

How to Relax, and Why You Should

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This paper is about the *relaxation response*: your natural ability to release bodily tensions and cultivate a state of calm. You will also learn about the health and emotional benefits of practicing relaxation (meditation) techniques on a regular basis.

The Fight-or-Flight Response

In order to fully understand the relaxation response, it is useful to first understand the basics of the relaxation response's physiological opposite: the *fight-or-flight response*. Take a few moments to think of something that you dread. Spend some time imagining what it would be like to have it happening right now. Do you notice anything in the way you feel? Do you notice any muscles tensing up slightly? Is your jaw clenched a bit? How about your hands? Is your breathing any different? Is your abdomen tight? Do you notice a feeling of anxiety? Where do you sense it? If you haven't yet noticed any changes, then close your eyes and visualize your dreaded event and pay attention to your body, then open your eyes and read on.

If you noticed an increase in muscle tension, a change in breathing, a feeling of anxiety, or a stronger sense of your heart beating, then you were experiencing your body's *stress response*, otherwise known as the *fight-or-flight response*. This fight or flight response is hardwired into the nervous system of every type of animal on earth. It is a tremendously *useful* feature of our physiology because it prepares us to take action in challenging situations.

The fight or flight response is triggered whenever you perceive a threat or a challenge. Once you decide that you are in a threatening situation (or you are imagining a threatening possibility) your brain sends out signals via the *sympathetic*

nervous system (SNS) to various glands which hormones that spark your, in turn, release a cascade of body into action.

The *catecholamines* are important hormones in this stress response, with the two main players being *epinephrine* (alias *adrenaline*) and *norepinephrine* (*noradrenaline*). Epinephrine is mediated by the SNS nerve endings residing in your adrenal glands (sitting on top of your kidneys), and norepinephrine is secreted by the SNS nerve endings at various other points in your body.

Together, these potent hormones immediately signal your muscles to tighten and poise for action. Your blood pressure rises, your breathing quickens, and your heart speeds up to provide more oxygen to your muscles. The blood flow to the muscles in your arms and legs can increase as much as 300-400%, while the blood flow to your skin decreases. Sweating increases. Your senses become acute, and your mind becomes focused on the threat, screening out irrelevant stimuli. Bodily functions that are unnecessary for immediate survival, such as digestion and sexuality, are temporarily shut down. Your sensitivity to pain is temporarily reduced. Your blood thickens a bit to assist in coagulation, just in case you should start to bleed. Even your pupils dilate to allow more light into the eyes. All of this (and much more) begins within seconds of the perceived threat or challenge.

Within a few minutes your thyroid gland releases extra thyroid hormone which accelerates your metabolism. Also within a few minutes your pituitary gland releases a hormone called *glucagon* and your adrenal glands release a group of hormones called *glucocorticoids*, the chief one being *cortisol*. These hormones, together with epinephrine, stimulate a process called *gluconeogenesis*, (the creation of new glucose), causing blood sugar levels to go up. You are now equipped with extra fuel for an extended struggle or retreat. If the perceived threat continues, so do these processes.

If you think about it, you can only conclude that the fight-or-flight response is a terrific feature. Your body is automatically doing everything you would

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want it to do if you were in a challenging or dangerous situation. But if it's so great, then why should we be at all concerned about it's activation? Well, one handicap of being human is that this fight-or-flight response can be triggered simply by thought! Other animals (we believe) do not sit around imagining threatening situations, but we do. Extreme anxiety and panic are, essentially, fight-or-flight reactions. If we spend too much time imagining grim possibilities, we end up repeatedly activating this stress response, which then leads to mind-body strain and an array of emotional and physical health problems. These will be discussed later.

The physiologic details of the fight-or-flight response are many and complex. What has been presented here are just the basics. If you would like to learn more about the stress response read *Why Zebras Don't Get Ulcers* by Robert Sapolski (1998) or *Mind/Body Health* by Hafen, Karren, Frandsen, and Smith (1996).

Now that you have been reading about the fight-or-flight response, your body might have tensed up some. This is a good time to try a relaxation technique.

Technique 1: Quiet Mind, Relaxed Body

Review these instructions first so that you will know what to do, then close your eyes and try it for several minutes. Don't worry about doing it perfectly.

1. Get into a comfortable sitting position. Sit with erect posture, but not artificially stiff.

2. Breathing through your nose, take a couple of *slow, deep* breaths. (It is fine to breath through your mouth if you are stuffed up). As you exhale allow your shoulders and chest to relax and drop.

3. Now return to normal breathing. Simply observe the process of breathing. Bring your attention to the actual *sensations* of breathing; the cool of the air flowing in, the warmth of it leaving, the air passing through your windpipe, and the feeling of your lungs expanding and contracting.

4. As you feel each inhalation, say silently to yourself: "*quiet mind.*" As you feel each exhalation, say silently: "*relaxed body.*" By saying "*quiet mind*" you are reminding yourself to let go of worries, plans, analyses and other thoughts. By saying "*relaxed body*" you are reminding yourself to let go of muscle tensions.

