



## The Importance of Blueberries During National Nutrition Month®: A Resource for Health Professionals and Their Patients

### OVERVIEW

Happy National Nutrition Month®! This annual campaign, created by the Academy of Nutrition and Dietetics, emphasizes the importance of making informed food choices and developing healthy eating and physical activity habits. The official 2022 National Nutrition Month® theme is Celebrate a World of Flavors, a time to embrace global cultures, cuisines and inclusivity. What better way to do this than by eating more versatile fruits with a world of benefits, like blueberries. Whether fresh or frozen, blueberries are deliciously simple, snackable and nutritious. Better yet, blueberries can be incorporated into a variety of global cuisines — whether it's adding blueberries into a savory [Bahn Mi inspired by the flavors of Southeast Asia](#) to using them to elevate a typical [Mediterranean vegetable side dish](#).

Beyond great taste and serving as a passport to explore other cultures, a growing body of evidence shows that blueberries can help improve overall health as part of a healthy lifestyle — all the more reason to encourage your patients and clients to Grab a Boost of Blue during National Nutrition Month® (and beyond).

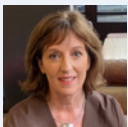
In honor of National Nutrition Month®, here's a roundup of research that illustrates the various ways blueberries help support overall health and nutrition.

# BLUEBERRIES AND HEART HEALTH

The American Heart Association (AHA) recommends eating an overall healthy dietary pattern that emphasizes a wide variety of fruits and vegetables, in conjunction with regular physical activity.<sup>1</sup> Encourage your clients and patients to look for the Heart-Check mark to find foods, like blueberries, that have been [certified by the AHA as heart-healthy](#).

## What the Science Says

A research study conducted at the University of East Anglia in the United Kingdom investigated if blueberries improve biomarkers of cardiometabolic function in participants with metabolic syndrome during a six-month, double-blind, randomized controlled trial. One hundred and fifteen (115) participants between the ages of 50 and 75 years with metabolic syndrome were randomly assigned to receive one of three daily treatments: 26 g freeze dried blueberries (the equivalent of one U.S. cup/day); 13 g freeze-dried blueberries (the equivalent of one-half U.S. cup/day fresh blueberries); or a placebo powder matched for color, taste and consistency. The study found that daily intake of the equivalent of one U.S. cup of blueberries resulted in clinically significant improvements in heart health measures, particularly markers of vascular function including improved endothelial function and reduced arterial stiffness, which are associated with a reduced risk of cardiovascular events such as heart attack and stroke.<sup>2, 3</sup>



**“Our research provides evidence that eating one cup of blueberries daily is an effective dietary strategy to improve cardiovascular health,”** said study researcher Aedín Cassidy, PhD. **“More specifically, the data show sustained and clinically relevant improvements in vascular function and arterial stiffness.”**

<sup>1</sup> American Heart Association. 2021. [The American Heart Association Diet and Lifestyle Recommendations](#).

<sup>2</sup> Inaba Y, Chen JA, Bergmann SR. Prediction of future cardiovascular outcomes by flow-mediated vasodilatation of brachial artery: a metaanalysis. *Int J Cardiovasc Imaging*. 2010 Mar 26;26(6):631–40.

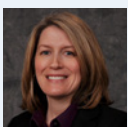
<sup>3</sup> Curtis PJ, van der Velpen V, Berends L, et al. [Blueberries improve biomarkers of cardiometabolic function in participants with metabolic syndrome—results from a 6-month, double-blind, randomized controlled trial](#). *Am J Clin Nutr*. 2019 Jun 1;109(6):1535–1545.

# BLUEBERRIES AND DIABETES MANAGEMENT

American Diabetes Association (ADA) notes that fruit can fit into a diabetes-friendly meal plan, help to satisfy a sweet tooth and provide extra nutrition. Blueberries are a great way to add natural sweetness to your favorite foods including cereal, yogurt, salads and smoothies. Not only can they help satisfy your sweet tooth, but they provide the added benefit of essential nutrients like fiber, vitamin C, manganese and vitamin K.<sup>4</sup> In fact, including blueberries in your diet may offer health benefits and help [manage your diabetes](#).<sup>5</sup>

