

Case study C: Botulinum toxin (Botox and Dysport)

Botulinum toxin is produced by the bacterium *Clostridium botulinum* and is the cause of a rare type of food poisoning. It is one of the most poisonous, naturally-occurring substances in the world, causing paralysis of the muscles. In very small doses, it is used medically to treat a number of painful and sometimes serious conditions involving muscle spasms. It is also increasingly used as a cosmetic treatment because it can relax the muscles of the face and temporarily smooth wrinkles and frown lines. It is sold under the brand names **Botox** and **Dysport**.

Is being wrinkly a problem?

Having wrinkles is certainly perceived as a problem by many people. In the UK in 2002, people spent £652 million on anti-ageing products and 72,000 cosmetic surgery procedures were carried out. One in three women over 30 in the UK now uses an anti-ageing product. Anti-wrinkle treatments (such as "Self-Esteem Neck Firming Treatment") are aggressively marketed in a society that values a youthful appearance. However, growing older is a perfectly natural process and many people believe that you should just accept it.

What happens to animals used to test botulinum toxin?

The toxin is extracted from cultures of bacteria, and batches vary in strength. It is very important to measure the strength of each batch so that the right dose can be given to people. This is done by injecting **mice** in the abdomen with different doses of each batch of toxin and seeing whether they become paralysed. Some mice die of suffocation due to the paralysis of the muscles needed for breathing. As many as 100 mice have been used to test each batch of toxin, although it is now more usual to use 25.

As the demand for botulinum toxin increases, particularly for cosmetic use, so will the number of tests done on mice.

As more is found out about the way in which botulinum toxin causes paralysis, more accurate methods of testing are being developed, based on measuring reactions between molecules in the test tube (in vitro). However, these methods are still not ready for use.

Some things to think about...

Does the way in which people use botulinum toxin (i.e. for medical or cosmetic reasons) affect your opinion about the fact that animals suffer and die when it is tested?

Do you think people who use the toxin for cosmetic purposes are aware that it is tested on animals? Should they know?

Facts and figures correct as of 2007