5. Gently allow thoughts to disperse as a drop of ink would in a glass of water. It is not necessary to forcibly shove thoughts out of your mind. If your mind wanders (and, by the way, this is perfectly normal), return to your breath and saying "*quiet mind, relaxed body.*"

The Relaxation Response

What did you notice? Did you feel your muscles loosening and letting go? Did your breathing change? Did your mind quiet down at all? If so, then you were experiencing your body's natural *relaxation response*, which is regulated by the *parasympathetic nervous system*. The term *relaxation response* was introduced by cardiologist Herbert Benson (1975). He defined the relaxation response as "an opposite, involuntary response that causes a reduction in the activity of the sympathetic nervous system" (p. 73). Edmund Jacobson, a pioneer of relaxation training in America some forty years before Benson's work, came to the same conclusion: "To be relaxed is the direct physiological opposite of being excited or disturbed" (1934, p. ix). "It is physically impossible to be nervous in any part of your body, if in that part you are completely relaxed" (p. 85).

The technique that you tried is a form of *meditation*. It is believed that meditation techniques have been used for at least 3,000 years, and most of the world's cultures and religions have developed meditative practices. We can think of the array of meditation techniques as fitting into two general classifications: 1) The techniques that trigger the relaxation response and focus the mind, and 2) the more esoteric, "deep" meditation approaches aimed at cultivating spiritual enlightenment. For the purposes of this paper, the focus is on the techniques used to trigger the relaxation

response and focus the mind. The term "meditation" is used generically to indicate those techniques. For an overview of the world's meditative traditions, including an array of religious approaches, see Daniel Goleman's (1988) book *The Meditative Mind*.

Here are some of the physiological changes that are associated with the relaxation response: As you become deeply relaxed (usually about ten minutes into meditation), your heart rate slows, pace of breathing slows, less oxygen is required and consumed, muscle tension decreases, and your brain's alpha waves increase (alpha waves are indicative of a restful waking state). Blood pressure typically remains constant for those with normal blood pressure, but those with high blood pressure often demonstrate reductions. Blood lactate levels fall dramatically. Lactate is a substance produced by your skeletal muscles during physical activity. Lactate levels typically fall when we are calm, and so it is considered one indicator of how deeply a person is at rest.

Is meditation the same as ordinary rest? Apparently not. While meditating, blood lactate levels decline more than three times faster than when simply resting (See Benson 1975, 1993; Jevning, Wallace, and Beidebach, 1992; Walsh, 1980). Meditators also demonstrate greater alertness and a more substantial drop in oxygen consumption when compared to those who are merely resting (Dillbeck and Orme-Johnson, 1987).

Wallace and Benson (1972) report that the meditative state is physiologically different than sleep. For example, the drop in oxygen consumption during sleep is very gradual (over a period of hours) and is not nearly as deep as the reduction during meditation. During sleep the carbon dioxide concentration in your blood increases, while that is not the case during meditation. The brain wave differences between sleep and the meditative state are very different.

Technique 2: Ten-to-One Countdown

Here is a technique suggested by Joan Borysenko in her book *Minding the*

Body, Mending the Mind (1987). This is a good technique to use when you haven't much time. Read the directions first and then try it out.

1. Sit in a comfortable position and with proper posture. Close your eyes.

2. Inhale deeply and then let it go with a *sigh of relief*. Many find it comforting to silently say "*there*" on the sigh of relief.

3. Breathing normally, inhale and pay attention to the air filling your lungs. To promote proper breathing, think of the air as filling your belly (and not your rib cage).

4. Exhale and silently say to yourself "ten" and let go of tension in your body as if it was a wave starting at your head and moving down your body, and then out through the soles of your feet.

5. On the next breath, repeat steps three and four but instead silently say "nine" to yourself. With each breath continue in this manner while you count down to "one."

6. Open your eyes and take another deep breath and let it go with a *sigh of relief*.

Although this relaxation technique works great in a pinch, you can also extend this into a longer meditation simply by repeating the countdown as many times as you wish. You will learn about more meditation techniques later on, but for now let's review the potential hazards of too much stress.

The Hazards of Sustained Stress

Take a few deep breaths and relax some more because just reading this section might make you tense. Sustained stress seems to have the potential to adversely influence nearly every aspect of human physiology. Hafen et al. (1996) report that there are over 1400 known physiochemical responses to excessive stress. This is currently a hot area of research, with volumes being written about the influence of stress on illness. For more information see Goleman and Gurin(1993),

Hafen et al. (1996), Sapolski (1998), or Suinn (2001).

The American Academy of Family Physicians estimates that 60% of the problems brought to physicians are somehow related to stress (Hafen et al., 1996). The list of stress-related illnesses includes (but is not limited to) mental/emotional problems, insomnia, hormonal imbalances, sexual problems, sleep disorders, impaired immunity, high blood pressure and other cardiovascular diseases, gastrointestinal problems, skin irritations and rashes, and even elevated cholesterol. In some instances an ailment can be the direct result of sustained stress response, while in other instances the stress response acts as an aggravating factor.

