LIFE AFTER GBS

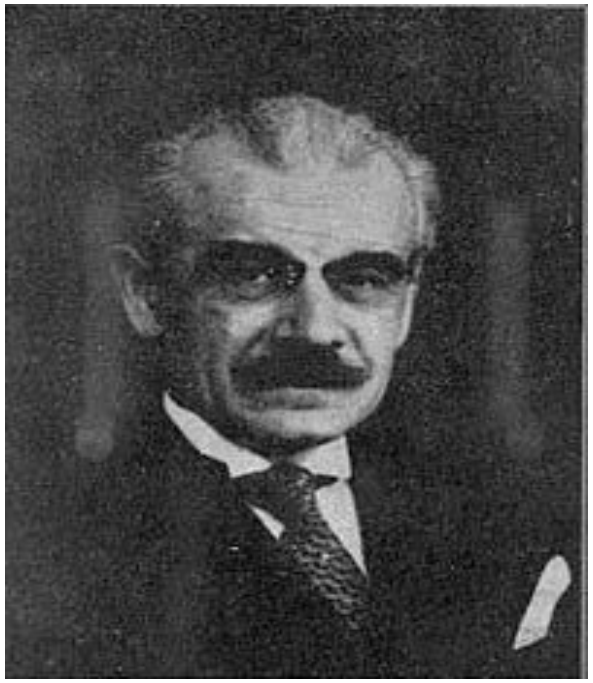
WAQAR WAHEED,MD
Associate Professor of Neurology
Vice Chair, Department of Neurosciences,
Larner College of Medicine,
University of Vermont

OUTLINE

- Who are Guillain and Barré ?
- What is GBS ?
- What causes GBS?
- What are the symptoms of GBS ?
- What kind of GBS do I have ?
- How is GBS diagnosed ?
- What now ; what is the clinical course of GBS ?
- How is GBS treated ?
- Will I get better and when ?

GUILLAIN-BARRÉ SYNDROME

Georges Guillain (1876-1961)

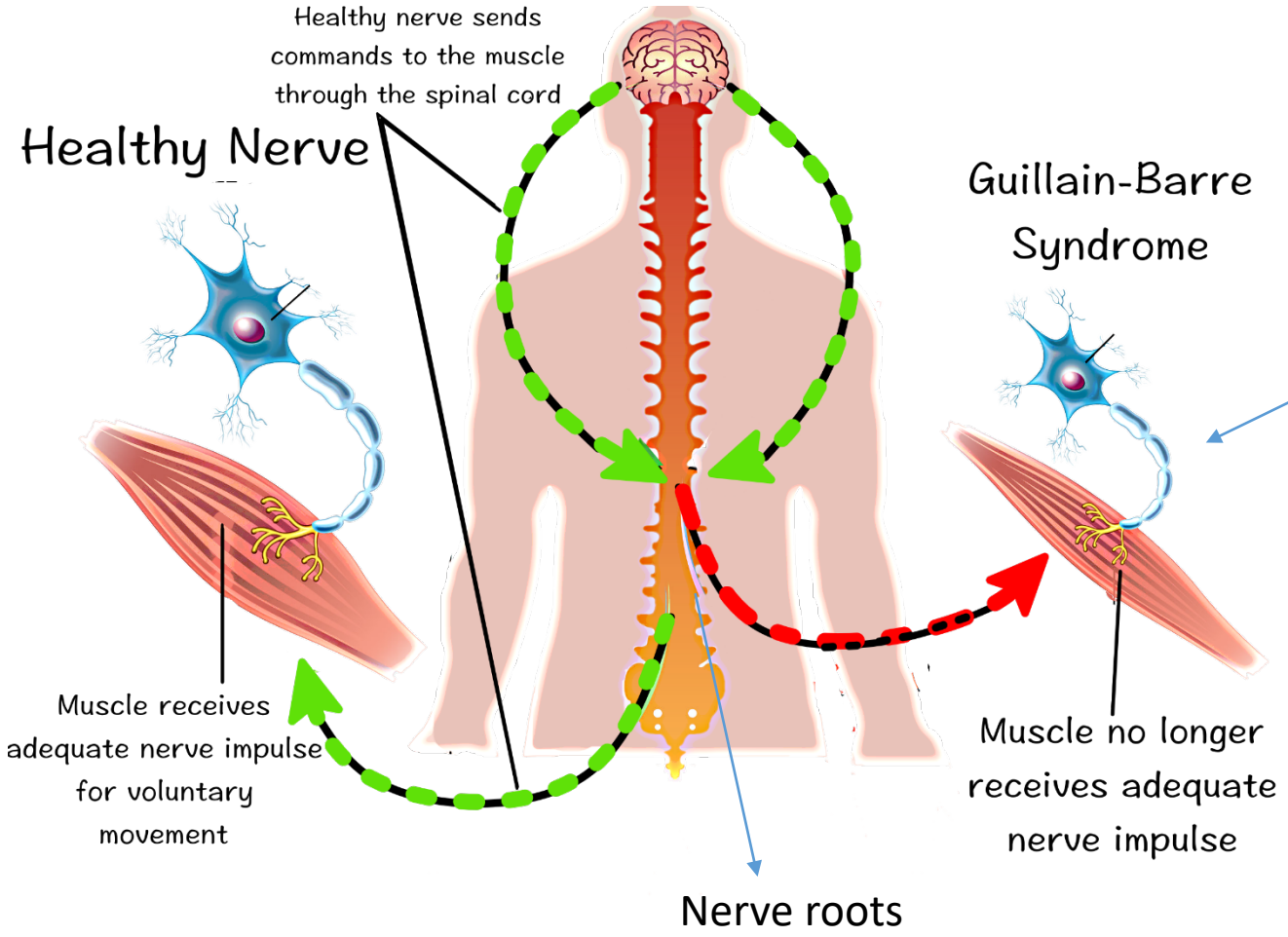


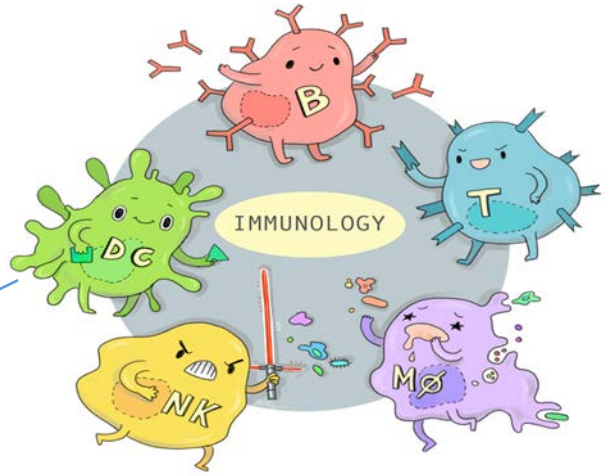
Jean Alexandre Barré (1860-1967)

André Strohl (1887 -1977)

GBS was described in 1916 by George Guillain, Jean-Alexandre Barré, and André Strohl

What is Guillain-Barré syndrome?



