

USE OF BOTULINUM NEUROTOXIN INJECTIONS TO TREAT MOVEMENT DISORDERS

People often associate botulinum neurotoxin (BoNT) with the treatment of facial wrinkles or frown lines. Since its introduction 28 years ago, neurologists and other physicians have safely used BoNT to treat many disorders. This fact sheet will help you and your family understand the use of BoNT in people who have excessive and involuntary activity of muscles.

Neurologists from the American Academy of Neurology are doctors who identify and treat diseases of the brain and nervous system. The following evidence-based information* is provided by experts in neurology who carefully reviewed all available scientific studies on the effect of BoNT for treating movement disorders.

What is botulinum neurotoxin and how does it work?

BoNT is a drug made by bacteria that causes some forms of food poisoning. Neurologists inject small and safe doses of BoNT into the muscle to block nerve signals that cause muscle spasms.

Will BoNT help my neck and shoulder twisting or tilting (cervical dystonia)?

There is strong evidence that BoNT injection is safe and helpful in treating head, neck, and shoulder problems known as cervical dystonia. BoNT blocks nerve signals that cause the uncontrollable tightening and movements of these muscles.

Will BoNT control winking or closing of my eyelids (blepharospasm)?

There is good evidence that BoNT injections probably help control involuntary winking (also known as blepharospasm). Prior to BoNT, there were no helpful treatments for this disorder.

Will BoNT help my facial spasms (hemifacial spasms)?

There is good evidence that BoNT injection is useful in treating hemifacial spasms. People with hemifacial spasms who have had BoNT injections report benefits lasting almost three months. You may experience mild weakness of the face,

headache, dry eye, or drooping of the eyelid or mouth. No studies have compared BoNT with other common treatments for hemifacial spasms, including oral drugs and surgery, so we do not know which is better.

Is BoNT effective for treating “writer’s cramp”?

There is good evidence that BoNT injection probably treats writer’s cramp (also known as focal limb dystonia). While many doctors use EMG or nerve stimulation to help determine the best needle location for BoNT injection, more research is needed to say how much this helps.

Will BoNT help my tremors?

Essential tremor is the most common movement disorder. BoNT injection in the forearm muscles should be considered as a treatment option for “essential hand tremor” when drugs have not worked. The evidence does not say whether BoNT helps control head and voice tremors.

How effective is BoNT for disorders of the voice (dysphonias)?

There is good evidence that BoNT injection helps “strain-strangle” voice (also known as adductor type spasmodic dysphonia, or ADSD). There is not enough evidence to say whether BoNT helps or does not help treatment of a breathy voice (also known as abductor spasmodic dysphonia, or ABSD).

Does BoNT control motor tics?

Tics associated with Tourette syndrome are relatively brief, intermittent movements (also known as motor tics) or sounds (also known as vocal or phonic tics). There are drugs that are often effective in treating troublesome tics. However, these drugs can often produce undesirable side effects, such as involuntary movements. BoNT possibly helps control motor tics. The evidence does not say whether BoNT helps vocal tics.

What are the risks or side effects for BoNT injections?

BoNT was introduced 28 years ago. When used appropriately, its risks are low and adverse side effects are rare. The most common side effect is mild muscle weakness. Other side effects include pain at the injection site, weakness, dry mouth, and flu-like symptoms. All side effects generally go away quickly.

*After the experts review all of the published research studies, they describe the strength of the evidence supporting each recommendation:

Strong evidence = more than one high-quality scientific study

Good evidence = at least one high-quality scientific study or two or more studies of a lesser quality

Weak evidence = the studies, while supportive, are weak in design or strength of the findings

Not enough evidence = either different studies have come to conflicting results or there are no studies of reasonable quality

This is an educational service of the American Academy of Neurology (AAN). It is designed to provide members with evidence-based guideline recommendations to assist with decision-making in patient care. It is based on an assessment of current scientific and clinical information and is not intended to exclude any reasonable alternative methodologies. The AAN recognizes that specific patient care decisions are the prerogative of the patient and the physicians caring for the patient, based on the circumstances involved. Physicians are encouraged to review carefully the full AAN guidelines so they understand all recommendations associated with care of their patients.

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