Anxiety and depressive disorders are particularly influenced by the experience of sustained stress, which can either cause or exacerbate these conditions. Individuals with high levels of anxiety or depression also have a higher risk of developing some of the other ailments described in this section.

Sapolski (1998) reports that people who are highly anxious or have panic attacks have high levels of catecholamines (epinephrine and norepinephrine) in their blood. You will recall that these are two important initiators of the fight-or-flight response. On the other hand, people who are depressed do not usually have these high levels of catecholamines, but have higher than normal levels of glucocorticoids (the hormones released to prepare for extended struggle). Both groups are evidencing signs of the body's stress response, but differently. Sapolski reasons this is because the anxious individual is chronically overreacting and poised for action, as if around each new corner there is yet another danger. In contrast, the depressed person seems to have given up on readying for new threats, yet remains chronically stressed-out by the experience of continuous struggle.

Glucocorticoid overload can actually cause the axons and dendrites (long appendages) of your nerve cells to shrivel. According to Sapolski (1998), this is especially problematic in a region of your brain called the hippocampus, which is

important in memory. Nerve cells with shriveled axons and dendrites don't communicate with one another as well. Memory and concentration problems are the results. Fortunately, these damaged nerve cells can eventually revitalize.

The muscle tension that comes with sustained sympathetic nervous system activation frequently causes pain in the neck and shoulders, headaches, and back pain. High levels of catecholamines can produce tics and tremors. Clenched teeth can produce TMJ pain and headaches in the temples and front of the face. Migraine headaches can be triggered or made worse by stress, and those who suffer from chronic pain usually experience intensification of the pain when stressed. (see Hafen et al., 1996)

Sustained stress can lead to an overproduction of thyroid hormone that can produce insomnia, agitation, heat intolerance, weight loss, and ultimately exhaustion (see Hafen et al., 1996). It can also disrupt sexuality. The production of the male hormone testosterone and the female hormones estrogen and progesterone are all inhibited. Stress can lead to loss of sex drive, inhibited orgasm, impotence, miscarriage, and irregular menstrual cycles. Although high stress is not itself a cause of infertility, it can contribute to the problem if there is already a fertility complication. (see Hafen et al., 1996; Sapolski, 1998; Seibel and McCarthy, 1993)

Diabetes symptoms can become aggravated under sustained stress because of several interacting processes. For example, under high stress there is an overproduction of glucose, but less insulin is produced by the pancreas. Although high stress cannot itself cause diabetes, it appears to be a risk factor for those who are already predisposed to it (see Hafen et al., 1996; Sapolski, 1998; Surwit, 1993).

One of the more interesting influences of stress is what it can do to our immune systems. As early as 1936, researcher and physician Hans Selye documented that if animals are subject to sustained stress, they develop a number of alterations in their physiology, including shrunken lymph nodes (important in the production of lymphocytes: white blood

cells that combat infections). Selye hypothesized that as a result of sustained stress, animals (including humans) fall into a physiologic exhaustion phase marked by a radical drop in immunity (See Hafen et al., 1996). Today we know this to be absolutely true. In fact, wound healing and recovery from surgery has been found to be much slower for people who are overly stressed and anxious (Kiecolt-Glaser et al., 1998).

Once the immune system is impaired, a person is more vulnerable to infection. For example, Cohen, Tyrrell, and Smith (1991) studied nearly 400 adults and their response to a respiratory virus. First, the participants completed a questionnaire to assess their stress levels. Then nasal drops that contained a cold virus were dropped into their nostrils. (Do you wonder who would volunteer for such an experiment?) They waited to see who got sick. Although many people came down with colds, the more stressed-out individuals were far more likely to get colds.

The relationship between the stress response and the immune system is extremely complex. Here are some of the simplified basics: When under sustained stress, glucocorticoid levels elevate which, in turn, impair some of the operations of the thymus, lymph nodes, and spleen -- organs that produce white blood cells that fight off infections. There are many different types of infection-fighting cells and they have names like *T cell*, *helper T cell*, *B cell*, *natural killer cell* (no joke), and *large granular lymphocyte*. There is also an important chemical called *gamma interferon* that helps natural killer cells to proliferate. All of these infection fighters are impaired by sustained stress. (For more detailed explanations see Hafen et al, 1996; Kiecolt-Glaser and Glaser, 1993; and Sapolski, 1998).

Sapolski (1998) states that the glucocorticoids released when under stress can actually kill lymphocytes by causing the lymphocyte to produce a "suicide protein" that "chops the DNA in the lymphocyte into thousands of tiny pieces" (p.133).

Sustained stress also influences immunity through other indirect paths.

