**Muscular Dystrophy**

Muscular dystrophy refers to a group of more than 30 genetic conditions that cause muscle weakness and other muscle-related symptoms. The symptoms of muscular dystrophy get worse over time. It can be present at birth, develop in childhood or develop in adulthood depending on the type.

**Overview**

**What is muscular dystrophy?**

Muscular dystrophy refers to a group of more than 30 [genetic (inherited) conditions](https://my.clevelandclinic.org/health/diseases/21751-genetic-disorders) that affect the functioning of your [muscles](https://my.clevelandclinic.org/health/body/21887-muscle). In general, the symptoms of muscular dystrophy worsen over time. These conditions are a type of [myopathy](https://my.clevelandclinic.org/health/diseases/17256-myopathy), a disorder of your [skeletal muscles](https://my.clevelandclinic.org/health/body/21787-skeletal-muscle).

Depending on the type, muscular dystrophy can affect your ability to move, walk and perform daily activities. It can also affect muscles that help your [heart](https://my.clevelandclinic.org/health/body/21704-heart) and [lungs](https://my.clevelandclinic.org/health/body/8960-lungs) function.

Some forms of muscular dystrophy are present at birth or develop during childhood. Other forms develop during adulthood.

**Types of muscular dystrophy**

There are more than 30 types of muscular dystrophy. Some of the more common forms include:

* [**Duchenne muscular dystrophy (DMD)**](https://my.clevelandclinic.org/health/diseases/23538-duchenne-muscular-dystrophy-dmd): This is the most common form of muscular dystrophy. It mainly affects [boys](https://my.clevelandclinic.org/health/articles/sex-recorded-at-birth), but girls can also have a milder version of it. As DMD progresses, it affects your heart and lungs.
* [**Becker muscular dystrophy (BMD)**](https://my.clevelandclinic.org/health/diseases/23541-becker-muscular-dystrophy-bmd): BMD is the second most common type of muscular dystrophy. It mainly affects boys, but girls can have milder symptoms. Symptoms of BMD can appear any time between the ages of 5 and 60, but they typically start by your teenage years. The severity of BMD varies from person to person.
* [**Myotonic dystrophy**](https://my.clevelandclinic.org/health/diseases/22334-myotonia): This is the most common type of muscular dystrophy that’s diagnosed in adulthood. It affects men and women equally. People with myotonic dystrophy have difficulty relaxing their muscles after using them. The condition can also affect your heart and lungs and may cause [endocrine](https://my.clevelandclinic.org/health/articles/21201-endocrine-system) issues, such as [thyroid disease](https://my.clevelandclinic.org/health/diseases/8541-thyroid-disease) and [diabetes](https://my.clevelandclinic.org/health/diseases/7104-diabetes-mellitus-an-overview).
* [**Congenital muscular dystrophies (CMD)**](https://my.clevelandclinic.org/health/diseases/congenital-muscular-dystrophy-cmd): CMD refers to a group of muscular dystrophies that become apparent at or near birth (“congenital” means “present from birth”). CMD causes overall muscle weakness with possible joint stiffness or looseness. Depending on the type, CMD may also involve spinal curvature ([scoliosis](https://my.clevelandclinic.org/health/diseases/15837-scoliosis)), breathing issues, intellectual disabilities, learning disabilities, eye issues or [seizures](https://my.clevelandclinic.org/health/diseases/22789-seizure).
* **Distal muscular dystrophy**: This type affects the muscles of your hands, feet, lower arms and lower legs. It tends to affect people in their 40s and 60s.
* **Emery-Dreifuss muscular dystrophy (EDMD)**: EDMD mainly affects male children and young adults. It tends to cause muscle weakness in your shoulders, upper arms and shins. EDMD also affects your heart. The condition usually progresses slowly.
* [**Facioscapulohumeral muscular dystrophy (FSHD)**](https://my.clevelandclinic.org/health/diseases/facioscapulohumeral-muscular-dystrophy-fshd): FSHD most commonly affects muscles in your face, shoulders and upper arms. Symptoms tend to appear before age 20. About 4 out of 100,000 people in the U.S. have this form.
* [**Limb-girdle muscular dystrophy (LGMD)**](https://my.clevelandclinic.org/health/diseases/limb-girdle-muscular-dystrophy-lgmd): LGMD affects the muscles in your upper arms, upper legs, shoulders and hips. It affects people of all ages. Approximately 2 out of 100,000 people in the U.S. have LGMD.
* [**Oculopharyngeal muscular dystrophy (OPMD)**](https://my.clevelandclinic.org/health/diseases/24078-oculopharyngeal-muscular-dystrophy): OPMD weakens muscles in your eyelids and throat. Symptoms, such as droopy eyelids ([ptosis](https://my.clevelandclinic.org/health/diseases/14418-ptosis-droopy-eyelid)) and difficulty swallowing ([dysphagia](https://my.clevelandclinic.org/health/symptoms/21195-dysphagia-difficulty-swallowing)), often appear in your 40s or 50s. About 1 in 100,000 people have OPMD.

