

**PRODUCE FOR[®]
BETTER HEALTH**
FOUNDATION

The Snack-Meal Phenomenon: A Simple Strategy to Increase Fruit and Vegetable Intake

PRESENTED BY:

Mary Ellen Phipps, M.P.H., R.D.N., L.D.


blueberries[®]
U.S. Highbush Blueberry Council



Moderator

Wendy Reinhardt Kapsak, MS, RDN
President & CEO

Produce for Better Health Foundation

Our Purpose

The Produce for Better Health Foundation (PBH), a 501(c)3, is the only national non-profit organization committed to helping people live happier, healthier lives by eating more fruits and vegetables in all their glorious forms every day.

**PRODUCE FOR®
BETTER HEALTH**
FOUNDATION

Our Movement

Research shows, rather than a prescriptive recommendation to eat a certain amount of fruits and vegetables each day, consumers (particularly Gen Z and Millennials) want actionable, realistic and FUN approaches that make eating fruits and vegetables easy, helping them feel confident, happy and healthy.

That's where PBH's **Have A Plant®** movement comes in. It's a way to tap into the emotional connection consumers have to the fruit and vegetable eating experience while inspiring long-term, sustainable behavior change. And it does so with a no-nonsense approach that's simple, understandable, and, importantly for this audience, non-prescriptive.



Spread the Fruit and Veggie Love

#haveaplant

 @fruits_veggies

 @fruitsandveggies

 @fruitsandveggies



Mary Ellen Phipps, M.P.H., R.D.N., L.D.

Mary Ellen is the founder and registered dietitian behind Milk & Honey Nutrition. Mary Ellen has been living with type 1 diabetes since she was five years old, and she knows firsthand the impact food has on how we think, feel, act and move. She strives to make food easy and fun again for people with type 1 diabetes and other autoimmune conditions, and uses both her professional expertise and personal experience to reduce stress and fear around food, and help people find joy in the kitchen again. Mary Ellen is also a contributing writer, recipe developer and content expert for several leading health and wellness organizations. You can find her frequently on local Houston-area TV stations educating audiences on food, nutrition and joyful eating.



Disclosures

- This webinar is sponsored by the U.S. Highbush Blueberry Council.
- Mary Ellen Phipps, M.P.H., R.D.N., L.D. is a paid spokesperson for the U.S. Highbush Blueberry Council.

Agenda

- What is a “Snack Meal”?
- Food Realities While in Quarantine
- Why Increased Snacking is a Good Thing
- Why Blueberries Should be Considered for Snack Meals
- “Blue”tiful Snack Meals
- Q&A



Learning Objectives



Develop an understanding for the latest data related to the increased trend of snacking in the United States



Understand current and emerging health research related to blueberries and certain health conditions



Provide recommendations on produce consumption, including blueberries for clients and/or patients



Apply the latest trends in mini meals to incorporate blueberries into menus and eating plans

The Blueberry Method

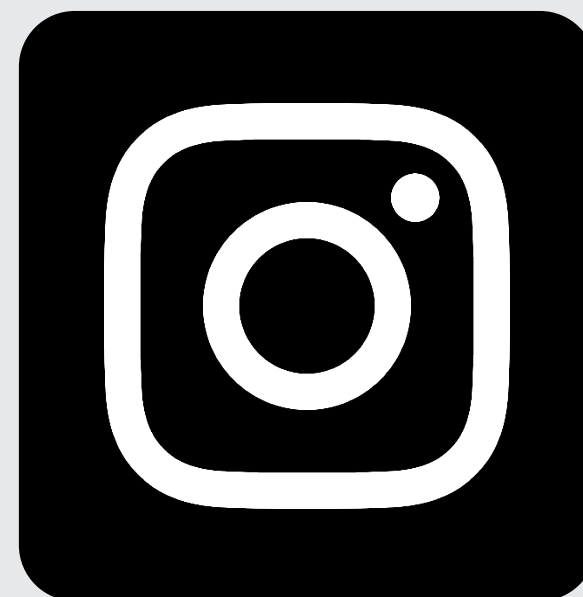
**Counteract
the chaos.
Snack with
simplicity.**

**The Blueberry Method
can show you how.**



We Want to Hear from You

#TheBlueberryMethod



Celebrate #NationalBlueberryMonth!
#Blueberries pack big flavor & are a
good source of fiber and vitamin C, yet
small enough to fit into every routine.
@blueberry411 #TheBlueberryMethod

What is a “Snack Meal”?