Our health habits often change when we experience a lot of stress. Those who smoke, smoke more. Those who drink a fair amount of alcohol, drink even more. Exercise is often the first thing to leave the schedule, as is adequate sleep, and one's nutritional needs might be neglected. Any of these lapses have the potential of lowering immunity.

The cardiovascular system can also be affected by stress. As we know, a boost in blood pressure and heart rate are two components of the flight-or-fight response. As an acute response, that is normally not a problem. Repeated and chronic fight-or-flight arousal, however, can contribute to damage within the cardiovascular system. Blood pressure can remain elevated, and this extra pressure can, in turn, damage blood vessels. The body's way of trying to remedy the damage is to mobilize fats (including cholesterol) to coat the vessel, but that has the adverse consequence of narrowing the vessel and forming plaque. Blood platelets are also mobilized to the damaged vessel, but that can result in a blood clot. If the clot obstructs blood to the heart, the result is a heart attack. If the vessels to the brain are obstructed, the result is a stroke. (see Hafen et al., 1996; Suinn, 2001; Williams, 1993)

In the past we thought of the go-go-go *type A* work addict as prone to heart disease. Although that is still true to some extent, we now know that *chronic hostility* is the biggest personality risk factor. Again, it appears that the fight-or-flight hormones are the culprits, especially epinephrine and cortisol. When highly hostile individuals are provoked, their bodies over-react and put out much more epinephrine and cortisol than people who do not rate high in hostility. As a result, the hostile individual often has higher blood pressure, faster heart rate and -- because epinephrine mobilizes fats into the blood-- higher cholesterol (see Williams, 1993).

Last, but certainly not least, are the gastrointestinal problems associated with excessive stress. A major function of the fight-or-flight response is to reduce the activity of the GI system. Less saliva is produced. Dry mouth is often indicative of anxiety. The muscles of the esophagus can become tense and irregular in their

pattern of contracting, leading to the “lump in the throat” phenomenon. Nausea, lowered appetite, stomach pains, and “heart burn” are all potential results of sustained SNS arousal.

Not long ago we assumed that peptic ulcers were directly caused by stress. We know now that many ulcers are caused by bacterial infections, and can be treated with antibiotics. Stress continues to play a role, however. With sustained stress the GI tract becomes sluggish, and there is an overproduction of hydrochloric acid. The stomach lining can become engorged with blood. All of these factors can contribute to the formation of ulcers in the stomach and duodenum (upper part of the small intestine).

A 13 year follow-up study of 4,500 people demonstrated the relationship between *perceived* stress and ulcers. The participants who rated themselves as stressed were 1.8 times as likely to develop ulcers than those who did not rate themselves as stressed. Those who rated themselves as extremely stressed were 2.9 times as likely to develop ulcers than those who said they were not stressed at all (Anda et al., 1992).

Sustained SNS activation also disrupts the activity of the small and large intestines, with diarrhea or constipation being the result. Irritable bowel syndrome is aggravated by excessive stress. For more information on the relationship between stress and the GI system, read Whitehead (1993), Hafen et al. (1996), and Sapolski (1998).

Now that you have read about the ills of sustained stress, it is possible that you have tensed up some. Take just a minute to close your eyes and focus your mental attention on the muscles in your abdomen, hands, shoulders, neck and jaw. Did you notice anything? It isn't unusual for tension levels to gradually rise without our noticing; the result being end-of-the-day headaches, gut pains, irritability or anxiety.

Technique 3: The Complete Breath

This is another technique from Borysenko's book *Minding the Body, Mending the Mind* (1987). It is another

“quickie” that can help you to calm down when you are acutely anxious or irritable.

1. Sit with good posture and close your eyes.

2. Think of a pear-shaped balloon inside of you, with the wide bottom located in your belly, and the narrower neck of the balloon in your chest.

3. While inhaling, slowly fill the balloon from the bottom to the top.

4. While exhaling, slowly empty the balloon from the top to the bottom.

5. Do this ten times.

The Benefits of Meditation

Meditation has temporary “state” benefits and longer lasting “trait” benefits. The state effects are the physiological and psychological responses that occur while you are in the act of meditating. The trait effects are the benefits that persist beyond the time period that you are meditating, and are the fruits of regular (e.g. daily) practice. The trait effects are not permanent, however, and require regular practice to keep them going. Once regular practice stops, much of the cumulated trait benefits dwindle away as the days and weeks pass.

The main *state* effects were discussed earlier. You will recall that while meditating your heart rate slows, muscle tension declines, alpha brain waves increase, breathing rate slows, blood lactate levels drop, and you require and consume less oxygen. Individuals with high blood pressure often show a drop in blood pressure. With time and practice these state effects typically become accentuated. You may notice that you feel the relaxation response coming over you sooner. You may find that your muscles “give in” or “let go” more completely.

