

# Meditation: concepts, effects and uses in therapy

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**Abstract** *This article reviews 75 scientific selected articles in the field of meditation, based on a Medline and Psychlit search from 1989 until June 1999 and earlier relevant papers. It summarises definitions of meditation, psychological and physiological changes, and side-effects encountered in the meditator. The review focuses on the comparison between meditation and psychotherapy at a practical and theoretical level. Finally, it reviews the scientific evidence for specific applications of meditation in clinical practice.*

## Meditation: definition

Meditation can be defined in a number of different ways, philosophical or operational. Webster's dictionary defines meditation as an 'act of spiritual contemplation'. It seems that in its wider modern usages, it denotes (Kokoszka, 1990): self-experience, self-realisation and, in some religious traditions, a specific practice to achieve the discovery of the ultimate truth.

From a psychophysiological perspective, meditation is the intentional self-regulation of attention, in the service of self-inquiry, in the here and now (Masion *et al.*, 1995). Most descriptions of meditation expressed in behavioural terms (Craven, 1989), include the following components: (1) relaxation, (2) concentration, (3) altered state of awareness, (4) suspension of logical thought processes, and (5) maintenance of self-observing attitude.

There are many different techniques of meditation, which can be classified according to Shapiro (1982) as: those which focus on the *field* or background perception and experience, called 'mindfulness meditation'; those which focus on a preselected specific *object*, or 'concentrative' meditation', and those which shift between the field and the object.

In mindfulness meditation, the subject sits comfortably, in silence, centring attention by focusing mental awareness on an object or process (either the breathing process, a sound, a mantra koan or riddle evoking questions, a visualisation, or an exercise) and then consciously is encouraged to scan their thoughts in an open focus, shifting freely from one perception to the next (Kutz *et al.*, 1985a, b). No thought, image or sensation is considered an intrusion. The meditator, with a 'no effort' attitude, is asked to remain in the here and now. Using the focus as an 'anchor' (Teasdale *et al.*, 1995) brings the subject constantly back to the present, avoiding cognitive analysis or fantasy regarding the contents of awareness, and increasing tolerance and relaxation of secondary thought processes.

Meditation can also be practised walking or doing some simple exercises, where it aims to break down habitual automatic mental categories, thus regaining the primary nature of perceptions and events, focusing attention on the process while disregarding its purpose or final outcome. If based in a visualisation such as the Chinese Qi Gong meditation (Liu *et al.*, 1990), the subject concentrates on a certain 'energy' (Qi) in his body, starting in his lower abdomen and then, through visualisation, circulating through various parts of the body, until the energy is eventually 'dispersed'. This is combined with repetitive, positive, reinforcing suggestions from the instructor and the subject himself, resulting in a strong belief in the subject that s/he can manipulate this 'energy' at will.

Meditation is claimed to enhance the sense of mastery through the mediator's self-observing cognitive attitude. The mediator realises his or her role as 'writer-director' in charge of inner dramas and discovers the element of choice in the 'cutting and editing' of perceptions of reality. It suspends habitual logical-verbal construing, and so frees the individual of his/her usual defensive constructions, allowing consciousness to move in new directions (Bogart, 1991). It is said to free the mediator from bodily and cognitive tensions.

Meditation is related but distinguishable from daydreaming, hypnosis (Fromm, 1975), praying, cardiovascular and neurovascular feedback, autogenic training and relaxation techniques (Kokoszka, 1994). Meditation differs from these other techniques or practices in its emphasis on maintaining alertness, and its philosophical/cognitive background aims at expanding self-awareness and an increased sense of integration and cohesiveness (Snaith, 1998).

### Psychological effects

Traditionally meditation has been practised within a religious context. Only in modern times have the techniques of meditation been extracted from their spiritual and philosophical context and applied to the promotion of individual well-being. Most literature in scientific journals and research about meditation has been based on this personal health-enhancing aspect (Epstein, 1990; Globus, 1980; Leuschitz & Harlman, 1996; Russell, 1986; Shapiro, 1994; Tyler, 1977; West, 1987). Atwood & Maltin (1991) described how meditation helps the patient to understand that there are no quick solutions. It develops patience: to be aware of the problem before attempting to solve it. It promotes a non-judgmental attitude, it helps the patient to come to terms with 'what is', rather than to fight hopelessly for 'what might be', or 'might have been'. It helps people to be comfortable with ambiguity, ignorance and uncertainty. Meditators learn to recognise and trust their inner nature and wisdom. Meditation fosters the recognition of personal responsibility. The mediator's feelings during and about meditation itself cannot be displaced or disowned.

