

*Openure  
 missing  
 a couple  
 of details  
 essentially  
 those noted  
 in your paper.  
 Generally  
 a good job.  
 I liked the  
 video!*

90%

## Bell's Palsy

(Facial Palsy)  
(7<sup>th</sup> Nerve Palsy)

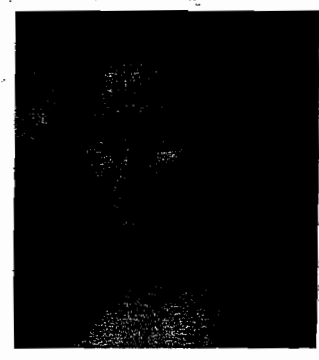
### What is it?

- > The most common causes of the abrupt onset of a unilateral facial weakness are strokes (central) and Bell's Palsy (peripheral).
- > Sudden onset of paralysis or weakness on one side of your face caused by trauma to the 7<sup>th</sup> cranial nerve (facial nerve).

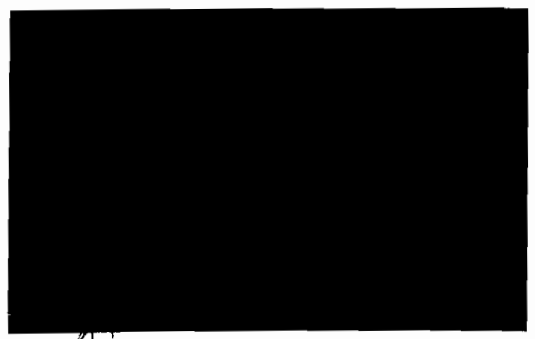
### Characteristics of the facial nerve

- > aka 7<sup>th</sup> nerve
- > Exits the skull at the stylomastoid foramen, passes through the parotid gland, and subdivides in the 5 different branches that supply the facial muscles.
- > Facial nerve function:
  - > Controls the muscles responsible for blinking and closing the eye
  - > Facial expressions such as smiling and frowning
  - > Controls and sends impulses to the lacrimal or tear glands and saliva glands
  - > Controls the muscles in the middle ear, and the stapedial muscle

Does Leonardo DaVinci's Mona Lisa have Bell's Palsy?



### A Video!



*this was a nice touch!*

### Incidence/Prevalence

- > Occurs in 1 out of 5,000 people
- > Affects more than 40,000 Americans each year
- > Mean age of onset is 40 years, with a youngest onset reported at age 3
- > Incidence is lowest in children under age 10
- > People most at risk:
  - Pregnant women
  - Diabetics
  - People with Upper Respiratory problems
- > Unilateral cases seen more often, but can have bilateral paralysis or weakness.

## Frequent Signs and Symptoms

- > Sudden onset (hours up to a day or two) on one side of your face
- > Degree of paralysis should peak within a few days of onset
- > Difficulty smiling or blinking
- > Facial droop, stiffness
- > Vertigo
- > Pain behind or in front of your ear
- > Headache
- > Loss of taste
- > Changes in the amount of tears or saliva your body produces
- > Dry eyes
- > Hyperacusis – paralysis of stapedial muscle, impaired tolerance to typical levels of noise

## Cause/Risks

Cause is still unknown

- > Viral infection
  - Herpes Simplex virus (70%)
- > Neoplastic
  - Acoustic Neuromas
  - Glomus jugulare
- > Trauma
- > Birth
- > Neurologic
  - Guillian Barre Syndrome
- > Metabolic
  - Pregnancy
  - Diabetes
  - Hyperthyroidism
  - Hypertension
- > Toxic
  - Alcoholism

## Audiological Findings

- > No hearing loss
- > Hyperacusis - may report sounds are louder on affected ear due to paralysis of the stapedial muscle
- > Tymps: normal
- > Word Rec: reduction at high intensity levels or a rollover effect.
- > Acoustic Reflexes: absent or present
  - > If present – SOL of facial nerve is distal to the stapedial branch of the 7<sup>th</sup> nerve
  - > If absent – SOL of facial nerve is proximal to the stapedial branch of the 7<sup>th</sup> nerve (most common)

## Otologic Findings

- > Bell's Palsy involves the facial nerve, yet other cranial nerves need to be evaluated too.
- > Observation of the face to determine the site of lesion whether central or peripheral:
  - > Central: indicated by only lower facial paralysis
  - > Peripheral: indicated by lower and upper facial paralysis
- > Typical commands to help diagnose Bell's Palsy:
  - "Close your eyes"
  - "Show me your teeth"

## Not to be confused with...

- > Stroke – more severe
- > Infections
- > Tumors
- > Ramsey Hunt Syndrome – facial paralysis in conjunction to a hearing loss
- > Blepharospasm - spasmodic eye blinking, not a sudden onset and bilateral
- > Mobius syndrome – congenital facial diplegia associated with the 6<sup>th</sup> nerve, weakness of side to side eye movement, and abnormalities of the limbs.
- > Facial Myokymia – associated with facial contractions and weakness due to brainstem tumors and MS

## Common Diagnostic Test

- > Electromyography (EMG) – this test can confirm the presence of nerve damage and predicts the return of facial motor function.
  - measures the amplitude of the facial muscle in response to stimulation
  - Should not be performed until 3 days after onset of paralysis
- > CT or MRI – may be needed to eliminate the presence of a tumor or skull fracture.

## Treatment

- > Most mild symptoms will subside within 2 weeks - 1 month without treatment
- > Combination of corticosteroid with antiviral med. is most effective:
  - > Anti-inflammatory: prednisone
    - > 1 mg/kg/d for 1 week, tapering off in the 2<sup>nd</sup> week.
  - > Anti-viral: Acyclovir (Zovirax) or famciclovir (Famvir)
    - > 800 mg, five x day for five days.
- > Facial Massage!!!!
- > Keep eye moist with eyedrops
- > Cosmetic and reconstructive surgery may also be performed

significant spontaneous recovery

eye care can be significant

mentioned MCF

anne note that surgery may sometimes be done in some cases.

## Recovery

- > 50% - within 2 weeks - 1 month
- > 35% - within a year
- > Severe cases: symptoms may never disappear and may need facial retraining therapy from a physical therapist.
- > Rare cases: symptoms recur

## Recovery terms

- > Crocodile tears – increased tearing when eating due to aberrant regeneration of the nerve fibers.
- > synkinesis – involuntary movements of some facial muscles due to voluntary movement to other facial muscles.
  - Ex. eye lid moving while eating.

## Case Study

- > 29 year old female
- > 16 day history of right-sided facial paralysis
- > 34 weeks pregnant
- > No complaints of dizziness or hearing loss
- > Audiogram was normal with the exception of absent acoustic reflexes on the right side.
- > No treatment offered due to her pregnancy

protection when pregnant

## Follow-up Case

- > Recovery was incomplete, developed good facial symmetry, excellent eye closure, but suffered mild brow ptosis, synkinesis, and gustatory tearing.
- > At age 36 she suffered another attack, but this time on the left side.
- > She was immediately treated with prednisone and acyclovir, and she fully recovered on the left side.
- > Two years later she suffered two more recurrences on the right side, treated with prednisone and acyclovir, and recovered just as much as her first outbreak.

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