

## Hypnosis - A Probable Green Dentistry Application in Paediatric Dental Practice

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Hypnosis, a phenomenon that was referred to as "magnetic disharmony", has been associated with Mesmer, a German who lived between 1734 and 1815. This association gave rise to the word "mesmerization" to describe this phenomenon. During hypnosis, the subject is assisted through a series of instructions to achieve focused attention, dissociate with the surroundings, absorb inner mental world and maintain non-analytical thinking but have positive outcome expectancies. In Hypnosis, two main factors are involved "Trance" and "Suggestion", and their effects have been explained through two sets of theories.

Firstly, the State theories have suggested that hypnosis ensues through dissociation within high-level control systems of the body, and the hypnotic induction only assists in splitting the functioning of the executive control system (ECS) of the brain in different streams. The amnesic barrier created allows for part of the ECS to remain functioning normally, but unable to represent itself in conscious awareness. The barrier permits Hypnotic suggestions to appeal to the dissociated part of the ECS, resulting in the subject being aware of the results of the suggestions, but unaware of how the process normally comes about. Physiologically, there is increased activity seen within the left-sided Fronto-Limbic brain regions, possibly this permits a release of self-control by the subject to the hypnotist. Further, the right-side temporo-posterior systems has increased activity, presumably that leads to the subject engaging in passive imagery.

Secondly, the Non-state theories have clearly suggested that the subject of hypnosis is presumed as an active "doer" and the suggested effect is just an enactment rather than a happening. The hypnotist motivates the subject to be able to interpret hypnotic suggestions without requiring active planning and effort with a response-set put into place. In effect, these theories are simply suggesting that expectancies can directly alter the subject's subjective experience of internal states, and this is what the hypnotist has to employ when putting the subject through hypnosis. Hypnosis in children and adolescents is possible, but, much harder to administer than in the adults. It is also true that not everybody is susceptible to hypnosis, as it is apparent that this phenomenon has also some association with genetics and brain structure. Susceptible persons have been found to have a brain structure with the front part of the corpus callosum of almost a third bigger in relation to the lowly hypnotizable people. Further, on the basis of neurological imaging studies, there appear to be some differences in the function of the frontal lobes, especially, the anterior cingulate in highly hypnotizable people. Nonetheless, allowing for a conducive environment, children, especially for ages 6 to 18 years are more amenable to hypnosis.

During the administration of hypnosis in children, there are variations in suggestions accompanied with imagery that allow for a susceptible child to be guided through the phases of "hypnotic induction", "deepening", "dissociation", "analgesia", "amnesia" and "post-hypnosis". As the child goes through these phases, the hypnotist can alter the sensation, while exploring the origins of given dental problems so as to institute remedial actions. This clinical application is referred to

as hypnotherapy, and can assist the dental practitioner to modulate emotions and behaviours of the child-patient, allowing for its application in the management of dental anxiety, dental fear, tooth ache and also change unhelpful behaviours in the child-patients. Pain, being the most important and challenging condition paediatric dentists have to deal with in children, hypnotic analgesia can be achieved through this process. Even though there are doubts in several quarters as to whether hypnotherapy works in children, studies that have been done indicate that hypnosis is effective in the management of dental anxiety, pain, phobias, post-traumatic stress disorder in children. It is a fact that the normal reaction to dental pain occurs through the nervous communication and cognitive channels of the brain, but when hypnosis creates a communication barrier that leads to non-recognition of pain, facilitating relaxation with no reflexes or physiological reactions by the child [1-7].

In conclusion, through appropriate training, selection of patients and with appropriate informed consent, the dentist can successfully employ Hypnosis as part of the management regime in paediatric dentistry. This could form a part of the green dentistry application within the paediatric dental practices.