Snack Meal Examples



Food Realities While in Quarantine

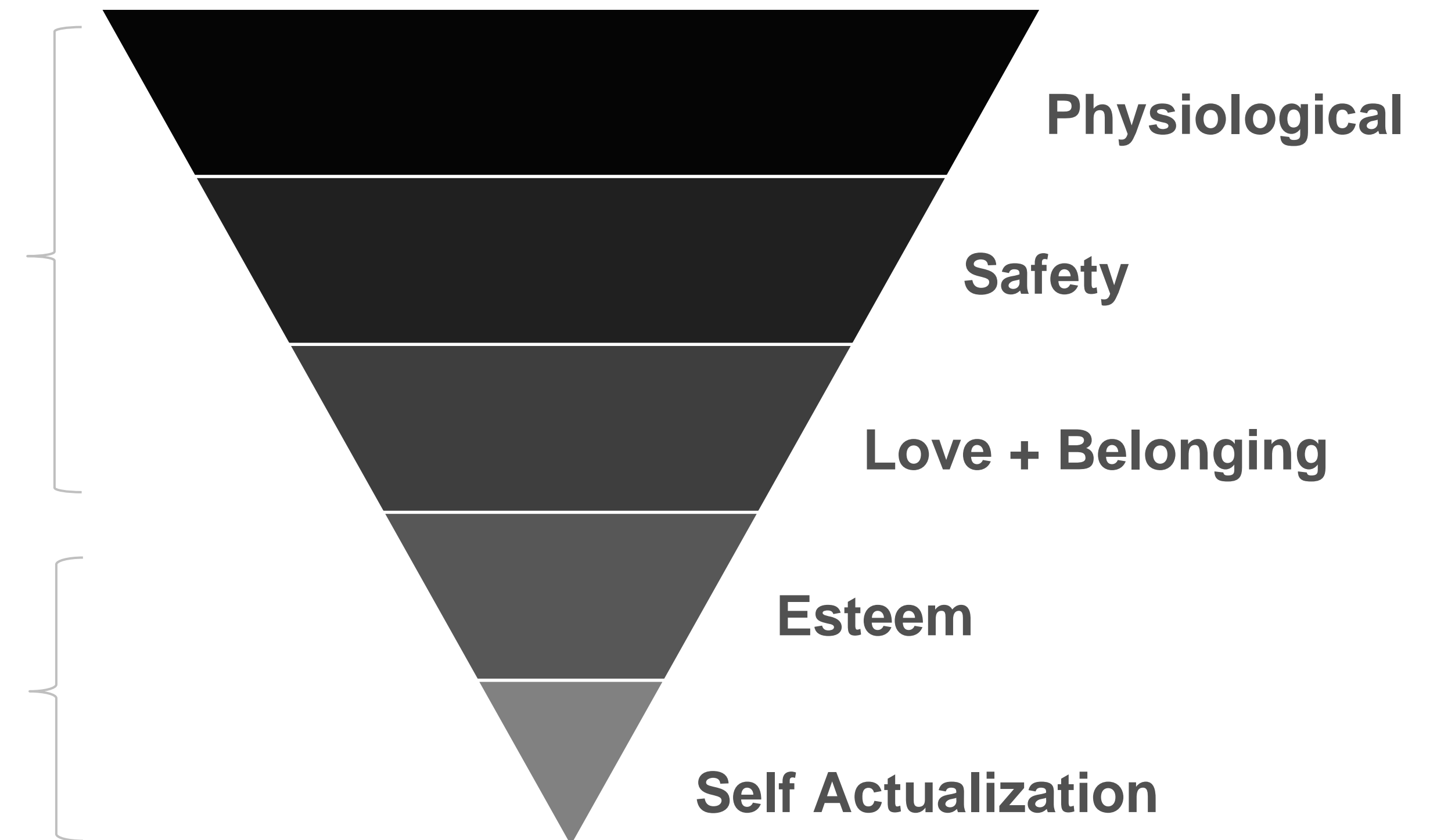
The Pandemic Upended Our Priorities

Physiological | Safety | Love + Belonging

The pandemic forced a dramatic rise in values associated with **safety and self-sufficiency**, with protecting the family, self-reliance, thrift and helpfulness rising the most.

Esteem | Self Actualization

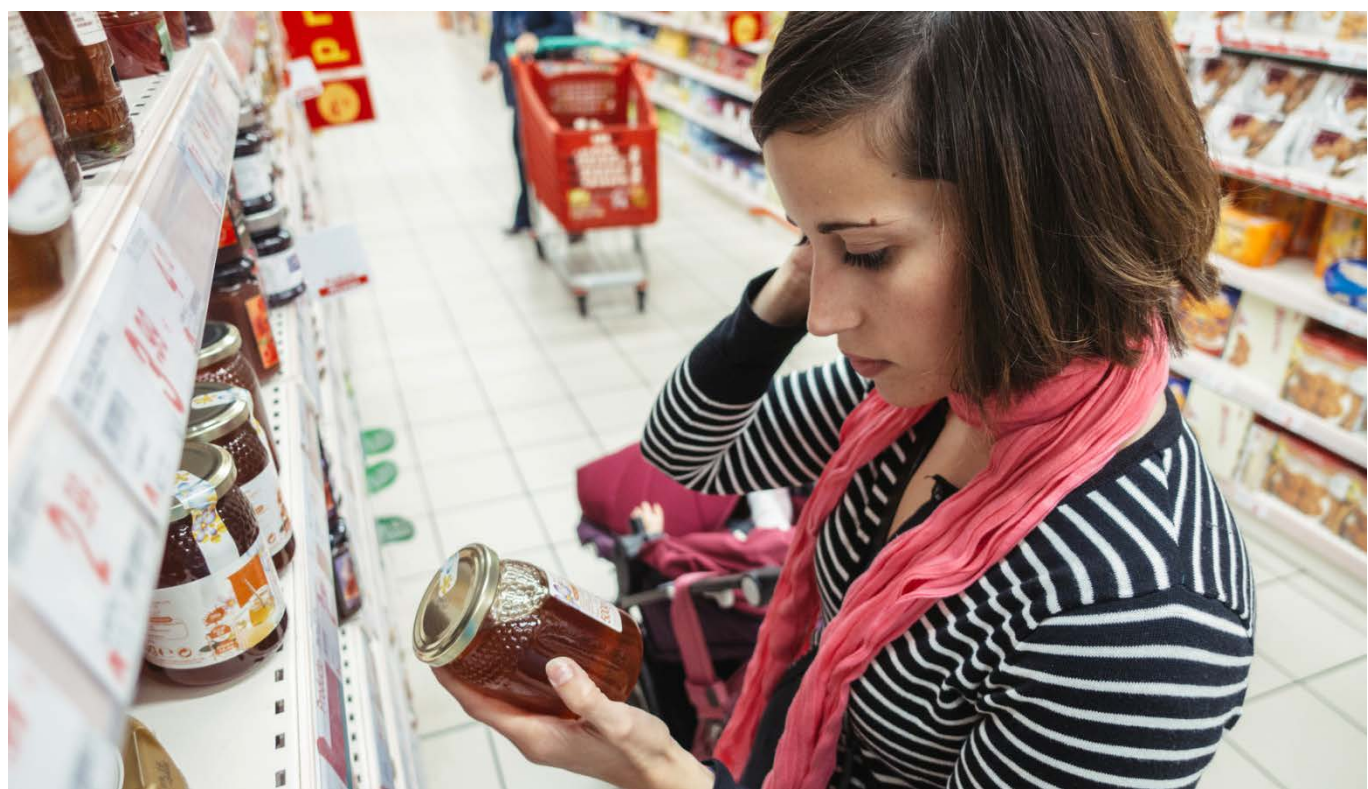
Conversely, there has been a plunge in values associated with **materialism and self-fulfillment**, with power, status, wealth and adventure down the most from before the pandemic.



Source: Zeno Group

Food-Related Reactions Have Varied

Save &
Stockpile



Experiment &
Comfort Cook



Cut Costs
& Survive



Shortcut &
Soldier On



Image Source: Photo by Alan Hardman on Unsplash

A woman with glasses and a bun sits at a desk, working on a laptop. She is surrounded by children: one is at a chalkboard, another is on a trampoline, and others are playing on the floor. The room is filled with books, toys, and household items, illustrating the concept of multitasking and energy drain.

Making dinner requires energy, and there are a lot of energy-draining forces at work right now.

Claire Lower | Senior Food Editor for Lifehacker



Snack-Meal Values

Thrift

Convenience

Adventure

Wellness + Nutrition

Thrift

1/3 of working age adults say they're more likely to budget and monitor expenses due to the pandemic.

Translation: "At-home value meals" are in demand.

Source: Resonate U.S. Consumer Panel 2020



Convenience

8/10 of working adults expect to eat out less due to pandemic.

Translation: They are losing a primary source of convenience, looking for replacements.

Source: Resonate U.S. Consumer Panel 2020



Adventure

Research shows that the type of stress induced by the pandemic causes boredom.

Translation: People want easy ways to add variety.

Source: Waters, M. (2020, March 31). This Pandemic Is Perilously Boring. Retrieved June 12, 2020, from <https://www.wired.com/story/this-pandemic-is-perilously-boring/>



Wellness + Nutrition

Despite spikes in comfort eating, wellness will remain a priority, especially as doctors preach benefits to immunity.

Translation: Fruits and veggies have a starring role to play in snack meals.



Why More Snacking is a Good Thing!

