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BC Medical Association

## World's Deadliest Poison Used for Revolutionary Therapies

VANCOUVER -- Last week a B.C. Medical Association course for specialists demonstrated medical and cosmetic uses for botulinum toxin -- the same paralyzing poison that once commonly caused botulism in the days when people canned their own food.

Treatment with this toxin alleviates many of the disabling disorders called dystonias, where excess nerve activity in specific muscles causes cramping, spasms, eye disorders, or a rigid, twisted posture. Surprisingly, the treatment is now also used to rejuvenate aging faces, or to put an end to the social stigma that some people suffer because of ingrained, exaggerated facial features that others misinterpret as an emotion such as anger.

In addition to giving approved toxin treatments for eye disorders and facial dystonias, Vancouver ophthalmologist Jean Carruthers has so far treated thirty patients experimentally with botulinum toxin for frown lines. In the next year, she will be recruiting many more of these patients as part of an international, multi-centre research trial program.

In a safe, highly dilute form, the toxin (sold as Oculinum or Botox) is injected directly into the offending muscle, where it permanently deadens the overactive nerve terminals. The dystonia usually disappears for about four months, until the nerve terminals regenerate.

Although the treatment must be repeated periodically, it is given comfortably in a doctor's office, and it produces very little side effects -- the worst is a possible drooping of the eyelids for a week or so (with some facial treatments). This contrasts with the trauma and complications of traditional therapies, making it possible to reliably return for treatments.

One patient is Henry Goertson, who had spent a year going to faith healers and hypnotists and had finally lost his job as a bus driver because he simply could not keep his eyes open. "I felt very bitter to think that I was going to lose the use of my eyes for the rest of my life," he says. "I was almost

suicidal. I had to literally hold my eyes open to see what I was doing."

Luckily, Henry was soon diagnosed, was given the approved botulinum-toxin treatment pioneered for this disorder by Dr. Carruthers, and was back driving again. He now needs the treatment only twice a year.

Donna Gurney had exaggerated frown lines. "I'd be walking through the office and people would say what's wrong? Are you upset? Are you mad? And nothing would be wrong," she says. "This continually happened. And when you project that you're mad, people relate to you like you're mad. They act wary."

For Donna the treatment was wonderful. "Nobody was asking me if I was mad anymore," she says. "They relate to you differently."

Another condition that responds to botulinum-toxin treatment is torticollis, a painful twisting of the neck that gets little relief from other drugs or surgery. Dr. Joseph Tsui in Vancouver is one of the world leaders in treating torticollis with botulinum toxin.

Other responding conditions include misalignment of the eyes, facial spasms, some limb dystonias, selected cases of writers' or musicians' cramp, a speech disorder, spasticity in some cases of multiple sclerosis, dystonia in cerebral palsy, and possibly even stuttering and tics.

On the cosmetic side, botulinum toxin may be used to even out a face that is paralyzed on one side, to reduce flared nostrils or crows feet, or for other forms of facial rejuvenation.

Plastic surgeons, neurologists, and ophthalmologists who attended the Vancouver course learned the careful art of placement and dilution of the botulinum toxin, a substance so potent that, in the crystalline form in which it is sold, it looks like a mere film of dust on the bottom of the vial.

"Botulinum toxin must be treated with great respect," says Dr. Carruthers, "but when appropriately used it can be a dramatically effective therapeutic agent."

Written by Stephen X. Arthur  
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