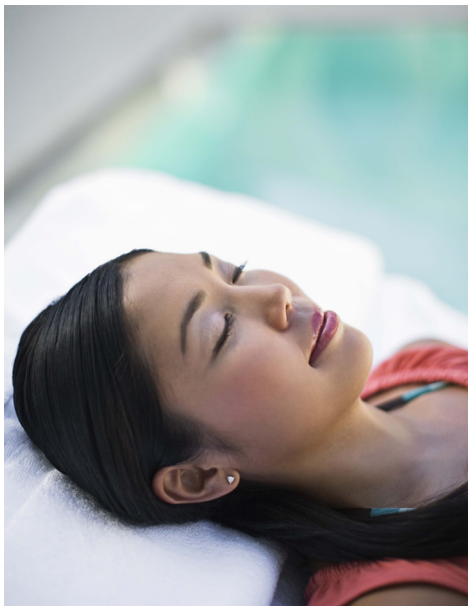
backgrounder

Relaxation Techniques for Health: An Introduction



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Relaxation techniques include a number of practices such as progressive relaxation, guided imagery, biofeedback, self-hypnosis, and deep breathing exercises. The goal is similar in all: to consciously produce the body's natural relaxation response, characterized by slower breathing, lower blood pressure, and a feeling of calm and well-being.

Relaxation techniques (also called relaxation response techniques) may be used by some to release tension and to counteract the ill effects of stress. Relaxation techniques are also used to induce sleep, reduce pain, and calm emotions. This fact sheet provides a general overview of relaxation techniques and suggests sources for additional information.

Key Points

- Relaxation techniques are used for a variety of health-related purposes, such as counteracting the effects of stress on the body.
- Most relaxation techniques can be self-taught and self-administered.
- Relaxation techniques are generally safe, but there is limited evidence of usefulness for specific health conditions. Research is under way to find out more about relaxation and health outcomes.
- Do not use relaxation techniques as a replacement for conventional care or to postpone seeing a doctor about a medical problem.
- Tell your health care providers about any complementary and alternative practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care.

About Relaxation Techniques

Relaxation is more than a state of mind; it physically changes the way your body functions. When your body is relaxed breathing slows, blood pressure and oxygen consumption decrease, and some people report an increased sense of well-being. This is called the "relaxation response." Being able to produce the relaxation response

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using relaxation techniques may counteract the effects of long-term stress, which may contribute to or worsen a range of health problems including depression, digestive disorders, headaches, high blood pressure, and insomnia.

Relaxation techniques often combine breathing and focused attention to calm the mind and the body. Most methods require only brief instruction from a book or experienced practitioner before they can be done without assistance. These techniques may be most effective when practiced regularly and combined with good nutrition, regular exercise, and a strong social support system.

The relaxation response techniques covered in this fact sheet include:

- **Autogenic training.** When using this method, you focus on the physical sensation of your own breathing or heartbeat and picture your body as warm, heavy, and/or relaxed.
- **Biofeedback.** Biofeedback-assisted relaxation uses electronic devices to teach you how to consciously produce the relaxation response. Biofeedback is sometimes used to relieve conditions that are caused or worsened by stress.
- **Deep breathing or breathing exercises.** To relax using this method, you consciously slow your breathing and focus on taking regular and deep breaths.
- **Guided imagery.** For this technique, you focus on pleasant images to replace negative or stressful feelings and relax. Guided imagery may be directed by you or a practitioner through storytelling or descriptions designed to suggest mental images (also called visualization).
- **Progressive relaxation** (also called Jacobson's progressive relaxation or progressive muscle relaxation). For this relaxation method, you focus on tightening and relaxing each muscle group. Progressive relaxation is often combined with guided imagery and breathing exercises.
- **Self-Hypnosis.** In self-hypnosis you produce the relaxation response with a phrase or nonverbal cue (called a "suggestion"). Self-hypnosis may be used to relieve pain (tension headaches, labor, or minor surgery) as well as to treat anxiety and irritable bowel syndrome.

Mind and body practices, such as meditation and yoga are also sometimes considered relaxation techniques. You can read more about these practices in the National Center for Complementary and Alternative Medicine's (NCCAM) fact sheets *Meditation: An Introduction* at nccam.nih.gov/health/meditation/overview.htm and *Yoga for Health: An Introduction* at nccam.nih.gov/health/yoga/introduction.htm.