Different components of the technique of meditation, such as physical posture, attentional focus, style and breathing, have been proposed as explanations for the positive effects of meditation (Colby, 1991; Levenstein, 1996). Kutz *et al.* (1985a, b) explained meditation as a repetitive dose of corrective emotional experience similar to an interpersonal therapeutic encounter which may have its counterpart in gradual interneuronal modulation. 'It's tempting to speculate that such neural plasticity can be enhanced by causing a functional shift in the state of the CNS. Such a psychobiological shift may be elicited by mental practices such as meditation'. Craven described the following effects: integration of subjective experiences, increased acceptance and tolerance of affect and increased self-awareness. Atwood & Maltin (1991) claim that meditation optimises the process of memory. Kutz *et al.* (1985a,b) reported an increase in vigor. Shappiro (1992) found that 88% of the subjects of her research subjects ( $n = 27$ ) reported greater happiness and joy, positive thinking, increased self-confidence, effectiveness (getting things done), and better problem-solving skills. Other reported

beneficial effects include enhanced acceptance, compassion and tolerance to self and others (Dua & Swinden, 1992), more relaxation, resilience, and better ability to control feelings (Scheler, 1992).

However, none of these findings were based on properly randomised and controlled trials, and a placebo comparison for meditation is even more problematic than it is for psychotherapy.

### Physiological effects

Meditation is claimed to produce an integrated response with peripheral circulatory and metabolic changes subserving central nervous activity. Jevning *et al.* (1992) called it an 'awakeful hypometabolic integrated response'.

The physiological effects include: increased cardiac output, slow heart rate (Dillbeck & Orme-Johnson, 1987), muscle relaxation (Narayu *et al.*, 1990), apparent cessation of CO<sub>2</sub> generation by muscle, decreased renal and hepatic blood flow, increased cerebral flow, decreased respiratory frequency (Kesterson & Clinch, 1989), significantly decreased sensitivity to ambient CO<sub>2</sub>, less O<sub>2</sub> consumption (Wilson *et al.*, 1987), increased skin galvanic resistance, decreased spontaneous electrodermal response, EEG synchrony with increased intensity of slow alpha in central and frontal regions, and increased theta waves in frontal areas of the brain (Telles & Desraj, 1993), enhancement of brain stem auditory evoked response (Liu *et al.*, 1990), increased alpha and beta coherence (Sim & Tsol, 1992), and shift in hemispherical dominance with greater activation of the centres in the right hemisphere (to which non-verbal, intuitive, spatial, holistic, non-sequential qualities are attributed; Telles *et al.*, 1994).

Metabolical effects include: increased blood pH during meditation but decreased arterial pH afterwards, resulting in a mild metabolic acidosis; decreased plasma lactate (probably due to changes in erythrocyte metabolism); changes of glucose metabolism pattern (Herzog *et al.*, 1990); decreased adrenocortical activity just after 30 minutes of meditation and long-term decreased cortisol secretion (Sudsang *et al.*, 1991); decreased TSH; increased concentration of arginine vasopressin (which is said to play an important part in learning and memory); increased levels of phenylalanine concentration (in 3–5 year meditators); increased 5 hydroxyindole-3 acetic acid urinary metabolite of serotonin after 30 minutes of meditation (Travis & Orme-John, 1989); and increased levels of melatonin (urinary 6 sulphatoxymelatonin) which is produced in the pineal gland (Masison *et al.*, 1995). Through melatonin, there is an increased inhibitory effect of GABA, which has a benzodiazepine-like effect (analgesia, antistress, anti-insomnia; Elias & Wilson 1995; Harte *et al.*, 1995).

Benson *et al.* (1990), in a descriptive study of three very experienced Tibetan monks, claimed that metabolic rate could be raised up to 61% or lowered to 64% at the meditator's will, and that EEG showed a marked asymmetry in alpha and beta activity between the hemispheres with increased beta activity. Lou *et al.* (1999), using 150 h20 PET measures of CBF (cerebral blood flow), found a differential activity noticeable mainly in the posterior sensory and associative cortices known to participate in imagery, in meditation, compared with the resting state of normal consciousness, although the mean global flow remained unchanged.