## What the Science Says

Researchers at the Stratton Veterans Affairs (VA) Medical Center in Albany, New York investigated the effects of blueberry consumption for 8 weeks on cardiometabolic parameters in 52 overweight men with type 2 diabetes between the ages of 51 and 75. In this double-blind, randomized, placebo-controlled trial, participants were randomly assigned to one of two interventions: either 22 g of freeze-dried blueberries (the equivalent of one U.S. cup/day fresh blueberries) along with their regular diet or 22 g of a placebo powder (matched in energy and carbohydrate content to the freeze-dried blueberries) along with their regular diet. The results found that eating blueberries for 8 weeks may beneficially affect cardiometabolic health parameters, including hemoglobin A1c (7.1 + 0.1% vs. 7.5 + 0.2%) and triglycerides (179.6 + 10.1 mg/dL vs. 199.6 + 19.9 mg/dL). While the results cannot be generalized to all populations, they add to the evidence that a dietary intervention with a realistic serving of blueberries may be an effective strategy to improve metabolic factors associated with type 2 diabetes.<sup>5</sup>



**“This was one of the first human clinical trials to evaluate the potential beneficial health effects of blueberries in populations with type 2 diabetes,”** said Kim Stote, PhD, MPH, RDN, research scientist at the Stratton VA Medical Center and the study’s lead investigator. **“The results suggest that adding blueberries to the daily diet may help improve metabolic factors associated with type 2 diabetes.”**

<sup>4</sup> American Diabetes Association. 2021. [What superfoods are good for diabetes?](#)

<sup>5</sup> Stote KS, Wilson MM, Hallenbeck D, et al. [Effect of blueberry consumption on cardiometabolic health parameters in men with type 2 diabetes: an 8-week, double-blind, randomized, placebo-controlled trial](#). *Curr Dev Nutr*. 2020 Mar 9;4(4):nzaa030.



# BLUEBERRIES AND HEALTHY LIFESTYLES

Researchers are currently exploring how blueberry consumption may help to address a wide range of public health concerns, including emerging scientific areas of interest like immune health, gut health and the microbiome and exercise performance. Importantly, blueberries can help contribute to health, when incorporated into a healthy lifestyle.

## What the Science Says

Blueberries contain anthocyanins, plant compounds that give blueberries their beautiful blue color and possess antioxidant and anti-inflammatory properties which have been hypothesized to potentially enhance performance and recovery. Researchers at the University of the Fraser Valley in Canada examined the effects of two blueberry supplementation protocols on running performance, physiological responses, and short-term recovery. Using a randomized, double-blind, placebo-controlled crossover design, 14 healthy runners (mean age: 31.3 ± 10.3 years) completed an 8-km time trial (TT) after supplementation with 4 days of blueberries (72 g/day of freeze-dried blueberry powder, equivalent to 3 U.S. cups per day of fresh blueberries) 4 days of a placebo, or 2 days of placebo followed by 2 days of blueberries. While no significant differences were observed for time to complete the TT, an interaction effect ( $p = .027$ ) was observed for blood lactate, with lower post-TT concentrations after 4 days of blueberry supplementation ( $5.4 \pm 2.0$  mmol/L) vs. placebo ( $6.6 \pm 2.5$  mmol/L;  $p = .038$ ) or 2 days of supplementation ( $7.4 \pm 3.4$  mmol/L;  $p = .034$ ). The decline in reactive strength index was less following 4 days of supplementation compared to the other conditions. Although 4 days of blueberry supplementation did not alter performance, it blunted the increase in blood lactate, perhaps reflecting altered lactate production and/or clearance, and offset the decrease in dynamic muscle function post-TT, as indicated by the reactive strength index differences.<sup>6</sup>



**“Blueberries are abundant with anthocyanins possessing antioxidant and anti-inflammatory properties that can help combat fatigue and promote recovery,”** said lead researcher Jason Brandenburg, M.Sc, PhD. **“Our research, which has been conducted at sea level as well as simulated altitude, has consistently found that blueberry powder supplementation blunts the increase in blood lactate response to running. This response may very well have positive implications for longer duration or higher-intensity running performances as well as when performing at altitude.”**

<sup>6</sup> Brandenburg, JP, Giles LV. [Four days of blueberry powder supplementation lowers the blood lactate response to running but has no effect on time-trial performance.](#) *Int J Sport Nutr Exerc Metab.* 2019 Nov 1;29(6):636–642.

