

Daniel Kim-Shapiro

Professor of Physics & Harbert Family Distinguished Chair for Excellence in Teaching and Scholarship at Wake Forest University

Winston-Salem, NC, US

Kim-Shapiro is an expert on nitric oxide, a signaling molecule that is important in maintaining adequate blood flow.

Description

Daniel Kim-Shapiro is an expert on nitric oxide, a signaling molecule that is important in maintaining adequate blood flow, regulating blood clotting and other physiological functions. Nitric oxide dysfunction contributes to many diseases including sickle-cell disease, pulmonary hypertension, malaria and stroke.

Kim-Shapiro's research has shown that Nitrite (like in hot dogs) can be converted to Nitric Oxide under conditions of low oxygen, thereby increasing blood flow when it is needed. This action may be due to a new function of the oxygen-carrying molecule in the blood, hemoglobin.

The Kim-Shapiro lab has focused on using physical and biological tools to address problems in cardiovascular health (a major health factor in many scenarios including aging) for many years. His lab has had continuous funding from the Heart Lung and Blood Institute of the NIH for more than fifteen years and has also been funded by the American Heart Association. In 2007 he received a prestigious MERIT Award from the NIH in recognition of the promising nature of his research.

Kim-Shapiro and colleagues discovered that the compound nitrite increases blood flow – a benefit with major implications. One of the best sources for nitrates is the humble beet and Kim-Shapiro and team researched beets as a potential health supplement, ultimately developing a performance drink called Unbeetable, which promises everything from lower blood pressure to increased blood flow to the brain and has the science to back it.

Kim-Shapiro is listed as a co-inventor on several patents or filed patent applications on cardiovascular health including “Use of Nitrite Salts for the Treatment of Cardiovascular Conditions.”

Topics

Blood Flow Clotting, Nitric Oxide Dysfunction, Blood Storage Transfusions, Cardiovascular Health, Sickle Cell Disease, Hemoglobin, Complications from Blood Transfusions, Drinking Beet Juice

Education

University of California - Berkeley

Ph.D. Biophysics

Southern Illinois University

M.S. Physics

Accomplishments

Director of Wake Forest's Translational Science Center

The goal of the TSC is to bring together faculty from the biochemical, physiological, psychological and behavioral disciplines to build internationally recognized research programs and academic training programs to improve functional health in aging.

MERIT Award

Awarded by the National Institute for Health

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