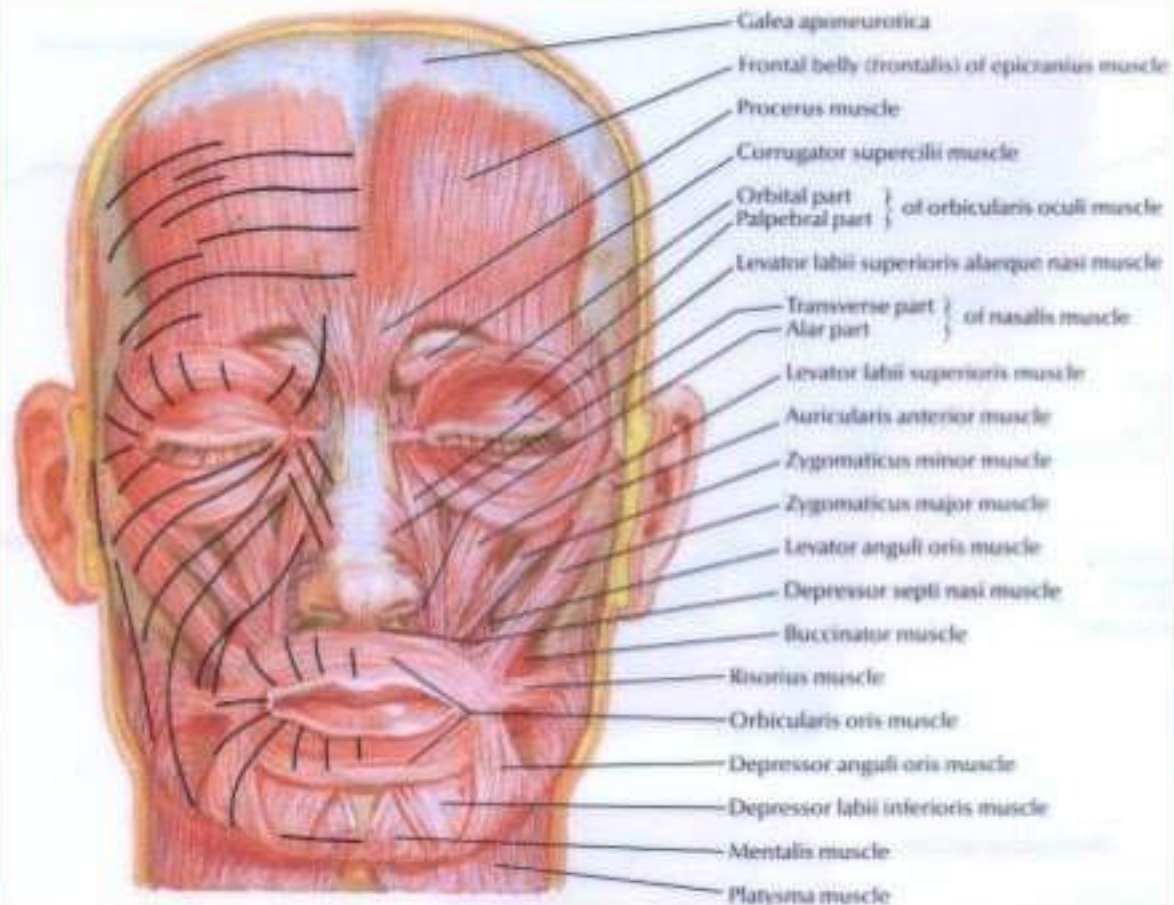


Facial paralysis

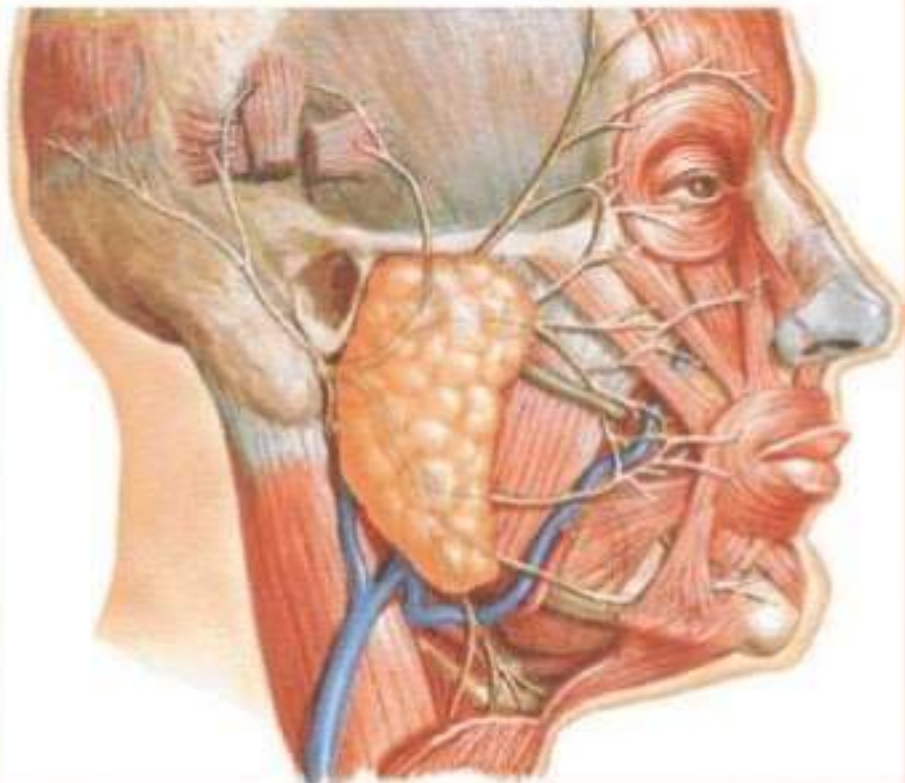
FACIAL MUSCLES

- Muscles of facial expression
- Subcutaneous
- Develop from the second branchial arch
- Innervated by the VII n

1. Muscles of the scalp