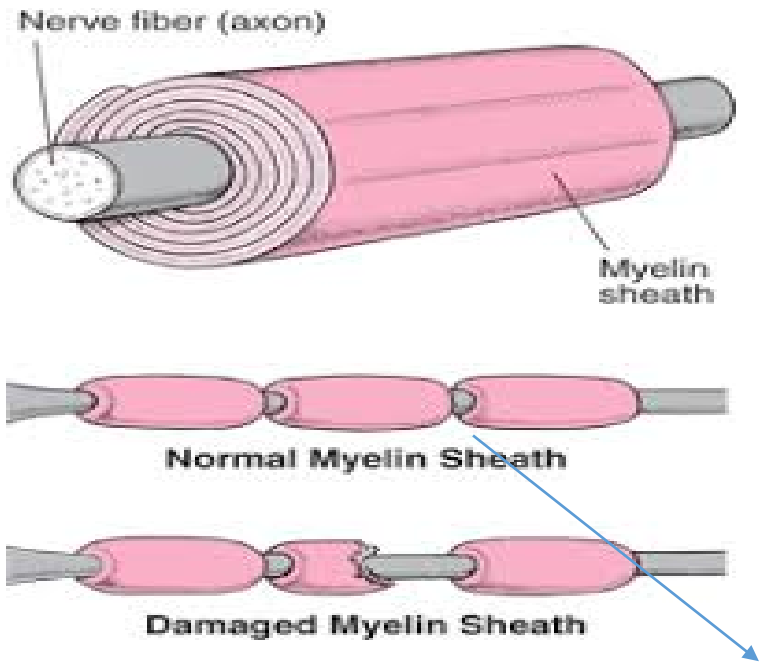


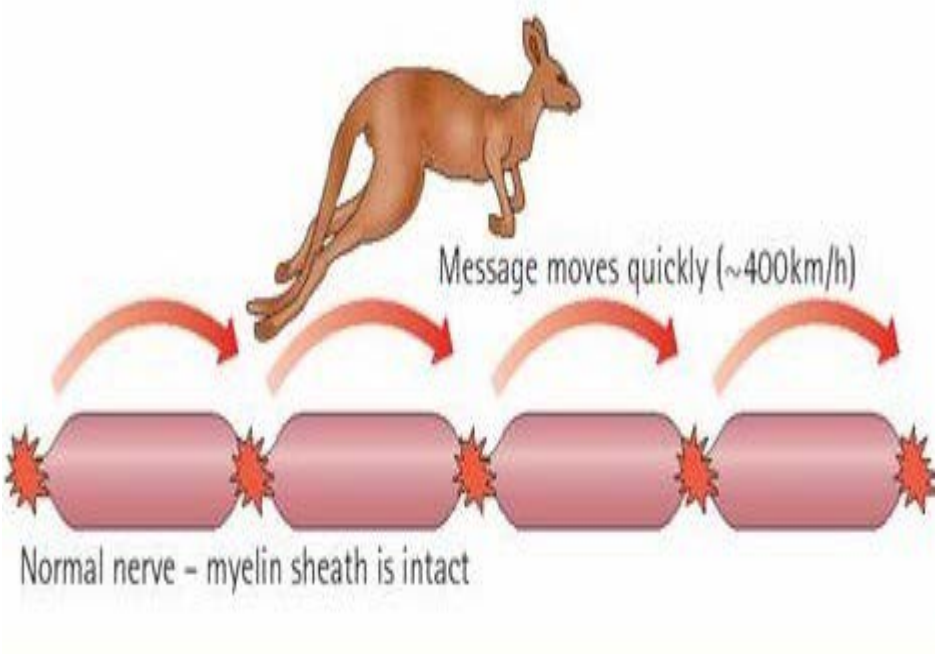
Immune system mistakenly attacks part of its PNS—the network of nerves located outside of the brain and spinal cord.

