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# Gene Therapy and Muscular Dystrophy: Structure, Function, and Dysfunction of the Muscular System

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*Gene Therapy and Muscular Dystrophy* is a short unit intended for high school Anatomy & Physiology students who may lack mastery of some foundational biology concepts. The unit employs the peculiarities of Duchenne muscular dystrophy (DMD) as a basis for understanding normal skeletal muscle function. Further, it explores principles of molecular genetics that are the foundation of new treatment strategies associated with DMD and uses these to emphasize the idea that in biology, function is determined by structure and dysfunction results from changes in structure. The unit incorporates Next Generation Science Standards (NGSS) for Life Sciences (HS-LS1: Structures and Processes, HS-LS3: Inheritance and Variation of Traits). It incorporates NGSS Science & Engineering Practices (SEP) - developing and using models; analyzing and interpreting data; constructing explanations and designing solutions; engaging in argument from evidence; obtaining, evaluating, and communicating information. Students develop a simple model they use to understand basic processes of molecular genetics. That model is then used to construct and communicate clear explanations for complex medical innovations whose data they have analyzed and evaluated.

(Developed for Anatomy and Physiology, grades 11-12; recommended for Anatomy and Physiology, grades 9-12)