Neurology

Guillain-Barre

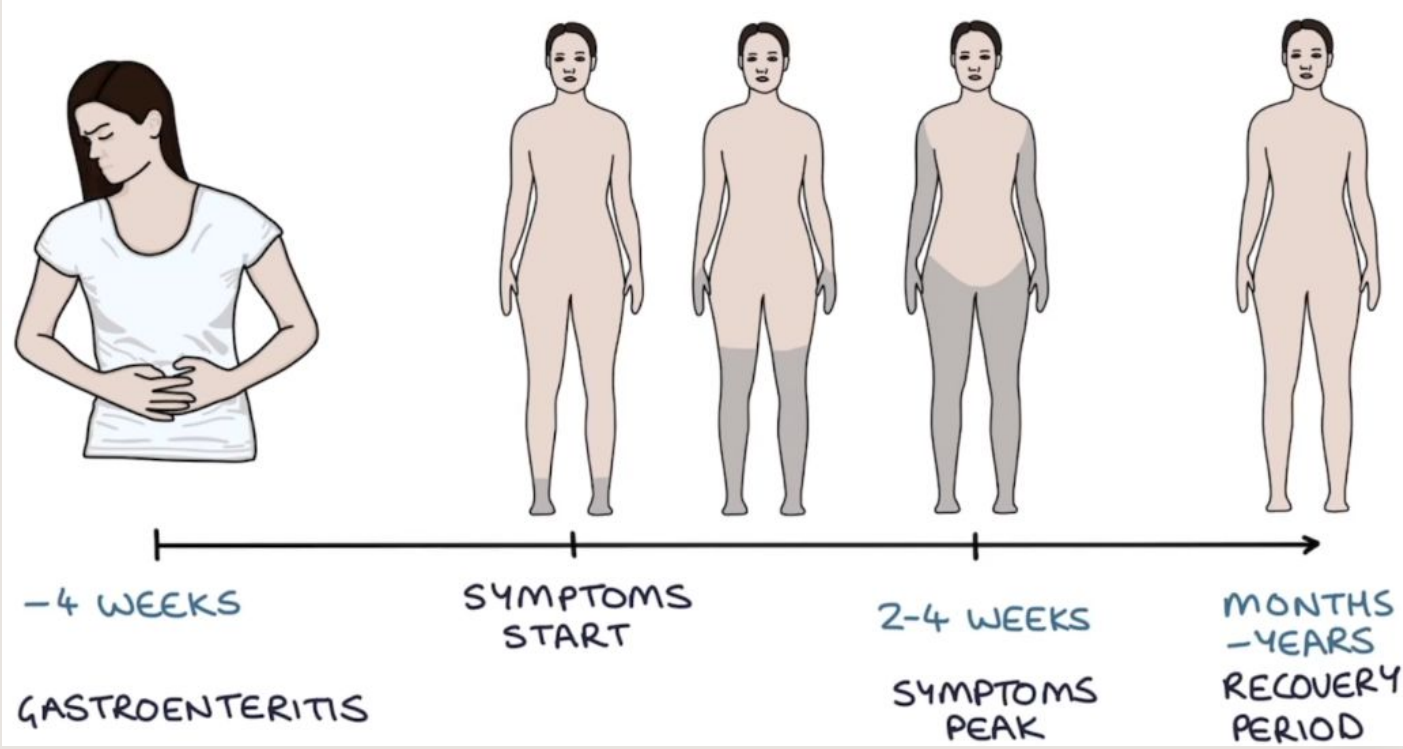
Myasthenia gravis

Guillain-Barre

Acute paralytic polyneuropathy

Triggered by infection :

- Campylobacter Jejuni
- Cytomegalovirus
- Epstein-Barr virus
- HIV/AIDS, HSV, Mycoplasma, H. influenzae
- Vaccines (Influenza, polio)



Symptoms: occurs post infection, begins in lower limbs, symmetrical **ascending** weakness, reduce reflexes, peripheral loss of sensation, neuropathic pain, facial nerve weakness,

Acroparesthesia - tingling, pins-and-needles, burning or numbness or stiffness in the hands and feet

Autonomic disfunction: blood pressure dysregulation, urinary retention, cardiac arrythmias and sinus tachycardia

Guillain-Barre syndrome

Diagnosis:

- Clinical
- *The most accurate is Electromyography (EMG) and Nerve conduction test*

(reduced signal)

- Lumbar puncture

(Albuminocytological dissociation)

Treatment:

- *IV immunoglobulins*
- Plasma exchange
- Supportive care
- VTE prophylaxis
- Respiratory failure: intubation and ventilation; admission to ICU (daily monitoring of vital capacity)

An 11-years-old boy is brought to your practice with progressive difficulty climbing stairs, walking, or running for the past few days. On examination, bilateral lower limb weakness is noted. All lower limb deep tendon reflexes are lost, the sensation is, however, intact. Which one of the following tests is most likely to confirm the diagnosis?

