

# TRANSCENDENTAL MEDITATION

**Meditation is becoming a popular relaxer and escape mechanism in Western societies. Researchers are finding that many of the claims for meditation seem to have physiological correlates.**

by Robert J. Trotter

The work ethic was having trouble recruiting jobbers. There were rumors that God was dead. Sancrosanct institutions (big government, big business, higher education, the nuclear family, etc.) were under attack from within and without.

Such was the setting of the sixties that left many young people ideologically aimless and confused. With what were they to fill their time and their heads? Many of these searchers turned to a practice that has been the opiate of the Eastern masses for several millennia—meditation.

For years, meditation has remained a mysterious, cultist, semi-religious type of experience that had no meaning for the rational Western mind. But meditation is not all that mysterious, and techniques have been developed that can be communicated and learned by anyone. Consequently, in the past few decades, literally hundreds of thousands of Westerners have learned and are using some of the many methods of meditation. The techniques differ but most of them aim at the same goal: achievement of a profound state of rest while maintaining a relaxed alertness. Some attain the goal through physical excesses, as in "hatha yoga"; others concentrate on a particular overt function, such as the respiratory rate; still others require rigorous concentration on a single object or concept as a means of eliminating all contact and flow from conscious experience.

This rather ill-defined and vague "profound state of rest" is not as obscure as it sounds. Everyone experiences a similar state of relaxed awareness during the few moments immediately before going to sleep. With a little training and practice, such a state can be prolonged and reached at will—in a quiet room or even in the midst of a noisy crowd. People who meditate regularly report that it has altered their

lives in a variety of ways. They say they experience greater serenity and inner peace; they frequently mention having more energy and greater steadiness in pursuing goals, and greater efficiency in ordering priorities so that less effort is wasted. They report that anxiety, aggression and hostility are reduced.

But these reports are all subjective, says Edward Taub of the Institute for

Behavioral Research in Silver Spring, Md. In many areas of study, he notes, such subjective reports have been found to have little correspondence with outward reality as perceived by others. "Our traditions of thought, then, compel us to seek verification of the self-reports through more objective measures," said Taub as chairman of a symposium on the psychobiology of meditation at this year's meeting of the



American Psychological Association.

The physiological effects of meditation have always been of some interest to researchers. In 1935 a French cardiologist took a portable electrocardiograph to India in order to check out Yogis who claimed to be able to voluntarily stop their heart beat. One Yogi was apparently able to, but subsequent studies were inconclusive. In recent years more extensive studies have been

performed in the United States.

One of the first of a spate of recent papers was published by Robert Kieth Wallace in *SCIENCE* in 1970 (SN: 4/11/70, p. 370). He found that meditation is accompanied by a number of physiological changes—decreases in heart rate and oxygen consumption. Wallace, Herbert Benson and Archie F. Wilson of Harvard Medical School followed up in the *AMERICAN JOURNAL*

OF *PHYSIOLOGY* in 1971 with the first major study of the physiological effects of meditation.

In this study and in subsequent ones, Wallace and Benson (and many other researchers) have worked with one particular type of meditation—Transcendental Meditation, or TM. They chose TM because consistent physiologic changes were noted during its practice, because subjects found little difficulty in meditating during experimental measurements and because a large number of subjects were available who had received uniform instruction from an organization specializing in teaching TM (student's International Meditation Society, which teaches TM according to a method popularized in this country by Maharishi Mahesh Yogi). Taub agrees with the choice of TM. He explains: TM is said to be an entirely mechanical process which attains its goals automatically with constant practice. It requires no faith or belief and does not involve intense concentration or control of the content of consciousness. TM's practice requires no intellectual analyses and can be learned by people of all backgrounds, ages and education. It does not call for recourse to a reclusive style of living, but integrates well with a normal active life style.

The basic technique of TM can be learned in the course of a 90-minute session of individual instruction. It is then practiced for 20 minutes, twice a day, during which the meditator sits in a comfortable position with eyes closed. The subject has been assigned a suitable sound or thought (mantra). Without attempting to concentrate specifically on this cue, the meditator merely perceives the mantra and experiences it freely. As other thoughts enter the mind, they may be examined and discarded—they are not to be followed logically and allowed to lead to other

विद्यां चाविद्यां च यस्तद् वेदोभयं सह ।  
अविद्यया मृत्युं तीर्त्वा विद्ययामृतमश्नुते ॥ ११ ॥

*vidyām cāvidyām ca yas  
tad vedobhayam saha  
avidyayā mṛtyuṁ tīrtvā  
vidyayāmṛtam aśnute.*

*vidyām*—knowledge in fact; *ca*—and; *avidyām*—nescience; *ca*—and; *yaḥ*—a person; *tad*—that; *veda*—knows; *ubhayam*—both; *saha*—simultaneously; *avidyayā*—by culture of nescience; *mṛtyum*—repeated death; *tīrtvā*—transcending; *vidyayā*—by culture of knowledge; *amṛtam*—deathlessness; *aśnute*—enjoys.

#### TRANSLATION

**Only one who can learn the process of nescience and that of transcendental knowledge side by side can transcend the influence of repeated birth and death, and enjoy the full blessings of immortality.**

*Mandalas, such as the one at the left, are often used as objects for meditation. Concentration on increasingly complex designs is said to prolong one's experience of time. Mandalas are usually round and, according to Carl G. Jung, represent the unity of the self.*

*Mantras, such as the one above translated from Sanskrit, are also used as aids to meditation. A mantra can be a complete thought or a single sonorous sound or word (Ommm) that is repeated over and over. Mantras are supposedly assigned according to the user's personality.*

Drawing: M. C. Escher, Escher Foundation, Haags Gemeentemuseum—The Hague

Sri Isopanisad by A. C. Bhaktivedanta Swami Prabhupada

associations. This type of thinking, meditators report, leads to a finer and more creative level of thinking. The total experience is pleasant and is supposed to produce a state of relaxation that gives rise to dramatic short-term and long-term effects on behavior.

