

### Muscle weakness







#### **Contents**



- ➤ What is muscle weakness?
- ➤ What causes muscle weakness?
- Probable symptoms
- Potential complications of muscle weakness
- > Treatment
- > Thanks



## What is muscle weakness?



- Muscle weakness, or myasthenia is a decrease in strength in one or more muscles. It is a common symptom of muscular, neurological and metabolic disorders.
- Muscular diseases, such as muscular dystrophy and dermatomyositis (disorder characterized by muscle inflammation), are common causes of muscle weakness.
- Other common causes include neurological disorders, such as Guillain-Barre syndrome (an autoimmune nerve disorder), amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease), stroke, and even a pinched nerve
- Metabolic disorders, such as Addison's disease and hyperthyroidism, can lead to weakness in one muscle or a group of muscles.
- Depending on the cause, weakness may develop in one or more muscles or all muscles accompanied by pain, atrophy, cramping etc
- In some cases, muscle weakness that happens suddenly, especially on one side of the body, can be a sign of stroke. If it occurs along with severe abdominal pain, it may by a symptom of botulism. Medical treatment should be sought for without further delay





#### What causes muscle weakness?



- Muscle weakness may be caused due to various reasons like muscular, metabolic, neurological disorders:
- The metabolic causes of muscle weakness are:
  - Addison's disease (deceased production of hormones by the adrenal glands)
  - Hyperparathyroidism (overactive parathyroid glands)
  - Hyperthyroidism (overactive thyroid)
  - Hypokalemia (low potassium)
  - Hyponatremia (low sodium)
- Muscle weakness may have neurological causes including:
  - Bell's palsy (swollen or inflamed nerve that controls facial muscles)
  - Cerebral palsy (group of conditions affecting the brain and nervous system functions)
  - Charcot-Marie-Tooth disease (inherited disorder affecting the peripheral nerves)
  - Guillain-Barre syndrome (autoimmune nerve disorder)
  - Multiple sclerosis (disease that affects the brain and spinal cord, causing weakness, coordination and balance difficulties, and other problems)
  - Nerve entrapment or compression, such as of the ulnar nerve in the arm
  - Stroke



#### What causes muscle weakness?



- Muscle weakness may have muscular disease causes including:
  - Amyotrophic lateral sclerosis (ALS, also known as Lou Gehrig's disease, a severe neuromuscular disease that causes muscle weakness and disability)
  - Dermatomyositis (condition characterized by muscle inflammation and skin rash)
  - Muscular dystrophy (inherited disorder that causes a progressive loss of muscle tissue and muscle weakness)
- Muscle weakness may be due to toxins including:
  - Botulism (serious food poisoning caused by Clostridium botulinum bacterium)
  - Insecticide ingestion
  - Nerve gas exposure
  - Paralytic shellfish poisoning
- Muscle weakness may have other causes including:
  - Anaemia (low red blood cell count)
  - Overuse injury (overuse of a muscle)
  - Polymyositis (widespread inflammation and weakness of muscles)

## Probable symptoms



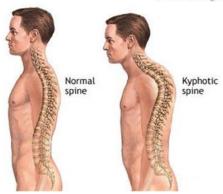


- Muscle weakness may accompany other symptoms affecting the muscles including:
  - Burning feeling
  - Frequent episodes of falling
  - Loss of muscle coordination
  - Muscle spasms
  - Pain
  - Paralysis
  - Pins-and-needles (prickling) sensation
  - Twitching
- Muscle weakness may accompany symptoms that are related to other body systems including:
  - Blurred or double vision
  - Difficulty with speaking and swallowing
  - Diarrhoea
  - Fainting or change in level of consciousness or lethargy
  - Fatigue & headache
  - Fever
  - Gradual difficulty walking and speaking, memory loss
  - Nausea with or without vomiting
  - Protruding eyes, unexplained weight loss, heat intolerance, perspiration, and goiter
  - Weakness, numbness or tingling, vision problems, unsteady walk, fatigue, and depression
  - Unexplained weight loss



## **Complications**

- <u>Inability to walk</u>. Some people with muscular dystrophy eventually need to use a wheelchair/stick/walker to move.
- Shortening of muscles or tendons around joints (contractures). Contractures can further limit mobility.
- Breathing problems. Progressive weakness can affect the muscles associated with breathing. People with muscular dystrophy may eventually need to use a breathing assistance device (ventilator), initially at night but possibly also in the day.
- <u>Curved spine (scoliosis).</u> Weakened muscles may be unable to hold the spine straight.
- **Heart problems.** Muscular dystrophy can reduce the efficiency of the heart muscle.
- **Swallowing problems.** If the muscles involved with swallowing are affected, nutritional problems and aspiration pneumonia may develop. Feeding tubes may be an option.













#### **Treatment**



- Treatment generally involves a multifaceted plan that addresses the cause, helps to build strength, decreases the risk of developing complications, such as muscle atrophy, and helps a person to live a normal life
- Treatment generally includes appropriate periods of rest, good hydration and nutrition and regular medical care.
  Rehabilitation, physical therapy, occupational therapy, and a regular program of exercise may be recommended.
  Orthopaedic splints, canes, crutches and/or a walker may be needed to help support weak muscles and improve mobility in some cases.
- Corticosteroid medications may be prescribed to reduce inflammation of the nervous system in some conditions
- Treatment of muscle weakness caused by anaemia may involve blood transfusions and treatment of the underlying conditions causing anaemia







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