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Muscular Dystrophy and Multiple Sclerosis

Although muscular dystrophy and multiple sclerosis are both progressive diseases that ultimately lead to the crippling of the muscular system, there are many differences between these two disorders. Muscular dystrophy and multiple sclerosis differ in their etiology, symptoms, and treatment methods.

First of all, the etiology, or cause, of muscular dystrophy is different from that of multiple sclerosis. Muscular dystrophy is an inherited disease that is caused by a defective gene on the X-chromosome ("Muscular Dystrophy"). The Duchenne and Becker forms of muscular dystrophy are caused by these sex-linked genes and affect only males. Other forms of muscular dystrophy, including "dystrophy of the face, shoulders, arms and limb-girdle dystrophy are not sex-linked" and may be passed on to both males and females (Shaw 186). Malnutrition and physical inactivity are considered risk factors that may also lead to the development of muscular dystrophy (Doenges et al. 642).

The etiology of multiple sclerosis currently remains a mystery in the medical field. However, multiple sclerosis is most commonly believed to result from the inflammation of nerve cells. This inflammation destroys the protective covering over the nerve cells, referred to as the myelin sheath, "leaving multiple areas of scar tissue." This scar tissue interrupts the transfer of electrical signals between the brain, spinal cord, and motor nerve cells throughout the body ("Multiple Sclerosis"). Other theories suggest that a "latent viral infection and an autoimmune

response" may cause multiple sclerosis (Shaw 145). Another theory holds that the disease may be inherited from the mother (DeNoon). "Emotional stress, overwork, fatigue, pregnancy, and acute respiratory infections" are also believed to trigger the onset of multiple sclerosis (Shaw 145).

In addition to their differences in etiology, muscular dystrophy and multiple sclerosis also differ in their symptoms. Muscular dystrophy is characterized by symptoms of muscle atrophy, uncontrolled movement, and "progressive crippling, resulting in contractures of the muscles around [the] joints and loss of mobility" ("Muscular Dystrophy"). The Duchenne form of muscular dystrophy exhibits symptoms of a "waddling gait" and winged shoulder bones, while dystrophy of the face, shoulders, and arms may inhibit infants from suckling or displaying emotional expressions (Shaw 187). More serious and developed forms of muscular dystrophy may cause "mild mental retardation" ("Muscular Dystrophy"), cause delayed physical growth and development (Doenges et al. 641), and weaken the cardiovascular and respiratory systems (Shaw 186).

The symptoms of multiple sclerosis include both muscular and neurological disturbances. The symptoms of multiple sclerosis that affect the muscular system typically begin with muscle spasms, tremors, numbness, and tingling. Weakness, inhibited mobility, and paralysis progressively develop. The neurological symptoms of multiple sclerosis include dizziness, vertigo, depression, and extreme fatigue. Memory loss, lower levels of thinking, and difficulty communicating may follow ("Multiple Sclerosis"). Vision problems, including an "inflamed optic nerve, double vision, blurred vision, paralysis of the eye's motor nerves, and rapid eyeball movement" are also symptoms of multiple sclerosis. Other symptoms may include difficulty urinating (Shaw 146), constipation, and hearing loss ("Multiple Sclerosis").

Along with their differences in symptoms, muscular dystrophy and multiple sclerosis have different treatment methods. There is no definite cure for muscular dystrophy; however, there are many different treatment options "designed to help prevent or reduce deformities in the joints and spine and to allow people with MD to remain mobile as long as possible." Orthopedic assistive devices, physical therapy, medications, and corrective surgery are all treatment options that may help to ease the symptoms of muscular dystrophy. Orthopedic assistive devices, such as braces, can release the pressure off weakened muscles and "help keep muscles and tendons stretched and flexible" to prolong the progression of muscle contractures. Wheelchairs may also be necessary assistive devices in the later stages of muscular dystrophy. Physical therapy may be used as a treatment option to maintain joint flexibility and prevent further curvature of the spine. Many medications may be prescribed to comfort the patient suffering from muscular dystrophy. The most common medication given for the Duchenne form of muscular dystrophy is an anti-inflammatory corticosteroid that is used to increase muscle strength and smooth mobility. Corrective surgery may be considered as a final treatment option to relieve the musculoskeletal pain and weakness. The most common surgeries associated with muscular dystrophy are tendon release surgery and surgery to correct curvature of the spine ("Muscular Dystrophy").

There is no cure for multiple sclerosis, but there are many options available to treat its symptoms and decrease the progression of the disease. Medications such as Cortiotropin and Decadron may be prescribed to eliminate the inflammation of the affected myelin sheath, and Lioresal or Dantrium may be used to decrease muscle spasms (Shaw 147). Cholinergic medicines may help relieve urinary disturbances associated with multiple sclerosis, and antidepressants are often prescribed for the psychological symptoms. Immune modulating therapy is another common treatment of multiple sclerosis which "requires [an] injection [of

interferon or glatiramer acetate] under the skin or in the muscle one or several times a week." In addition to these treatment methods, "physical therapy, speech therapy, occupation therapy, and support groups" may be necessary to help the patient suffering with multiple sclerosis maintain a normal, functioning lifestyle ("Multiple Sclerosis").

Muscular dystrophy and multiple sclerosis differ in their etiology, symptoms, and treatment methods. While muscular dystrophy is an inherited musculoskeletal disease, multiple sclerosis results from a malfunction in the nervous system. Muscular dystrophy is typically characterized by symptoms of muscle weakness and growth deformities, while multiple sclerosis exhibits both muscular and neurological symptoms, such as muscle spasms and depression. Muscular dystrophy can be treated with physical therapy and corrective surgery, but there are few medications available to control its symptoms. Patients with multiple sclerosis, however, may be prescribed many medications to treat both physical and emotional symptoms. Muscular dystrophy and multiple sclerosis are clearly two very distinct diseases.

Works Cited

DeNoon, Daniel. "Mothers May Be Origin of Children's Multiple Sclerosis Risk." *WedMd,* 28 May 2004, www.webmd.com/content/article/88/99701.htm.

Doenges, Marilynn E., et al. *Nurse's Pocket Guide: Diagnoses, Interventions, and Rationales*. 8th ed., F. A. David Co., 2002.

"Multiple Sclerosis." *Medline* Plus, 7 Nov. 2005, www.nlm.nih.gov/medlineplus/print/ency/article/000737.htm.

"Muscular Dystrophy." *Mayo Clinic*, 9 Dec. 2005, www.mayclinic.com/health/muscular-dystrophy/DS00200/DSECTION=3.

Shaw, Michael, editor. *Everything You Need to Know about Diseases*. Springhouse Cooperation, 1996.

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