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Bell's Palsy

What is Bell's Palsy?

Bell's Palsy is a form of temporary facial paralysis that results from damage to the facial nerve (also known as Cranial Nerve VII). Data suggests that the damage is a result of a viral infection along the path of the nerve. The facial nerve controls many muscles of the face, including those that cause eye opening and closing, smiling, and frowning. With Bell's palsy, the ability for the facial nerve to transmit messages from the brain to the facial muscles is impaired, which can cause facial weakness or paralysis.

Treatment for Bell's Palsy is dependent on the individual. In some cases, only medical therapy is needed, with steroids and/or anti-inflammatory medication prescribed immediately after symptom onset. In other cases, treatment may include medications and physical therapy. Since eye closing ability may be affected, lubricating eye drops or eye patches may be prescribed to prevent excessive eye drying and irritation during sleep.

Pathophysiology

Nerve injuries are classified according to the degree of injury. The following is an overview of the main types of nerve injury:



Neuropraxia	
Mechanism of Injury	Ischemia or compression.
Effect of Injury	Nerve structure remains intact but conduction slows down.
Recovery	Occurs within hours-weeks.
Axonotmesis	
Mechanism of Injury	Crush injury.
Effect of Injury	Axon is disrupted but myelin sheath is intact.
Recovery	Dependent on severity of injury; Motor function may return, but is not guaranteed. Occurs within weeks-months.
Neurotmesis	
Mechanism of Injury	Damage extends through the majority of the nerve
Effect of injury	Decreased nerve conduction.
Recovery	Recovery is uncertain and complete recovery may be rare. It typically takes 6 months to determine if there is any return of function.

Nerve Recovery and Regeneration

Following injury, nerves sprout to recover function. Nerve regeneration occurs at a rate of 1 mm/day. The extent of nerve recovery is dependent on the amount of scarring around the nerve, the proficiency of blood flow around the nerve, and the degree of inflammation.

Re-training the Facial Nerve

A trained physical therapist may work with you to help you recover muscle function. Your therapist may prescribe you a series of exercises to help maximize facial muscle function recovery.

General Exercise Principles:

- Slow and small movements to start
- Focus on motor control and coordination
- Use of a mirror to ensure symmetric muscle movements
- **Emphasis on QUALITY of movements, not quantity**

Avoid the use of electrical stimulation during the first 6-12 months. Please consult with a physician.

Frequently Asked Questions

- **How long should it take to recover?**
 - Most patients with Bell's palsy should have some recovery within the first 2-4 weeks, however, complete recovery may take up to 6 months. If you have facial paralysis without recovery for more than 6 months you should see a physician immediately.
- **What can prolong recovery or cause incomplete recovery?**
 - The gold standard treatment for Acute Facial Paralysis secondary to Bell's palsy is steroids and antiviral medications. If you do not take these medications you may have a delay in recovery. Or if the cause of your paralysis is something different from Bell's Palsy.
- **What treatments should I avoid?**
 - Electrical nerve stimulation applied incorrectly or at the wrong time could increase your risk of synkinesis therefore should be avoided.
 - Accupuncture - the current available evidence is insufficient to support that acupuncture is an effective therapy for Bell's palsy due to the poor quality of research into the area.
- **What is Synkinesis?**
 - Unwanted movement of the facial muscles during voluntary movement. Examples: eye closure with smiling, neck tightening with mouth movement, cheek lifts with eye closure, facial tightness.
- **Who develops Synkinesis?**
 - Everyone who develops facial paralysis will develop some degree of synkinesis. However, the degree will vary from patient to patient. The more severe your facial paralysis is at the onset, the likelier you're your synkinesis will be more noticeable.
- **How do you treat Synkinesis?**
 - Biofeedback and facial re training with a physical therapist
 - Facial massage and stretching
 - Botox can be used to relax overactive or tight muscles. Please consult your physician.

For more information:

- **USC Facial Nerve Center** -- <http://ent.keckmedicine.org/treatments-services/facial-nerve-center/>
- **Information about Bell's Palsy** -- <http://www.facialpalsy.org.uk/causesanddiagnoses/bells-palsy/>
- **Information about Synkinesis** -- <http://www.facialpalsy.org.uk/support/patient-guides/synkinesis-advice/>