

Research on Stress and Meditation

excerpted from *Freedom from Stress*, David Gamow, Glenbridge Publishing

Part I: The High Cost of Stress

Harvard researchers estimate that 60-90% of doctor's visits are caused by stress. Stress is linked to the following illnesses: heart attacks, hypertension, diabetes, asthma, chronic pain, insomnia, allergies, headache, backache, various skin disorders, cancer, accidents, suicide, depression, immune system weakness, decreases in the number and function of white blood cells.

- 1) Stress is more powerful than diet in influencing cholesterol levels. Studies of medical students near exam time and accountants during tax season showed significant increases in cholesterol levels during stressful events, when there was little or no change in diet.
Rosenman, *Homeostasis* 34 (1993)
- 2) During several years of rising unemployment, workers in departments with the most downsizing suffered twice the normal death rate from heart attack and stroke.
Chandola, *British Medical Journal* 332 (January, 2006)
- 3) More than 50% of adults have insomnia a few nights a week or more. 25% suffer from insomnia occurring most nights and lasting a month or longer.
Thakur, Duke University Medical Center (2004)
- 4) Severe stress may be a potent risk factor for stroke even 50 years after the initial trauma. In a study of 556 veterans of WWII, the rate of stroke among those who had been prisoners of war was eight times higher than among those not captured.
Page and Brass, Yale Medical, *Military Medicine* 166 (2001)
- 5) Workplace stress is estimated to cause:
19% of absenteeism
40% of turnover
55% of EAP programs
60% of workplace accidents
30% of short and long-term disability
What Stress Costs, Ravi Tangri, Oxford, (2003)
- 6) Stress appears to significantly increase the ability of pharmaceuticals to pass through the blood-brain barrier, which normally protects the brain from toxins in the bloodstream. Many of today's medicines are developed under the assumption that they cannot cross this barrier.
Hebrew University, *Nature Medicine* 2 (12) (1996)
- 7) Common emotions such as tension, frustration, and sadness trigger frequent heart abnormalities that can lead to permanent heart damage. Study results show a direct relationship between negative emotions, an inadequate flow of blood to the heart, and increased risk of heart attack.
Journal of the American Medical Association 277 (1997)

Part II: Clinical Research on Meditation

Hundreds of studies have been conducted on meditation and its beneficial effects on heart disease, cholesterol, high blood pressure, insomnia, chronic pain, cancer, and immunity. Studies have also shown significant improvements in mental health, memory, concentration, and productivity.

Heart disease

- 1) Meditation lowers blood pressure in people who are normal to moderately hypertensive. This finding has been replicated in more than nineteen studies, some of which have shown systolic reductions among subjects of 25 mmHg or more.
Murphy and Donovan, *The Physical and Psychological Effects of Meditation*, Institute of Noetic Sciences, 1997
 - 2) Stress management appears to be as beneficial as aerobic exercise in preventing major cardiac events. A group receiving standard care turned out to have the most cardiac events, such as heart attacks, open-heart surgery, and angioplasty. The group that studied stress management had fewer problems — equal to that of the aerobics group.
Blumenthal, *American Journal of Cardiology*, 89 (Jan, 2002)
 - 3) Twenty-eight people with high levels of blocked arteries and high risk of heart attack practiced a program of meditation, yoga, a low-fat vegetarian diet, and exercise. A control group received conventional medical care endorsed by the AMA. In one year, most of the experimental group reported that their chest pains had virtually disappeared; in 82% of the patients, arterial clogging had reversed. The control group experienced an increase in chest pain and arterial blockage. (Subsequent studies indicate that stress-reduction may be the most significant factor).
Ornish, *The Lancet* 336 (July, 1990)
 - 4) Meditation significantly increases circulation. Forearm blood flow increased in novice meditators by 30%. Frontal cerebral blood flow increased an average of 65% in experienced meditators, and remained elevated afterwards, with brief increases of up to 100 to 200%.
Murphy and Donovan, *The Physical and Psychological Effects of Meditation*, Institute of Noetic Sciences (1997)
- ### Insomnia
- 5) 75% of long-term insomniacs who have been trained in relaxation, meditation, and simple lifestyle changes can fall asleep within 20 minutes of going to bed.
Jacobs, Harvard, *Say Goodnight To Insomnia* (1999)

