

Epigenetics & Athletics

PREVENTING CHRONIC ILLNESS THROUGH YOUTH SPORTS



By: Corinne Vasiloff and Keri Roney

What is Epigenetics?

Modifications to your DNA and DNA packaging that do not affect the DNA sequence but can affect how it is expressed. Environmental factors and choices drive these changes and many of them are long-lasting and inheritable for future generations.

How Can This Improve Your Health?

- Exercise can unwind the epigenetic clock
- Potential preventative and rehabilitative effects for cancer, neurodegenerative disorders, and metabolic and cardiovascular diseases
- Aerobic exercise was also shown to have epigenetic effects on brain development and function

How Do Sports and Epigenetics Interact?

- Physical activity influences expression of genes related to muscle work (especially those involved in energy metabolism)
- These interactions are often studied in blood cells, but are also seen in muscle and fat tissue
- Consistent exercise can create Epigenetic Memory, reprogramming the body to react more strongly to repeated activity
- Most importantly, it tells us that exercise in childhood can have life-long benefits

