

# Neurology of Meditation

## It's Good to Meditate

During the annual meeting of the American Society of Psychosomatic Medicine, University of Toronto have presented the results of a meditation study lasting ten weeks and involving nearly four hundred patients who greatly improved or significantly improved their state of anxiety, chronic stress, recurrent depression, etc., which would equate to spending three hundred dollars each, or the amount corresponding to three sessions with a psychoanalyst and not receiving the same results on the fateful couch or something so intense in such a short time.

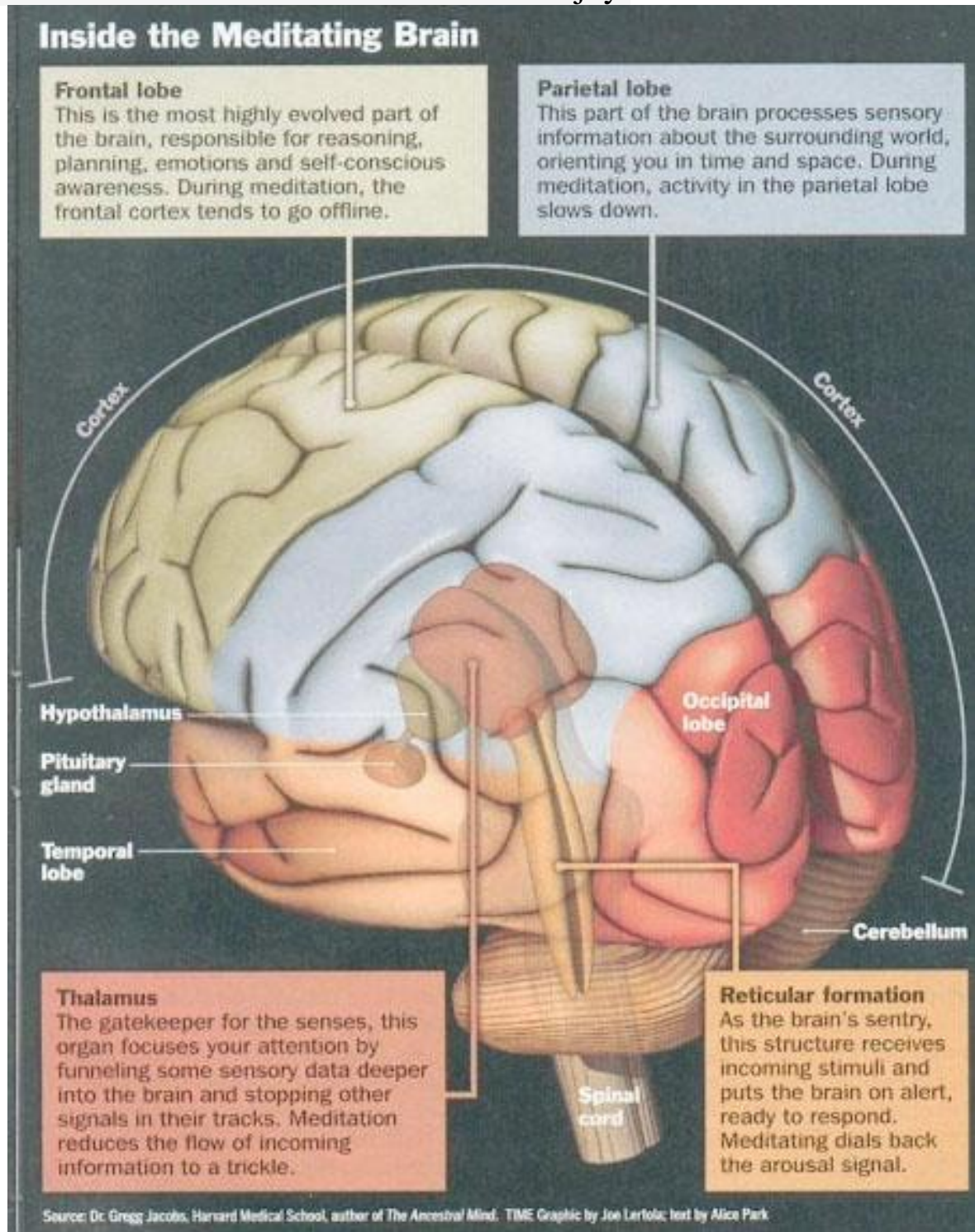
Perhaps women and men of modern times have forgotten to live well requires a certain strength of conviction, and to an ignorant person seems to be automatic but requires attention. Without this conviction, romantic or ignorant people never know what to do so they earn as much money as possible to feel better or go on a diet to feel more alive, or reduce their cholesterol, have more sex, less sex, or something else.