2. Muscles of the auricle
3. Muscles of the eyelids
4. Muscles of the nose
5. Muscles around the mouth
6. Muscle of the neck

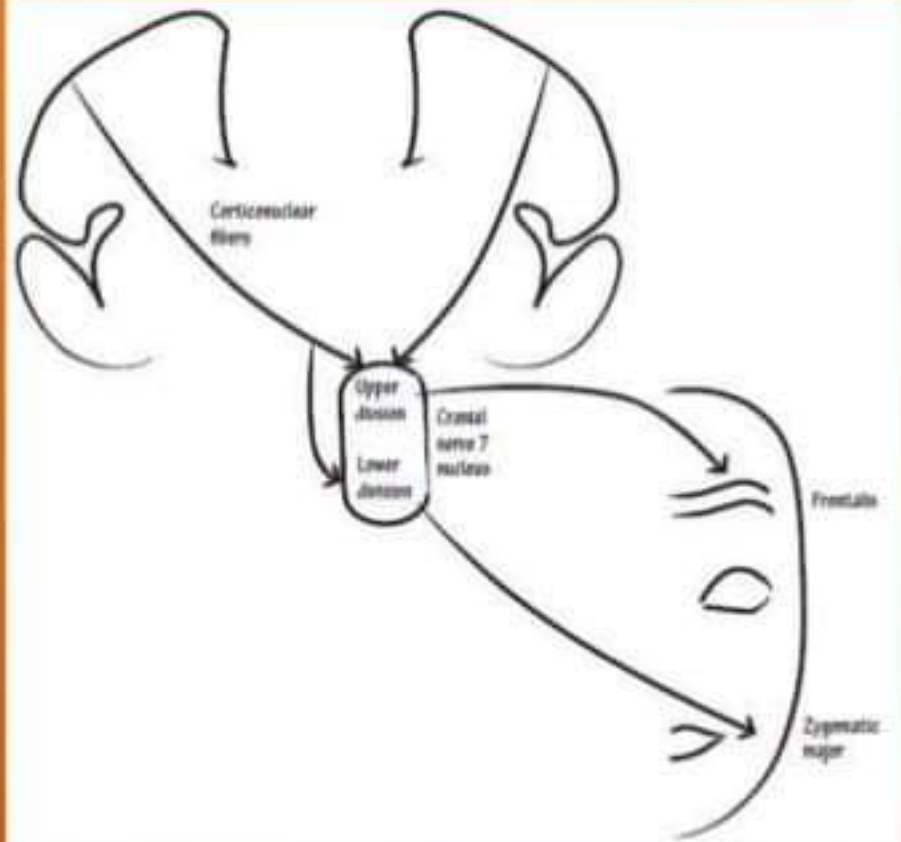


Facial Nerve Branches and Parotid Gland in Situ



Facial muscle control.