http://thedishonscience.stanford.edu/topics/immune-system/

WHAT CAUSES GBS

HEALTHY NERVES



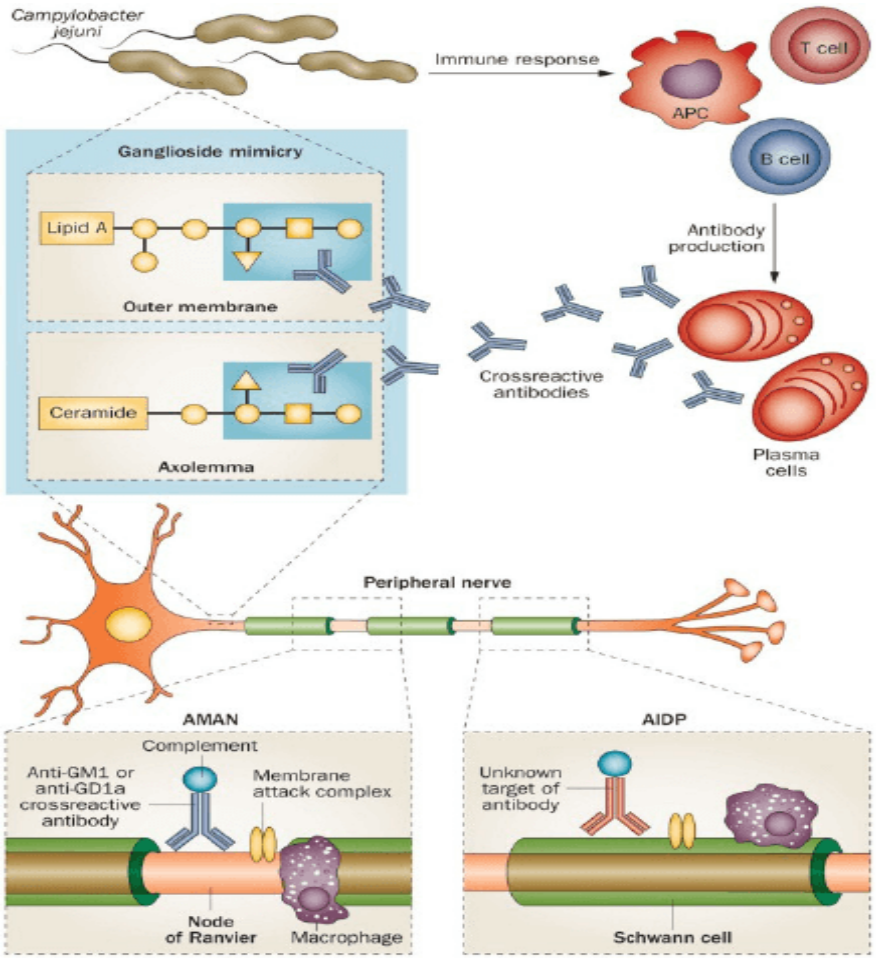


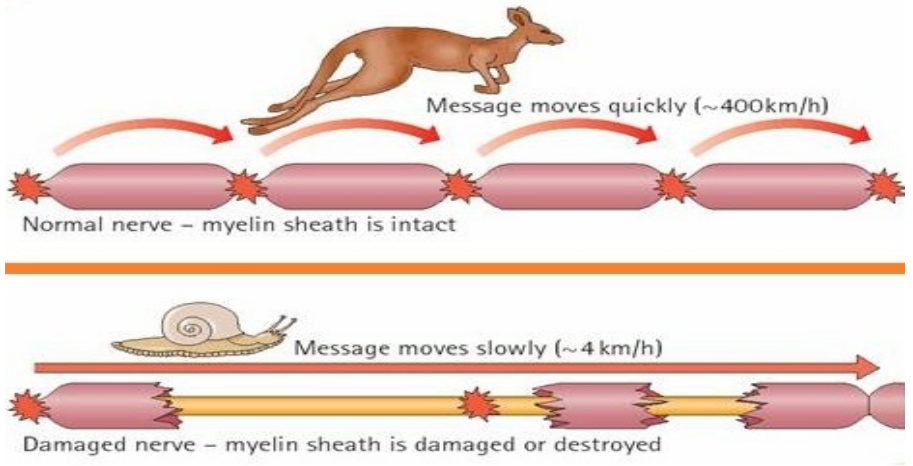
Nodes of Ranvier

Nerves are like household wires

https://ww.pinterest.ca/pin/w

WHAT CAUSES GBS- “MOLECULAR MIMICRY/INNOCENT BYSTANDER” THEORY





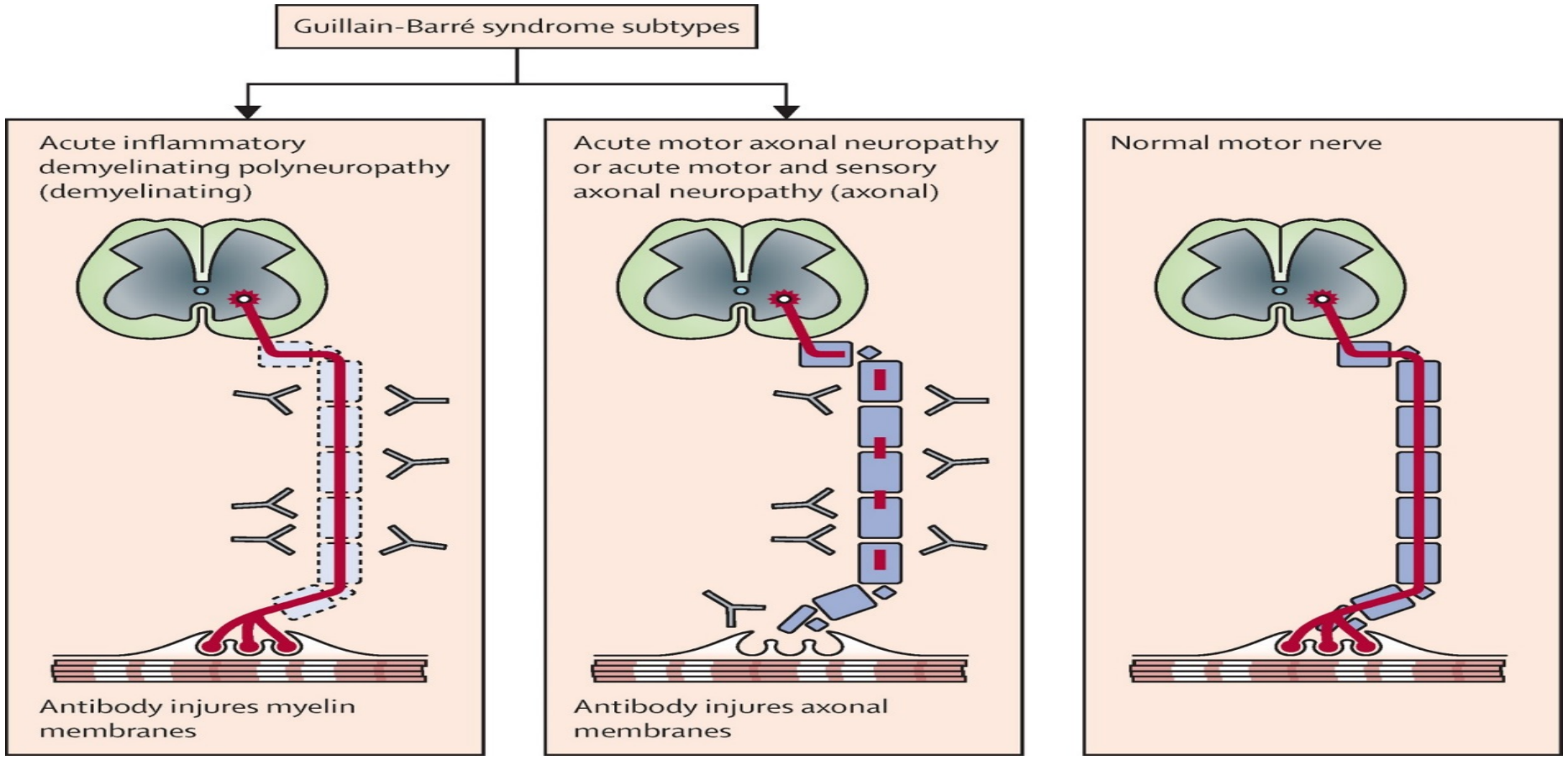
This slows nerve conduction and causes weakness

Molecules on some nerves are very similar to or mimic molecules on some microorganisms

“connection problem”; machine (the muscle) is working but the power source (the nerve) is not working properly.

Winer J B BMJ 2008;337:bmj.a671 Nat Rev Neurol. 2014; 10 (8): 469–482.

WHAT CAUSES GBS SYNDROME?

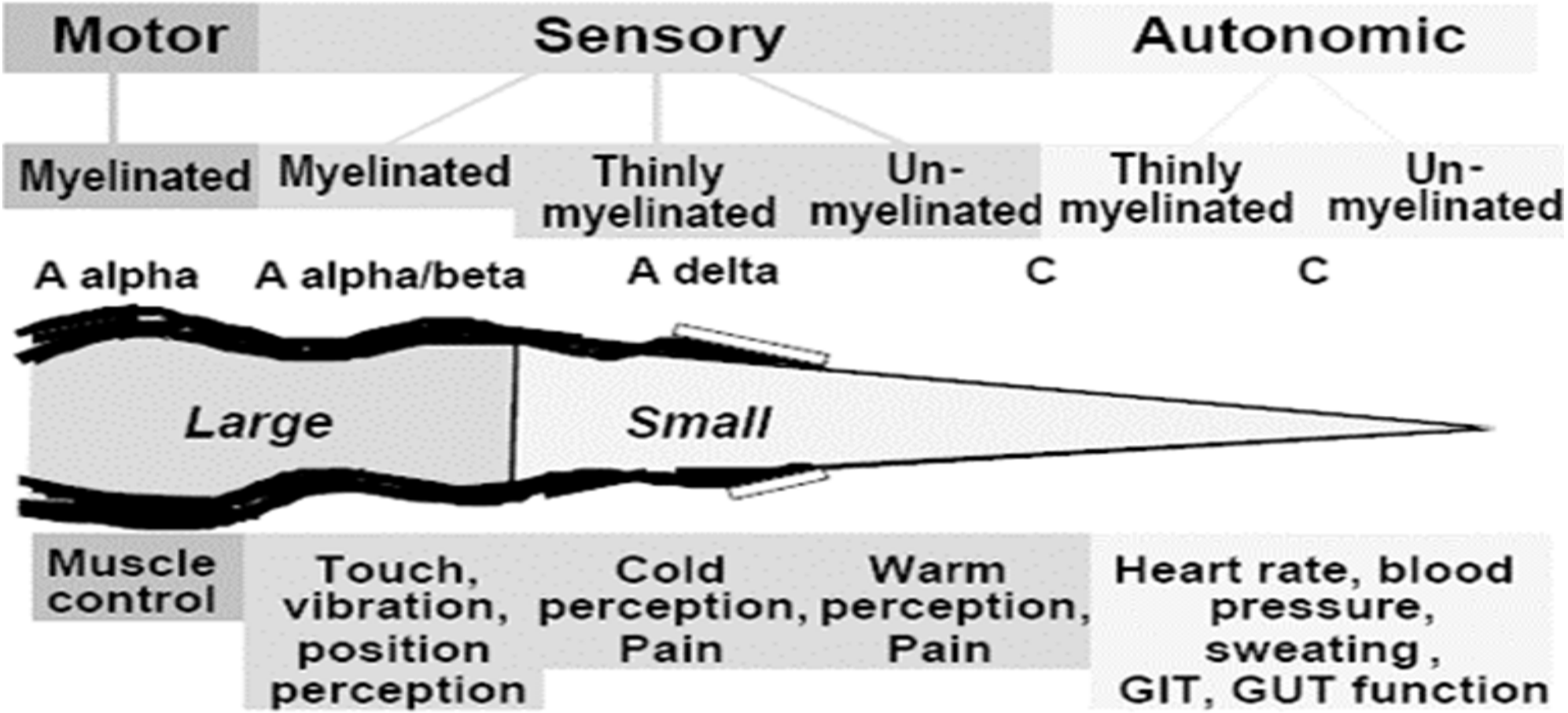


AIDP **AMAN/AMSAN** **NORMAL**

The immune response can be directed towards the myelin or the axon of peripheral nerve, resulting in demyelinating and axonal forms of GBS

