

Botulinum Toxin Treatment for Strabismus (squint)

Information for patients



Leeds Centre for
Ophthalmology

What is botulinum toxin?

Botulinum toxin (BT) is a chemical produced by the bacteria *Clostridium botulinum*. The BT we use does not contain infection and cannot cause botulism food poisoning. It has been used to treat strabismus (squint) since the 1980's. It is also known as Botox and is used cosmetically to treat wrinkles as well as conditions such as strabismus or muscle spasms.

How does it work?

BT prevents the release of the chemical called neurotransmitter acetylcholine which blocks nerve signals between the nerves and muscles. BT causes weakening/ paralysing of the muscle concerned. This paralysis takes effect after approximately three days and wears off gradually over three months, although this can be delayed in some cases. The treatment is temporary, and the muscle will recover its full function over the course of a few months.

One of the muscles that moves the eye can be paralysed, which reduces the strabismus. This can give the orthoptist and the doctor valuable information about proceeding with surgery, how much surgery to do and what results can be expected. In some patients, the BT does not work.

What is it used for?

Adults

In diagnosis

It may be used if you have a strabismus that you would like to have corrected surgically. The BT will temporarily alter/reverse the position of your eyes during which time we can assess two things:

1. Whether you get any double vision and if you do, how uncomfortable it is.
2. Whether you use your eyes together as a pair (binocular vision).

In treatment

Repeat BT treatments may be used to correct a strabismus if you are unable to have surgery. Sometimes, BT is used in adults during surgery as part of the surgical procedure and in this case, it will be done under general anaesthetic.

Children

BT is used to try to straighten the eyes in some types of strabismus that start in infancy. In some cases, the eyes may remain straight as the eyes begin to work together as a pair. In other cases, the strabismus may reappear as the BT wears off and an operation may be needed to correct it.

BT may be used if your child has an acquired nerve palsy to prevent contracture of the opposite muscle. It may also be used during surgery as part of a strabismus operation.

How is the procedure carried out?

Adults

The procedure is carried out at St. James's University Hospital. It is usually performed whilst you are awake under local anaesthetic. Anaesthetic drops are placed in the eye to stop sensation on the surface of the eye. Sticky pads are placed on your forehead to detect the electrical activity of your eye muscles. The needle is put into the muscle and you will be asked to move your eyes from side- to-side. You will hear a noise that indicates the needle is in the right place. The doctor will inject BT into the muscle and ask you to remain still for approximately 30 seconds before removing the needle.

Children

Children are treated under general anaesthetic. It is carried out in an operating theatre as a day case. Once your child has recovered from the anaesthesia, they will be able to go home later that same day.

Does it hurt?

Local anaesthetic is used in adults but there may still be some discomfort. A mild ache may be felt after the injection, if necessary a pain relief can be taken.

Children and some adults are treated under general anaesthetic or sedation.

Possible side-effects

- Ptosis (drooping eyelid) occurs in about 5% of cases but normally recovers within 4-6 weeks.
- The strabismus may be overcorrected causing the eye to temporarily turn the other way e.g. if your eye was turning out, it may turn inwards and then become straight as the effect wears off.
- Double vision may occur and require you to wear prisms for several weeks until the effect of the BT wears off.
- Bleeding and infection may occur.
- Perforation of the eyeball is a potential very rare complication.

N.B. In some patients the BT does not work, so you will see no change in the strabismus.

Contraindications

Tell your doctor if you are pregnant or breastfeeding, have heart problems or a neuromuscular disorder. They will advise you on whether you are suitable for this procedure.

If you have any questions or concerns, please discuss these with the doctor or one of the orthoptists.

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