Real Food for Real Life

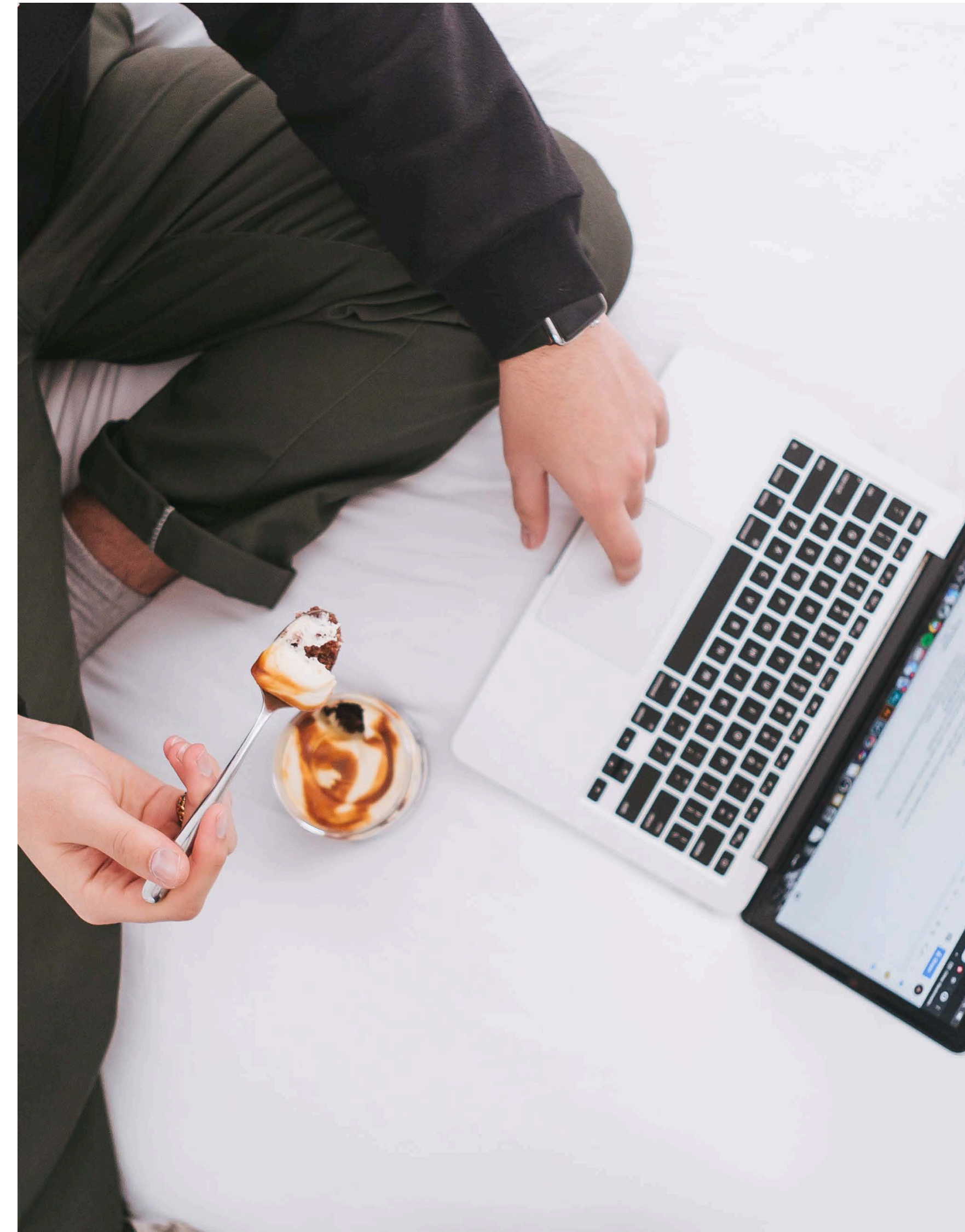
- Busy families want healthy, sustained energy in a portable format.
- A glut of “healthy” snacking products have rushed in, leaving people unsure what to believe and seeking products they can trust.
- Produce, like blueberries, can add nutrients to hurried food occasions that busy families experience day after day after day.



Food Values and Meal Occasions Have Evolved

- People have higher expectations from food, but less time to devote to it.
- The three square meals/day model doesn't fit with modern lifestyles.
- Power snacks and mini-meals have been on the rise for years.

IRI – How America Eats 2019: The State of the Snacking Industry



Additional Pandemic-Influenced Behaviors

- Other trends we saw...
 - Pantry raiding
 - Increased packaged foods
 - Online ordering: increased from 3 - 4% of grocery spending to about 15%
 - Snacking more
 - Social trends: banana bread
 - Virtual meals

Bain and Company



Image Source: Photo by Jeff Siepmann on Unsplash

But Now ...

- Snacking is still important to consumers just like it was pre-pandemic.
- Stress eating happening early but not as much anymore ...
- **People are back to paying more attention to physical and emotional health.**



Snacks, Mini-Meals/Snack Meals ... They Fit Within Nutrition Policy

50%

Adolescent females and young adult males consume three meals a day, but most also have two or more snacks per day.

40-
50%

Consume two to three snacks a day, and about one-third consume four or more snacks a day, among most age groups.

**DIETARY
GUIDELINES
FOR AMERICANS
2015-2020
EIGHTH EDITION**

Source: U.S. Department of Health and Human Services and U.S. Department of Agriculture.
2015 – 2020 Dietary Guidelines for Americans. 8th Edition.

Research Shows Snacks Help Boost Nutrition

Kids

Snacking between meals improves overall diet quality of a racially diverse set of children, and an important source of fruit and dairy for kids.

Adults

The percentage of snacking calories from nuts, fruit and 100% fruit juice was related to better diet quality.

Loth KA, Tate A, Trofholz A, Fisher JO, Neumark-Sztainer D, Berge JM. The contribution of snacking to overall diet Intake among an ethnically and racially diverse population of boys and girls. J Acad Nutr Diet. 2020 Feb; 120(2):270-9.

Barnes TL, French SA, Harnack LJ, Mitchell NR, Wolfson J. Snacking behaviors, diet quality, and body mass index in a community sample of working adults. J Acad Nutr Diet. 2015 Jul;115(7):1117-23.



Why Blueberries Should be Considered for Snack Meals

Good Things Come in Small Packages



Highbush blueberries are certified by the American Heart Association

Good Things Come in Small Packages

Fiber

- Heart health
- Feeling full
- Staying regular
- Keeping cholesterol in check

Vitamin C

- A healthy immune system
- Protect cells from free radical damage
- Improves iron absorption from plants

Vitamin K

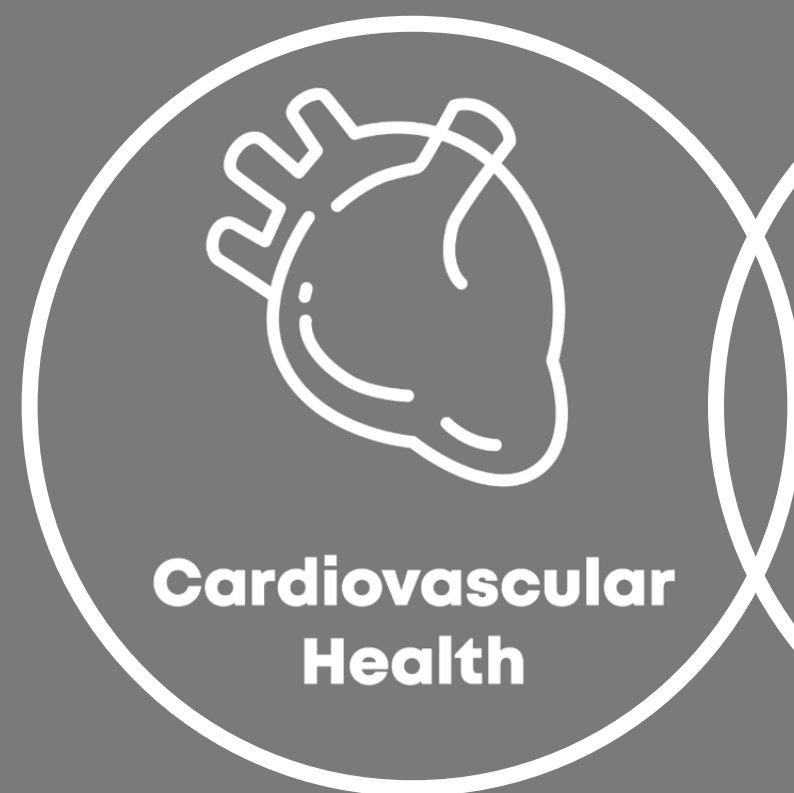
- Bone metabolism
- Regulating blood clotting

