

## **MEDICAL BREAKTHROUGHS**

### **RESEARCH SUMMARY**

TOPIC: NERVE RECONSTRUCTION GIVES CHRIS CONFIDENCE AGAIN  
REPORT: MB #4963

**BACKGROUND:** The nerve in the jaw, the trigeminal nerve, is a complex nerve that is responsible for sensation in the face as well as motor function, like chewing or biting. This nerve is the largest of the cranial nerves. It comes directly from the brain, the branches of this nerve give sensation to the upper face, midface, upper lip, jaw and palate, lower face, lower lip, and tongue. Injury to the nerve comes from facial trauma, local anesthesia, or surgical procedures. Complete sensory recovery from such injuries seldom occurs spontaneously. Peripheral nerve injuries can cause permanent sensory dysfunction such as decreased or lost sensation, painful sensation, or a combination of both. This can interfere with daily living and may affect the lives of afflicted patients.

(Source: <https://renaissance.stonybrookmedicine.edu/surgery/blog/providing-microsurgical-repair-of-trigeminal-facial-nerve-injuries>)

**DIAGNOSING:** Time between the injury and repair can be less critical and the sensation in the face can be recovered even after one to two years without sensation. All routes to access the sensory nerve involve little scarring. Minor or superficial nerve injuries can heal themselves; an exam neurophysiology and clinical imaging will decide the level of damage to the nerve and if it needs repair. If the nerve needs repair, this is done so surgically. Patients with persistent loss of sensation in the face can take more than four to six months to heal properly.

(Source: <https://sorensenclinic.com/microsurgery/sensory-nerve-repair/>)

**NEW TECHNOLOGY:** Recent advances in allograft nerves, which are nerves harvested from human donors, combined with advances in complex microsurgical repair allow doctors to successfully restore feeling to patients' faces after trigeminal nerve damage. Oral and maxillofacial surgeons are doctors who specialize in the care of patients with facial trauma and perform surgery. These surgeries, called orthognathic surgery, correct jaw irregularities and realign the patient's jaw and bite. These specialists also remove benign tumors and cysts through reconstructive surgery, in some cases they can repair the trigeminal nerve. It is very important for patients to report to their doctors if they have any numbness or pain following an oral surgery, because the nerve may have been damaged during the procedure. Using the nerve allografts from human donors has been increasingly popular because after surgery, the patients does not have to go on immunosuppressives, which may or may not have even prevented the body from rejecting the graft. This new technique is less likely to reject the graft and retain the structure necessary for nerve regeneration.

(Source: <https://news.vumc.org/2021/06/09/nerve-repair-advances-lead-to-improved-restoration-of-facial-sensation/>)

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**If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting  
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