

Nitrosigine (ASI) demonstrates 33 percent cognitive performance boost in healthy, active adults

Long-lasting results occur with a single dose, in as quickly as 10 minutes

PURCHASE, NEW YORK – February 2, 2017 – Nutrition 21, LLC (“**Nutrition 21**”), announces results of two placebo-controlled human studies, published in “Nutrients”, indicate that Nitrosigine® – bonded arginine silicate (ASI) – significantly improves cognitive acuity, including processing speed and executive functioning. Athletes know that focus and mental acuity are essential to improving their performance and avoiding injury.

“Enhanced cognitive acuity and focus allows athletes to adjust their “game” faster than their peers,” commented nutrition researcher Douglas Kalman, PhD, the lead author of the Nutrients published study. The benefits of better mental acuity are especially evident in field sports, where quick decisions and faster adaptations give competitors an edge. More efficient multi-tasking also benefits athletic performance by helping athletes save energy.

He added that the improvements in complex processing speed with Nitrosigine (ASI) supplementation suggest that this self-affirmed GRAS nutritional ingredient may have specific benefits in sports, competitions and other athletic activities.

Two studies evaluated Nitrosigine’s cognitive effects

In two double-blind, placebo-controlled crossover [studies](#), investigators used parts A and B of the Trail Making Test (TMT) to assess healthy participants’ ability to perform cognitive tasks before and after taking 1500 mg of Nitrosigine (<https://nitrosigine.com>) or a placebo.

TMT is a widely accepted neuropsychological assessment of cognitive processing speed and executive functioning. “Faster times in TMT B are associated with enhanced visual search, speed of processing, mental flexibility and executive functions under performance demands,” explained Kalman.

In the first study, which lasted 14 days, TMT B performance improved 28 percent over baseline, among those supplementing with Nitrosigine. In the second study, evaluating shorter term effects, TMT B performance improved 33 percent among those supplementing with Nitrosigine (a decrease of 17.6 seconds over baseline time of 52.7 seconds), compared to a decrease of 4.9 seconds in the placebo group. This improvement was significant versus the placebo, $p < 0.05$. “Effects were seen in as little as 10 minutes after dosing and there was continued benefits with ongoing use,” Kalman explained.

He added that enhanced cognitive acuity may offer that “edge” that many athletes seek.

Previous studies further support Nitrosigine’s role as a sports nutrition ingredient

One of Nitrosigine’s primary mechanisms of action may be its superior ability to boost nitric oxide (NO) levels. NO is a key factor in promoting the relaxation of smooth muscle in blood

vessels, increasing blood flow to working muscles. This improved vasodilation and blood flow may also deliver more nutrients and oxygen to the brain.

Additional studies have shown that Nitrosigine significantly increases Afamin, a blood protein known to enhance cognitive function, by more than 50 percent. For athletes, this may translate to better attention, psychomotor speed, visual scanning and associated adaptations often required during competition.

Previous clinical studies have also shown that a single dose of Nitrosigine significantly increased arginine blood levels in as quickly as 30 minutes and lasted for up to 6 hours. Kalman noted that, "Some recent studies with arginine and arginine-based products have been shown to enhance exercise performance in athletes and active adults through an increased time to exhaustion, improved recovery and delayed muscular fatigue."

Nitrosigine supplementation for four days has also been shown to significantly increase pre-workout energy levels and reduce the biomarkers associated with muscle damage. The latter may play a role in faster exercise recovery.

Kalman concluded that, "Improved mental flexibility and acuity are areas of potential athletic enhancement which is deserving of further research." For additional information, visit <https://nitrosigine.com>.

Media Note: For additional information or to schedule an interview, contact Media Relations, Inc. at 952-697-5220.

Biography: Douglas S. Kalman, PhD, RD, FACN

Dr. Kalman has been involved in over 200 clinical trials and projects within the pharmaceutical, medical and exercise - nutrition fields. He has published over 75 abstracts and more than 30 peer-reviewed manuscripts. He is also a Co-Editor of one journal (JISSN) and on the Editorial Board of three Scientific Journals.

Dr. Kalman received his undergraduate degree from Florida State University, Masters' Degree from Hunter College - City University of New York and Doctorate in exercise and nutritional biochemistry (Health Research) from Touro University International. He is an Active Member and or Spokesperson with many organizations (ISSN, NSCA, APS, ACSM, etc.) and a co-founder of The International Society of Sports Nutrition (www.theissn.org). He has worked with Olympic Athlete's (Nagano, Japan, Salt Lake City, UT, Torino, Italy and England and the most recent 2016 Rio games) for Winter and Summer sports, professional athletes (i.e., MLB, NFL, NBA), musicians and music groups, combat sports (UFC-MMA), collegiate athletes and teams as well as Nike's Elite Distance Racing Team (Oregon Project) and the general population. Dr. Kalman has edited four academic textbooks, contributed to more than five academic textbooks as well as two "popular press" books. He has been interviewed on various media outlets such as NBC, MSNBC, CBS Evening News, CNN, Discovery Channel plus others along with a host of radio shows.

Dr. Kalman is an Adjunct Professor in the Robert Stempel School of Public Health at Florida International University (FIU), Miami, Florida. He has been the Nutrition Program Consultant for IMG Academies in Bradenton, Florida and is currently the Nutritionist and Physiologist for a professional MMA team. In addition, Dr. Kalman serves as the Team Nutritionist for Coral Springs Aquatic Center and the Sports Nutritionist for the United States Tennis Association –

Player Development (USTA). He has taught at New York University, C.W. Post-Long Island University and Florida Atlantic University. In addition to the aforementioned, Dr. Kalman is the Sports Nutritionist for the FIU Athletic Department, a Division I competitor with 18 fielded teams (www.fiusports.com).

About Nitrosigine

Nitrosigine (ASI), a patented complex of bonded arginine silicate with FDA New Dietary Ingredient (NDI) notification status; affirmed Generally Recognized As Safe (GRAS) at the level of 1,500 mg per day for use in nutritional bars and beverages. Nitrosigine is scientifically engineered to boost nitric oxide levels. The Nitrosigine complex bonds arginine and silicate – unlocking powerful synergistic effects. Manufactured in the U.S., Nitrosigine is a safe, non-stimulant, effective ingredient that is easy to formulate into new and existing products for sports nutrition, men's health and cardiovascular health.

For more information, please visit: www.Nitrosigine.com

About Nutrition 21, LLC

Nutrition 21, a wholly owned subsidiary of JDS Therapeutics, is a leader in the nutritional supplement industry. With many years of biotechnology and pharmaceutical experience, the Company's scientific platform has created unique, patented products that are safe and clinically effective. Rigorous preclinical and clinical trials are a key part of its product development strategy to ensure product safety and consumer trust. Nutrition 21 currently holds over 100 domestic and international issued and pending patents for products. Many support unique claims associated with, among others, glucose metabolism, weight management, cognition, and sports nutrition.

The Company is a developer and marketer of efficacious, high-value, clinically substantiated ingredients for dietary supplements, medical foods and beverages. Nutrition 21's branded ingredients include: Velositol[®] amylopectin chromium complex, clinically shown to double the effects of whey protein -- significantly increasing muscle protein synthesis, the key to muscle growth; Chromax[®] chromium picolinate, with clinically substantiated benefits for glucose metabolism, weight management, and brain health; Nitrosigine[®] bonded arginine silicate, is clinically shown to significantly boost nitric oxide levels supporting mental acuity/focus and sports nutrition. Nitric oxide is a key factor in promoting the relaxation of smooth muscle in blood vessels, increasing blood flow to working muscles.

For more information, please visit: www.Nutrition21.com

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