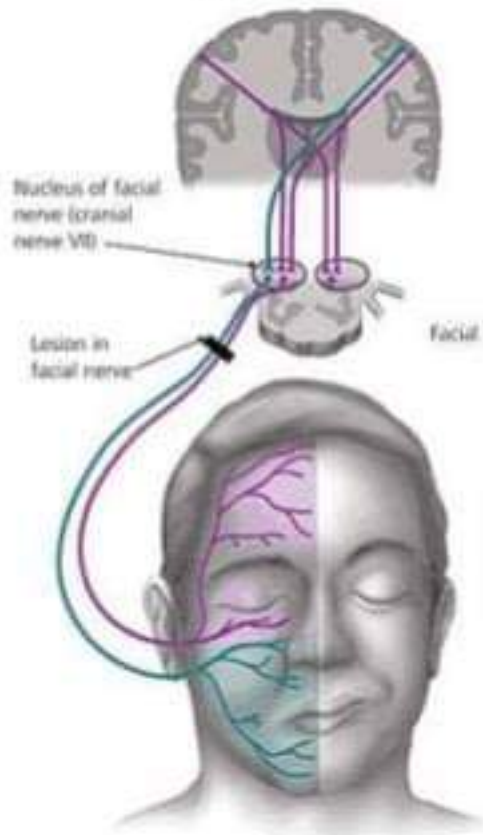
- These fibres come from the motor cortex of both cerebral hemispheres.
- Half of the fibres cross over to the contralateral side and the other half remains on the ipsilateral side.
- The facial nerve emerge from the middle of the pons and carry motor fibres to the facial muscle.
- Passes the facial canal and exits the skull through the stylomastoid foramen



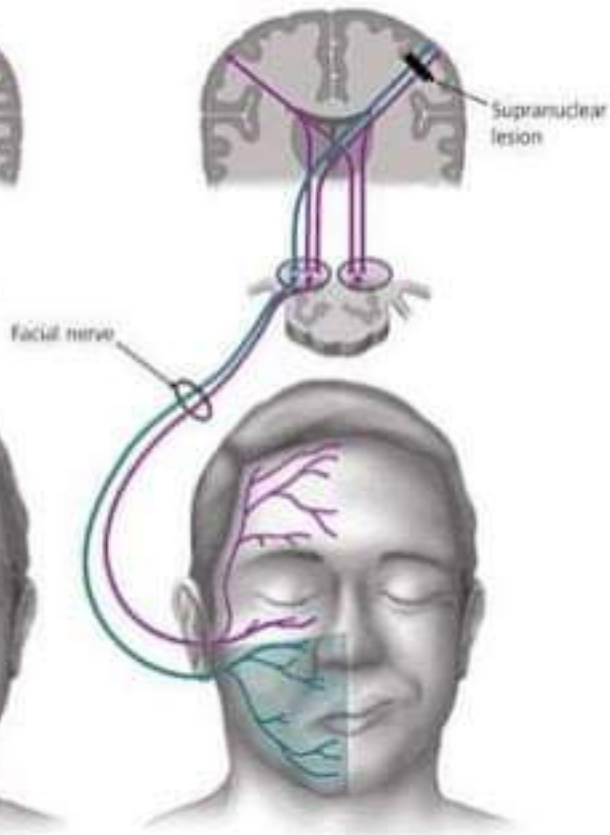
The innervation to the muscles of the upper face originates on both sides of the brain.

The innervation to the muscles of the lower face comes from the opposite side of the brain only.

A. Facial nerve lesion
(Bell's palsy)

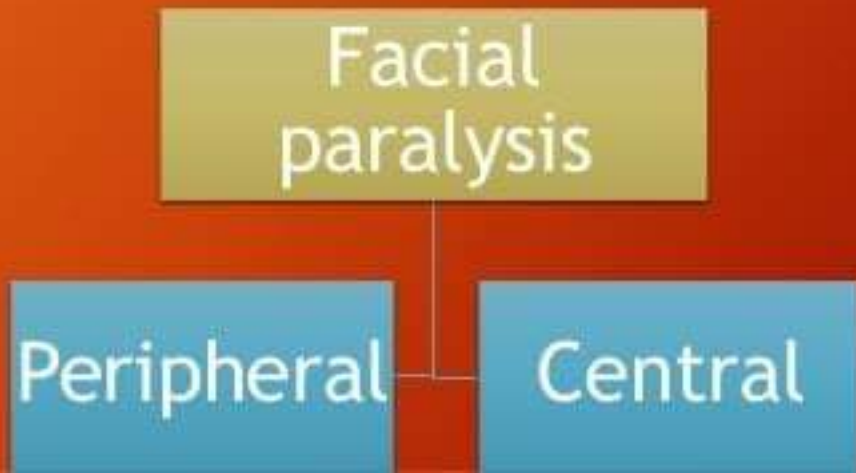


B. Supranuclear lesion



Facial Paralysis

- Two most common cause of acute facial paralysis are bell's palsy and ischaemic stroke.