Although we should not expect to achieve the same responses of meditating Tibetan Buddhist monks (many of whom have been meditating several times each day since their teens!), we can learn about the extremes of the relaxation response by studying them. Herbert Benson did just

that. He reports that while the average American meditator might show an oxygen requirement decrease of 16-17% while meditating, the Tibetan monks that he studied reduced their oxygen consumption by up to 64% (see Benson, 1984, 1993). Likewise, Farrow and Hebert (1988) reported 40% drops in oxygen consumption for individuals who practiced transcendental meditation (TM) on a long-term basis. The point is not that we ought to aim for these extremes, but that consistent practice does indeed deepen the response.

And now for the *trait* effects of consistent meditation practice. Perhaps the most noticeable early result of regular meditation is an increase in overall ease and a reduction in anxiety. Consistent meditation is associated with more frequent positive moods, lower general anxiety levels, less panic, quicker recovery from fight-or-flight arousal, improved self-esteem, less depression, improved social adjustment, reduced alcohol consumption, fewer phobias, reduced performance anxiety, less anger and hostility, and better sleep (see Epley, Abrams, and Shear, 1989; Goleman, 1988; Jedrczak, Miller, and Antoniou, 1988; Kabat-Zinn, 1990; Kabat-Zinn, 1993; Kabat-Zinn, Massion, Kristeller, et al., 1992 Klein, Greist, Gurman, et al., 1985; Suinn, 2001; Throll, 1981; Walsh, 1980).

Benson (1993) indicates that those who meditate regularly have been found to be less reactive to injections of noradrenaline, even when not meditating. Individuals who have learned to meditate, and who practice regularly, have proven to have lower levels of stress hormones generally (Sudsuang, et al., 1991; Walsh, 1980), and less physiological reactivity when confronted with stressful, challenging situations, including less blood pressure reactivity (Wenneberg, et al., 1997) and lower levels of fight-or-flight hormones (MacLean, 1994).

The experience of pain is also reduced for many who meditate regularly. Significant reductions in pain ratings have been demonstrated for tension headaches, migraine headaches, and back pain (Turk and Nash, 1993). As a result of relaxation training, rheumatoid arthritis sufferers have been found to significantly reduce

pain ratings *and* inflammation (Achterberg, McGraw, and Lawis, 1981). Kabat-Zinn (1990) found that pain sufferers who learned to meditate were able to reduce their reliance on pain medications, improve body image, and improve moods, while the non-meditators studied showed little or no improvements in these areas.

Meditation has been associated with improvements in a number of medical disorders. As you read about these, please keep in mind that *meditation should not be considered a primary treatment for medical problems, but can be a useful adjunct to several medical treatments*. For example, Whitehead (1993) reports that irritable bowel syndrome sufferers were able to reduce their symptoms more if they meditated and followed their usual medical treatment than if they used medical therapy alone. The same has been found to be true for psoriasis symptoms (Bernhard, Kirsteller, and Kabat-Zinn, 1988). In a study of people with large-airway asthma, those who were taught to meditate had significantly fewer attacks and did not need to use as much asthma medication (Lehrer and Hochron, 1986).

Surwit (1993) reports that type II diabetes (adult onset) patients who learned relaxation techniques showed significant improvements in metabolic control, but only if they were highly anxious individuals. Relaxation does not seem to help much with diabetic symptoms *unless* the person is highly anxious. It is unclear at this point if similar benefits exist for type I diabetes.

Meditation can be beneficial to the cardiovascular system in various ways. In the case of high blood pressure, the results are mixed: Some individuals experience a reduction due to meditation, while others do not. The causes of high blood pressure are many, and just one of the contributors is stress. Meditation is more likely to produce a reduction in blood pressure if stress is contributing to the blood pressure problem, and if the blood pressure problems are mild (see Benson, 1993; Goleman, 1988; Sudsuang, et al., 1991; Patel, et al., 1985; Schneider, et al., 1995). Meditation has also been associated with reductions in angina symptoms, arrhythmias, improved bloodflow to the heart, and reduced

cholesterol (see Goleman, 1988; Patel, et al., 1985). Castillo-Richmond and colleagues (2000) found that meditation actually reduced blockage in carotid arteries (the large blood vessels that supply blood to the brain).

You will recall that one of the hazards of sustained stress is an impairment of the body's immunity. As it turns out, meditation techniques have been found to actually boost the body's immunity. In one study, researchers found that the participants significantly increased the immunoglobulin levels (proteins that boost immunity) in their saliva and blood, following just three weeks of daily relaxation practice (Green, Green, and Santoro, 1988).

In a study of "high stress" college students, two weeks of daily relaxation practice was found to significantly increase their "phagocytic capacity" (phagocytes are cells that can devour bacteria). Their ratings of tension and anxiety dropped, and ratings of coping effectiveness went up (Peavey, Lawlis, and Goven, 1985).

Kiecolt-Glaser, Glaser and their colleagues studied another group of highly stressed people: first-year medical students studying for exams. As expected, under this type of stress several measures of their immunity dropped, but the more a person meditated, the less was the drop in immunity (Kiecolt-Glaser, Glaser, Strain, et al., 1986).

