How Meditation Works

Studies have shown that meditation (in particular, research on Transcendental Meditation, a popular form of meditation practiced in the West for the past thirty years), can bring about a healthy state of relaxation by causing a generalized reduction in multiple physiological and biochemical markers, such as decreased heart rate, decreased respiration rate, decreased plasma cortisol (a major stress hormone), decreased pulse rate, and increased EEG (electroencephalogram) alpha, a brain wave associated with relaxation. Research conducted by R. Keith Wallace at U.C.L.A. on Transcendental Meditation, revealed that during meditation, the body gains a state of profound rest. At the same time, the brain and mind become more alert, indicating a state of restful alertness. Studies show that after TM, reactions are faster, creativity greater, and comprehension broader.

A laboratory study of practitioners of Maharishi Mahesh Yogi's transcendental meditation (TM), carried out by Benson and Wallace at Harvard Medical School towards the end of the 1960s, provided the first detailed knowledge of the many physiological changes that go with meditation.

Some of the meditators, whose ages ranged from seventeen to forty-one, had been meditating only a few weeks, others for several years. All recorded changes associated with deep relaxation.

The fall in metabolic rate was the most striking discovery. This was indicated by a dramatic drop in oxygen consumption within a few minutes of starting meditation. Consumption fell by up to twenty per cent below the normal level; below that experienced even in deep sleep. Meditators took on average two breaths less and one litre less air per minute. The meditators' heart rate was several beats less per minute.

During meditation, blood pressure stayed at 'low levels', but fell markedly in persons starting meditation with abnormally high levels.

The meditators' skin resistance to an electrical current was measured. A fall in skin resistance is
characteristic of anxiety and tension states; a rise indicates increased muscle relaxation. The finding was that though meditation is primarily a mental technique, it soon brings significantly improved muscle relaxation.

Meditation reduces activity in the nervous system. The parasympathetic branch of the autonomic or involuntary nervous system predominates. This is the branch responsible for calming us.

During anxiety and tension states there is a rise in the level of lactate in the blood. Lactate is a substance produced by metabolism in the skeletal muscles. During meditation blood lactate levels decreased at a rate four times faster than the rate of decrease in non-meditators resting lying on their backs or in the meditators themselves in pre-meditation resting.

The likely reason for the dramatic reduction in lactate production by meditators was indicated when further studies of meditators showed an increased blood flow during. Benson and Wallace found that there was a thirty-two per cent increase in forearm blood flow. Lactate production in the body is mainly in skeletal muscle tissue; during meditation the faster circulation brings a faster delivery of oxygen to the muscles and less lactate is produced.

The two investigators summed up the state produced by their meditating subjects as wakeful and hypometabolic. The physiological changes were different in many ways from those found in sleeping people or those in hypnotic trance states. Meditation, they said, produces ‘a complex of responses that marks a highly relaxed state’. Moreover, the pattern of changes they observed in meditators suggested an integrated response, mediated by the central nervous system.

“Through meditation we can learn to access the relaxation response (the physiological response elicited by meditation) and to be aware of the mind and the way our attitudes produce stress,” says Dr. Borysenko, author of ‘Minding the Body, Mending the Mind’. “In addition, by quieting the mind, meditation can also put one in touch with the inner physician, allowing the body’s own inner wisdom to be heard.”

Taoists believe that the mind of emotions is governed by the Fire energy of the heart. When your emotions are not controlled, the fire energy of the heart flares upwards, wastefully burning up energy and clouding the mind. The mind of intent, or willpower, is controlled by the Water energy of the kidneys. When unattended, the water energy flows down and out through the sexual organs, depleting essence and
energy and weakening the spirit. Taoists believe that when you are 'sitting still, doing nothing', as in meditation, the flow of Fire and Water are reversed: Water energy from the kidneys and sacrum is drawn up to the head via the Central and Governing channels, while emotional Fire energy from the heart is drawn down into the Lower Elixir Field in the abdomen, where it is refined and transformed and enters general circulation through the energy channels. On the spiritual/mental level, this internal energy alchemy enables the mind of intent (Water) to exert a calming, cooling, controlling influence over the mind of emotion (Fire).

Next Topic: Healing Power of Meditation

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