Chronic pain

- 6) Those trained in meditation were able to reduce chronic pain by more than 50%. This gain was maintained even 4 years after the initial training.
Kabat-Zinn, *Clinical Journal of Pain* 2 (1986)
- 7) Meditation and relaxation therapies are effective in treating chronic pain, and can markedly ease the pain of low back problems, arthritis, and headaches.
National Institutes of Health (NIH), *JAMA* 276 (4) (1996)

Hospitalization

- 8) In a study of health insurance statistics, meditators showed hospitalization rates 87% less than non-meditators for heart disease, 55% less for benign and malignant tumors, 30% less for infectious diseases, and 50% less for out-patient doctor visits.
Orme-Johnson, *Psychosomatic Medicine* 49 (1987)
- 9) Surgery patients who learned simple relaxation and meditation techniques stayed in the hospital an average of 1.5 days fewer than those in a control group. Results include faster recovery from surgery, fewer complications, and reduced postsurgical pains. Findings were consistent in 191 independent studies.
Devine, University of Wisconsin, School of Nursing, *Patient Education and Counseling* 19 (1992)

Mental health

- 10) A group of inner-city residents suffering from chronic pain, anxiety, depression, diabetes, and hypertension were trained in meditation. They experienced a 50% reduction in overall psychiatric symptoms, a 70% decrease in anxiety, and a 44% reduction in symptoms.
Roth and Creaser, *Nurse Practitioner*, 22 (3) (1997)
- 11) Meditation helped chronically depressed patients to reduce their relapse rate by half.
Journal of Consulting and Clinical Psychology 68 (2000)

Aging

- 12) Those practicing meditation for more than five years were physiologically 12 years younger than their chronological age, measured by reduction of blood pressure, better near-point vision, and auditory discrimination. Short-term meditators were physiologically five years younger than their chronological age.
International Journal of Neuroscience 16 (1982)

Children's health

- 13) Middle school students exposed to relaxation and meditation techniques over a three year period scored higher on work habits, cooperation, attendance and had significantly higher GPA's than non-meditating students.
Benson, *Jnl of Research & Dev. in Education* 33 (3) (2000)

- 14) Forty-eight children who participated in a 6-week meditation program showed significant improvements in behavior, self-esteem, and relationship quality, with an average 35% improvement in ADHD symptoms. Of 31 children taking medication for their ADHD. 11 were able to reduce their medications.
Harrison, *Clinical Child Psychology and Psychiatry* 9 (4) (October, 2004)

Addiction

- 15) Meditative self-awareness can reduce binge overeating. In a study of overweight women, meditation training and awareness practice while eating (slowly savoring the flavor of a piece of cheese, being aware of how much is enough), reduced eating binges from an average of 4 per week to 1.5 per week.
Kristeller and Hallett, *Journal of Health Psychology* 4 (1999)
- 16) Meditation produced a larger reduction in tobacco, alcohol, and illicit drug use than standard substance abuse treatments or prevention programs. Whereas effects of conventional programs normally decrease significantly by three months, effects of meditation on total abstinence from tobacco, alcohol, and illicit drugs ranged from 50% to 89% over 18 to 22 months.
Alexander, *Alcoholism Treatment Quarterly* 11 (1994)

Productivity

- 17) Stress reduction significantly reduces medical errors. Twenty-two hospitals that implemented a stress prevention program experienced a 50% drop in medical errors and a 70% reduction in malpractice claims, compared to a control group of twenty-two hospitals, which showed no change in errors or claims.
Jones, *Journal of Applied Psychology* 73 (4) (1988)
- 18) Tech workers at a small Wisconsin company reported high stress and unhappiness with their jobs. Scans confirmed high levels of right-brain activity.* After eight weeks of meditation practice, activity in the left side of the brains increased significantly. Workers reported feeling happier, with a renewed sense of enthusiasm for life and work. The control group showed no change. At the end of the 8 weeks, both groups received flu shots to test immune responses. The meditators developed more antibodies against the flu virus than the non-meditators. Those with the strongest immune response had the highest levels of left-sided brain activity.

*Brain scans show that meditation shifts activity in the prefrontal cortex from the right hemisphere to the left. People who have a negative disposition tend to be right-prefrontal oriented; left-prefrontals have more enthusiasms, more interests, relax more, and tend to be happier.