Causes of Facial Paralysis

Cause	Description or Examples
Congenital	Möbius syndrome, Vascular anomaly, Hemifacial microsomia, Goldenhar, Poland, Melkersson-Rosenthal, Other syndromes, No associated syndrome
Birth-related	Traumatic or difficult delivery
Bell's	Unknown cause, Viral infection
Traumatic injury	Temporal bone fracture, Blunt force to cheek, Laceration, Swelling involving facial nerve
Infectious	Ear infections, Lyme disease, Viral infections (VZV (Ramsay Hunt), HSV, EBV), Mycoplasma, Mastoiditis
Neoplastic	Central, Parotid, or Acoustic tumors
Iatrogenic	Brain, Middle ear, and Facial surgery
Ischemic	Loss of blood supply to the nerve or muscle
Neurogenic	Guillan-Barré
Hematologic	Leukemia, Hemophilia
Hypertension	High blood pressure

Peripheral Facial Paralysis

- Most common is bell`s palsy.
- Bell`s palsy is an idiopathic condition, it has not yet been possible to find out why the facial nerve becomes compressed; however, links have been made with viruses (including herpes, influenza and respiratory tract infections), as well as a depleted immune system and stress.
- It will manifest suddenly and resolves within weeks or months.

Causes of Peripheral Facial Nerve Palsy

- Idiopathic (Bell's palsy)
- Infectious:
 - Herpes simplex
 - Herpes zoster
 - Otitis media
 - *Borrelia burgdorferi*
 - Human immunodeficiency virus
 - Syphilis
 - Infectious mononucleosis
 - Mastoiditis
 - Polio
 - Meningitis
 - Malaria
 - Leprosy
 - Rubella
 - Mumps
 - Osteomyelitis
 - Cat scratch disease
- Inflammatory
 - Guillain-Barré syndrome
 - Sarcoidosis
 - Multiple sclerosis
 - Arteritis
 - Melkersson-Rosenthal syndrome
 - Behçet syndrome
 - Wegener's granulomatosis
 - Lymphomatoid granulomatosis
 - Kawasaki disease
 - Angioedema
 - Pseudotumor (Tolosa-Hunt syndrome)
 - Amyloidosis
 - Idiopathic hypertrophic cranial pachymeningitis
- Neoplastic
 - Schwannoma
 - Neurofibroma
 - Meningioma
 - Cholesteatoma
 - Parotid gland tumor
 - Metastasis
 - Carcinomatous meningitis
 - Leukemia
- Metabolic
 - Diabetes mellitus
 - Hypothyroidism
 - Uremia
 - Porphyria
- Trauma: Surgical trauma to nerve
- Congenital, Familial
- Miscellaneous
 - Pregnancy
 - Paget's disease
 - Osteopetrosis
 - Hypertension
 - Diphtheria-pertussis-tetanus vaccination
 - Pontine infarction
 - Myasthenia gravis
 - Traumatic external carotid artery aneurysm
 - Lumbar extradural blood patch
 - Vascular malformation
 - Pseudotumor cerebri
 - Ethylene glycol poisoning

Sign and symptoms

- Bilateral facial muscle paralysis
- Pain in the inner ear during onset
- Impaired sense of taste
- Drooling of saliva
- Unable to close the eye properly
- Slurring of speech
- Difficulty in eating



Lesions of Facial Nerve - 1

Bell's Palsy



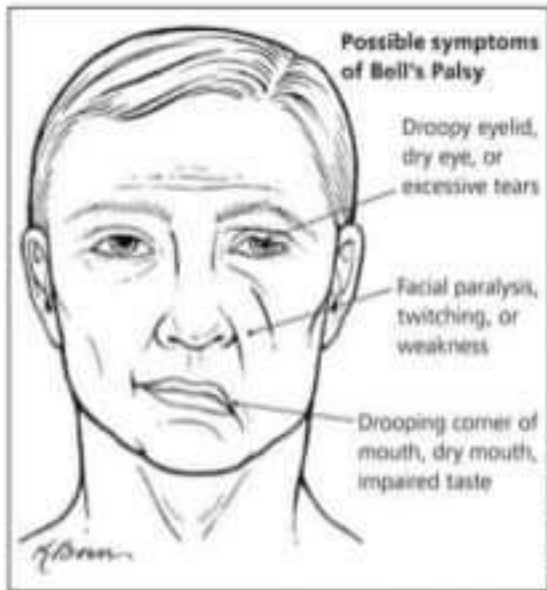
In patient's attempts to smile or bare teeth, mouth draws to unaffected side. Patient cannot wink, close eye, or wrinkle forehead on affected side