This confusion comes from modern neurosis, what C.G. Jung defined as “a profound disagreement within themselves,”; in a positive sense, the individual has responsibility but not able to accept this; much as in the days of Imperial Rome.

Modern people are at odds with themselves: they can laugh at it but it seems impossible. In fact, it takes so much energy to argue with themselves and they have to be very convinced that it is bad to use their energy to really succeed. This hypochondriac mentality is evoked by the attitudes from the teachings of reductionist science much like the eye of a butcher making us believe that life is a physiological fact.

However there are researcher who are not slaves of their research, they deal with men and not with guinea pigs, allowing the experiment to produce the actual outcome, whatever it is. Then the responses have come from real science, from an honorable investigative attitude, while possibly reductionist, but is fair-minded and realistic.

Researchers at the University of California and Wisconsin have analyzed the Buddhist meditation, the first on the area of the brain called the amygdala, associated with the fear reactions, the second, by studying the prefrontal lobe, which is connected to the reactions of intense joy.



The results presented in journalistic terms ruins everything. “The Buddhists are happier and more serene,” is a very naive statement that certainly does not take into account many variables. The hope is still one of salvation without cost, without effort.

Someone more composed in expressions yet wrote with disinterest, was Tomio Hirai who wrote a book specifically about zen meditation, a book at the time that was innovative but today is very dated. They identified a very specific EEG alpha wave activity, theta and beta on the organism during zazen. Meditation, according to these studies, is detectable in the physiology of the nervous system in a state of standby in which “alpha” activity is increased and the “theta” is highlighted in an incredible way despite the waking state of the meditator.

The latest research comes from Denmark where a group of neurobiologists have published “Cognitive Brain Research”, research on the meditative experience of deep relaxation (yoda nidra) with the use of PET (Positron Emission Tomography) and the use of practitioners of long-standing.

The presence of dopamine in a specific area of the brain increased significantly: the presence of the neurotransmitter dopamine in the ventral striatum is considered a “reward circuit” which is like saying that by meditating you receive a reward.

The circuits that connect the prefrontal areas of the cortex prize to the basal ganglia are part of the ventral striatum, as well as the thalamus and the limbic system.

The circuits of joy are activated mainly by dopamine when we feel gratified, happy, satisfied, as well as, from artificial drugs such as amphetamine or cocaine. But, we know well, as the former increases overall health, the latter decreases health.

In the journal, “Consciousness and Cognition”, Arne Dietrich from the Neuroscience Laboratory of the University of Georgia, writes about meditation and that during exercises of concentration, one receives very clear answers on the “dorsolateral” creating anti-anxiety and antidepressant effects, findings that integrate other research documentation, and in deep meditation, there is a

reduction of the overall activity of the prefrontal cortex, which justifies the power that meditation makes the brain serene but watchful.

It seems that talking about the “brain” instead of the “mind” is like hitting the wheel of the chariot rather than the horse. Is it possible to move from this lack of mobility of this cognitive experience? Physiology versus direct experience? From this point of view, cold and merely scientific, neurology can train those who want to create an experience of pleasure on a level of the aforesaid “circuit of pleasure”, an experience that has been found in the prefrontal cortex divided into two areas: the first, the ventral medial, affecting the often disturbed emotions, the second, the dorso lateral, being the center of attention, working memory, and the perception of time. Activating an area, preferably the second, it inhibits the other, thereby activating the mind from some memories and some concentration, producing neurological activity in the ventromedial and inhibiting depression and anxiety.

This explains, currently, the mystery of relaxed attention.

Neurotransmitters, activity in the cerebral area, were already discussed, electrophysiology, particularly Teta waves and leading to neuroendocrinology that shows during meditation, a powerful regulation of the stress system and the reduction of cortisol and norepinephrine.

The result on the overall health due to these transmuted neuroendocrinological activities is broad and deep: a net reduction in the incidence of cardiovascular disease, hypertension, mood disorders such as anxiety and depression, gastrointestinal disorders, and so on and so forth, given that the body belongs to a man and that man, at last is a mystery unconsciously known and celebrated through meditation.