

AUDIO, VISUAL AND SOMATOSENSORY STIMULATION

Audio, visual and somatosensory stimulation are frequently used in neurotherapy. The uses of these stimulation procedures are explained to clients in the intake assessment session. Stimulation is used to increase the efficacy of treatment and thereby markedly reduce the number of sessions required for treating many disorders. Usually some form of stimulation is provided for the client to self-administer at home. Such home-based procedures include self-administered tapping of the specific points on the body, audio stimulation delivered by cassette tape or CD, audiovisual stimulation delivered by a light and sound device with stimulation goggles and headsets, and micro amperage stimulators to deliver weak electrical stimulation to specific points on the body.

AUDIO STIMULATION: In neurotherapy, the audio stimulation used, either in the office or at home, is usually a harmonic that is embedded in a filtered "pink noise," a sound like whooshing of an air conditioner. Considerable research has explored the effects of these harmonics on brain activity. Because these harmonics have specific effects on brainwave activity, they are often used to potentiate desired brainwave changes. Some of these harmonics have a calming effect whereas others are designed to increase focus and alertness. In office, these harmonics are often used to enhance the brainwave changes the client is attempting to accomplish in a neurotherapy session, such as brainwave biofeedback. Harmonics are frequently used when treating autistic or delayed children to calm the child so that neurotherapy may proceed. In office, the harmonics or other therapeutic sounds are usually delivered with headsets so only the client under treatment is affected. In the home environment, the sounds are often delivered "open air" with loudspeakers. Persons not under treatment may be affected by these sounds, so care should be taken to minimize exposure of other persons in the acoustic environment. Most of these therapeutic sounds will not adversely affect others, but some sounds do have stimulating properties which could be uncomfortable for those not under treatment. The harmonics used in neurotherapy have been designed to be used at very low intensity. If you experience discomfort, either in office or at home, it is probably the result of setting the volume too high. Similarly, if you experience no satisfactory effect of the stimulation after prolonged use, the volume is probably too high and outside the window of effectiveness.

VISUAL STIMULATION: Visual stimulation is frequently used in neurotherapy and occasionally portable units are provided for clients to use at home. We have found that visual stimulation and feedback used in neurotherapy can be remarkably effective in the treatment of autism and many learning disorders. In such cases, the visual stimulation is presented with small lights (called light emitting diodes) mounted on eyeglasses frames around the child's field of vision. The child can see through the stimulation field so is able to read, see and communicate with the therapist, draw or do mathematical problems and the like, while being visually stimulated. Another light source that is often used in such cases is a stand-alone light strobe. This is a gooseneck type of fixture with small lights that is directed at material the child is reading. Often these stand-alone fixtures are used for severely hyperactive autistic children who have not yet been able to wear the eyeglasses.

Visual Stimulation is also used in the neurotherapeutic treatment of many other disorders including attention deficiencies, dementia, addictions, sleep disorders, alcoholism, chronic

pain, chronic fatigue, depression and traumatic stress disorders. The light stimulation used in such cases, particularly with adults, is delivered with closed eyeglasses with light emitting diodes surrounding the eyes, which are kept closed during treatment. Depending on the treatment, the light stimulation frequency can be calming or arousing, or various combinations of frequencies.

Feelings of agitation and/or headache are occasionally reported. These discomforts are associated with stimulation that is too intense. These side effects are self-limiting in the reduced stimulation usually eliminates the discomfort. Stimulation intensity can be reduced by lowering the brightness or changing the color of the lights. Clients usually self-adjust the light intensity and often mistakenly assume that more intense stimulation is more beneficial. Brightness should always be adjusted to a comfortable level. In fact, there is considerable evidence indicating that very low intensity stimulation may be much more effective than high intensity stimulation.

About five percent of people with epilepsy are photosensitive and prone to seizure when exposed to light stimulation. At intake, clients are screened for seizure and traumatic brain injury histories. Portable light stimulation devices are never provided for home use if clients report seizure or head injury histories. In office, there are occasions when such stimulation procedures might be used if such use seems therapeutically appropriate and the client is prepared to proceed, even with a seizure history. Generally, however, light stimulation is never suggested for persons with histories that would indicate seizure risk.

Photosensitivity seizure in the general none epileptic adult population is extremely rare. About one in 20,000 adults, with no seizure history, has photosensitivity. Most photosensitive individuals experience their first seizure while watching television and about 75 percent experience their first seizure before the age of 20. Photosensitivity in children with no seizure history is somewhat higher, until the age of about 20, when about 75 percent of photosensitive individuals will have been identified after having a seizure. Visual stimulation is used in most of the neurotherapy sessions to potentiate brainwave changes and to mitigate boredom with children. Should a parent be concerned, the visual component can be eliminated, although the occurrence of photosensitivity, even in children, is rare. The treatment of autistic and delayed children relies very heavily on visual stimulation procedures. Similarly, teaching children to read or spell, or to improve these skills, likewise relies extensively on visual stimulation procedures. The risk of photosensitivity seizures in children without seizure history would be about 1 in 4,000. One should also keep in mind that if a child is photosensitive, they will likely have a seizure at some time before the age of 20, and having a first seizure in a therapeutic environment is certainly safer than many other locations. Identifying a child with photosensitive epilepsy can be beneficial in that precautions can be taken to prevent seizures in other, less safe, environments. Having a first seizure does not make future seizures more likely. These risk factors do not apply, of course, to the seizure-disordered client. The treatment of seizure disorders does not involve visual stimulation. However, seizure-disordered clients under treatment for severe learning problems may elect to accept the higher seizure risk to facilitate treatment.

Parents, guardians or other persons accompanying the client in the treatment room should remember that when visual stimulation is delivered, either with a standalone strobe or open eyeglasses, their own seizure history may be relevant. Although the risk is trivial, observers with a history of seizures should orient themselves away from the visual stimulation being delivered to the client.

SOMATOSENSORY AND CRANIAL STIMULATION: Somatosensory stimulation is usually self-administered by tapping or rubbing specific points on the body. There are some points on the body that when stimulated, result in measurable changes in brainwave activity. These stimulation protocols are often used with neurotherapy in the treatment of phobias and seizure disorders. These body stimulation procedures are frequently used together with harmonic stimulation. Somatosensory stimulation can also be applied with micro amperage electrical stimulation. As with manual stimulation, micro amperage stimulation of specific points on the body has been found to have measurable effects on the brain activity. Often used to enhance body quiescence during neurotherapy, the level of stimulation should always be below the client's feeling threshold.

Cranial micro amperage stimulation is usually applied to the ear lobes or on the mastoid process behind the ears. Occasionally used in the office, cranial stimulators are usually provided for the client to use at home. Cranial micro amperage stimulation is a very effective therapy for treatment of anxiety disorders, depression, addictions such as alcoholism, chronic pain and sleep disturbance. The cranial stimulators prescribed for home use are Class IIa, Type B medical devices as classified by the Federal Drug Administration (USA). In the USA, a prescription is required from a licensed health care practitioner, but these devices are available in Canada without prescription. Feelings of agitation or headache are occasionally reported. These side effects are usually the result of stimulation that is too strong. The stimulation should always be below feeling threshold. When applied in this correct manner, side effects such as headache are very rare. Although completely safe, we never prescribe cranial or somatosensory electrical stimulation for use with children.

CONSENT FOR TREATMENT

I have read the information on the stimulation procedures. I hereby freely and voluntarily agree to have the following stimulation procedures used with me as part of my treatment.

VISUAL STIMULATION	YES	NO
AUDIO STIMULATION	YES	NO
MICRO AMPERAGE STIMULATION	YES	NO

Signed

Date