Salivary drooling due to impaired swallowing and poor facial muscle tone



Difficulty in chewing and/or swallowing

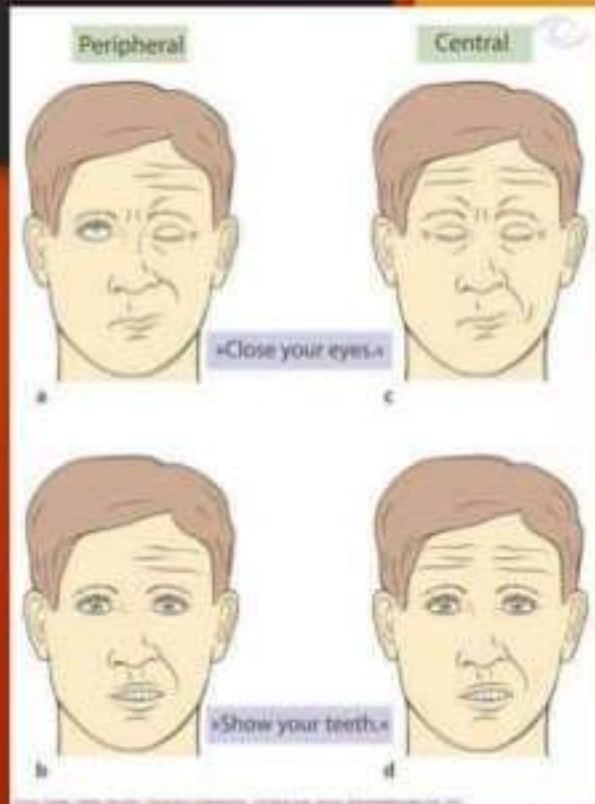


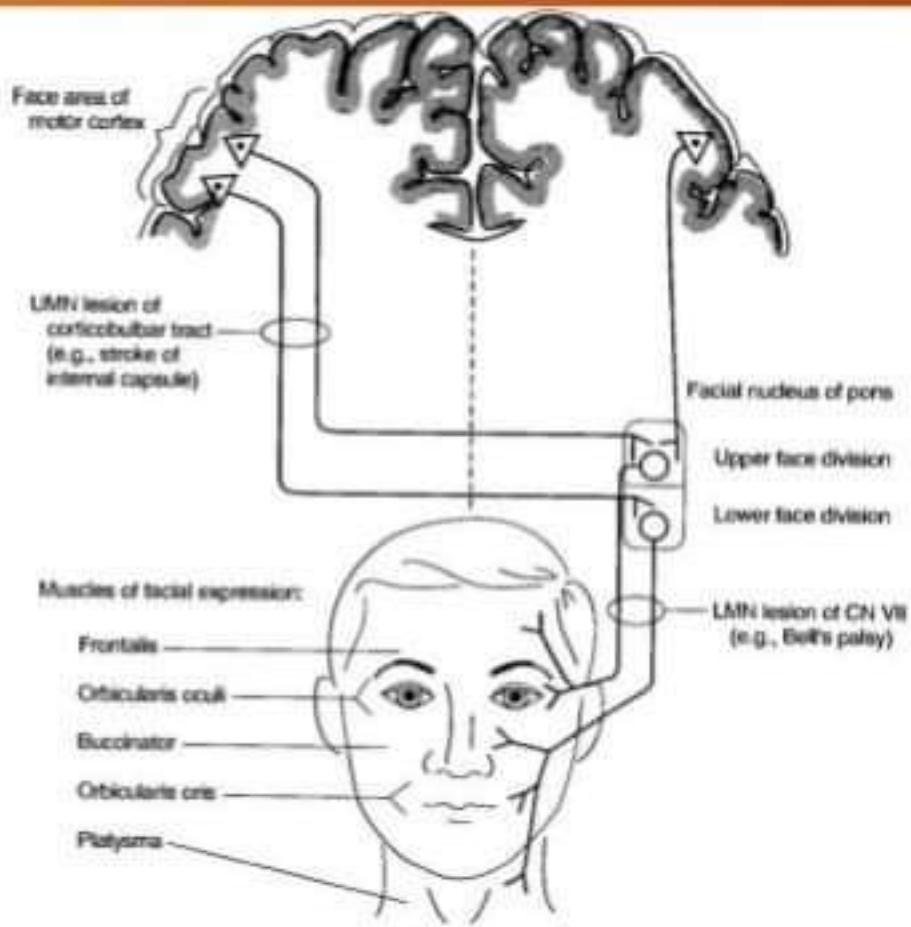
Treatment

- Prednisolone
- Antiviral drugs
- Physiotherapist

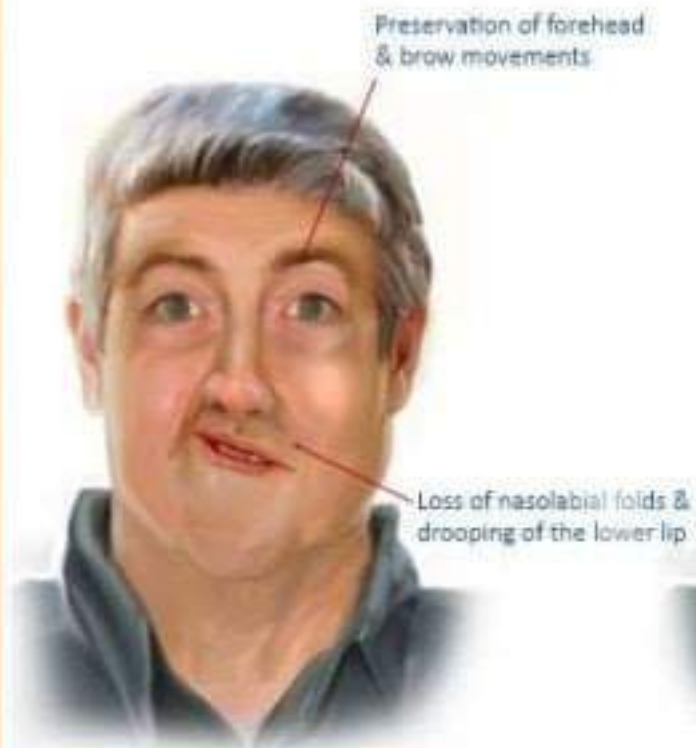
Central Facial Paralysis / UMNL

- Most common due to acute stroke
- The lesion is at the spinal cord or above
- Upper motor neuron causes
 - cerebral infarct (i.e. stroke)
 - intracranial tumour
 - multiple sclerosis
 - syphilis
 - HIV
 - vasculitis