Manganese

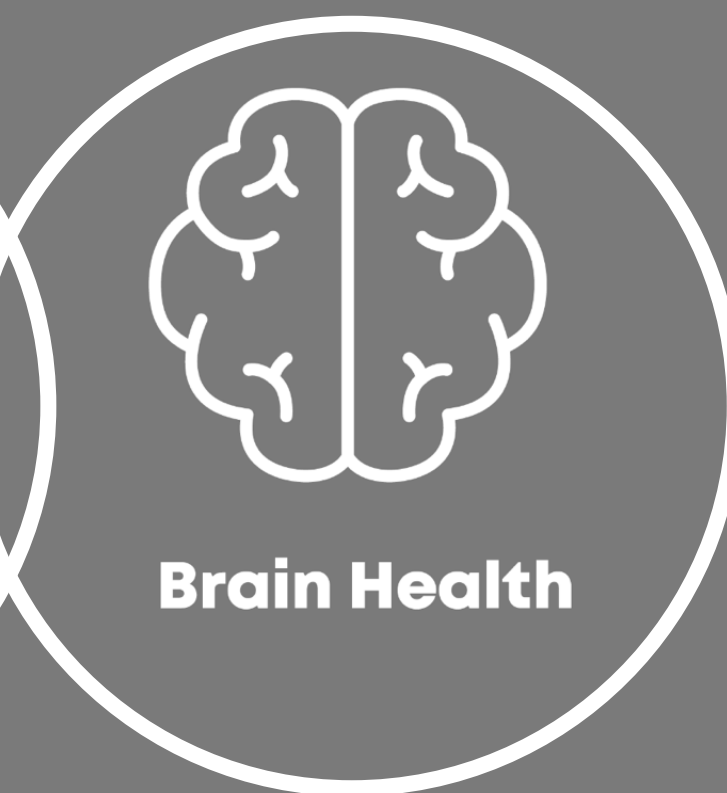
- Processing cholesterol, carbs and protein

Know we're always learning more.

Blueberries may promote good health in additional ways. **Areas of research:**



**Cardiovascular
Health**



Brain Health



Exercise



Insulin Response



Gut Health

Blueberries' Potential Impact on Diabetes/ Insulin Response

- Intake of blueberries resulted in clinically significant improvements in measurable indicators of type 2 diabetes in overweight men compared to placebo.
- Improvements shown in Hemoglobin A1c (HbA1c) and fructosamine compared to a placebo.

Source: Stote KS, Wilson MM, Hallenbeck D, Thomas K, Rourke JM, Sweeney MI, Gottschall-Pass KT, Gosmanov AR. 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.



Blueberries' Potential Impact on Cardiovascular Health

Journal of the Academy of Nutrition and Dietetics

Daily Blueberry Consumption Improves Blood Pressure and Arterial Stiffness in Postmenopausal Women with Pre- and Stage 1- Hypertension: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial

- Postmenopausal women with pre- and stage 1 hypertension
- Blueberry intake resulted in 5.1% and 6.3% reductions in mean systolic blood pressure and diastolic blood pressure



The American Journal of CLINICAL NUTRITION

Blueberries Improve Biomarkers of Cardiometabolic Function in Participants with Metabolic Syndrome – Results from a 6-month, Double-Blind, Randomized Controlled Trial

- Men and women with metabolic syndrome
- Blueberry intake resulted in clinically significant improvements in heart health measures, particularly markers of vascular function

Source:

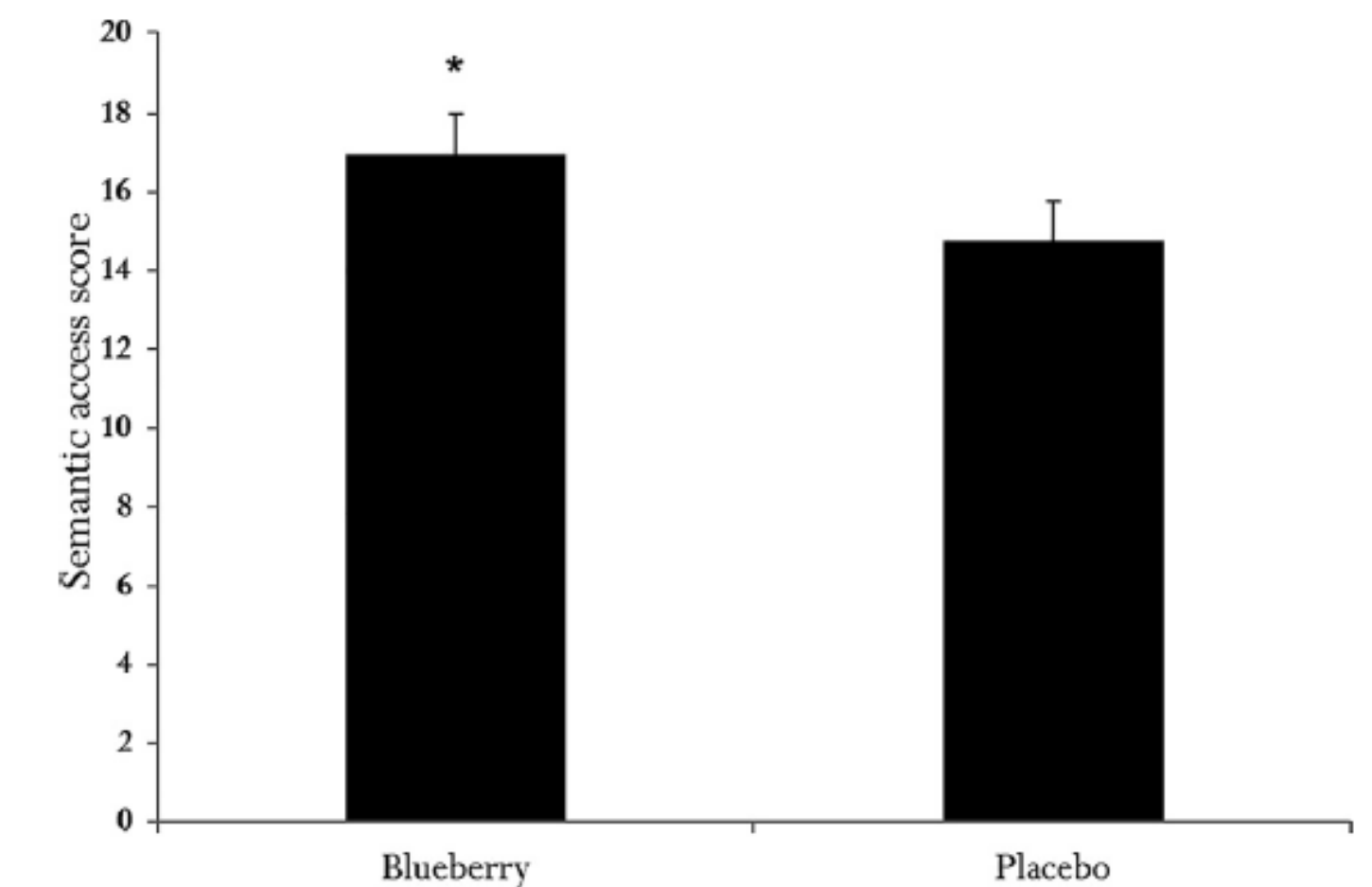
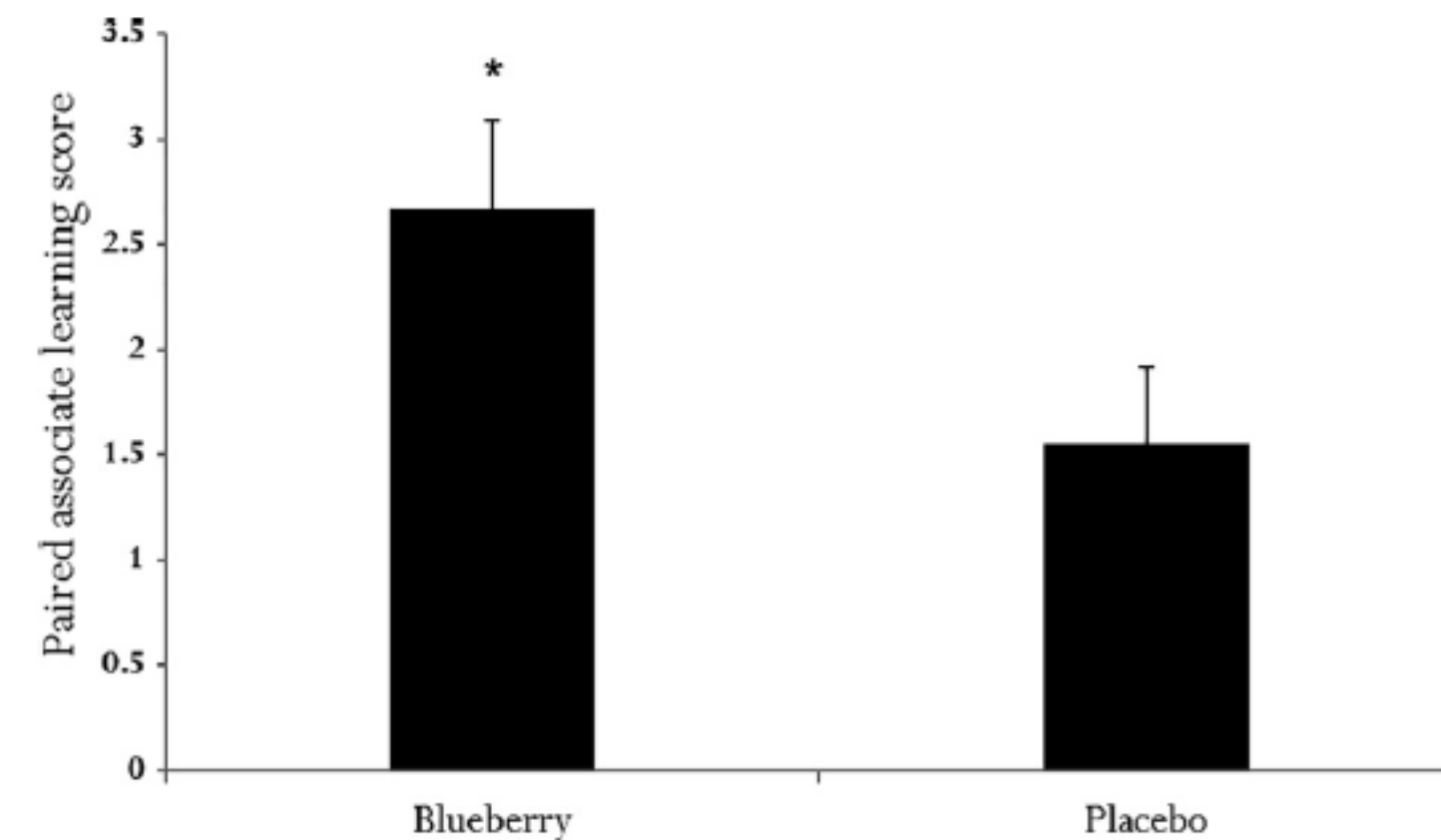
1. Johnson, Sarah A., et al. Daily blueberry consumption improves blood pressure and arterial stiffness in postmenopausal women with pre- and stage 1-hypertension: a randomized, double-blind, placebo-controlled clinical trial." J Acad Nutr Diet. 115.3 (2015): 369-377.
2. Curtis PJ, Van Der Velpen V, 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. The American Journal of Clinical Nutrition. 2019;109(6):1535-1545.

Blueberries' Potential Impact on Cognition



Cognitive Performance in Relation to Urinary Anthocyanins and Their Flavonoid-Based Products Following Blueberry Supplementation in Older Adults at Risk for Dementia

- Results of a study with older subjects that already showed signs of cognitive impairment revealed that the blueberry group exhibited improved areas of cognition after 16 weeks
- Semantic access and visual-spatial memory and a trend for enhanced speed of processing



Source: Krikorian R, Kalt W, McDonald JE, Shidler MD, Summer SS, Stein AL. Cognitive performance in relation to urinary anthocyanins and their flavonoid-based products following blueberry supplementation in older adults at risk for dementia. Journal of Functional Foods. 2020;64:103667.

Buy 'em, Eat 'em, Love 'em,
Snack Meals

Sweet Loves Savory

Flavor pairings are endless

- Lemon; Mint; Rosemary; Coconut; Balsamic; Cheese: Goat, Feta, Ricotta; Olives; Basil



Source: <https://www.blueberrycouncil.org/blueberry-cooking-tips/flavor-pairings/>

Consider the Pair

- A great snack involves protein, better-for-you fats and complex carbs
- Blueberries provide complex carbs in the form of fiber
- Great pairing ideas for blueberries include:
 - Nuts
 - Nut butter
 - Cheese
 - Seeds
 - Hummus
 - Hard boiled eggs
 - Yogurt

Source: Moghaddam E, Vogt JA, Wolever TM. The effects of fat and protein on glycemic responses in nondiabetic humans vary with waist circumference, fasting plasma insulin, and dietary fiber intake. Nutr. J. 2006 Oct 1;136(10):2506-11.



Bento Box and Tins

People love bento boxes

- Ease of Use, Kid Friendly, Controlled Portions, Endless Options



A Simple Formula for Snack Meals

- 1-2 fruits (one of which can be blueberries!)
- 1-2 veggies
- 1-2 protein sources
- 1 plant-based fat source
- 1 crunchy complex carb
- 1 fun treat



Snack Meals Encourage Cultural and Other Preferences to Shine

- Snack meals can be used in all cultures
- Everyone snacks!
- The flexibility of snack meals makes them adaptable



Meeting Clients where They're at with Snack Meals ...