Use of Relaxation Techniques for Health in the United States

People may use relaxation techniques as part of a comprehensive plan to treat, prevent, or reduce symptoms of a variety of conditions including stress, high blood pressure, chronic pain, insomnia, depression, labor pain, headache, cardiovascular disease, anxiety, chemotherapy side effects, and others.

According to the 2007 National Health Interview Survey, which included a comprehensive survey of complementary and alternative medicine (CAM) use by Americans, 12.7 percent of American adults used deep-breathing exercises, 2.9 percent used progressive relaxation, and

2.2 percent used guided imagery for health purposes. Most of those people reported using a book to learn the techniques rather than seeing a practitioner.

How Relaxation Techniques May Work

To understand how consciously producing the relaxation response may affect your health, it is helpful to understand how your body responds to the opposite of relaxation—stress.

When you're under stress, your body releases hormones that produce the "fight-or-flight response:" Heart rate and breathing rate go up and blood vessels narrow (restricting the flow of blood). This response allows energy to flow to parts of your body that need to take action, for example the muscles and the heart. However useful this response may be in the short term, there is evidence that when your body remains in a stress state for a long time, emotional or physical damage can occur. Long-term or chronic stress (lasting months or years) may reduce your body's ability to fight off illness and lead to or worsen certain health conditions. Chronic stress may lead to high blood pressure, headaches, stomach ache, and other symptoms. Stress may worsen certain conditions, such as asthma. Stress also has been linked to depression, anxiety, and other mental illnesses.

In contrast to the stress response, the relaxation response slows the heart rate, lowers blood pressure, and decreases oxygen consumption and levels of stress hormones. Because relaxation is the opposite of stress, the theory is that voluntarily creating the relaxation response through regular use of relaxation techniques could counteract the negative effects of stress.

Status of Research on Relaxation Techniques

In the past 30 years, there has been considerable interest in the relaxation response and how inducing this state may benefit health. Research has focused primarily on illness and conditions in which stress may play a role either as the cause of the condition or as a factor that can make the condition worse.

Currently, there is some evidence that relaxation techniques may be an effective part of an overall treatment plan for some disorders, including:

- **Anxiety.** Studies have suggested that relaxation may assist in the treatment of phobias or panic disorder. Relaxation techniques have also been used to relieve anxiety for people in stressful situations, such as when undergoing a medical procedure.
- **Depression.** In 2008, a major review of the evidence for relaxation in the treatment of depression found that relaxation techniques were more effective than no treatment for depression, but not as effective as cognitive-behavioral therapy.
- **Headache.** There is some evidence that biofeedback and other relaxation techniques may be helpful for relieving tension or migraine headaches. In some cases, these mind and body techniques were more effective than medications for reducing the frequency, intensity, and severity of headaches.
- **Pain.** Some studies have shown that relaxation techniques may help reduce abdominal and surgery pain.

The results of research on relaxation to promote overall health or well-being or to treat other health conditions have been mixed or unclear. These conditions include:

- **High blood pressure.** A 2008 review of evidence for relaxation in the treatment of high blood pressure found some evidence that progressive muscle relaxation lowered blood pressure a small amount. However, the review found no evidence that this effect was enough to reduce the risk of heart disease, stroke, or other health issues due to high blood pressure. In a recent randomized controlled trial, 8 weeks of relaxation response/stress management was shown to reduce systolic blood pressure in hypertensive older adults, and some patients were able to reduce hypertension medication without an increase in blood pressure.
- **Asthma.** Several reviews of the literature have suggested that relaxation techniques, including guided imagery, may temporarily help improve lung function and quality of life and relieve anxiety in people with asthma. A more recent randomized clinical trial of asthma found that relaxation techniques may help improve immune function. More studies are needed to confirm this finding.
- **Nausea.** Relaxation techniques may help relieve nausea caused by chemotherapy.
- **Fibromyalgia.** Although some preliminary studies report that using relaxation or guided imagery techniques may sometimes improve pain and reduce fatigue from fibromyalgia, more research is needed.
- **Irritable bowel syndrome.** Some studies have indicated that relaxation techniques may prevent or relieve symptoms of irritable bowel syndrome (IBS) in some participants. One review of the research found some evidence that self-hypnosis may be useful in the treatment of IBS.
- **Heart disease and heart symptoms.** Researchers have looked at relaxation techniques for the treatment of angina and the prevention of heart disease. When a cardiac rehabilitation program was combined with relaxation response training in a clinic, participants experienced significant reductions in blood pressure, decreases in lipid levels, and increases in psychological functioning when compared to participants' status before the program. Although studies have shown that relaxation techniques combined with other lifestyle changes and standard medical care may reduce the risk of recurrent heart attack, more study is needed.
- **Insomnia.** There is some evidence that relaxation techniques can help in treating chronic insomnia.