- A) CSF analysis
- B) Forced vital capacity
- C) MRI
- D) Nerve conduction studies
- E) X-ray

A child was recently vaccinated for polio, now presents with 1-week history of fever, flaccid paralysis of both lower limbs with no reflexes. The most likely diagnosis is?

A) Infection with wild poliomyelitis

B) Complication of the polio vaccine

C) Guillain-Barre syndrome

D) UMN lesion

1. Infection with wild poliomyelitis
   - Initial symptoms are fever, fatigue, headache, vomiting, stiffness of the neck and pain in the limbs.

2. Complication of the polio vaccine
   - Myocarditis, hypertension, pulmonary edema, pneumonia, UTIs

3. UMN lesion
   - Spasticity, weakness, hyper-reflexia

A 32-year-old woman suddenly develops abdominal pain and diarrhea. The abdominal pain is periumbilical and crampy, and she has had about 10 episodes of diarrhea per day over the past 3 days. She has no past medical or surgical history. She reports no sick contacts or recent travel, and no abdominal exposure. About 3 days ago she ate chicken at a barbecue that she thought might have been undercooked, but denies any other unusual exposure. Stool studies are positive for fecal WBCs and fecal occult blood; stool culture eventually grows out Campylobacter jejuni. She is treated with IV fluids and ciprofloxacin and is discharged home. About 2 weeks later, she develops weakness and absent deep tendon reflexes involving the lower extremities bilaterally.

All of the following are also triggers for this complications, EXCEPT:

(A) Chlamydia trachomatis infection

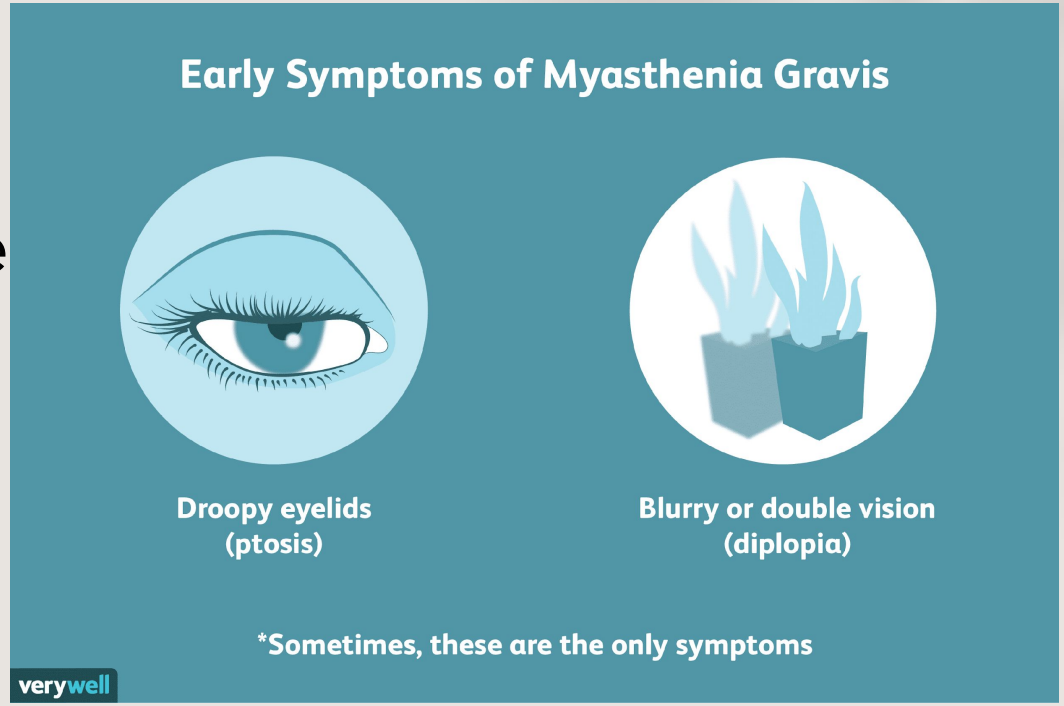
(B) Influenza-like illness

(C) HIV

(D) Vaccination

Myasthenia gravis

- Autoimmune disease affecting skeletal muscles
- Affects young women 20-30 and olde men 60-70



Associated with:

- Thymic tumors
- Other autoimmune diseases: RA, SLE, ect.