Willison HJ et al. Lancet 2016;388:717-727

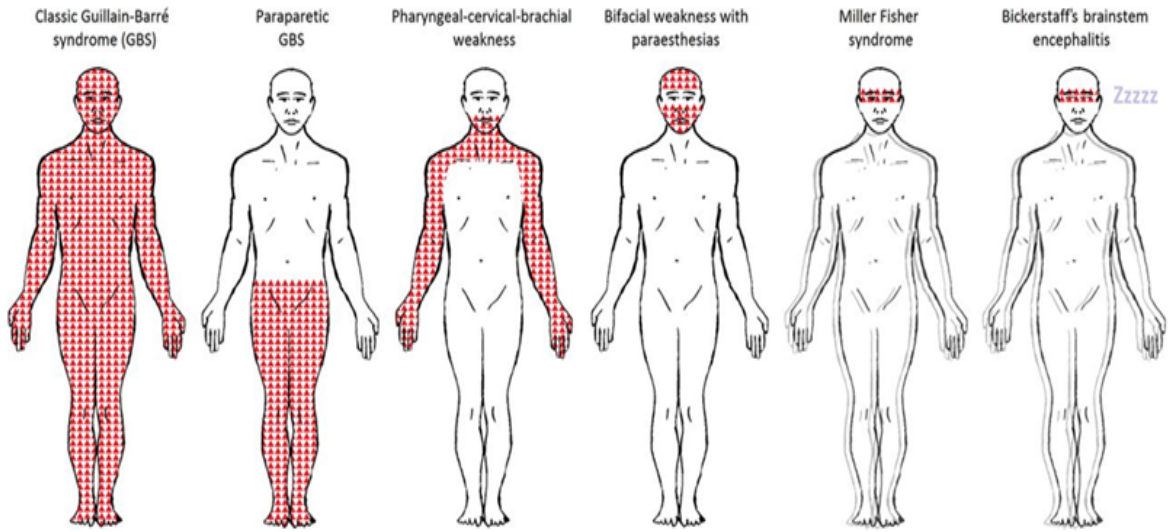
WHAT ARE THE SYMPTOMS OF GBS

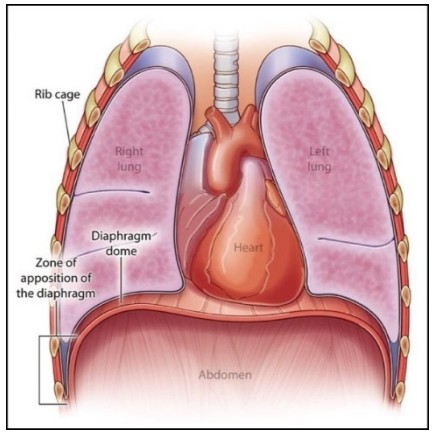


www.Medscape.com

WHAT ARE THE SYMPTOMS OF GBS

- **Weakness**
  - Ascending
  - Extent :Mild weakness --.Paralysis
  - Breathing muscles ,diaphragm (10-30%)
  - Limited forms : legs, arms, or face.
- **Tingling or numbness**
  - hands or feet
- **Autonomic Nerves :(70 %)**
  - Abnormal heart beat/rate or blood pressure
  - Problems with digestion and/or bladder control.
- **Pain**
  - Especially in the back, legs, or arms (due to nerve root inflammation)
  - Can be a presenting feature and is reported during the acute phase by2/3 of patients with all forms of GBS
- **Less common symptoms of GBS :**
  - Problems with eye movement
  - Loss of coordination in the arms and legs

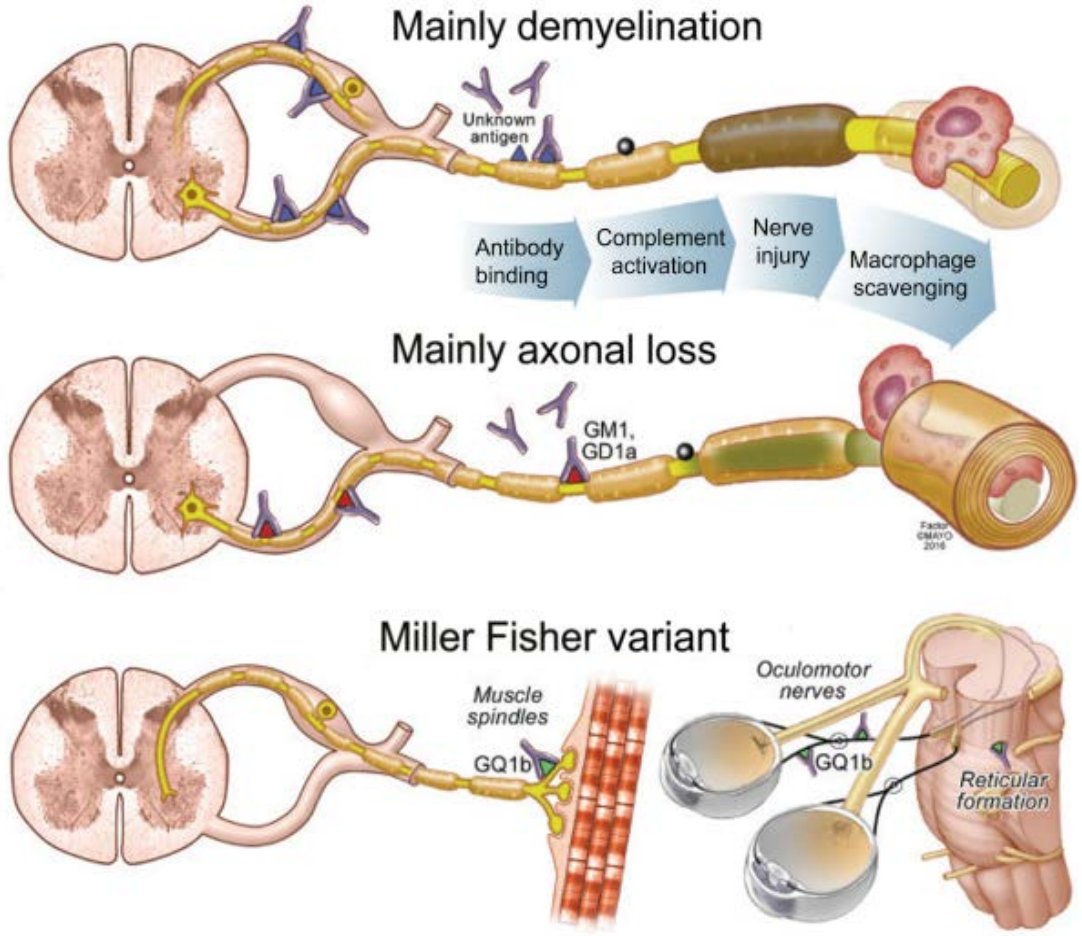




Willison HJ et al. Lancet 2016;388:717-727

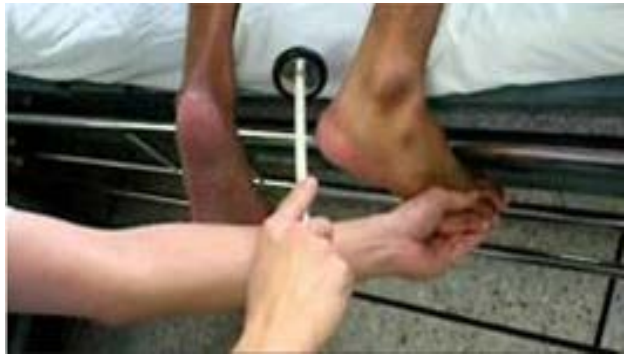
WHAT KIND OF GBS DO I HAVE

- Acute inflammatory demyelinating polyneuropathy (AIDP)
- Acute motor axonal neuropathy (AMAN)
- Acute motor sensory axonal neuropathy (AMSAN)
- Miller Fisher Syndrome (MFS)
- Other localized forms reported



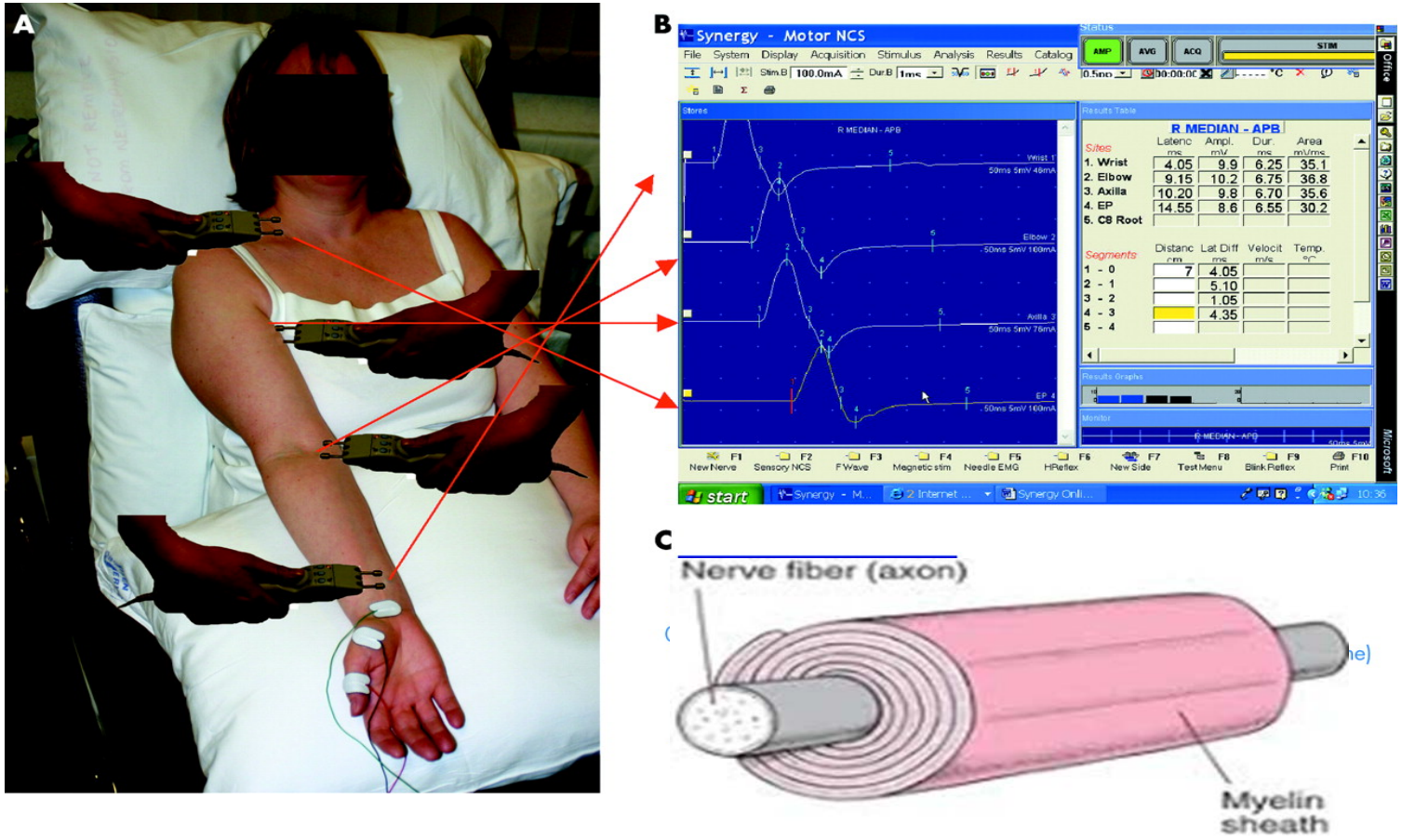
Wijdicks EF et al .Mayo Clin Proc. 2017 Mar;92(3):467-479