**How common is muscular dystrophy?**

Muscular dystrophy is relatively rare. All of the different types combined affect about 16 to 25 per 100,000 people in the U.S.

The most common childhood form is Duchenne muscular dystrophy. The most common adulthood form is myotonic dystrophy.

**Symptoms and Causes**

**What are the symptoms of muscular dystrophy?**

The symptoms of muscular dystrophy can vary significantly depending on the type. But the main symptom is muscle weakness and other muscle-related issues. Each type can affect different muscles and parts of your body. Symptoms of muscular dystrophy generally get worse over time.

Muscle- and movement-related symptoms can include:

* [Muscle atrophy](https://my.clevelandclinic.org/health/diseases/22310-muscle-atrophy).
* Difficulty walking, climbing stairs or running.
* Irregular [walking gait](https://my.clevelandclinic.org/health/symptoms/21092-gait-disorders) (like waddling or [toe walking](https://my.clevelandclinic.org/health/diseases/21017-toe-walking)).
* Stiff or loose joints.
* Permanent tightening of your muscles, tendons and skin ([contractures](https://my.clevelandclinic.org/health/diseases/contracture)).
* [Spasticity](https://my.clevelandclinic.org/health/diseases/14346-spasticity).
* [Muscle pain](https://my.clevelandclinic.org/health/symptoms/17669-muscle-pain).

Other symptoms can include:

* [Fatigue](https://my.clevelandclinic.org/health/symptoms/21206-fatigue).
* Trouble swallowing (dysphagia).
* Heart problems, such as [arrhythmia](https://my.clevelandclinic.org/health/diseases/16749-arrhythmia) and heart failure ([cardiomyopathy](https://my.clevelandclinic.org/health/diseases/16841-cardiomyopathy)).
* Curved spine (scoliosis).
* Breathing issues.
* Intellectual disabilities.
* [Learning disorder](https://my.clevelandclinic.org/health/diseases/4865-learning-disabilities-what-you-need-to-know).

The symptoms of some types of muscular dystrophy are mild and progress slowly as you age. Other types cause more rapid muscle weakness and physical disability.

**What causes muscular dystrophy?**

[Mutations](https://my.clevelandclinic.org/health/body/23095-genetic-mutations-in-humans) (changes) in the [genes](https://my.clevelandclinic.org/health/body/23064-dna-genes--chromosomes) that are responsible for healthy muscle structure and function cause muscular dystrophy. The mutations mean that the cells that would normally maintain your muscles can no longer fulfill this role, leading to progressive muscle weakness.

There are several genes — and possible genetic mutations — that play a role in muscle function. This is why there are so many different forms of muscular dystrophy.

In the majority of muscular dystrophy cases, you inherit the genetic mutation from one or both of your biological parents.