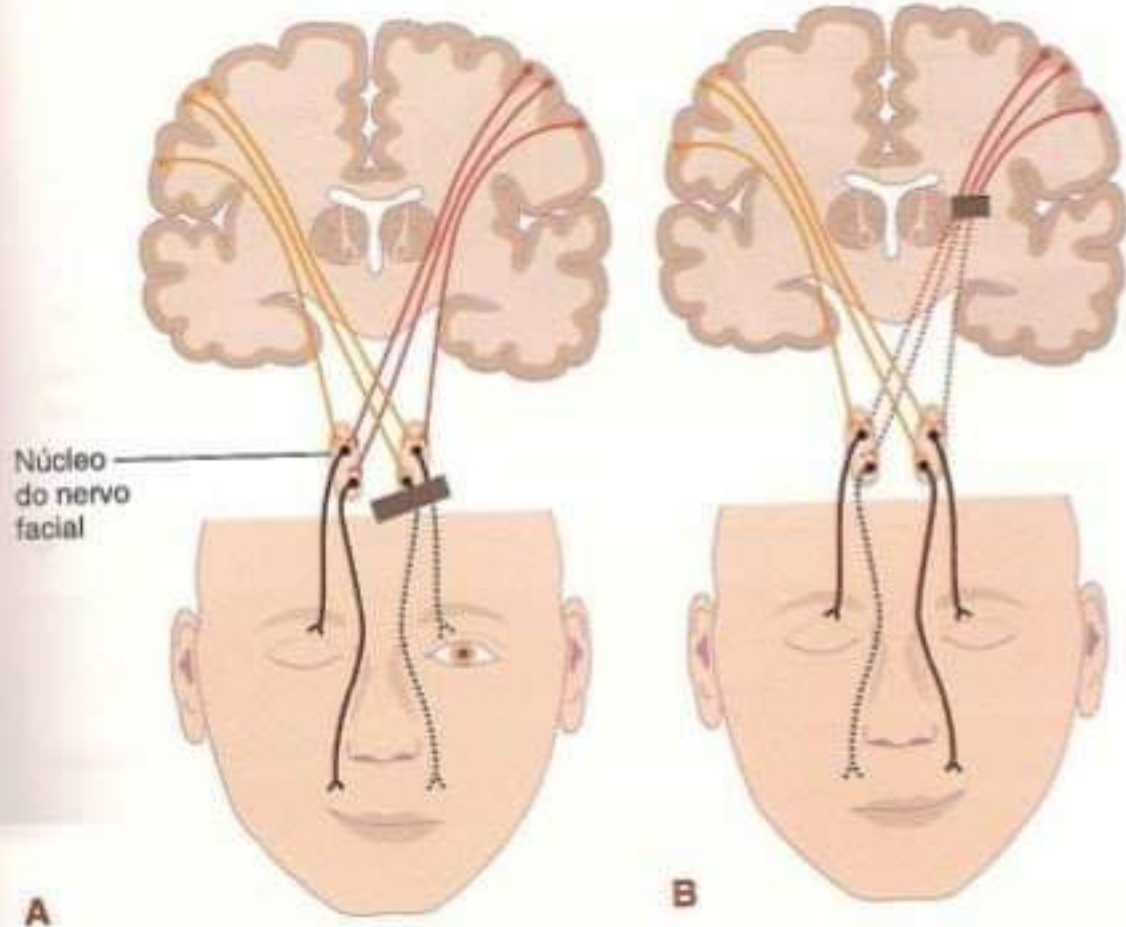
Central facial palsy

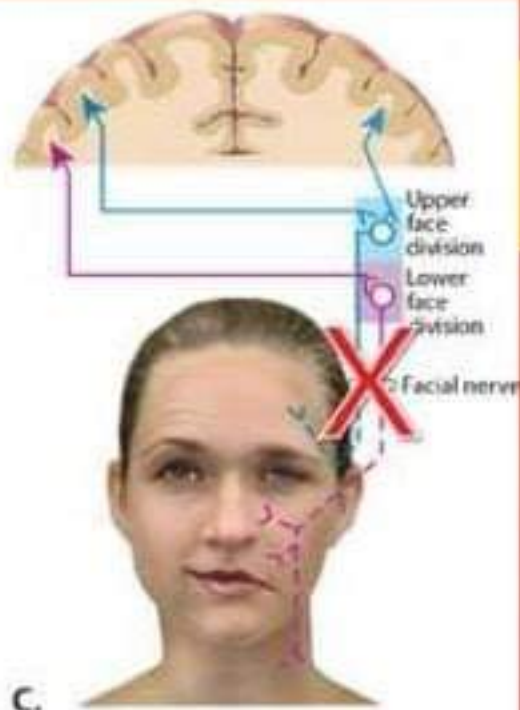