Myasthenia gravis

Symptoms:

- Weakness neck, face, arms
- Eyelid drooping “Ptosis”
- Appearance mask-like (very sleepy look)
- Keep choking/gagging when eating
- No energy
- Extraocular muscle involvement
- Slurred speech
- Shortness of breath
- Limbs (proximal and distal)
- Painless fatigue with exercise
- “Thinker” – hand used to hold the mouth closed and the head up

Myasthenia gravis

Complications:

- Myasthenic Crisis
  - Severe muscle weakness and respiratory failure
- Cholinergic Crisis
  - Severe muscle weakness and respiratory failure

Diagnosis

- Serum anti-acetylcholine receptor antibodies
- Electrophysiological tests if antibody test negative
- CT scan/x-ray of the chest to detect thymoma
- Edrophonium test still useful but potentially dangerous (atropine is the antidote)

Myasthenia gravis

Management

- Thymectomy is recommended early for generalised myasthenia, especially in all younger patients with hyperplasia of the thymus
- Plasmapheresis – in acute crisis
- Anticholinesterase inhibitor drugs (e.g. pyridostigmine, neostigmine or distigmine) should be used only for mild-to-moderate symptoms
- *Corticosteroids are useful for all grades of MG*

A 38-year-old woman presented to hospital with history of gradually increasing fatigue over last 6 months. She reported more fatigue in the evening than in the morning. Now she developed double vision, ptosis and, weakness of chewing and swallowing. She occasionally becomes breathless due to fatigue. Serum anti-acetylcholine receptor antibodies are positive.

Which ONE of the following treatment is useful for all grades of this clinical condition?

- a. Thymectomy
- b. Plasmapheresis
- c. Neostigmine
- d. Corticosteroids
- e. Physiotherapy

- A 42-year-old woman presents with progressive fatigue over the past few weeks. She reports muscle fatigue, occasional double vision, and some difficulty breathing. She has no relevant past medical history and takes no medications. On examination, sustained upward gaze leads to muscle fatigue and bilateral ptosis. Pulmonary function testing is performed and is shown below.

FEV_1	85% of predicted
Forced vital capacity (FVC)	85% of predicted
FEV_1/FVC	105% of predicted
Total lung capacity (TLC)	70% of predicted
Diffusion capacity of the lung for carbon monoxide (DLCO)	100% of predicted

- Which of the following is responsible for this patient's pattern on pulmonary function testing?
- **(A)** Chronic obstructive pulmonary disease
- **(B)** Neuromuscular disease
- **(C)** Pulmonary fibrosis
- **(D)** Pulmonary hemorrhage

Neuromuscular disease. Myasthenia gravis is a neuromuscular disease caused by autoantibodies directed against postsynaptic acetylcholine receptors. Neuromuscular diseases can show a restrictive pattern (decreased FEV1 and FVC but normal/increased FEV1/FVC ratio) on pulmonary function testing that is extrinsic to the lung itself and therefore will have a normal DLCO.

Examples include lower motor neuron disease (e.g., polio and Guillain– Barre syndrome), myasthenia gravis, Lambert–Eaton syndrome, muscular dystrophies, chest wall deformities (e.g., scoliosis and pectus carinatum), and obesity.

(A) COPD will present with an obstructive pattern on spirometry (decreased FEV1/FVC ratio) with a decreased DLCO (if there is a prominent component of emphysema).

(C) Pulmonary fibrosis is a type of interstitial lung disease, which will show a restrictive pattern on spirometry as well as a decreased DLCO from parenchymal destruction and scarring.

(D) Pulmonary hemorrhage would present with normal spirometry but an **increased** DLCO, since the presence of red blood cells within the airways will cause a rapid consumption of carbon monoxide during the test.

A 75 year old lady is admitted in an acute confusional state secondary to a urinary tract infection.

Despite antibiotic therapy, reassurance and environmental modification she remains agitated. You are considering prescribing **haloperidol**. Which one of the following condition may be significantly worsened If haloperidol is prescribed?

- A) Myasthenia gravis
- B) Parkinson’s disease
- C) Essential tremor
- D) Epilepsy
- E) Depression

Which ONE of the following condition causes ptosis and dilated pupil?

- a. Myasthenia gravis
- b. Mitochondrial myopathy
- c. Horner’s syndrome
- d. Third cranial nerve palsy
- e. Chronic fatigue syndrome

- A 65-year-old male patient presents with excessive salivation, sweating, diarrhea, and bradycardia. The patient just received pyridostigmine for his myasthenia gravis. Which of the following therapeutics would reverse this patient's symptoms?

- A. Atropine
- B. Bethanechol
- C. Edrophonium
- D. Neostigmine
- E. Pralidoxime