks and recovery involved with invasive treatment.

Choosing no treatment for now may be reasonable in some situations, but symptoms may continue. Ask what is likely to happen without biofeedback and whether delaying it would affect other options.

When to call your healthcare team

Contact the team during routine hours if you develop persistent skin irritation, increasing pain, dizziness during practice, or difficulty completing the exercises. Also contact them if an internal sensor causes ongoing discomfort or unexpected bleeding.

Arrange routine follow-up if your symptoms are not improving, are getting worse, or the treatment is affecting your emotional wellbeing. The plan may need to be reviewed.

Biofeedback itself is not expected to cause a medical emergency. Call emergency services for severe chest pain, major trouble breathing, fainting, stroke-like symptoms, heavy bleeding, or another sudden serious symptom rather than waiting for the biofeedback clinic to respond.

Common questions

Will I be asleep?

No. Biofeedback does not normally require anaesthesia or sedation. You need to be awake so

you can respond to the feedback and practise the skill.

Can I drive home?

Usually, yes. Biofeedback alone does not normally affect driving. Different restrictions may apply if you receive sedation or have another procedure at the same appointment.

How painful is it?

Skin sensors should not be painful. You may notice pulling when adhesive pads are removed. An internal pelvic sensor may cause pressure or mild discomfort, but you can ask to pause or stop.

When will I know if it worked?

You can see changes in the measured signal during a session. Improvement in headaches, pain, bowel or bladder control, or stress-related symptoms may take several sessions and regular home practice.

How many sessions will I need?

A course often includes several appointments, but the number is based on the condition, the type of feedback, your progress, and how confidently you can use the skill without equipment.

Do the sensors put electricity into my body?

Most biofeedback sensors only measure signals produced by your body. They do not deliver an electrical treatment. Ask the facility to explain the exact equipment being used.

Sources

- National Center for Complementary and Integrative Health. Relaxation Techniques: What You Need to Know . US National Institutes of Health.
- US Department of Veterans Affairs, Whole Health Library. Biofeedback .
- Association for Applied Psychophysiology and Biofeedback. About Biofeedback .
- Frank DL, Khorshid L, Kiffer JF, Moravec CS, McKee MG. "Biofeedback in Medicine: Who, When, Why and How?" Mental Health in Family Medicine . 2010;7(2):85-91.
- Rao SSC, Benninga MA, Bharucha AE, Chiarioni G, Di Lorenzo C, Whitehead WE. "ANMS-ESNM Position Paper and Consensus Guidelines on Biofeedback Therapy for Anorectal Disorders." Neurogastroenterology & Motility . 2015;27(5):594-609.
- National Institute of Diabetes and Digestive and Kidney Diseases. Treatment for Constipation . US National Institutes of Health.