- Consider food sources
- What snacks do they prefer?
- Remember the central themes of snack meals

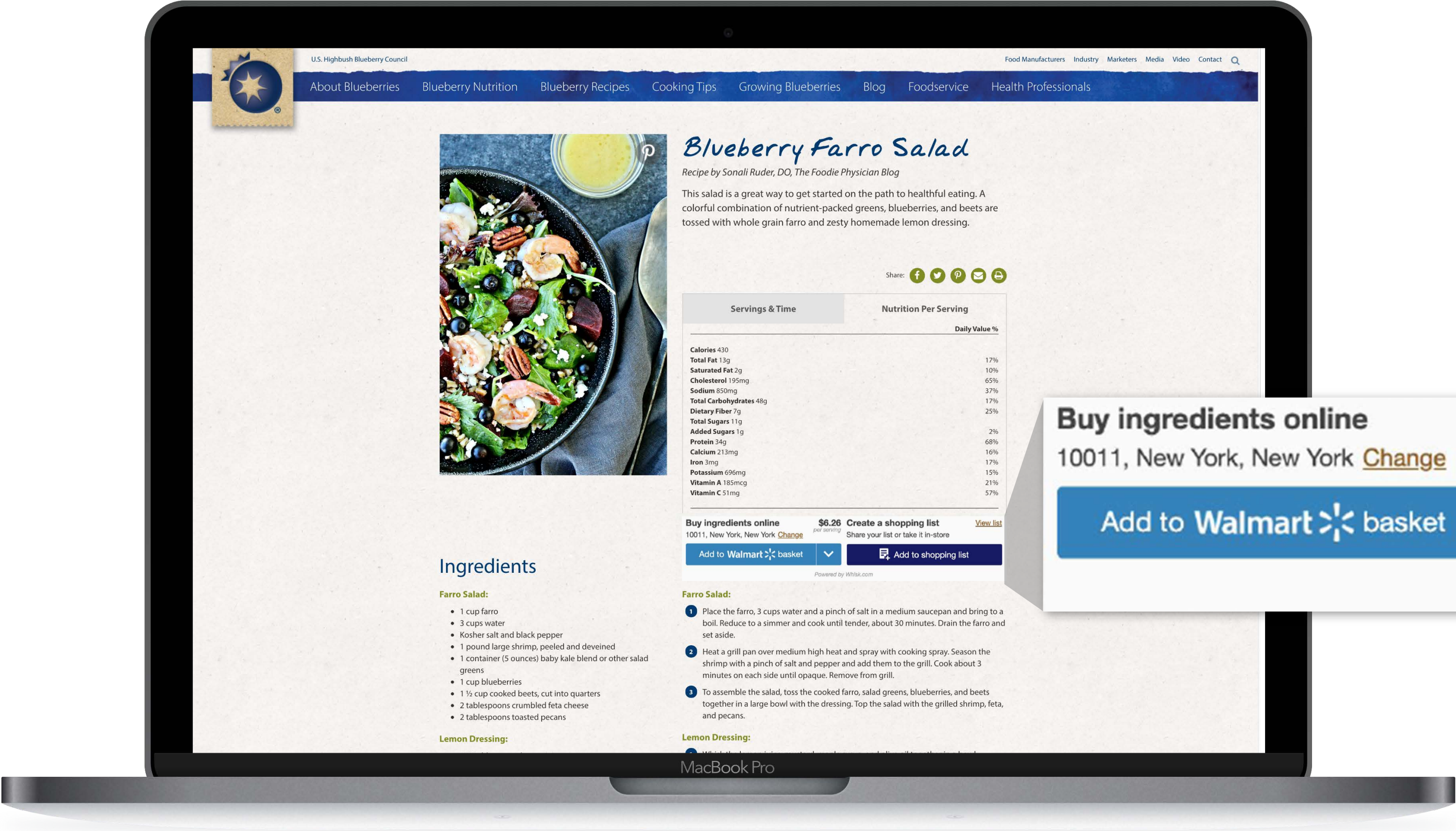


Strategies for Planning Snack Meals with Clients

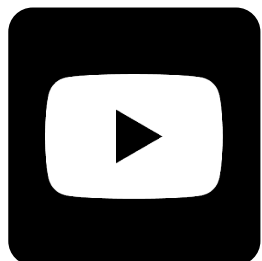
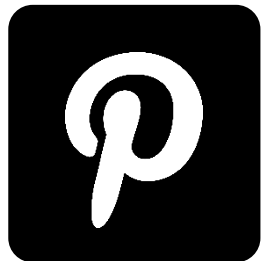
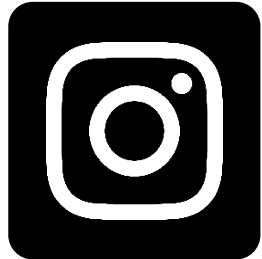
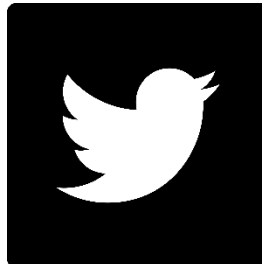
- Have them list their favorite snacks
- Take pictures at the grocery store
- Inventory the fridge and pantry
- Make a typical grocery list



Shoppable Recipes on blueberrycouncil.org



Resources




U.S. Highbush Blueberry Council

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Downloadable Materials


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Blueberry Nutrition Infographic

Get the latest findings on blueberries and nutrition.


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Blueberry Recipe Cards

Looking for blueberry recipes to share with consumers and patients? Download, print and distribute these recipe cards!


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Blueberry Fact Sheet

For everything you need to know about little blue dynamos, check out our Blueberry Basics fact sheet.

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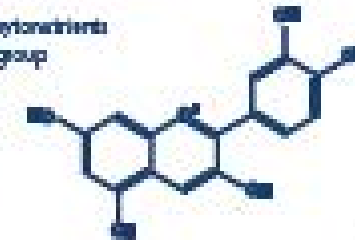
BUY EM, EAT EM, LOVE EM.

The Blueberry Method

An easy way and nutritious solution to eating well – just grab a handful, rinse and enjoy!

Boost your daily recommended servings of fruit.

Blueberries contribute phytonutrients called polyphenols. This group includes anthocyanins (163 mg/100 g), plant compounds that give blueberries their beautiful blue color.



Get 4 essential nutrients.

- Fiber**
Keep it healthy, feeling full, staying regular, keeping cholesterol in check
- Vitamin C**
A healthy immune system
- Vitamin K**
Bone metabolism, regulating blood clotting
- Manganese**
Converting proteins, carbs and fats into energy, bone development

Know we're always learning

Blueberries may promote good health in additional ways. Are we a fruit?



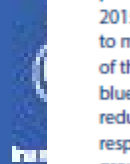
Cardiovascular Health



Brain Health



Bone Health



Energy

Fresh or frozen blueberries are infinitely snackable.

Whether you're just grabbing a handful on the go – or sprinkling them on a healthy treat, you'll love how versatile your blueberry snack can be.



Blueberry Smoothie

Blueberry Lemonade

Blueberry Cobbler

Blueberry Yogurt Parfait

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What's New In BLUEBERRY HEALTH RESEARCH

Blueberries are a healthy fruit: Blueberries are a healthy fruit: A serving (a handful or a cup) contains just 80 calories and only naturally occurring sugars, and contributes essential nutrients, including dietary fiber, vitamin C, vitamin K and phytonutrients called polyphenols. The group of polyphenols includes anthocyanins (163 mg/100 g), which are compounds that give blueberries their blue color. Following are summaries of recent studies investigators are currently pursuing to better understand the role that blueberries may play in promoting good health. These studies address four tracks: cardiovascular health, diabetes management, brain health and the gut microbiome. For more information, visit the Health Professionals section of [blueberrycouncil.org](#).