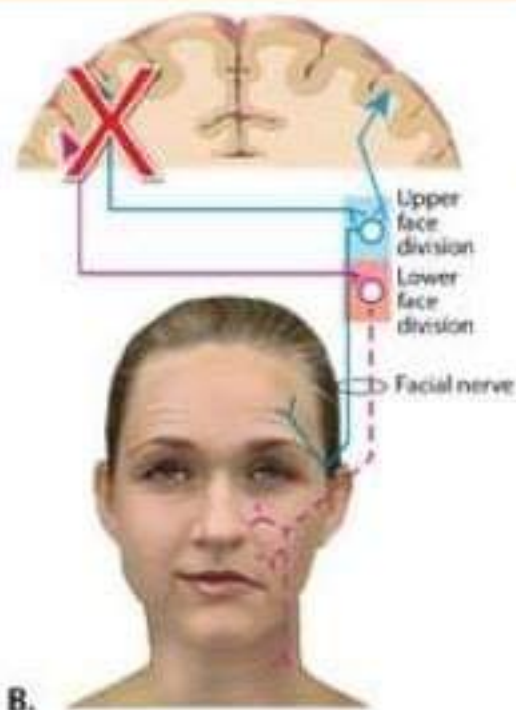
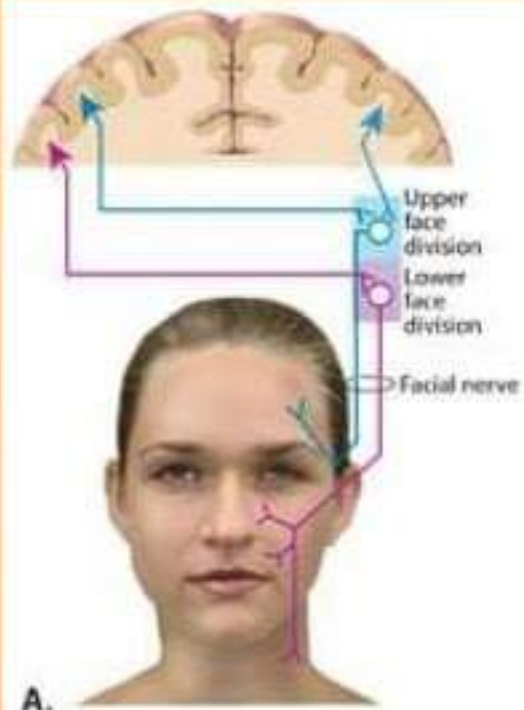


