

NASA releases 'Metabolomics: You Are What You Eat' video

May 26 2016



NASA Twins Study investigators are looking for metabolic changes in retired astronaut Scott Kelly and studying how it correlates to the food he ate during the One-Year Mission and Twins Study. He is photographed with oranges, lemons, and grapefruits floating around him on the International Space Station. Credit: NASA

NASA's Human Research Program is releasing "Metabolomics: You Are What You Eat" video to highlight its Twins Study which uses omics to study Mark and Scott Kelly's metabolites. Omics is an evolving field integrating collections of measurements, biomolecules and sub-disciplines to provide a more complete picture of health. It includes the studies of DNA, RNA, proteins, your environment, microbiome and metabolites, to name a few. This is the sixth video in the omics miniseries of eight videos. The video provides a broad overview of ongoing Twins Study research on the International Space Station and the importance of the metabolome, the collection of an individual's metabolites.

Metabolites are key small molecules. They're the chemicals in the body to let you do all the things you do. It's all these things that give you energy, like glucose. They let you move, think, and digest your food.

Using a mass spectrometer, researchers can analyze blood and urine for secreted [metabolites](#). By following Scott and Mark Kelly both in space and on Earth, scientists can see a collection of changes occurring. Some chemicals are indicative of high stress but other chemicals are unknown. It is hoped that the Twins Study will show which stress molecules get activated at which times and what other kinds of metabolites are present and active. Identical [twins](#) share the same fertilized egg, thus, share similar genes. Because of similarities, researchers can focus on the metabolic changes.

One interesting aspect of this study is that the researchers know what Scott Kelly ate during the Twins Study and One-Year Mission. Diet definitely impacts a person's metabolites. They can see which foods cause what kinds of metabolic changes and how that evolves over time. It will be very informative to see how what you eat determines what you are chemically.

This information could be helpful for researchers creating recommendations to protect the health of astronauts embarking on long-duration missions, such as a journey to Mars, as well as benefit humans on Earth.

Provided by NASA

Citation: NASA releases 'Metabolomics: You Are What You Eat' video (2016, May 26) retrieved 25 April 2024 from <https://phys.org/news/2016-05-nasa-metabolomics-video.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.