Cardiovascular Health

Cardiovascular disease is a major public health concern in the United States and currently the leading cause of death for both men and women ("Heart Disease Facts" 2019). Conditions that in combination significantly increase an individual's risk for developing cardiovascular disease include high blood sugar, high blood pressure, obesity and high blood-lipid levels. The name given to this cluster of symptoms is metabolic syndrome ("Metabolic Syndrome").

In a 2010 study of 48 obese human subjects with metabolic syndrome, those who consumed a blueberry beverage over an eight-week period experienced a slight decrease (- 6 and - 4%) in their systolic and diastolic blood pressure compared to those who consumed a placebo beverage (- 1.5 and - 1.2%). During the study, participants maintained their usual diets and physical activity patterns, but were asked to avoid consuming flavonoid-rich foods such as any other berries, green tea, cocoa and soy (Basu, 2010). The results warrant further investigation and provide some evidence for including blueberries as part of healthy dietary practices.

A 2015 double-blind, placebo-controlled human study out of Florida State University investigated the effects of blueberry consumption on 40 postmenopausal women with pre- and stage 1 hypertension (Johnson, 2015). Conducted over an eight-week period, the participants were advised to maintain their usual diet and physical activity levels during the duration of the study. The results showed that the 20 participants who consumed blueberries given as blueberry powder experienced 5.1% and 6.3% reductions in mean systolic blood pressure and diastolic blood pressure, respectively, whereas there were no significant decreases in the control group. From baseline to eight weeks, there was a significant ($P < 0.01$) reduction in ankle-brachial pulse wave velocity, and there was a group-time interaction ($P < 0.05$) in the blueberry group, whereas there were no changes in the control group. Reduced bioavailability of nitric oxide is thought to be one of the central factors common to cardiovascular disease, though it is unclear whether this is a cause of, or a result of, endothelial dysfunction (Naseem, 2015). While more research is needed, this initial study provides insight on the role that blueberries may play in the area of blood pressure and cardiovascular health.

In another human study, 44 adults with metabolic syndrome who consumed a blueberry smoothie twice daily for six weeks exhibited significant improvement in vascular endothelial function versus those who consumed a placebo (Stull, 2015). Vascular endothelial function is thought to play a central role in the development, progression and clinical

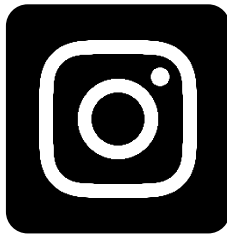
over a six-week period in adults with metabolic syndrome. Clinical trials with a larger sample size and longer duration are warranted to explain the potential role blueberries have in improving endothelial function and blood pressure in a population at high risk for developing cardiovascular disease.

Another research study out of the University of East Anglia in the United Kingdom investigated if blueberries improve biomarkers of cardiometabolic function in participants with metabolic syndrome in a six-month, double-blind, randomized controlled trial. One hundred and fifteen (115) participants between the ages of 50 and 75 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 (given as 26 g freeze-dried blueberries) resulted in clinically significant improvements in heart health measures, particularly markers of vascular function. Improved endothelial function and reduced arterial stiffness are associated with a reduced risk of cardiovascular events such as heart attack and stroke. Intake of one cup of blueberries per day also resulted in significantly increased HDL-C levels compared to the placebo. Additional lipid biomarkers researched in the study support these findings, such as significant increases in HDL particle number and APO-A1 levels, which are other predictors of heart disease risk (Curtis, 2019). Insulin resistance, pulse wave velocity, blood pressure and other lipid levels (including total cholesterol) were unaffected by any of the interventions. There were also no observed clinical benefits from the intake of one-half cup of blueberries in this at-risk participant group. While the conclusions drawn are from a single study that cannot be generalized to all populations, the data add weight to the evidence that a dietary intervention with a realistic serving of blueberries may be an effective strategy to decrease important risk factors for heart disease.