Researchers have found some evidence on the effectiveness of relaxation techniques for:

- **Temporomandibular disorder** (pain and loss of motion in the jaw joints). A review of the literature found that relaxation techniques and biofeedback were more effective than placebo in decreasing pain and increasing jaw function.
- **Ringing in the ears.** Use of relaxation exercises may help patients cope with the condition.
- **Smoking cessation.** Relaxation exercises may help reduce the desire to smoke.
- **Overactive bladder.** Bladder re-training combined with relaxation and other exercises may help control urinary urgency.

- **Nightmares.** Relaxation exercises may be effective in treating nightmares of unknown cause and those associated with posttraumatic stress disorder.
- **Hot flashes.** Relaxation exercises involving slow, controlled deep breathing may help relieve hot flashes associated with menopause.

Researchers have found no significant change in outcomes from relaxation techniques used during cardiac catheterization. However, patients experienced less distress prior to the procedure. Future research may investigate whether this has any long-term effect on outlook and recovery.

Many of the studies of relaxation therapy and health have followed a small number of patients for weeks or months. Longer studies involving more participants may reveal more about the cumulative effects of using relaxation techniques regularly.

NCCAM-Funded Research

NCCAM-supported studies have been investigating:

- Progressive relaxation and massage therapy for relieving low-back pain
- The effect of the relaxation response on blood pressure, stress hormones, and psychological well-being in older adults with hypertension
- Acupuncture and relaxation training for relieving stomach symptoms for people taking HIV medications.

Side Effects and Risks

- Relaxation techniques are generally considered safe for healthy people. There have been rare reports that certain relaxation techniques might cause or worsen symptoms in people with epilepsy or certain psychiatric conditions, or with a history of abuse or trauma. People with heart disease should talk to their doctor before doing progressive muscle relaxation.
- Relaxation techniques are often used as part of a treatment plan and not as the sole treatment for potentially serious health conditions.

Training, Licensing, and Certification

There is no formal credential or license required for practicing or teaching most relaxation techniques. However, the techniques may be used or taught by licensed professionals, including physicians, recreational therapists, and psychologists.

If You Are Thinking About Using Relaxation Techniques for Health

- Do not use relaxation techniques as a replacement for conventional care or to postpone seeing a doctor about a medical problem.
- Ask about the training and experience of the practitioner or instructor you are considering for any CAM practice.

- Look for published research studies on relaxation for the health condition in which you are interested. Remember that some claims for using relaxation therapies may exceed the available scientific evidence.
- Tell all your health care providers about any complementary and alternative practices you use. Give them a full picture of what you do to manage your health. This will help ensure coordinated and safe care. For tips about talking with your health care providers about CAM, see NCCAM's Time to Talk campaign at nccam.nih.gov/timetotalk/.

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For More Information

NCCAM Clearinghouse

The NCCAM Clearinghouse provides information on CAM and NCCAM, including publications and searches of Federal databases of scientific and medical literature. The Clearinghouse does not provide medical advice, treatment recommendations, or referrals to practitioners.

Toll-free in the U.S.: 1-888-644-6226
TTY (for deaf and hard-of-hearing callers): 1-866-464-3615
Web site: nccam.nih.gov
E-mail: info@nccam.nih.gov

PubMed®

A service of the National Library of Medicine, PubMed contains publication information and (in most cases) brief summaries of articles from scientific and medical journals.

Web site: www.ncbi.nlm.nih.gov/sites/entrez

ClinicalTrials.gov

ClinicalTrials.gov is a database of information on federally and privately supported clinical trials (research studies in people) for a wide range of diseases and conditions. It is sponsored by the National Institutes of Health and the U.S. Food and Drug Administration.

Web site: www.clinicaltrials.gov

The Cochrane Database of Systematic Reviews

The Cochrane Database of Systematic Reviews is a collection of evidence-based reviews produced by the Cochrane Library, an international nonprofit organization. The reviews summarize the results of clinical trials on health care interventions. Summaries are free; full-text reviews are by subscription only.

Web site: www.thecochranelibrary.com/view/0/index.html

Research Portfolio Online Reporting Tools Expenditures & Results (RePORTER)

RePORTER is a database of information on federally funded scientific and medical research projects being conducted at research institutions.

Web site: projectreporter.nih.gov

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