

In madeleine lengle's
children's novel a
wrinkle in time, the
mitochondria in one...

[Science](#), [Biology](#)



Losing Your Mitochondria The essay aims to address a two-fold objective to wit to describe what would happen to people who lost their mitochondria; and (2) to explain why it would happen.

Losing Your Mitochondria

Question: In Madeleine LEngles childrens novel A Wrinkle in Time, the mitochondria in one of the characters start to die. Describe what would happen to people who lost their mitochondria, and explain why it would happen.

Mitochondria function as the powerhouses of the human cell and people who lost their mitochondria would manifest symptoms of mitochondrial disorder, a metabolic disorder affecting muscles, brain, retina, extra-ocular muscles, heart, liver, kidney, pancreas, gut, bone marrow, and endocrine systems (Hoffman, Zschocke & Nyhan, 2010, 326). Muscles are the parts of the human body being mainly affected because every muscle is filled with mitochondria. Mitochondria found on the muscles convert energy stored in fats to water and adenosine triphosphate (ATP) - the main energy building blocks of both humans and animals.

Just as the electricity is essential to maintain the function and everyday living of those in the city, the mitochondria serve the same function in that the energy it produced are needed for the cells to function. The lack of some or all of the mitochondria can cut off the essential energy supply in the body, including those in the nerve and muscle cells which require high energy needs. Thus, muscular and neurological alterations are the common manifestations being experienced by people who lost their mitochondria. Among of the manifestations include symptoms of autism or cerebral palsy, three or more organ affectations (eye, muscles, brain), and infections and setbacks of a chronic disease.

In general, the lost of mitochondria or the experience of mitochondrial

disorders is attributed to the genetic defects of the family. Women contribute mitochondria and could be responsible for the mitochondrial disease; however, men could also be responsible for the lost of mitochondria due to mutations of mitochondrial cells.\n

Reference

\nHoffman, G. F., Zschocke, J. & Nyhan, W. L. (2010). Suspected Mitochondrial Disorder. *Inherited Metabolic Diseases: A Clinical Approach* (p. 325-334). New York: Springer Science+Business Media, Inc.