There are three ways you can inherit muscular dystrophy, depending on the specific type:

* [**Recessive inheritance**](https://my.clevelandclinic.org/health/body/23078-autosomal-dominant--autosomal-recessive): This means you’ve inherited a genetic mutation that causes the condition from both of your biological parents. Some forms of limb-girdle muscular dystrophy have this inheritance.
* **Dominant inheritance**: This means you only need to inherit the mutated gene from one of your biological parents to develop the condition. Myotonic, facioscapulohumeral and oculopharyngeal muscular dystrophies have this type of inheritance.
* **Sex-linked (X-linked) inheritance**: A genetically male person has one X and one Y chromosome, and a genetically female person has two X chromosomes. A genetic mutation on the X chromosome causes a sex-linked condition. As genetically male people only have one copy of each gene on the X chromosome, they’ll develop the condition if one of those genes is mutated. A genetically female person can have X-linked disorders, but the symptoms are usually less severe. Duchenne and Becker muscular dystrophies have this type of inheritance.

In rare cases, a person may develop muscular dystrophy spontaneously, meaning the mutation happened randomly and wasn’t inherited. This is called a *de novo* mutation.

**Diagnosis and Tests**

**How is muscular dystrophy diagnosed?**

If you or your child have symptoms of muscular dystrophy, your healthcare provider will likely perform a physical exam, [neurological exam](https://my.clevelandclinic.org/health/diagnostics/22664-neurological-exam) and muscle exam. They’ll ask detailed questions about your symptoms and medical history.

If they suspect you or your child have muscular dystrophy, they may recommend any of the following diagnostic tests:

* [**Creatine kinase blood test**](https://my.clevelandclinic.org/health/diagnostics/22692-creatine-kinase-ck): Your muscles release creatine kinase when they’re damaged, so elevated levels may indicate muscular dystrophy.
* [**Genetic tests**](https://my.clevelandclinic.org/health/diagnostics/23065-dna-test--genetic-testing): Certain genetic tests can identify gene mutations that are linked to muscular dystrophy.
* [**Muscle** **biopsy**](https://my.clevelandclinic.org/health/diagnostics/muscle-biopsy): Your provider may take a small sample of your muscle tissue. A specialist will then look at the sample under a microscope to look for signs of muscular dystrophy.
* [**Electromyography (EMG)**](https://my.clevelandclinic.org/health/diagnostics/4825-emg-electromyography): This test measures the electrical activity of your muscles and nerves.

**Management and Treatment**

**How is muscular dystrophy managed or treated?**

There currently isn’t a cure for muscular dystrophy, though researchers are actively looking for one.

The main goal of treatment is to manage symptoms and improve your quality of life. Treatments can vary depending on the type of muscular dystrophy and may include:

* [**Physical**](https://my.clevelandclinic.org/health/treatments/physical-therapy)**and**[**occupational**](https://my.clevelandclinic.org/health/treatments/occupational-therapy)**therapies**: The main goal of these therapies is to strengthen and stretch your muscles. They can help you maintain movement function.
* [**Corticosteroids**](https://my.clevelandclinic.org/health/drugs/4812-corticosteroids): Corticosteroids, such as [prednisolone](https://my.clevelandclinic.org/health/drugs/18881-prednisolone-tablets) and[deflazacort](https://my.clevelandclinic.org/health/drugs/20103-deflazacort-tablets), may be beneficial for delaying muscle weakness, improving lung function, delaying scoliosis, slowing the progression of cardiomyopathy and prolonging survival.
* **Mobility aids**: Devices such as [canes](https://my.clevelandclinic.org/health/articles/15541-how-to-use-a-cane), braces, [walkers](https://my.clevelandclinic.org/health/articles/15542-how-to-use-a-walker) and wheelchairs can improve your mobility and help prevent falls.
* **Surgery**: People with muscular dystrophy may need surgery to relieve tension in contracted muscles or to correct spine curvature (scoliosis).
* **Heart care**: Early treatment with [ACE inhibitors](https://my.clevelandclinic.org/health/treatments/21934-ace-inhibitors) and/or [beta-blockers](https://my.clevelandclinic.org/health/treatments/22318-beta-blockers) may slow the progression of cardiomyopathy and prevent the onset of heart failure. [Pacemakers](https://my.clevelandclinic.org/health/treatments/17360-permanent-pacemaker) can also help treat heart rhythm problems and heart failure.
* [**Speech therapy**](https://my.clevelandclinic.org/health/treatments/22366-speech-therapy): This can help people who have difficulty swallowing.
* **Respiratory care**: Cough-assist devices and respirators can help with breathing. [Tracheostomy](https://my.clevelandclinic.org/health/treatments/23231-tracheostomy) and assisted [ventilation](https://my.clevelandclinic.org/health/treatments/15368-mechanical-ventilation) may be necessary in cases of respiratory failure.

