

Calcifying Nanoparticles (Nanobacteria): An Additional Potential Factor for Urolithiasis in Space Flight Crews - Abstract

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National Aeronautics and Space Administration, Lyndon B. Johnson Space Center, Houston, Texas, USA.

Baylor College of Medicine, Houston, Texas, USA; Veterans Affairs Medical Center, Houston, Texas, USA.

Spaceflight-induced microgravity appears to be a risk factor for the development of urinary calculi, resulting in urolithiasis during and after spaceflight. Calcifying nanoparticles, or nanobacteria, multiply more rapidly in simulated microgravity and create external shells of calcium phosphate. The question arises whether calcifying nanoparticles are nidi for calculi and contribute to the development of clinically significant urolithiasis in those who are predisposed to the development of urinary calculi because of intrinsic or extrinsic factors. This case report describes a calculus recovered after flight from an astronaut that, on morphologic and immunochemical analysis (including specific monoclonal antibody staining), demonstrated characteristics of calcifying nanoparticles.

Written by:

Jones JA, Ciftcioglu N, Schmid JF, Barr YR, Griffith D. Are you the author?

Reference:

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