In summary, it seems that meditation has a bimodal biological impact along time. Initially there is a physiological relaxation response in the short term. This effect also corresponds with findings in the study of imagery on brain activity as described by Laine *et al.* (1997). More enduring hormonal and metabolic changes can later be detected in experienced meditators, some 12 to 18 months after starting meditation practice.

### Side-effects

Not all effects of the practice of meditation are beneficial. Shapiro (1992) found that 62.9% of the subjects reported adverse effects during and after meditation and 7.4% experienced profoundly adverse effects. The length of practice (from 16 to 105 months) did not make any difference to the quality and frequency of adverse effects. These adverse effects were relaxation-induced anxiety and panic; paradoxical increases in tension; less motivation in life; boredom; pain; impaired reality testing; confusion and disorientation; feeling 'spaced out'; depression; increased negativity; being more judgmental; and, ironically, feeling addicted to meditation.

Other adverse effects described (Craven, 1989) are uncomfortable kinaesthetic sensations, mild dissociation, feelings of guilt and, via anxiety-provoking phenomena, psychosis-like symptoms, grandiosity, elation, destructive behaviour and suicidal feelings. Kutz *et al.* (1985a,b) described feelings of defencelessness, which in turn produce unpleasant affective experiences, such as fear, anger, apprehension and despair. Sobbing and hidden memories and themes from the past, such as incest, rejection, and abandonment appeared in intense, vivid forms and challenged the subject's previously constructed image of their past and themselves. On the other hand, it is not uncommon to encounter a meditator who claims that has found 'the answers' when in fact he has been actively engaged in a subtle manoeuvre of avoiding his basic questions.

Therefore, Shapiro (1992) recommended caution when the answer encountered to every dilemma was 'adverse effects are only part of the path. It takes years of practice'. This statement is reminiscent of the classical psychoanalytic dictum: 'insight causes cure; if you are not cured, by definition you need more insight'—and its misuse.

The side-effect profile summarised also resembles many of the neurotic/anxiety constellation of symptoms. None of the studies reviewed tried to disentangle the effects of meditation *per se* from the influence of the presenting problem or/and premorbid personality of the subjects. It is unclear whether certain personality types are more likely to try meditation or whether the effect of meditation increases the awareness of those feelings, symptoms and personality traits (Morse, 1984).

### Meditation and psychotherapy

Increased self-awareness is a common theme in most psychotherapies. It is often proposed as an initial step in freeing oneself from distressing symptoms, and forms the basis of behavioural monitoring and feedback, cognitive diaries and psychoanalytical analysis of transference, dreams and free association.

From a personal construct perspective (Kelly, 1955), meditative concentration techniques can be viewed as deliberately experimenting with 'constriction' in the Kellyan sense. In constriction the perceptual field is shrunk to a few elements in an attempt to reorganise and make manageable the construct system. Mindfulness techniques can be seen as 'dilation' in a Kellyan terms, whereby the person broadens his/her perceptual field to include more elements, with the aim of a more comprehensive organisation of his/her construct system (DelMonte, 1987).

Thus meditation allows its practitioner to step out of conceptual limitations, a process which is considered to be the hallmark of insight and creativity, and the converse of neuroticism (Craven, 1989; Greguire, 1990). The detachment from self experienced in meditation can be related to the split described by Freud (1930) between the experiencing ego and the observing ego. This capacity to rise above the self increases motivation, tolerance of guilt, and enhancing a sense of unity and centredness.

On the other hand, in order to reach this deeper stability, one has to become fundamentally destabilised, which may require preliminary strength and faith (Shapiro, 1992).

Freud, personally unfamiliar with meditation, interpreted the 'oceanic' meditative experience as a reaction formation, a defence of omnipotence against infantile helplessness. Even Jung (1936), who was better acquainted with both mystical philosophy and Eastern ways of thinking, was ambivalent about its use. He believed that Eastern methods and philosophical doctrines put Western attempts along these lines into the shade. On the other hand, he said; 'people will do anything, no matter how absurd, in order to avoid facing their own souls. They will practice yoga and all its exercises, observe a strict regime of diet, learn theosophy by heart, or mechanically repeat mystic texts from the literature of the whole world, all because they cannot get on with themselves and have not the slightest faith that anything useful could ever come out of their souls'.