HOW IS GBS DIAGNOSED?



Areflexia

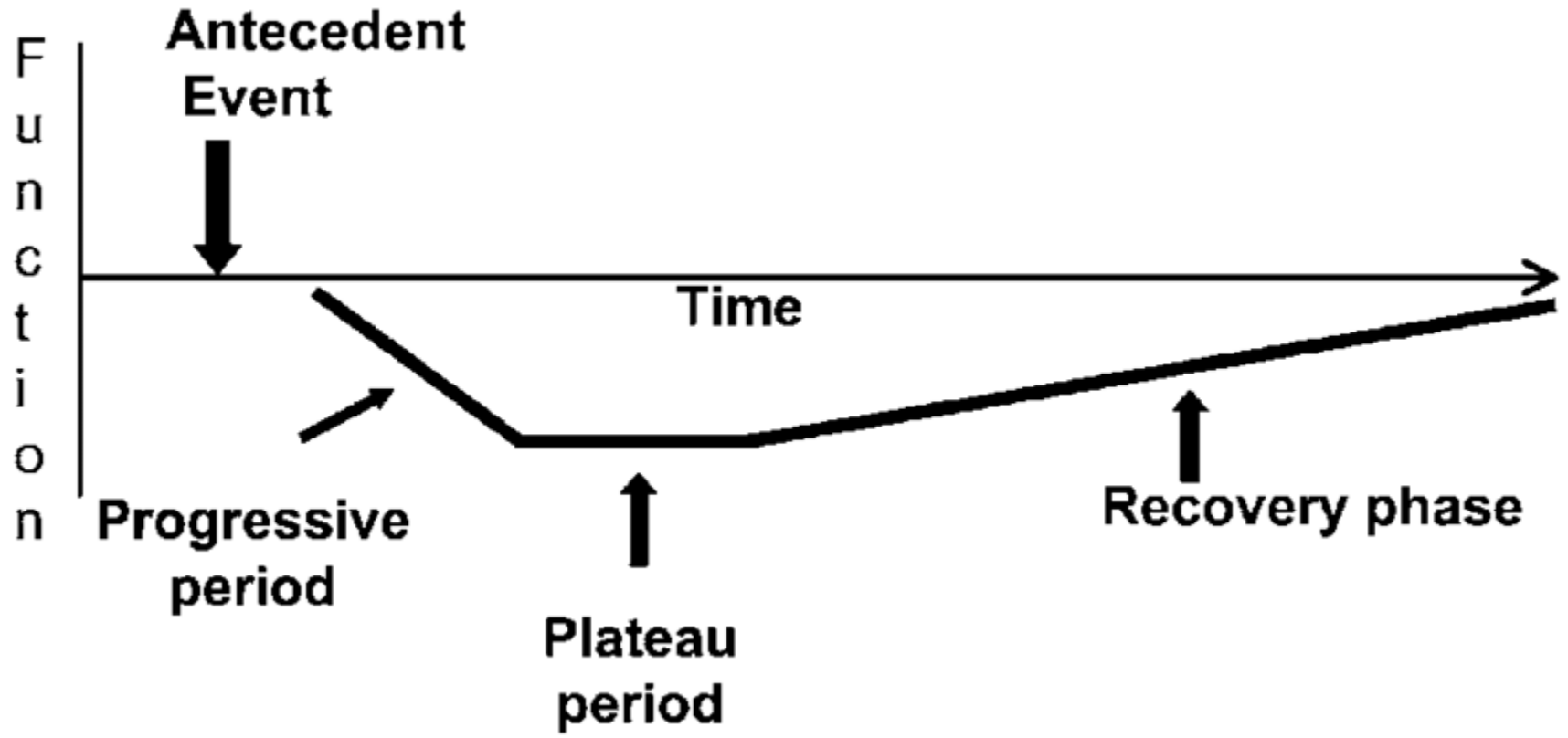
Albumino-cytologic dissociation



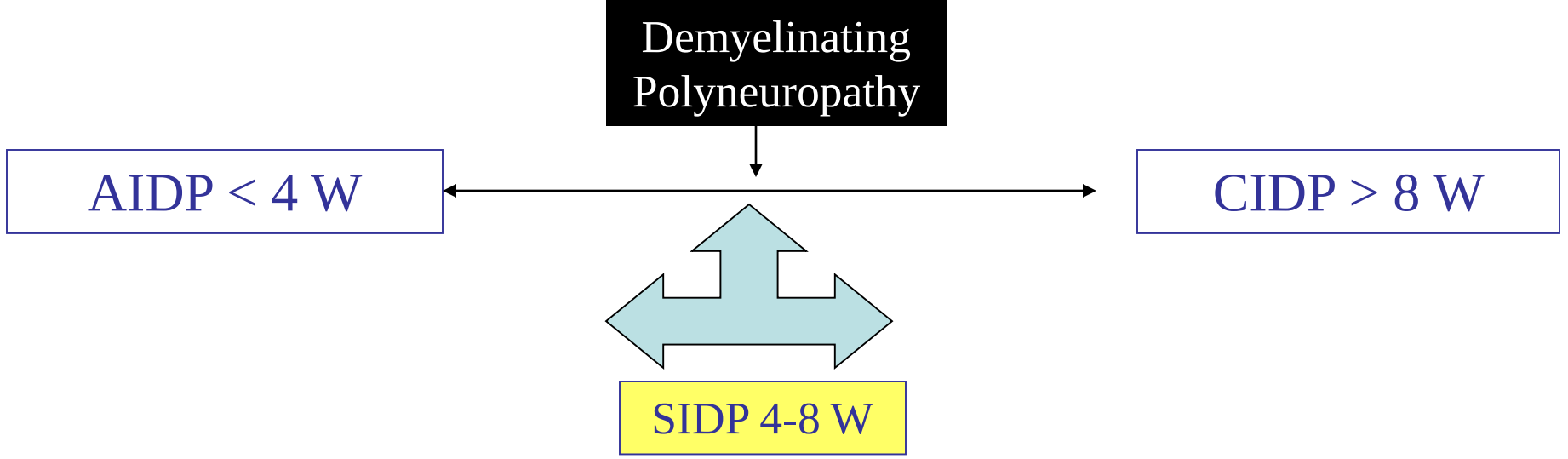
EMG/NCS

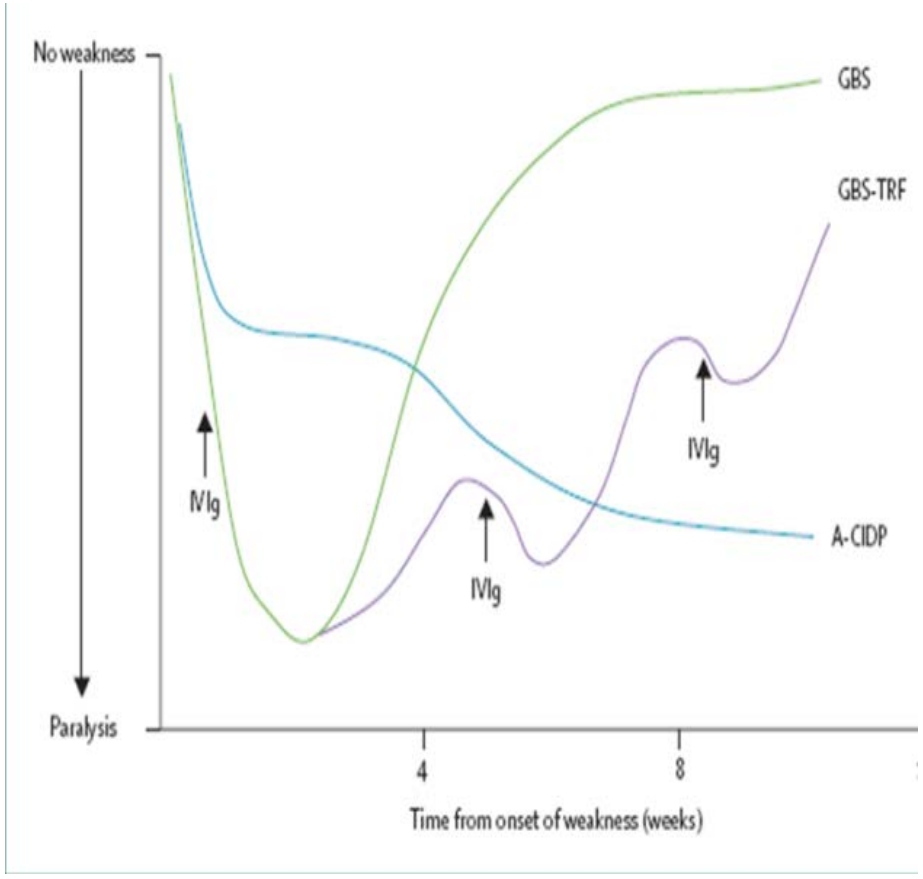
Mallik A , and Weir A I J Neurol Neurosurg Psychiatry 2005;76:ii23-ii31

WHAT NOW :CLINICAL COURSE



Most people reach the greatest stage of weakness within the first two weeks after symptoms appear; by the third week 90 percent of affected individuals are at their weakest.





10 % of GBS patients treated with IVIG show early relapse after initial improvement and may respond to second dose

Initial improvements with 2 subsequent relapses

3 or more relapses or progression for 9 weeks

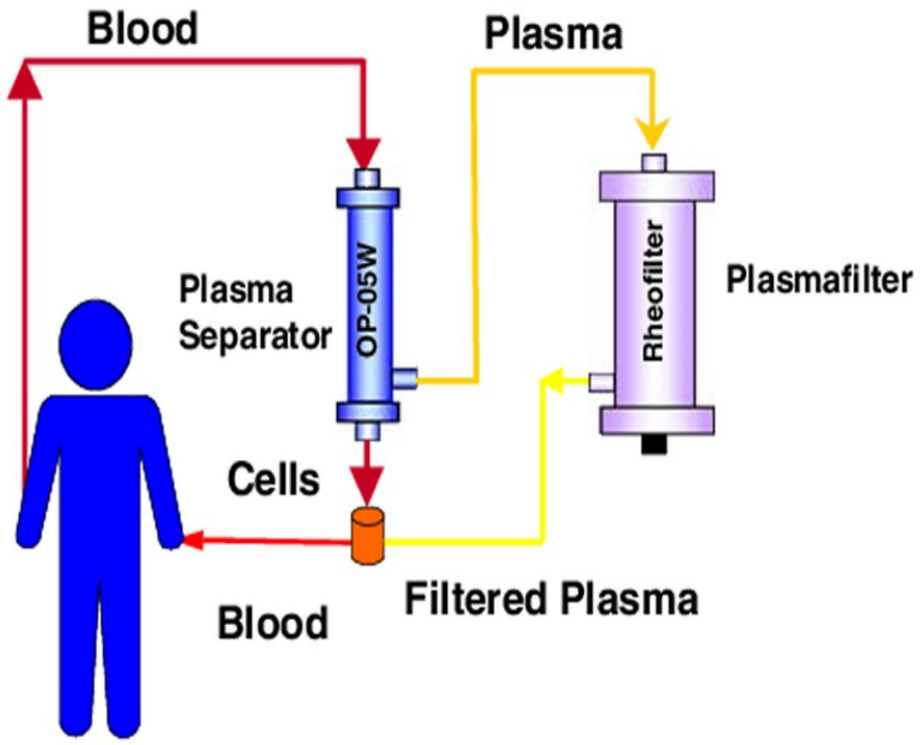
Rapid clearance of IgG —benefit from a second dose or second course

TREATMENT RELATED FLUCTUATIONS

Ann Neurology 2009;66:597-603

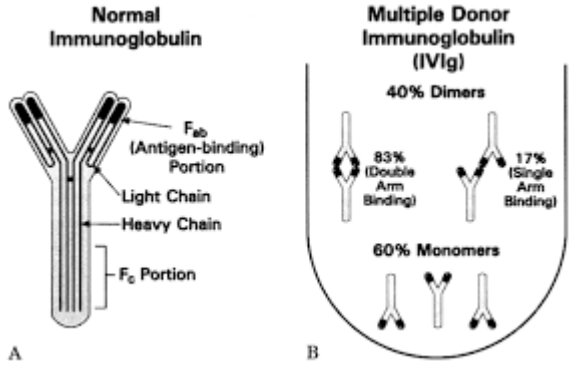
