

# BOTOX FOR HEADACHE

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Botulinum toxin is a neurotoxin produced by clostridium botulinum, the bacteria that thrive in poorly sterilized canned food and produce the severe food poisoning called botulism. These are the toxin that paralyze nerves by blocking the release of a substance called acetylcholine- which blocks the muscles and prevents them from contracting thereby causing paralysis. The substance which is ingested in spoiled food and causes the illness is known as botulism.

However, in therapeutic uses, Botox is injected directly into the muscle rather than absorbed into the bloodstream. The dose is a fraction of those which cause botulism.

Botox is well known for its use in treatment of wrinkles. It has approval for use in treating facial tics and spasms, dystonia and other forms of spasticity in cerebral palsy for example. Its tolerability and safety record for these uses are excellent. The principle behind its use in this case is to relax tense or spastic muscles by blocking Acetylcholine release which stimulates muscle contraction.

The discovery of Botox for treatment of migraine was quite by accident. Several patients who were using Botox for injection of wrinkles also happened to have migraine. They reported improvement in their headaches following injection of Botox to their brow and forehead muscles.

The mechanism of action is not entirely clear. One possibility is that Botox may decrease muscle contraction that may act as a trigger to migraine. Another theory is that Botox may act on a brain related chemical like substance P which is involved in pain and migraine mechanisms.

Careful trials studying migraine and chronic headache patients continue to examine the efficacy of Botox. Several small trials have been completed and results of a large placebo controlled trial are pending. The average dose is 100-200 units. The onset of action is usually within the first 2-3 weeks of injection however patients may require a set of 2-3 injections before maximum benefit is seen. Injections are spaced at 12 week intervals.

Safety is always a concern. However, Botox' record since 1989 is excellent. There is no systemic absorption as there is with oral medication; therefore no systemic side effects are seen. Drooping eyelids can occur with improper injection technique but are transient.

Botox can be considered in patients when other migraine treatments fail or are contraindicated. Cost depends on the number of units required. Safety and tolerability are excellent. Studies are ongoing to prove efficacy.