



## **Neurotoxins**

**Also known as** anti-wrinkle injections or treatments, cosmetic injections, onabotulinumtoxin A, abobotulinumtoxin A, incobotulinumtoxin A and Botox<sup>®</sup>, Dysport<sup>®</sup> and Xeomin<sup>®</sup>

### **What are neurotoxins?**

Neurotoxins are a group of substances that are used in dermatology to treat hyperhidrosis (excessive sweating). They are also used to reduce wrinkles, most commonly those around the eyes and on the forehead.

Neurotoxins are also used in ophthalmology for strabismus (where the eyes are not aligned properly) and in neurology for the treatment of migraines, and for spasticity of the limbs due to cerebral palsy.

### **How do neurotoxins work?**

Neurotoxins are derived from a bacterium and work by blocking the connection between the nerve and its muscle. This results in the muscle not being activated.

In dermatology this occurs only within the area of treatment. When the muscle is smooth then the skin overlying it is also smooth, resulting in a reduction in wrinkles. In the treatment of hyperhidrosis, neurotoxins block the nerve supply to sweat glands, which in turn stops the sweat production.

### **How many types of neurotoxins are available?**

There are 3 types of neurotoxins currently available in Australia – known as onabotulinumtoxin A, abobotulinumtoxin A and incobotulinumtoxin A. They each have their own unique characteristics.

### **Which wrinkles can be treated with neurotoxins?**

Neurotoxins are the most common non-surgical method for treating wrinkles. Neurotoxins are particularly effective for targeting the lines that form when we move our face such as in smiling or frowning. These include the forehead lines, crow's feet lines (lateral canthal lines) and frown lines (glabellar lines).

### **What are the potential side effects of using neurotoxins?**

Side effects of using neurotoxins can be due to the injection itself or related to the treatment. Injection related side effects include tenderness, bruising or headaches. Treatment related side effects include an increased risk of bruising with some herbal medications such as vitamin E, ginseng, ginkgo and high doses of garlic. A rare side effect may be a transitory droop of the eyelids or eyebrows.

### **Who should not have treatment with neurotoxins?**

People who are known to be allergic to this product or have a neuromuscular condition known as myasthenia gravis or Eaton Lambert syndrome should not be treated with neurotoxins. Treatment is not recommended during pregnancy or breast-feeding, or if there is an infection in the treatable area.

Whilst no drug interactions have been reported, care should be taken with aminoglycoside antibiotics (such as neomycin and gentamycin) as these inhibit neuromuscular signalling. Care should also be taken if an individual has bleeding tendencies or experiences bruising with treatment.

### **Is this treatment reversible?**

The effects of neurotoxins are not permanent and, over time, the nerves become functional again. This usually takes about 3 months depending on the area being treated and the dose of neurotoxin used.

This information has been written by Dr Elizabeth Dawes-Higgs  
*Updated 02 June 2015*