HOW IS GBS TREATED?

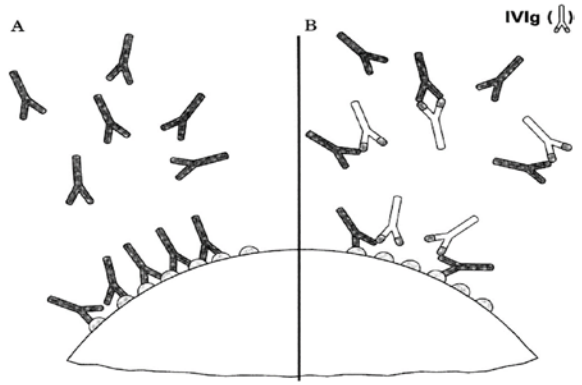
- No known cure for GBS
- Therapies can lessen the severity of the illness and shorten recovery time
- **<u>Plasma exchange</u>**.
  - Plasma contains antibodies and PE removes some plasma
  - PE may work by removing the bad antibodies that have been damaging the nerves.



Immunoglobulin therapy (IVIg)

- Igs are proteins that the immune system naturally makes to attack infecting organisms.
- IVIg are developed from a pool of thousands of normal donors.
- Lowers the levels or effectiveness of antibodies that attack the nerves by:
  - Diluting them with non-specific antibodies
  - Providing antibodies that bind to the harmful antibodies and take them out of commission.

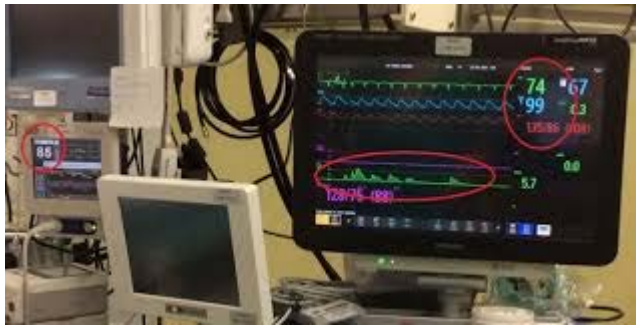




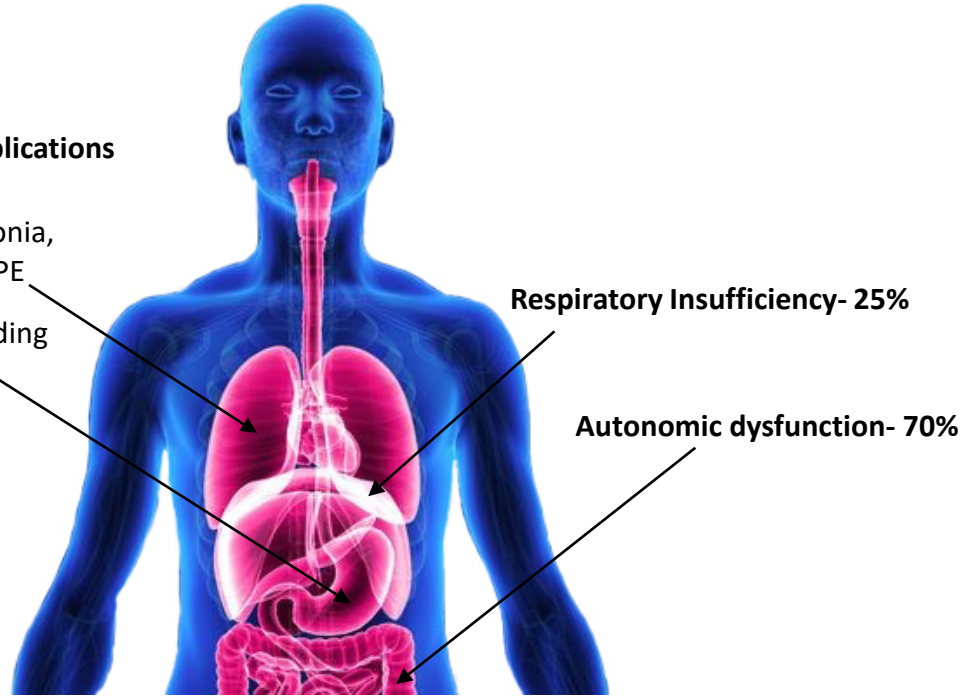
Dalakas . Neurology, 1998; 51 (6 Suppl 5)