Davidson & Kabat-Zinn, *Psychosomatic Medicine* 65 (2003)

Practical Hints for Meditation

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- 1) **Regularity** Set aside the same times each day for your meditation. Most people find first thing in the morning to be best. Another good time is in the evening, just before bedtime. Noontime, before lunch, can be a helpful break in the day. Best not to meditate after a meal.
- 2) **Exercise** If you have time, exercise a little before meditation. Yoga postures are excellent. The exercises one does before meditation should calm and energize, but not excite, the nervous system.
- 3) **Location** Set aside a room, or small part of a room, just for meditation. You will find over time that just entering that spot begins to draw the mind towards meditation. Try to find as quiet a spot as possible—or if this is difficult, try using comfortable “foam” earplugs or headphones to block out noise. Be sure the room is not stuffy and is kept a bit on the cool side; a blanket or shawl to wrap up in is helpful.
- 4) **Sitting** Sit erect. A chair is fine, or a comfortable cross-legged position on the floor, a cushion, or a meditation bench. If in a chair, best to sit on the edge, away from the back, if possible. Whatever your position, keep your back straight, chest raised, head erect, eyes closed, and hands resting with palms upturned at the juncture of the thighs and abdomen. Some people find it helpful to place a small pillow under the buttocks to raise them slightly, and release any tension on the lower back.
- 5) **How long?** Consistency is much more important than length. Better to meditate 5-15 minutes each day, than longer once in a while. A tip: meditate as long as enjoyable. You will then leave each meditation feeling good, and enthusiastic about the next session.
- 6) **Helpful preparation and order of techniques** Stretching and mild exercise are helpful before you begin. Then, while standing, tense and relax each part of the body beginning with the feet and moving upward. Sit comfortably, inhale, tense the whole body, exhale, and relax. Do this 2-3 times. Scan the body for tension, mentally asking each part to relax, beginning with the feet and moving upward. Then do some equal measured breathing: inhale to a count, hold that same count, then exhale to the same count, and begin again. Do this 6-12 times, or as long as you wish. Then put aside all consciousness of the body and begin watching the breath.
- 7) **Tips for sitting still** Command the body to sit completely still now, for just three minutes. This will eliminate fidgeting before it starts. Also, mentally check the body from time to time to relax any areas of tension. Be silent and relaxed, yet aware.
- 8) **Thoughts** Everyone who meditates has thoughts. The best way to work with them is not to try to block them, but to allow them to drift through without giving them any energy, as a cloud passes through your sight when you are outside. When you notice your mind wandering or thinking about something, just bring your attention back to your breath. There will be periods when the mind becomes still. But it will happen naturally, as a result of concentration on the technique, and not by trying to make it happen more directly, with your will.
- 9) **The goal** Remember this helpful key: meditation is not so much doing, as it is *being*. There is no external goal, but more of a gentle releasing. If you seek peace, consciously imagine peace as you meditate, to help draw an even more peaceful state. If joy, then feel joy first.

Summary of techniques and benefits

Tensing & relaxing the muscles

Benefits:

- ◆ Lower blood pressure.
- ◆ Locate and release physical tension at will.
- ◆ Increase blood circulation by as much as 30%.
- ◆ Increase energy and vitality.
- ◆ Help injured body parts to heal more quickly by increasing the flow of blood to the injured area. (Note: tense injured areas gently).
- ◆ Use on long airplane trips to promote circulation.
- ◆ Use to help wake up in the morning. Lie in bed, doing the exercise gradually, to increase circulation and energy in the body.

How to do the technique:

Gradually tense an area of the body, then gradually relax. Begin with the left foot by tensing and relaxing, then do the right foot, and move slowly up through the body. Allow each area to relax completely before moving on. *This technique can be done standing, sitting, or lying down.*

Full body scan

Benefits:

- ◆ Achieve deep relaxation.
- ◆ Reduce or relieve pain.
- ◆ Alleviate pain from headaches or other conditions that are linked to stress or physical tension.
- ◆ Increase circulation by as much as 50%.
- ◆ Release tension from the body at will.
- ◆ Relieve insomnia: lie in bed on your back, and turn the eyes downward (not up). Go slowly, observing the release of each area. Change the breathing ratio to 1:2 (1 count inhale, 2 count exhale).

How to do the technique:

Mentally name a body part. Mentally say “relax”. Observe the body’s response. Begin with the feet, and move slowly up through the body. When meditating, do this technique in an comfortable sitting position, eyes slightly upward. Make sure the head is straight, and not lifted up along with the eyes. *For sleep, lie on the back, eyes downward.*

Equal measured breathing

Benefits:

- ◆ Calm the nervous system.
- ◆ Calm strong emotional states such as anger, fear, or anxiety.
- ◆ Use this technique just before or during activities where you feel nervous, such as public speaking, a performance review, interview, flying, etc.