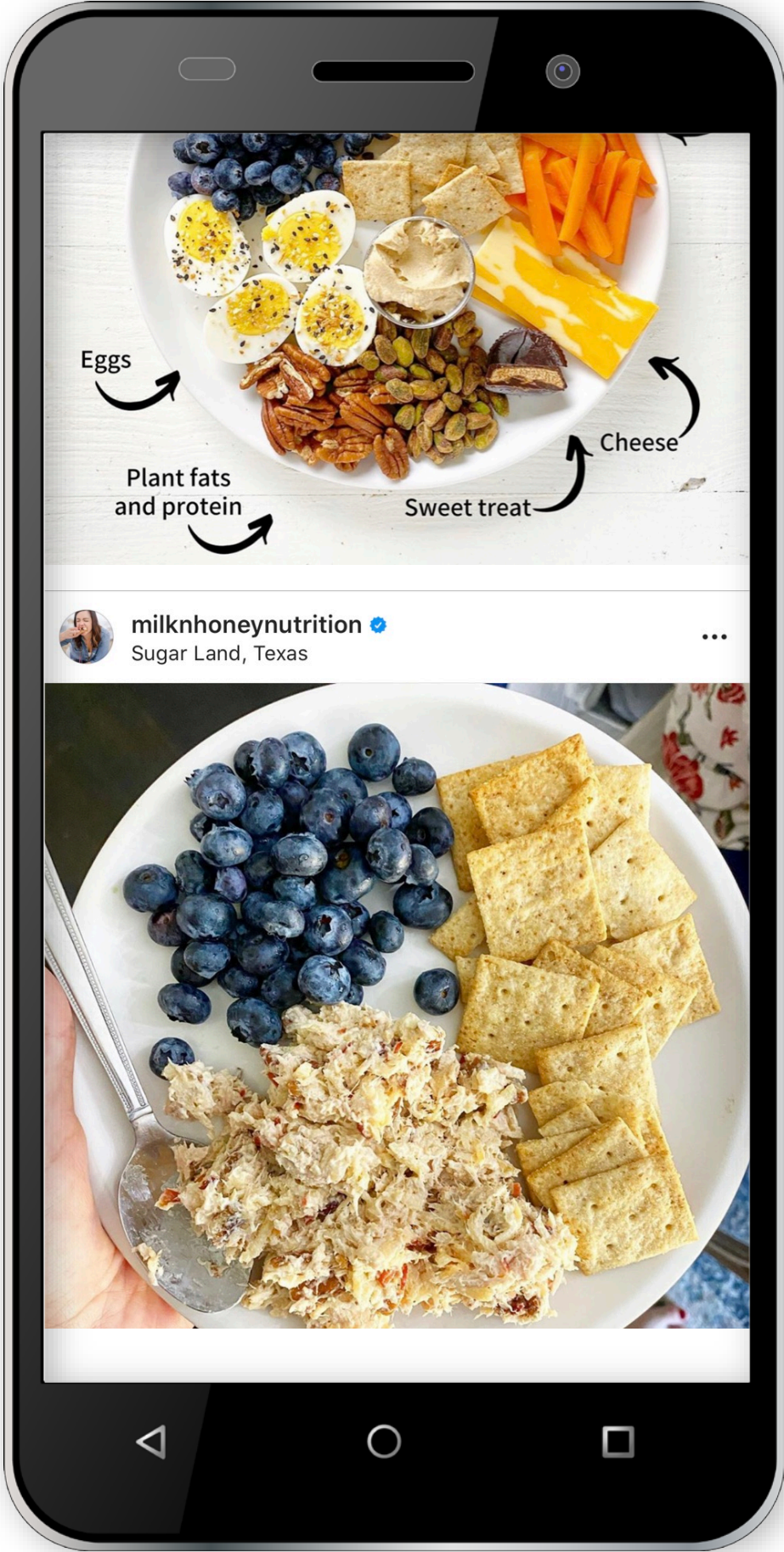
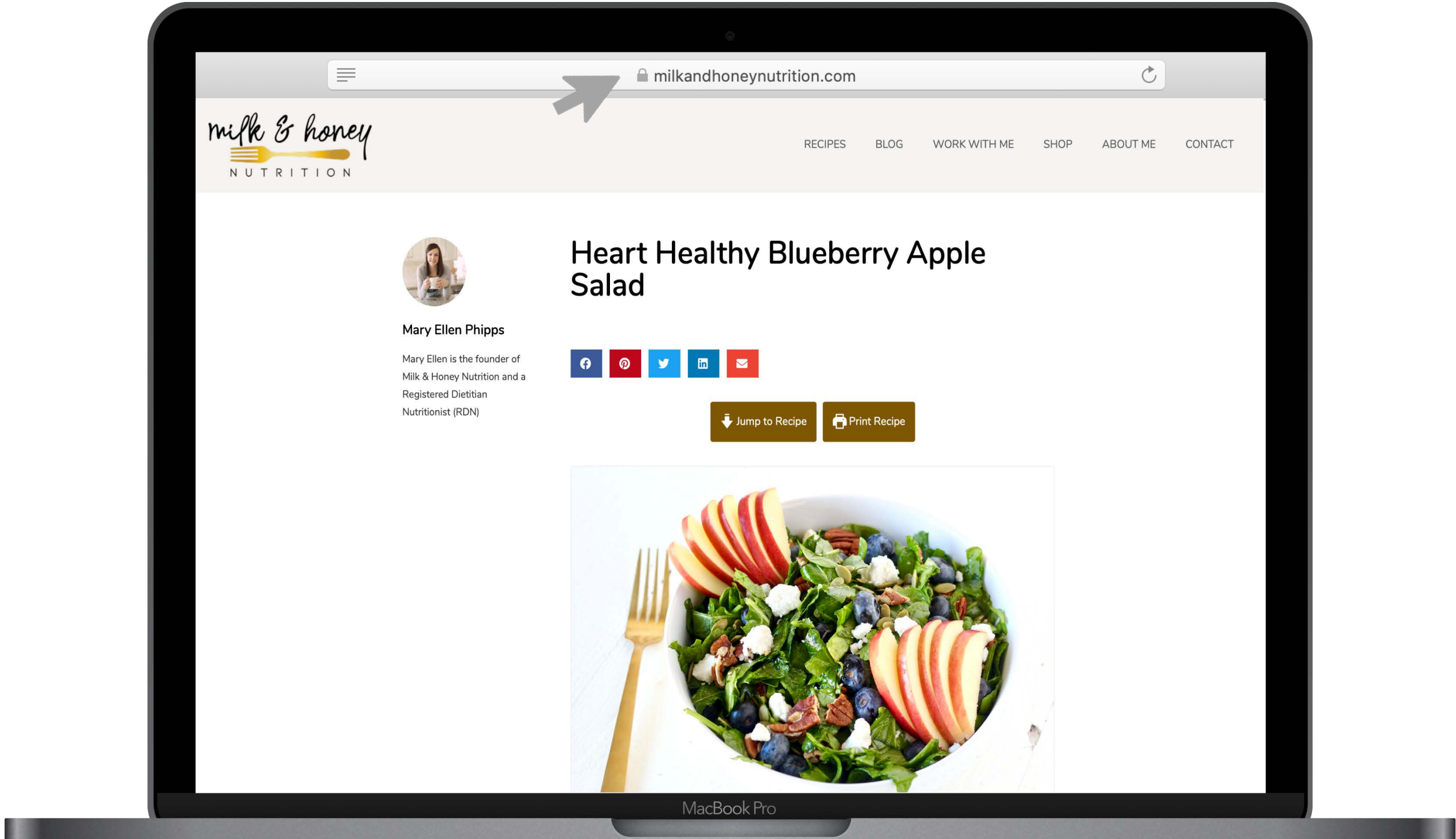
Diabetes Management

According to the National Institute of Diabetes and Digestive and Kidney Diseases, insulin resistance is a condition in which cells do not fully respond to the action of insulin, a hormone that regulates blood glucose ("Insulin Resistance").

Resources

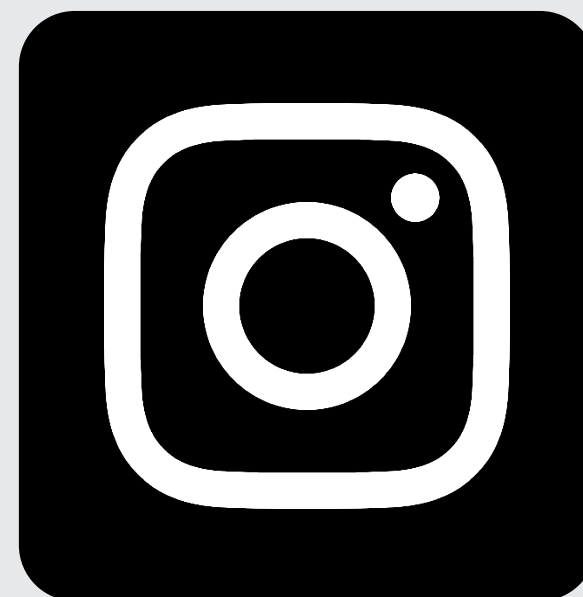


@milknhoneynutrition



We Want to Hear from You

#TheBlueberryMethod



Celebrate #NationalBlueberryMonth with @blueberry411! Make sure to include blueberries in your shopping cart with your other produce must-haves #RDchat




Questions?

Mary Ellen Phipps, M.P.H., R.D.N., L.D.

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Join the Movement



have a
plant
fruitsandveggies.org

Show your support by taking and sharing the [Have A Plant™ pledge](#) at fruitsandveggies.org. While you're there, check out the useful resources to equip you with the tools you need to enhance your nutrition knowledge and empower consumers to enjoy more fruits and vegetables every day.

Follow PBH's social channels to keep up to date on all the insights and inspiration. #haveaplant



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**SEPTEMBER IS NATIONAL
FRUITS & VEGGIES
MONTH**
#HAVEAPLANTPLEDGE
#HAVEAPLANT #NFVM2020

September is National Fruits & Veggies Month. Take a moment to promote and enjoy all forms of the fruits and veggies that you know and love – fresh, frozen, canned, dried and 100% juice – that taste great and also support your health and happiness!

A catalog of PBH's past webinars is available at fruitsandveggies.org/expert-professionals/webinars.

Continuing professional education units (CPEU) are available for live and pre-recorded webinars.





THANK YOU