Looked at more positively, meditation can be seen as an undifferentiated regressive state, which, like the mother-child bond, protects from fear of separation and desolation. It is a 'regression in the service of the ego' (Atwood & Maltin, 1991; Shaffii, 1973) where one's loneliness, even the problematic nature of one's existence, is threateningly close and all that matters is not being dead or disintegrating into non-existence. This very early 'narcissistic' feeling of injury, experienced as a loss of the safety provided by attachments to others, is temporarily counterbalanced by the meditation-induced enhanced sense of the tangible self (Bogart, 1991). Shaffii (1973) emphasised the importance of silence and conceptualises meditation as a temporary and controlled regression to the preverbal level or 'somasymbiotic phase' of the mother-child relationship. This regression may rekindle unresolved themes from the developmental phase in which the individual develops a sense of basic trust.

In Buddhist terms, the ultimate aim, the realisation that the self-ego is illusory, seems entirely irreconcilable with the goals of psychotherapy, which is, rather, to facilitate the development of a coherent ego (Bradwejn *et al.*, 1985). But both Buddhist thought and psychoanalytic object relations theory view human growth as a series of developmental stages (Engler, 1984). The ego is defined as an internalised image that is constructed out of experience with the object world and which appears to have the qualities of consistency, sameness and continuity. According to object relations theory, the major cause of psychopathology is the inability to establish a cohesive integrated self. In contrast Buddhist psychology states that the deepest psychopathological problem is the protagonist of a self, the 'clinging to personal existence'. But one has to be somebody before one can be nobody. Meditation may be most helpful to people who have achieved an adequate level of personality organisation. Meditation can help *both* with getting in touch with oneself, *and* with letting go of the self, where there is excessive investment in the self.

Perhaps meditation can offer the possibility of development beyond what most therapies can offer, but proceeds more effectively when certain fundamental ego-based issues, such as self-esteem, livelihood, intimacy and sexuality have been, at least to some extent, tackled (Finn, 1992).

### Relevance to clinical practice

Research into meditation is mixed, and of poor quality. Most of the studies are methodologically flawed, with insufficient number of cases, lack of standardised diagnostic procedures and being limited to non-psychiatric populations (Atkinson *et al.*, 1996).

Kutz *et al.*, (1985a, b) studied the effect of a 10-week mindfulness meditation programme on 20 patients who were also undergoing long-term individual exploratory psychotherapy. The main outcome was improvement in measures of psychological well-being. Smith *et al.* (1995) studied 36 undergraduate volunteers, and found that meditation had a positive effect

as part of a 'happiness enhancement program'. A three-year study with 22 subjects showed positive effects on people diagnosed with anxiety disorders, using a meditation-based stress reduction intervention (Miller *et al.*, 1995).

Teasdale *et al.*, (1995) found that mindfulness meditation used for stress reduction based on the skills of attentional control achieved positive effects for maintenance and relapse prevention of depression. This 'attentional control training' has also proven to be significantly beneficial in the treatment of chronic pain (Kabat-Zinn *et al.*, 1992), psoriasis (Bernhard *et al.*, 1988; Kabat-Zinn *et al.*, 1998), epilepsy (Deepack *et al.*, 1994; Persinger, 1993; Panjwani *et al.*, 1995), substance misuse (Gelderloos *et al.*, 1991), fibromyalgia (Kaplan *et al.*, 1993), hypertension (Schneider *et al.*, 1995), HIV patients (Taylor, 1995), anxiety-depression in old age (Deberry *et al.*, 1989) and anxiety and panic disorders (Kabat-Zinn *et al.*, 1992)

Kutz *et al.*, (1985a, b) studied the effect of meditation on 20 patients diagnosed with narcissistic or borderline personality disorder (BPD), anxiety and obsessional neurosis: 50% of them showed improved tension reduction, and tolerance of stress; depression, anger, guilt, self-blame and self-esteem were all helped, and 65% greatly improved on therapists' estimate of insight and psychological mindedness.

Linehan (1993) based behaviour-dialectical therapy (DBT) on principles of Zen philosophy. In this approach, with its built-in paradox, the patient is encouraged to work towards self-acceptance of who s/he is, and promote change while avoiding rejection of who s/he is. Meditative techniques are adjunctive to individual and group therapy in a research package that proved beneficial in the treatment of borderline personality disorders with frequent parasuicidal behaviour.