How to do the technique:

Inhale slowly for a count of 5, hold for 5, and exhale for 5 — all through the nostrils. Begin again without pause. The throat should be in the same position as when singing or speaking, to allow a long inhale and exhale without tension. *When meditating, do this technique in an comfortable sitting position, eyes slightly upward.*

An additional technique:

The anxiety breath helps calm anxiety and panic attacks. It’s similar in benefit to equal measured breathing and is a mild tranquilizer for the nervous system.

How to do the technique: 4 count inhale through nostrils, 7 count hold, and 8 count exhale through slightly pursed lips. Place tip of tongue just behind the front teeth, on the gum.

Watching the breath

Benefits:

- ◆ Slow the breath, which helps to calm the mind.
- ◆ Practice being objective—able to step back and observe life without judgement or reaction.
- ◆ Slow the heart rate.
- ◆ Lower blood pressure.
- ◆ Help concentrate and focus the mind.

How to do the technique:

Breathe naturally without controlling the breath in any way. Begin to notice the point on the body where the breath comes in and out. Notice cool on the inhale, warm on the exhale. Mentally say “I am” on the inhale and “peace” on the exhale. Enjoy the pauses between breaths when the breath becomes still. If the mind wanders, bring the attention back gently to the breath. *Do this technique in an comfortable sitting position with eyes slightly upward.*

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How to Beat Stress in the Heat of Battle

From *Freedom from Stress*, David Gamow, Glenbridge Publishing

1. Practice Stop-Breathe-Reflect-Choose. Remember that regardless of your external circumstances, you can always influence your own thoughts and behavior. Start there and always strive to attain a sense of freedom *before* acting. Please remember: If it can be done in a concentration camp, it can be done anywhere.
2. When we're feeling stress we're on drugs! Our body chemistry is out of whack and our brain functioning is impaired. Obviously, we ought to get off drugs before we act. This does not mean we don't care — it means we don't need the world to be *our* way for us to be o.k. When we step back we cease thinking about ourselves and can actually care more. Selfless service is only possible when there is less "self." Parents cannot be effective when it's all about them. It needs to be about the children first and foremost, not what the parent likes or doesn't like.
3. Start with two pound weights. When you go to a gym to start working out you don't start with the heaviest barbell. There will always be some things that we react to rather than choosing our response, just as there will always be some weights we cannot lift. The inability to lift 300 pounds is not a "failure." By practicing with the little weights we can come to see that we can be internally free of our circumstances, and that it's just a matter of practice and steadily increasing strength.
4. Gain perspective by watching the movie with someone else playing "your" part. Picturing someone else breaks the feeling of being personally and emotionally involved. An alternative to watching the movie is to give advice to an imagined "friend" who is in a similar situation. What would you advise him or her to do or think?
5. Don't yell at the movie. We laugh when children yell to warn the hero of impending danger. It's no more helpful for us to mentally yell at the hundreds of little things that bother us all day long. Don't repress the feeling, just see that it's not helpful. Skiers do not yell at the mountain. Tennis players do not yell at the ball. They do, however, *get* the ball. They just don't wish it were elsewhere or different. The martial artist that complains in his head before acting is the dead martial artist!
6. It is not the circumstance that bothers us, but our feelings about it. Being bumped on a bus no longer irritates us when we see the person who bumped us is blind. That doesn't mean we like being bumped but the feelings clearly change when we see his condition. It's our judgment that he should have behaved differently that causes stress, not the hurt ribs. We are all blind sometimes. It's not up to us to judge why someone else does what they do. Our full time job is to be responsible for what's happening inside our own heads, not other people's.
7. Stepping back is not a suggestion to be passive. In fact, once we step back and can see clearly, our actions become more decisive and more effective. We must act from freedom and not to act because "we can't stand it anymore." Once free, we can do whatever we think best. After taking care of the number one responsibility (getting free), we can then examine, from a position of strength and clarity, what should be done about the external behavior or situation we feel is wrong. This clarity will also enable to see solutions we would not have otherwise seen.
8. This process is directional and thus the idea is to do better and better over time. It's best not to imagine some arbitrary point you want to get to in a fixed amount of time. All things will improve if we strive to hold the right attitudes now. This approach is based on the physics of the human mind, and is governed by laws as sure and exacting as the physical world. If we cooperate with those laws we will find a great sense of freedom that steadily expands.

