



Treatment for Duchenne Muscular Dystrophy

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Why in News?

A collaborative effort between **doctors from Tamil Nadu, India, and scientists from Japan** has resulted in the development of a **disease-modifying treatment for [Duchenne Muscular Dystrophy \(DMD\)](#)**.

What is the Disease Modifying Treatment for DMD and Major Findings?

- This treatment utilizes a [food additive](#) called **beta-glucan**, derived from the N-163 strain of the [yeast *Aureobasidium pullulans*](#).
- The **six-month-long clinical study involved 27 children with DMD**, of which 18 were in the treatment group and 9 in the control group.
 - In addition to regular treatment, all participants (age >3) received the beta-glucan as a food supplement.
- The study yielded the following notable findings:
 - **Reduction in Muscle Weakness and Damage:** Evidence indicated a **reduction in muscle weakness** and damage among the treatment group.
 - It also led to improved **Muscle Strength**.
 - **Safety and Lack of Adverse Reactions:** No adverse reactions were observed in the participants, and the treatment showed no side effects on the liver and kidneys.

Note: Beta-glucan is a polysaccharide (a complex sugar) that has **anti-inflammatory, immunomodulatory and antioxidant properties**.

What is Duchenne Muscular Dystrophy?

- **About:**
 - **Duchenne Muscular Dystrophy (DMD)** is a [rare genetic disease](#) characterized by the **inability of muscles to produce dystrophin**, an enzyme that aids in muscle wear and tear as well as its regeneration.
 - It affects only male children.
 - The absence of dystrophin leads to **muscle damage, resulting in muscle weakness** and ultimately wheelchair-bound conditions in early teens and consequent premature deaths.
- **Common Symptoms:**
 - Progressive muscle weakness and [atrophy \(loss of muscle bulk\)](#) that begins in the legs and pelvis and later affects the arms, neck and other areas of the body.
 - Difficulty **walking, running, jumping, climbing stairs** and getting up from a lying or sitting position.
 - Frequent falls, **waddling gait** (abnormal walking pattern) and toe walking.
- **Prevalence:**

- According to a 2020 study on the global epidemiology of DMD, the pooled global DMD prevalence was **7.1 cases per 100,000 males** and **2.8 cases per 100,000 in the general population**.
- Also, it has approximately **5,000 patients in Japan and 80,000 in India**.
- **Current Treatments:**
 - Currently, there is **no known cure for DMD**. Treatment aims to control symptoms to improve quality of life.
 - Available treatments for DMD include **gene therapy, exon-skipping, and disease-modifying agents** such as [anti-inflammatory medications](#) and steroids.

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