

# Muscle pain (myalgia) in muscle diseases (myopathies)

Myalgia develops as a cardinal or accompanying symptom of various myopathies.

All myopathies are associated with muscle weakness.

Pain arises from spasms, persistent muscle tension and delayed muscle relaxation.

Each myopathy is treated individually depending upon its cause.

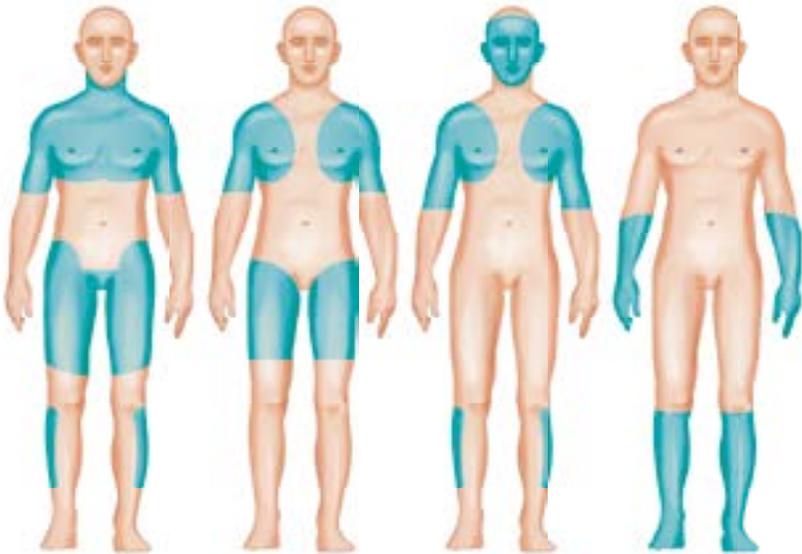
## Muscular dystrophy [1]

A

Hereditary disease

Defects in or deficiencies of muscle proteins

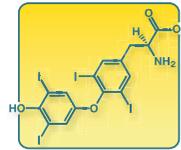
Muscle weakness and muscle wasting



Distribution patterns of affected muscle resulting from various changes in the genetic material.

## Myopathies with other causes [2, 3]

B



### Myopathy due to hormonal diseases

E.g. hyperthyroidism, cortisol over-production



### Myopathy due to metabolic diseases

E.g. glycogen storage disease, lipid storage disease



### Toxic myopathy

Triggered for example by alcohol or particular medicines (statins, cortisone, diuretics, etc.)



### Inflammatory myopathy

Autoimmune muscle inflammation (impaired immune system attacks the body's own muscle) or as a result of infections.

# Muscle pain (myalgia) in muscle diseases (myopathies)

Myopathies in the narrower sense are diseases of the skeletal muscle, the cardinal symptom (typical disease sign) of which is muscle weakness.

Typically, **muscle pain arises from spasms, continuous muscle tension and delayed muscle relaxation.**

Each myopathy is treated individually, as the symptoms vary greatly in severity and a very wide range of muscles may be involved. If possible, treatment is guided by the underlying disease, for example toxic myopathies can be treated by eliminating the triggering substances, and metabolic myopathies by replacing deficient metabolic products. The causes unfortunately cannot always be addressed.

**The treatment is therefore generally aimed at symptomatic alleviation of the spasms and pain.**

## A Muscular dystrophy [1]

Muscular dystrophy is caused by errors in the genetic material, leading to incorrect composition of proteins or a protein deficiency. The consequences are muscle weakness and muscle wasting.

Depending on the particular change in the genetic material, there are numerous different muscular dystrophies, with typical distribution patterns of the affected muscles. The most common types include Duchenne, Becker-Kiener, limb-girdle dystrophy (shoulder and pelvic girdles), facioscapulohumeral dystrophy (muscles of the face, shoulder girdle and upper arm) and distal dystrophy (hands and feet).

## B Myopathies with other causes [2, 3]

Myopathies can also occur as a result of other diseases.

**Myopathy in hormonal diseases:** e.g. hyperthyroidism, cortisol over-production in Cushing's disease or in hypofunction or hyperfunction of the adrenal glands.

**Myopathy in metabolic diseases:** These occur particularly in impaired energy metabolism, as the muscle needs a large amount of energy. Examples are glycogen storage disease and lipid storage disease.

**Toxic myopathies** are triggered by harmful substances taken into the body. Examples are alcohol and side effects of particular medicines (e.g. statins, glucocorticoids).

**Inflammatory myopathies** may occur: for example, in autoimmune diseases, in which an incorrectly controlled immune system attacks the body's own muscles (e.g. in polymyositis or dermatomyositis). An infection (e.g. trichinosis) may also lead to inflammatory myopathy.

[1] Lovering RM et al. Phys Ther (2005) 85(12): 1372- 1388.

[2] Chawla J. Front Neurol (2011) 2: 49.

[3] Ozen H. World J Gastroenterol (2007) 13(18): 2541- 2553.