Medications have also been recently developed that may alter the course of certain forms of the disease. Examples include [eteplirsen](https://my.clevelandclinic.org/health/drugs/20551-eteplirsen-injection" \t "_blank) and [golodirsen](https://my.clevelandclinic.org/health/drugs/21233-golodirsen-injection" \t "_blank) for DMD (Duchenne muscular dystrophy).

**Prevention**

**Can I prevent muscular dystrophy?**

As muscular dystrophy is a genetic condition, there’s nothing you can do at this time to prevent it.

If you’re concerned about the risk of passing on muscular dystrophy or other genetic conditions before trying to have a biological child, talk to your healthcare provider about [genetic counseling](https://my.clevelandclinic.org/health/articles/23086-genetic-counseling). In some situations, [prenatal testing](https://my.clevelandclinic.org/health/diagnostics/24136-pregnancy-genetic-testing) may be able to diagnose the condition in early pregnancy.

If you have muscular dystrophy, there are steps you can take to try to prevent or delay complications and improve your quality of life, including:

* Eat a healthy diet to prevent [malnutrition](https://my.clevelandclinic.org/health/diseases/22987-malnutrition).
* Drink lots of water to avoid [dehydration](https://my.clevelandclinic.org/health/treatments/9013-dehydration) and [constipation](https://my.clevelandclinic.org/health/diseases/4059-constipation).
* Exercise as much as possible according to your healthcare team’s recommendations.
* Maintain a healthy weight.
* [Quit smoking](https://my.clevelandclinic.org/health/articles/8699-quitting-smoking) to protect your lungs and heart.
* Stay up to date on [vaccines](https://my.clevelandclinic.org/health/treatments/24135-vaccines).

**Outlook / Prognosis**

**What is the prognosis for muscular dystrophy?**

The prognosis (outlook) for muscular dystrophy varies depending on the type. Your healthcare provider will be able to give you a better idea of what to expect based on the type of muscular dystrophy you have and your unique situation.

**What is the life expectancy of muscular dystrophy?**

The life expectancy for muscular dystrophy varies significantly depending on the type.

For example, people with Duchenne muscular dystrophy (DMD) often die from the condition by the age of 25. But other forms of muscular dystrophy, such as oculopharyngeal muscular dystrophy, don’t typically affect life expectancy.

**Living With**

**How do I take care of myself or someone with muscular dystrophy?**

If you have muscular dystrophy or you’re taking care of someone with it, it’s important to advocate for yourself/them to ensure you/they get the best medical care and as much access to therapy as possible. Advocating for care can help you/them have the best possible quality of life.

You and your family may also want to consider joining a support group to meet others who can relate to your experiences.

**When should I see my healthcare provider about muscular dystrophy?**

If you have muscular dystrophy, you’ll need to see your team of healthcare providers regularly to receive treatment and monitor your symptoms.

**A note from Cleveland Clinic**

“Muscular dystrophy” is a term for a group of more than 30 genetic conditions that cause muscle weakness and other muscle-related symptoms. Understanding your muscular dystrophy diagnosis can be overwhelming. Your healthcare team will offer a robust management plan that’s unique to your symptoms. It’s important to make sure you’re getting the support you need and to stay attentive to your health. Know that your healthcare team will be there to support you and your family.