Kiecolt-Glaser and Page et al. (1998) report that individuals who receive relaxation training prior to surgery actually recover earlier, including faster wound healing.

Another study by Kiecolt-Glaser, Glaser, Williger and colleagues (1985) examined the effects of relaxation training on the immune functions of elderly people in a nursing home. They found that after one month of relaxation practice the overall level of reported distress went down, natural killer cell activity had increased significantly, and their immune response to a latent virus had improved. There were two other groups that did not receive relaxation training (socialization group and a control group); they showed no changes. An interesting and important

finding was that one month after the study, most of the people who received the relaxation training no longer practiced it. As one might have expected, their natural killer cell levels had lowered to the pre-study levels, and their ratings of distress increased. This finding is in line with a conclusion by Zakowski, Hall and Baum (1992): They reviewed the research on stress, relaxation and immunity, and determined that *the benefits of relaxation techniques exist only if the individual continues to practice regularly*. Continued practice is also necessary to maintain the mood improvements realized through meditation (Klein, Greist, Gurman, et al., 1985).

Finally, there are also a number of personality characteristics associated with meditators when compared to non-meditators: greater spontaneity, capacity for intimacy, self-acceptance, empathy, and sense of personal control (see Goleman, 1988). Keep in mind, however, that some of these personality variables may also reflect characteristics of people who are drawn to meditation.

More Techniques to Try

After reading about the benefits of the relaxation response, perhaps you'd like to try a few more techniques.

Technique 4: Imagery

Just as the fight-or-flight response can be triggered by imagining grim and frightening scenes, the relaxation response can be triggered by imagining pleasant, comforting scenes. You can use your memory and imagination to create a beautiful scene.

1. Sit with good posture, close your eyes, and take a couple of deep breaths. Allow your chest and shoulders to drop with each exhale.

2. Bring your attention inward by noticing your breathing and other feelings in your body.

3. Decide on a place where you would like to be *in solitude*, and imagine that you are there. Nature scenes are particularly relaxing. Expand on the

scene by imagining all of your senses at work:

a. vision (What is the weather like? What are the colors? Where is the light coming from? Where are the shadows?)

b. hearing (What are the obvious sounds? The subtle ones?)

c. touch (Is there a breeze? Is there something you could examine with your hands?)

d. smell (Is there a main scent? Are there other, more subtle scents?)

e. taste (Is there something that you could sample?)

4. Rest in your scene for as long as you wish. When you find that you are distracted by thoughts (again, this is quite natural), simply return your attention to your breathing and your favorite scene.

Technique 5: Progressive Relaxation

This is a variation of the technique originally described by Edmund Jacobson in his book *You Must Relax* (1934). In addition to triggering the relaxation response, this method helps you to increase your awareness of the difference between tense and relaxed muscles. This can be done laying down, but you should sit if you find yourself drifting into sleep. Read the directions first, then try it. Take your time with this technique, so that it takes about 20 to 30 minutes.

1. Take a few deep breaths, then close your eyes.

2. Slightly tense the muscles in your face. Clench your jaw, tighten the muscles around your eyes, tighten your cheeks, and wrinkle up your forehead. Also, try to tense up the muscles around your scalp. Hold the tension for about 10 seconds.

3. Now relax those muscles. Put all of your attention on the experience of

your eyes, cheeks, forehead, jaw and tongue as they relax. Let your face go completely limp. Lightly massage your face and scalp if you notice residual tension. Notice the difference between the former sensation of tension and the current feeling of relaxation. Spend a few minutes attending to the feeling of relaxation.

4. Slightly tighten your neck and shoulder muscles by lifting your shoulders up toward your ears. Hold this for about ten seconds and notice the tension, then relax completely. You may gently massage your neck and shoulders if they won't relax all the way. Again, notice the difference between tension and relaxation, and spend a few minutes attending to the feeling of relaxation.

5. Now do the same tensing and relaxing with your arms and hands. From this point on do not massage, as this will introduce tension to parts that you've already relaxed.

6. Do the same with your back, chest, and abdominal muscles.

7. Do the same with your buttocks and thighs.

8. Do the same with your calves and feet.

9. Now attentively scan your entire body to see if anything has tensed up. Notice if you are maintaining tension to keep yourself motionless. Relax. Continue to pay close attention to how your body feels. Stay in this state for as long as you wish.

10. Open your eyes and take a deep cleansing breath.

Mantras

A tool of many forms of meditation is a single verbal focus or *mantra*. Mantra is a sanskrit word which means sacred counsel or formula. For the purpose of triggering the relaxation response, the mantra that you choose need not be *sacred*, that is, religiously based -- although it could be if you wish. It can be

a single word or a phrase. It should carry a meaning that is either neutral or soothing to you. If a particular word carries a negative meaning for you it could block the relaxation response, just as worrisome thinking whips up tension.