A good night's sleep: overcoming insomnia

Breathing, relaxation, and meditation exercises that may help you sleep better:

1) Yoga Postures

Try some yoga just before bed. These are especially helpful before sleep: full yogic breath, the hare pose, and the child pose.

2) Tensing and Relaxing Muscles

This is the first formal exercise on the CD after some light shoulder and neck relaxation. If you wish, you can inhale while tensing, and exhale while relaxing. Do this exercise standing up, or lying on your back in bed.

3) Full Body Scan

This technique comes next on the CD, and is the most valuable one we know of for helping with insomnia. Lie on your back with arms to the side. Close the eyes and turn them downward (instead of keeping the eyes up). Mentally say "feet", then mentally say "relax", and observe the body's response. Take your time, spending at least a full few seconds on each part to deeply feel any release. Slowly moving up through the body. Breathe in a ratio of 1:2. Inhale for one count, and exhale for two counts or longer. Emphasize the exhalation.

4) Watching the Breath

If you haven't yet fallen asleep, try "Watching the Breath" while keeping your eyes pointed downwards. This is the final technique on the CD.

Lifestyle changes to help reduce insomnia:

- 1) Reduce intake of caffeine, especially in the 6 hours before bedtime.
- 2) There are stimulants in many drugs which people are unaware of: pseudoephedrine (used in nasal decongestants), diet pills, asthma inhalers, some antidepressants, and caffeine in some over-the-counter pain relievers. Ask your doctor about alternatives, or about taking these medications earlier in the day.
- 3) Many people drink alcohol in the evening to relax. It does initially produce sleepiness, but leads to shallow, non-restorative sleep that includes suppression of normal dream sleep. Marijuana has the same effect.
- 4) A bedtime snack can be helpful. Bananas or warm milk are recommended, both of which contain tryptophan, which helps induce sleep. Avoid starchy carbohydrates, sweets, or spicy foods.

- 5) If you tend to need the bathroom during the night, cut back on liquids near bedtime.
- 6) Remove the TV from the bedroom. Experiment with eliminating television, especially news, an hour before sleep.
- 7) Avoid taking a hot bath or strenuous exercise near bedtime. The body tends to cool down in preparation for sleep. Keep your bedroom cool.
- 8) Dim the lights as bedtime nears; TV and light tell the body that it's time to be awake.
- 9) Ayurvedic physicians recommend going to bed by 10 pm and waking up by 6 am, a natural period for deeper sleep that is disrupted by later bedtimes.
- 10) If you read in bed before falling asleep, choose something that is calming. The act of reading can induce sleepiness, because the eyes are turned downward.
- 11) If you wake up in the middle of the night and are quite awake, get up and read until you feel sleepy again. When back in bed, try the breathing and relaxation exercises as an aid to falling asleep.
- 12) On your way home from work, listen to calming music or books on tape. Or drive home in silence. Listening to radio news can be agitating to the nervous system.
- 13) Exercise 3-5 times a week.
- 14) Upon awakening, try to get 35-40 minutes of natural daylight exposure, or artificial light as an alternative.
- 15) Keep a diary of your sleep patterns and the activities you did from this list to support a good night's sleep.
- 16) Keep lists of things to do, so that you have a place to capture all the pending things on your mind. The mind is an inefficient place to store hundreds of "to do" items, and it will remind you of them day and night, disturbing your peace of mind. You can also keep a pad of paper near your bed for things that occur to you, or wake you during the night. An excellent book to help with this process is *Getting Things Done*, by David Allen.

Additional resources:

Healing Therapies for Overcoming Insomnia

Dr. Peter Van Houten & Rich McCord

Say Goodnight To Insomnia

Gregg Jacobs

Stress reduction and meditation resources
from David & Karen Gamow

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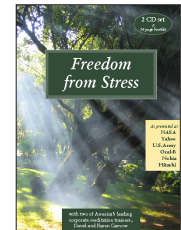
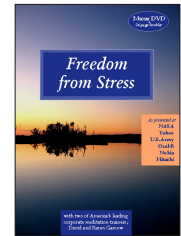
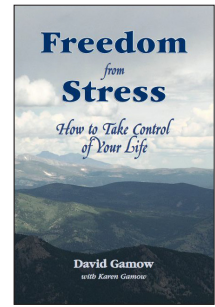
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