Peripheral facial palsy



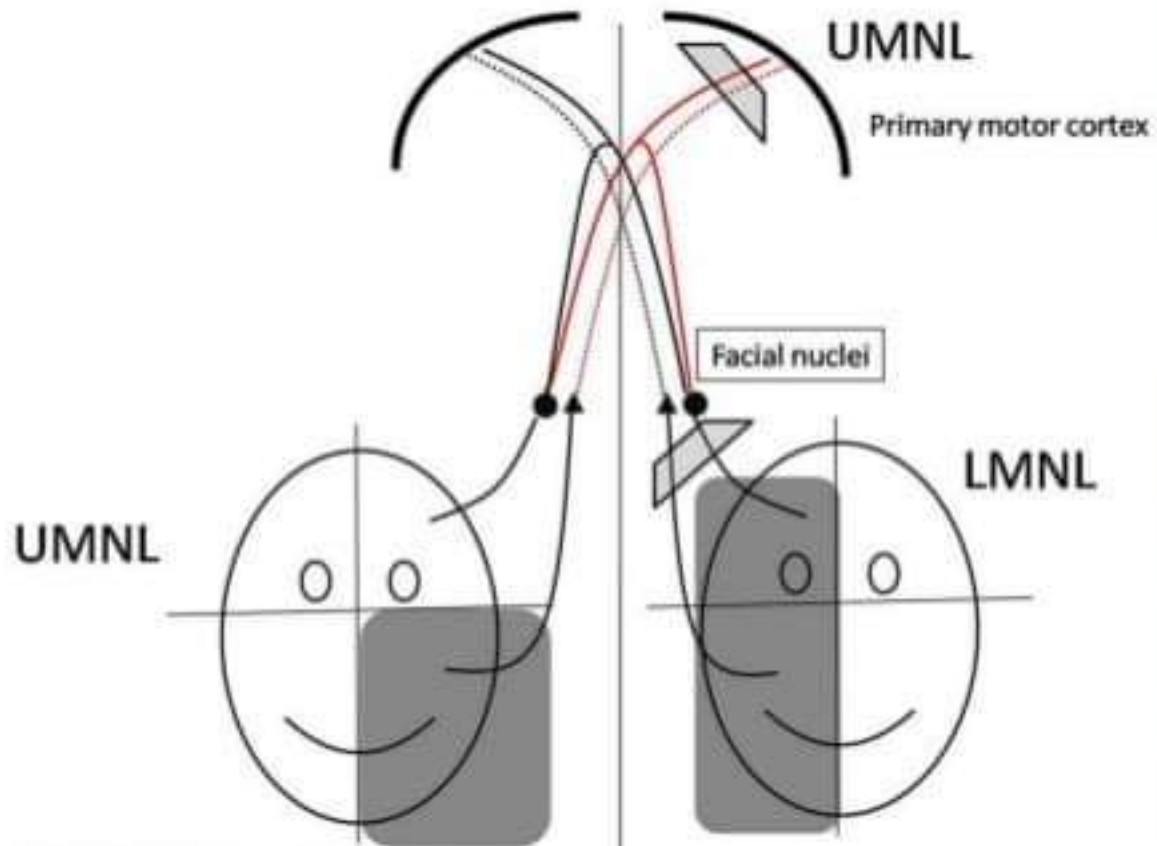
- There are also some rare conditions which cause facial nerve palsies including:
 - Rosenthal Melkersson syndrome: this is characterised by seventh nerve palsy, facial oedema and tongue fissuring. Symptoms occur from teenage years and recurrent facial nerve palsies have been described.
 - Moebius syndrome: a rare neurological disease where children are born with facial nerve and abducens nerve underdevelopment leading to facial muscle weakness and inability to abduct the eyes.





B) When the cortex is injured, there's weakness in the contralateral lower face only.

C) When the facial nerve is injured, there's weakness in the ipsilateral upper and lower face.



- Subnucleus for muscles of forehead and eye
- ▲ Subnucleus for muscles of lower part of face