The mantra is said silently within, usually timed to the breath, but you may say it at whatever pace feels best. It helps you to stay mentally focused while you relax. When you notice your thoughts jumping around (that's right, perfectly normal), you can re-establish your peaceful focus by returning to your breathing and mantra.

Some examples of mantras are "quiet mind - relaxed body" (as in technique 1), "om," "peace," and "present moment - tranquil moment." Benson's (1975) technique uses the word "one" as a mantra. The possibilities are endless. Try a few mantras (one sitting at a time) and when you discover one that works well for you, stay with it.

Technique 6: Mindfulness Meditation

So far we have discussed *concentration meditation* techniques that utilize close attention to the breath, a mantra, or other ways of more narrowly focusing attention. Another meditation method is known as *mindfulness (receptive) meditation*. The aim of this method is to *broaden* the attentional scope and cultivate non-judgmental awareness of the here and now. You assume a witnessing stance in your awareness, not locking onto any one thing, yet attending to everything that comes to you. This means that you notice how your body feels, the sounds and smells around you, and you *observe* your thoughts and feelings. In addition to the relaxing effects, mindfulness meditation is a way of cultivating an open and accepting experience of yourself and reality. Even thoughts and emotions that you might consider strange or troublesome are to be observed and accepted. The trick is to remain in the observer's position and not become judgmental or analytical, not resist selected experiences, nor become attached and carried away by one particular thought or experience.

1. Sit with good posture, and take a couple of deep breaths. Then breath naturally and spend a few moments simply letting your body unwind.

2. You may close your eyes or leave them open.

3. Begin by bringing your attention to your breath. As you did in technique #1, focus your attention on the *feeling* of breathing.

4. Expand your awareness to include your entire body. Gently scan with your awareness each area of your being, noticing the sensations in your toes, back of the knees, abdomen, forehead, and so on.

5. Allow your awareness to spill over into the space that surrounds you. Become aware of sounds, smells, etc.

6. Sit peacefully in the observer's position, simply noticing all that arrives in your awareness. Accept everything without judgment. When thoughts enter your awareness, make note of them just as you would watch a piece of driftwood floating in a river. Stay on the shore, watching.

7. If you find that you have jumped into the river and you are swimming after the driftwood, this means that you have forgotten about your aim of simply being aware. Gently return your attention to your breath, the feeling of your body, and the state of open awareness.

Mindfulness is more than a meditation technique. To live mindfully means to pay attention to each moment, and thus to be in the present, appreciating all that comes into your life. When you eat, taste the food. When you exercise, feel your muscles working. When you drive your car, be aware of the other cars and the flow of traffic. When you go for a walk, notice the sights, sounds, and scents.

For more information on mindfulness see Jon Kabat-Zinn's book *Wherever You Go, There You Are* (1994).

Are There Risks?

Experts in the field agree that, for the vast majority of people, meditation is a very nourishing and safe activity. There are some exceptions, however, for people with certain medical conditions: Sobel and Ornstein (1996) report that relaxation techniques could trigger seizures in people who have sleep-onset seizure disorders or other low-arousal seizure disorders. Sleep episodes can be triggered for those with narcolepsy.

The effects of meditation on individuals with psychotic disorders (e.g. schizophrenia) are uncertain: On the one hand, claims have been made that meditation helps to ease the agitation that often accompanies psychotic disorders. On the other hand, there has been at least one report of meditation-associated psychotic episodes in people with schizophrenia (Walsh and Roche, 1979). That report, however, was of schizophrenic individuals who had been enrolled in an intensive retreat involving several hours of meditation per day, for several days. At least one had stopped taking medications. Given the mixed reports, the most prudent choice is not to meditate if you have been diagnosed as having a psychotic disorder.

Another risk comes from the benefits. Sobel and Ornstein (1996) state that it is important to let your physician know about your meditation practice if you have medical conditions that might improve with meditation, for it is not unheard of to have blood pressure medications, insulin, and other medication dosages adjusted (lowered) if improvements occur. *The risk comes from not continuing your practice after your doctor has made those adjustments.* Remember that the benefits of meditation are maintained only for as long as you continue to practice. If you stop your meditation practice, you may then need your medications adjusted again.

Difficulties

Although not considered a health risk, some people who are new to meditation find it anxiety provoking -- at first. Benson (1998) believes that relaxation-associated anxiety and panic are "extremely uncommon," while Sobel and

Ornstein (1996) state that about 50% of those with an anxiety disorder may become anxious at first. The good news is that most people find that this initial anxiety diminishes and vanishes with consistent practice. There is some research that demonstrates progressive relaxation (technique 5) as less likely to evoke anxiety for some people. (Heide and Berkovec, 1983; Lehrer et al., 1983).

If you are a planner, a doer, a go-getter, then simply sitting and *being* may at first seem like a waste of time or even immoral. You may feel agitated and rushed. Or, you may feel "weird" when at first your body starts to relax. If so, start with brief periods, even just 5 minutes. Then, as you become used to the experience, you can extend your meditation time.