SUPPORTIVE CARE

- **Respiratory failure**
  - Close monitoring of a person's breathing should be instituted initially.
  - Sometimes a mechanical ventilator (15-30%) is used to help support or control breathing.
- **Autonomic nervous system**
  - Changes in heart rate, blood pressure, toileting, or sweating.
- **Difficulty handling secretions in the mouth and throat**
  - In addition to the person choking and/or drooling, secretions can fall into the airway and cause pneumonia.



WILL I GET BETTER? AND WHEN? PROGNOSIS

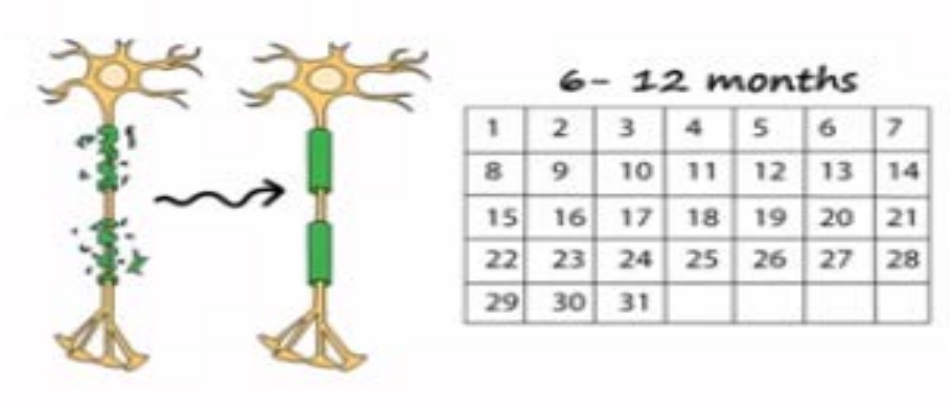


Outlook:

5% of GBS Patients Die

-Respiratory Paralysis
-Cardiac Arrest

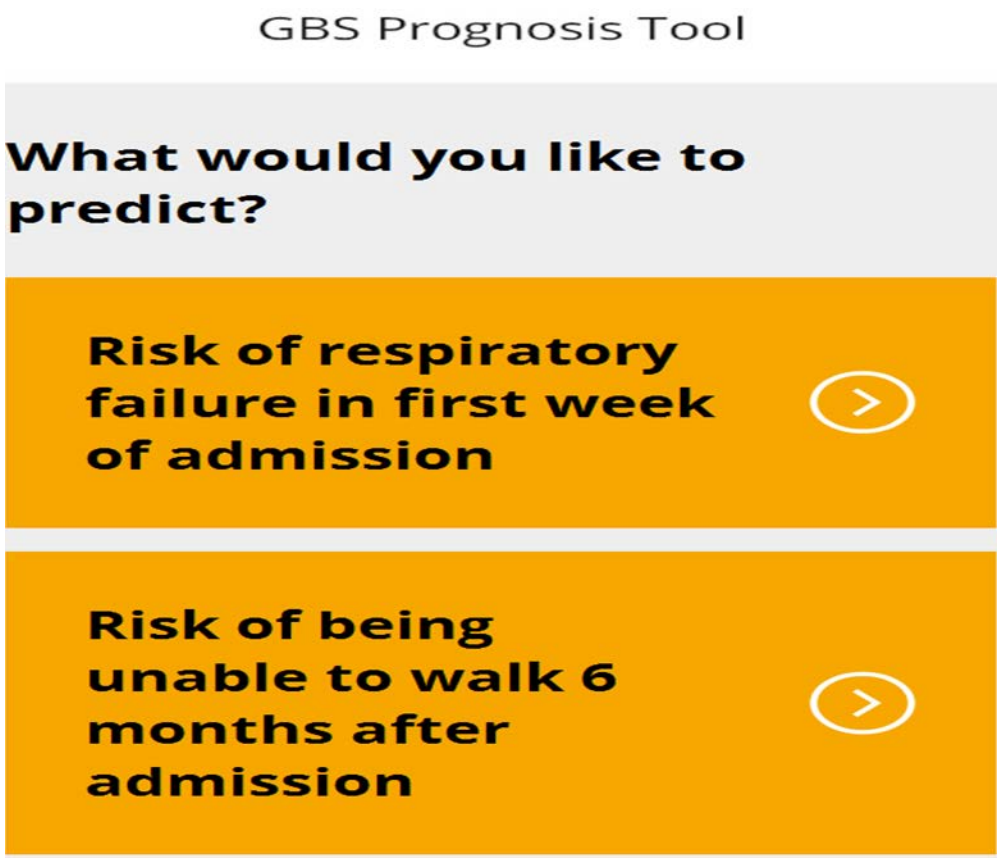
Most patients have a full recovery



20% of patients- residual weakness after 3 years

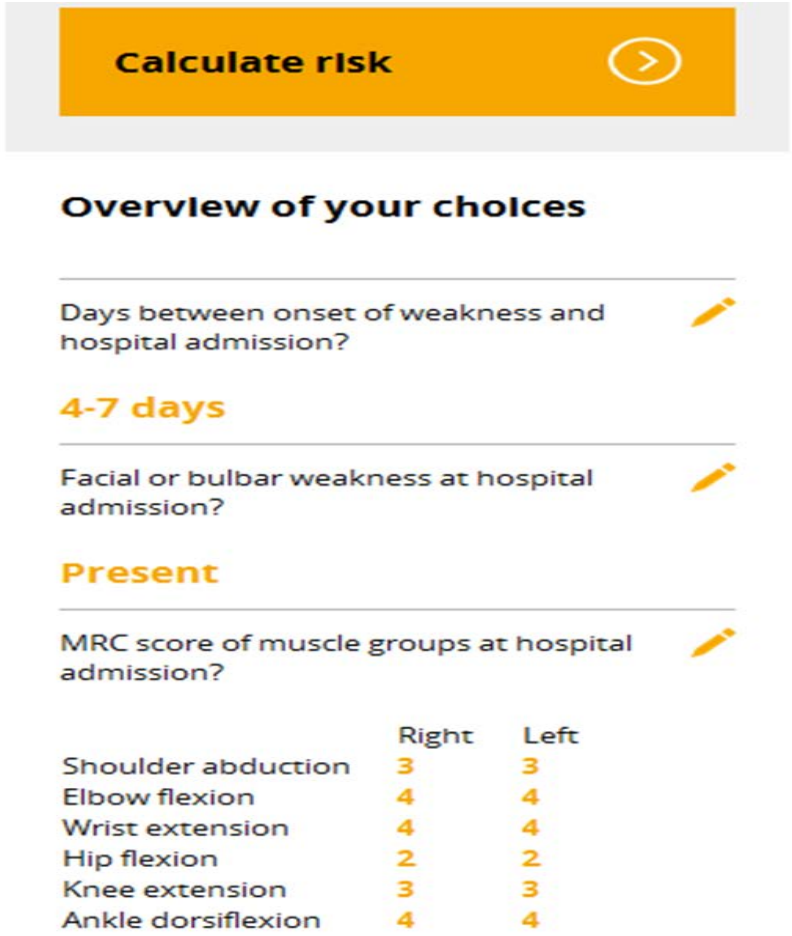
3 % of patients- weakness and tingling after many years