Presuming a physical rather than a spiritual cause for these effects, Benson and Wallace examined meditators on a variety of physiological scales. Results with 36 subjects revealed: blood flow in the arm increases during TM by about 32 percent, oxygen consumption decreases during TM by about 17 percent, electrical resistance of the skin increases by an average of about 200 percent, brain wave patterns indicate an alert wakefulness and carbon dioxide elimination decreases. This seeming "quiescence of the sympathetic nervous system," the researchers note, is the opposite of the fight-or-flight reflex. It is overstimulation of this fight-or-flight reflex by the stresses of modern life that is thought to be a cause of hypertension and some psychosomatic diseases. "It should be well worthwhile,"

resulted in increases in ego and productivity and greatly decreased hours of psychotherapy. Another therapist has reported success in treating cases of claustrophobia and profuse perspiration. And another report claims that TM can lead to a better marriage by releasing the tensions of daily life. Many of these claims are related to the reduction in anxiety that TM supposedly produces in regular practitioners.

A similar lessening of anxiety is often achieved through drugs, so some researchers have investigated the effects of meditation on drug users. One thing they have found is that meditation, unlike drugs, does not require increased doses as the user becomes habituated. In fact, most steady meditators usually stop drug use. Benson and Wallace conducted a study with 1,862 subjects. They found that after about 21 months of practicing TM, almost 96 percent of those who had been trafficking in drugs had ceased doing so. More than 95 percent of the subjects who used drugs illegally since starting TM had tried to

rishi International University in Los Angeles studied the effects of TM on narcotics addicts in a Federal prison in New Mexico. He found that prisoners become less compulsive and more sociable in their behavior after two months of regular meditation (SN: 9/8/73, p. 152). Orme-Johnson also studied staff members at the Drug and Alcohol Abuse Control and Prevention Center in Fort Bliss, Texas. MMPI tests before and after 10 weeks of meditation indicated that subjects practicing TM achieve a reduction in symptoms of anxiety, more maturity and more organized thought and behavior.

The results of these and other studies indicate that TM may be a useful tool, but there are some drawbacks. In almost every case, the subjects have been persons who elected to become meditators. This fact alone sets meditators apart from other hypertensives, drug users, neurotics and searchers. Those who decided to become meditators and who followed through had already displayed the will power that is sometimes enough to change a habit or a complete life style. Subjects who did not follow through with TM (even though they originally intended to do so) received none of its benefits. Perhaps they did not really believe in or want the changes that TM is supposed to produce. Perhaps they need another kind of help if some sort of change is really necessary. No one can be forced to meditate. Meditation is not a shot-in-the-arm cure all. For instance, Arthur Vassiliadis of the Stanford Research Institute has found that three months of TM does not produce a statistically important change in a meditator's heart beat. Only after nine months of conscientiously practiced TM is there a significant reduction in heart rate.

While meditation does seem to produce beneficial effects in certain subjects, researchers are still not agreed on how these effects are produced. The original work of Wallace and Benson indicated which physiological processes might be involved but, says Taub, there is no clear interpretation of the data yet. More recent work by Gary E. Schwartz at Harvard, for instance, indicates that Wallace and Benson's findings are not as clear-cut as they seemed. Schwartz points out that the personality of the tester, as well as that of the subject, might be an important variable. (Wallace, an easy-going and interested experimenter, gets somewhat different results than a less sympathetic person does.)

The work of Wallace and Benson is still valid, says Taub, even though newer data are providing a different interpretation. But even without a coherent interpretation, he concludes, the data on TM are "suggestive and exciting." □

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## Transcendental Meditation

as taught by

## Maharishi Mahesh Yogi

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Wallace and Benson concluded, "to investigate the possibilities for clinical application of this state of wakeful rest and relaxation."

Such possibilities have since been investigated. Benson and Wallace worked with 22 hypertensive subjects and reported that regular practice of TM resulted in reduced blood pressure. Other researchers have reported that TM appears to be beneficial in the treatment of bronchial asthma and diseases involving inflammation such as swollen gums. TM has even been found to increase auditory ability.

Psychological as well as physiological conditions respond to the practice of TM. On psychological tests, meditators display significantly less verbal hostility than nonmeditators. One psychiatrist has reported that patients who practice TM show a faster-than-average rate of improvement in the course of psychotherapy. With some patients TM has

discourage others from non-medical use of drugs. Prior to TM, 78.3 percent had used marijuana and hashish and 22.4 percent were heavy users. After 22 months of meditation, the number of users of these drugs had fallen off to 12.2 and 0.1 percent respectively. Similar results were reported for LSD, opiates (heroin, etc.), amphetamines, barbiturates, alcohol and tobacco. W. T. Winkquist of the University of California at Los Angeles has also examined the relationship between TM and drug use. He found that after at least three months of TM, 84 percent of those who were regular users of marijuana had stopped, 14.5 percent had substantially decreased and only about 1.5 percent increased use of the drug. According to Winkquist, 49 percent of the users stated that their use of drugs decreased because life became more fulfilling after starting meditation.

David Orme-Johnson of the Maha-