It is often the case that individuals with attention deficit hyperactivity disorder have extra difficulty staying focused in meditation. The same can be true for people with depression and obsessive-compulsive disorder. In all of these cases, proper medication often makes a world of difference. As always, remember that distraction happens to every meditator, and you should always strive to be kind to yourself. Remember that the whole point of this is to find peace.

At times you may notice emotions bubbling up into consciousness. This can be surprising. The feelings might be quite pleasant (and most people don't consider that a problem), or they can be unwanted and upsetting, accompanied by disturbing memories and thoughts. These are temporary experiences and in the vast majority of cases there is absolutely nothing to worry about. If this happens to you, simply observe the emotions and thoughts, do not try to push them away, yet do not allow yourself to become engrossed in them. *Simply keep your attention on your breath and wait for the feelings to gradually dissipate.* If these experiences are frequent or persistent, talk to your therapist or meditation teacher if you have one, and/or take a short vacation from your meditation practice. The chances are good that all will be well again when you resume your practice.

More Practice Tips

The most important part of all of this is regular, consistent practice. That typically means daily practice, but realistically there will be times when that will not be possible or practical. Twice daily is ideal, but once is usually sufficient to produce noticeable changes in well-being. Once every-other day might do the trick for some people. Thirty minutes is a nice amount of time, but if you only have ten or fifteen minutes available some days, that's better than deciding not to do it at all.

Try a number of techniques, and find out how you respond to each. Then select just one or two and stick with it. Too much jumping around from one technique to another can impede progress. There is an old story about a man who was trying to dig a well. He would dig down a few feet, wouldn't find water, and would move over a few yards and start again. His property became riddled with holes and he never found water, even though the water was there -just a few feet deeper.

Once you develop the habit of meditation, you will probably find that you look forward to your meditation time. The peaceful feelings usually deepen with consistent practice. Then, finding the time to do it seems less of an issue.

Resolve to not answer the telephone or in other ways allow yourself to abandon your practice session. If you live with others, kindly let them know that you are not to be interrupted. Joan Borysenko (1987) has a rule in her home: No interrupting of meditation unless blood is involved.

Remember that the point is to remain alert and aware while you relax (unless you are using these techniques to sleep). If you find yourself nodding off, try meditating with your eyes open. Try a stiffer chair or try moving forward to the very front of the chair. Sit erect, not using the chair's back. Or you might try sitting cross-legged on the floor. If so, elevate your hips by sitting on a cushion so that you will be able to keep your spine strait without straining.

Don't worry about your progress or if you are doing it perfectly, as that kind of mental activity pulls you away from being relaxed. And don't worry about all of the thinking that you will notice. Our minds are frequently racing around, and so it is unreasonable to expect a perfectly clear mind. Simply make note of your thoughts, observe them, don't engage with them, don't get upset with yourself, and then gently return to your focus. In discussing this point, Joan Borysenko (1987) quotes St. Francis: "You can't stop the birds from flying back and forth over your head, but you can stop them from nesting in your hair."

Another way to corral a wandering mind is to give it a bit more to do. Try repeating a more complex mantra such as "*relaxed body (inhale) - smiling body (exhale), peaceful mind (inhale) - smiling mind (exhale), loving heart (inhale) - smiling heart (exhale).*"

A trick to help you to stay focused on your mantra is to say it *so quietly* to yourself that it is just barely detectable. Practicing this way will also eventually help you to notice and appreciate a subtle silence within. Also, concentration is usually improved if you can feel that you are saying your mantra from the area of your heart, rather than in your head, mouth, or throat.

You will have days that are clearly advances. It will seem so much easier to stay concentrated and relaxed. There will be other days when you just can't stay focused. Don't worry about that. It's normal and yet another example of the *two steps forward, one step backward* nature of progress. Recognize that the real success is in taking the time to practice.

If you are interested in meditation but not sure if it will be worth your while, challenge yourself to try the following eight-week experiment. For the first four weeks, meditate once or twice each day. At the end of each day, reflect on the quality of the entire day, and record it on a calendar or in a diary. If you had a good day, mark your calendar with a "+". If it was a bad day, use a "-". Use a "0" for a neutral or mixed day. This four-week period is important. The benefits tend to build gradually and are more easily noticed

following a few weeks of practice. Step two is to completely quit meditating for two weeks. Continue your daily record of how you feel. Finally, meditate daily for two more weeks, keeping track of how you feel each day. Then examine all of your data. You will then know if a meditation routine is right for you.

To close, here is a poem by Edward Rowland Sill, found in *The Wonders of Solitude* collection by Dale Salwak (1998).

'Tis not in seeking,
'Tis not in endless striving
Thy quest is found.
Be still and listen.
Be still, and drink the silence
Of all around
Not for the crying
Not for thy loud beseeching
Will peace draw near.
Rest, with palms folded,
Rest with thine eyelids fallen-
Lo, peace is here.

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