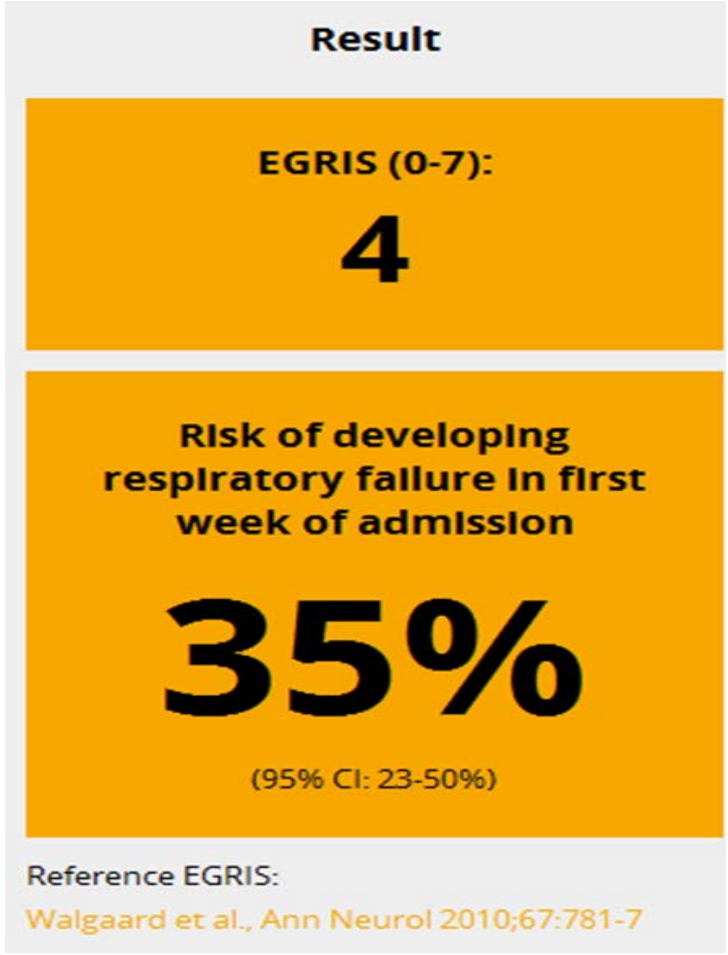
GBS PROGNOSIS SCALE



Ann Neurol. 2010 Jun;67(6):781-7 http://www.gbstools.org/prognosis-tool

RISK OF RESPIRATORY FAILURE

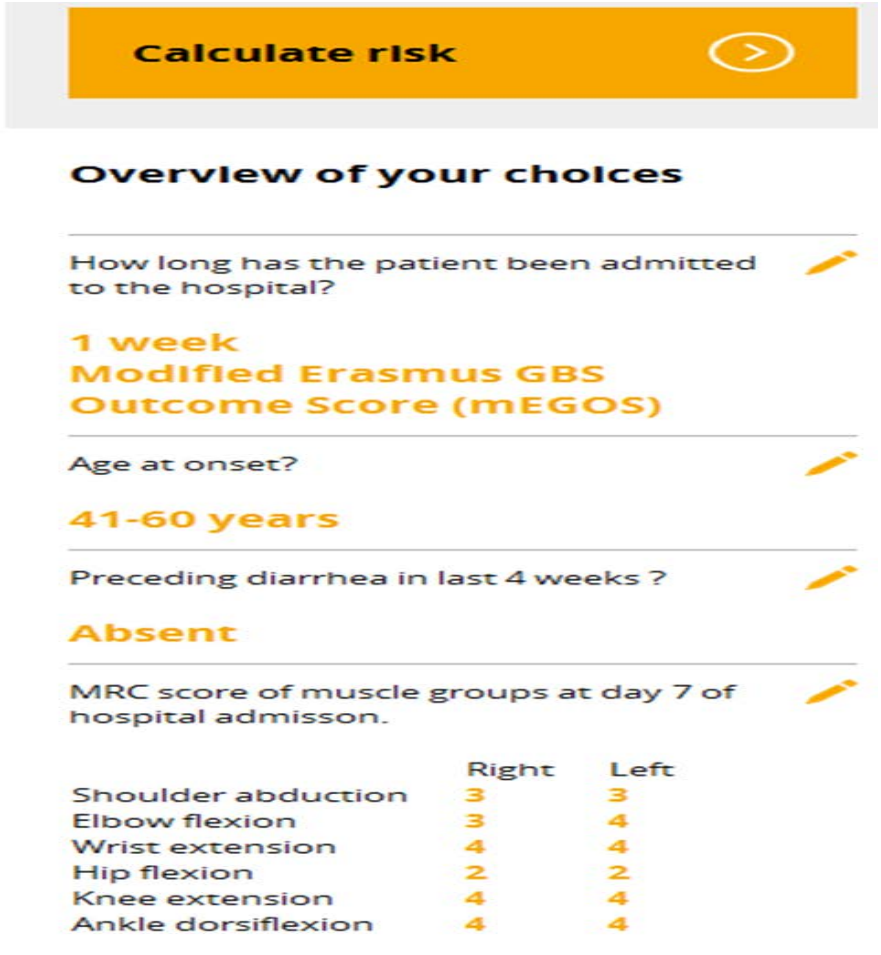


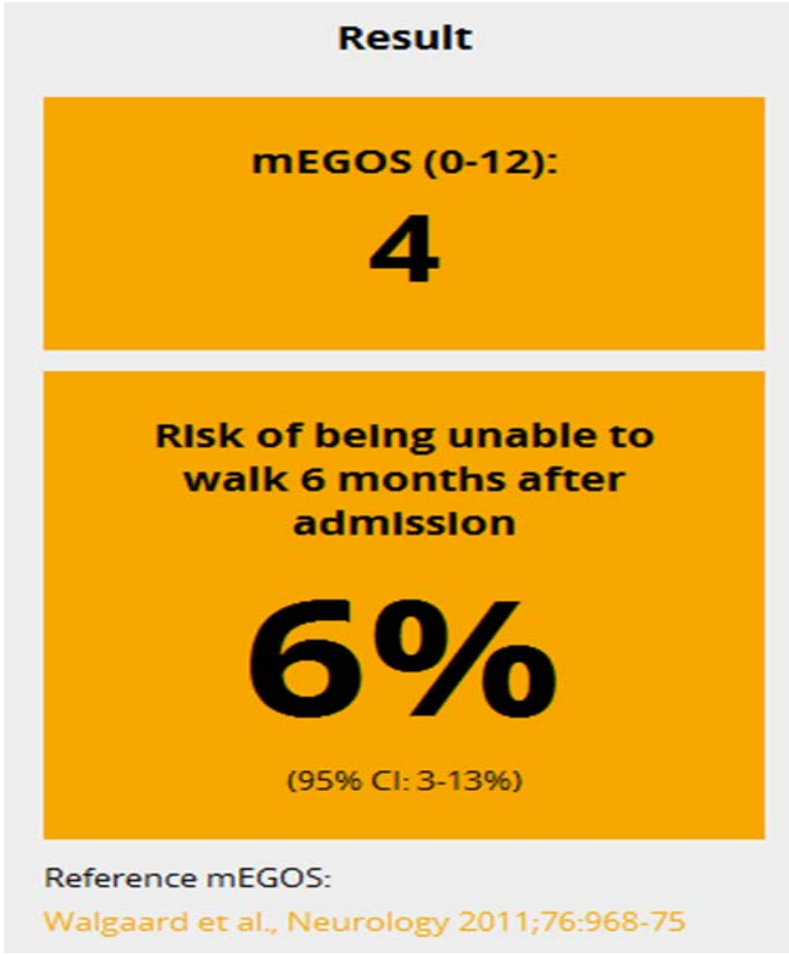


Ann Neurol. 2010 Jun;67(6):781-7

http://www.gbstools.org/prognosis-tool

RISK OF BEING UNABLE TO WALK IN 6 MONTHS





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SUMMARY

- GBS is an autoimmune disorder
- Most cases usually start a few days or weeks following a respiratory or gastrointestinal infection
- Molecular mimicry/innocent bystander” theory
- Symptoms : weakness ,abnormal sensation and autonomic dysfunction
- Diagnosis : clinical , spinal tap and EMG/NCS
- Course :greatest weakness within the first 2 -3 weeks.
- Treatment : IVIG, Plasma-exchange and supportive treatment
- Outcome : Prognosis scales
- Complications : Sepsis , GI bleeding, Respiratory failure and cardiac arrhythmias

THANK YOU