Shapiro (1994) described contraindications for meditation in people suffering mental illness such as psychosis, schizoid and schizotypal personality, dissociative states, hypochondrial and somatization disorders, as there is a risk that the patient will be distressed and overwhelmed by the experience of the symptoms during meditation.

Bogart (1991) argued that Western therapy appears quicker and more successful than meditation in many areas such as grief, communication skills, maturation of relationships, sexuality and intimacy, career and work issues, fears and phobias, and early trauma—not surprising, given the lack of direct focus on symptoms or problems within meditation.

In a study with alcohol-dependent patients, using an 'attention placebo group' which consisted in a group practising bibliotherapy, Benson (1975) suggested that relaxation training, whether it was meditation, progressive relaxation, or attention placebo, had a positive effect compared with normal placebo, but there were no significant differences between the three different relaxation processes (Holmes, 1985; Lazarus & Mayne, 1990).

Some authors like Chang-Yong-Chung (1990) recommended meditation as advanced courses for training for psychotherapists as a way of improving rapport and empathy. But Pearl & Carozzi (1994), in a study with 24 student volunteers compared with a control group of 26, in an 8-week trial found no significant effect on empathy, despite a positive effect on anxiety.

## Conclusion

Meditation is an ancient technique that has recently been extracted from its spiritual framework, and applied to therapy for the enhancement of personal well-being.

Although we have limited ourselves to reviewing studies that refer only to meditation as a technique, there is abundant literature that relates meditation to a religious-philosophical framework. It could be argued that in extracting the technique from its theoretical and belief context, the meaning and effect of meditation is deprived of its essence—just as an interpret-

ation, cognitive challenge, or a paradoxical injunction would not have the same impact/outcome when removed from its therapeutic context.

There are different types of meditation, but all seem to be fundamentally based on the concept of *self-observation* of the subject's psychic activity in the *here and now*, with an *acceptance* of process rather than content.

The practice of meditation has positive short- and long-term rewards, the main ones being a calm self-control, and what Benson called 'the relaxation response'. These effects include a wakeful hypometabolic physiological state and a balance of the parasympathetic or trophotropic and sympathetic or ergotropic functions.

The evidence of meditative physical effects is consistent with increasing evidence of the biological impact of psychological interventions. It refutes convincingly the stereotypical criticism that talking therapies 'do nothing' or are 'just' placebo.

Meditation is not free from side-effects, even for long-term meditators or experienced teachers. Nor is it free of contraindications.

The common element with psychotherapy is the emphasis and goal of self-awareness, and the freeing of the individual from habitual patterns of thinking and feelings, paving the way for change. It differs from psychotherapy in that meditation is a completely private and silent exercise.

There is mixed research on the efficacy of meditation as therapy or an adjuvant to therapy. This study has not included anecdotal reports by therapists of the use of meditation as a personal aid and maintenance to their professional development. Most of the studies are based on small numbers, and lack standardised diagnostic procedures. The current evidence seems to indicate a value of meditation in the treatment of stress and anxiety related disorders, but there is a need for a rigorous meta-analysis in order to guarantee standards in evidence-based therapeutic practice.

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**Résumé** Cet article passe en revue 75 articles scientifiques sélectionnés dans le champ de la méditation, par l'intermédiaire d'une compilation de Medline et Psychlit entre 1989 et Juin 1999 ainsi que d'articles pertinents plus anciens. Cet article résume les définitions de termes tels que : méditation, changements psychologiques et physiologiques, effets secondaires rencontrés dans la personne pratiquant la méditation. Cette revue se concentre sur la comparaison entre la méditation et la psychothérapie à un niveau pratique et théorique. Finalement, nous passons en revue l'évidence scientifique pour l'utilisation de la méditation dans la pratique clinique.

**Zusammenfassung** Dieser Artikel behandelt 75 wissenschaftlich ausgewählte Beiträge im Bereich der Meditation, basierend auf einer Medline und Psychlit Untersuchung von 1989 bis Juni 1999 und früheren wichtigen Aufsätzen. Es erfolgt eine Zusammenfassung von Definitionen von Meditation, psychologischen und physiologischen Änderungen und Nebenwirkungen, die von meditierenden Personen erfahren wurden. Dieser Überblick konzentriert sich auf den Vergleich zwischen Meditation und Psychotherapie auf einer praktischen und theoretischen Ebene. Schließlich wird auch die wissenschaftliche Beweislage für spezifische Anwendung von Meditation in klinischer Praxis dargelegt.