

Juicing for Health

Exploring Benefits, Barriers, and Beliefs

Produce for Better Health Foundation Webinar | Tuesday, May 14, 2019 | 1:00-2:00 p.m. EST



Our Purpose

The Produce for Better Health (PBH) Foundation is committed to helping people enjoy happier, healthier lives by eating more fruits and vegetables every day.

**PRODUCE FOR
BETTER HEALTH**
FOUNDATION



Ignite new
relationships
with fruits
and vegetables.

**PRODUCE FOR
BETTER HEALTH**
FOUNDATION™

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Amy Myrdal Miller, MS, RDN, FAND

Founder & President

Farmer's Daughter Consulting, Inc.

Carmichael, CA



Amy Myrdal Miller, MS, RDN, FAND

EDUCATION

- ▶ University of California, Davis
- ▶ University of Minnesota
- ▶ Tufts University School of Nutrition

EMPLOYMENT

- ▶ Fleishman Hillard
- ▶ Rippe Lifestyle Institute
- ▶ Dole Food Company
- ▶ California Walnut Board & Commission
- ▶ The Culinary Institute of America
- ▶ Farmer's Daughter Consulting



Financial Disclosures

- ▶ Academy of Nutrition and Dietetics Foundation – *grants and awards*
- ▶ Bayer Crop Science - *consultant, L.E.A.D. Network Member*
- ▶ California Foundation for Agriculture in the Classroom – *honoraria for speaking*
- ▶ Canned Pear Bureau Northwest – *consultant*
- ▶ Dairy Council of California - *honoraria for speaking*
- ▶ **Duda Farm Fresh Foods** – *consultant, honorarium for speaking*
- ▶ Hinoman – *consultant*
- ▶ HZPC - *consultant*
- ▶ Jamix - *consultant*
- ▶ National Dairy Council – *Ambassador*
- ▶ Phoenix Media Network - *consultant*
- ▶ *Produce Business Magazine* – *columnist*
- ▶ Produce for Better Health Foundation - *consultant*
- ▶ The Beef Checkoff– *member of Beef Expert Bureau, consultant*
- ▶ The Culinary Institute of America – *consultant / Director of the CIA Healthy Menus R&D Collaborative*
- ▶ The Dairy Alliance – *honoraria for speaking*
- ▶ University of California, Davis Honey and Pollination Center – *honoraria for speaking*

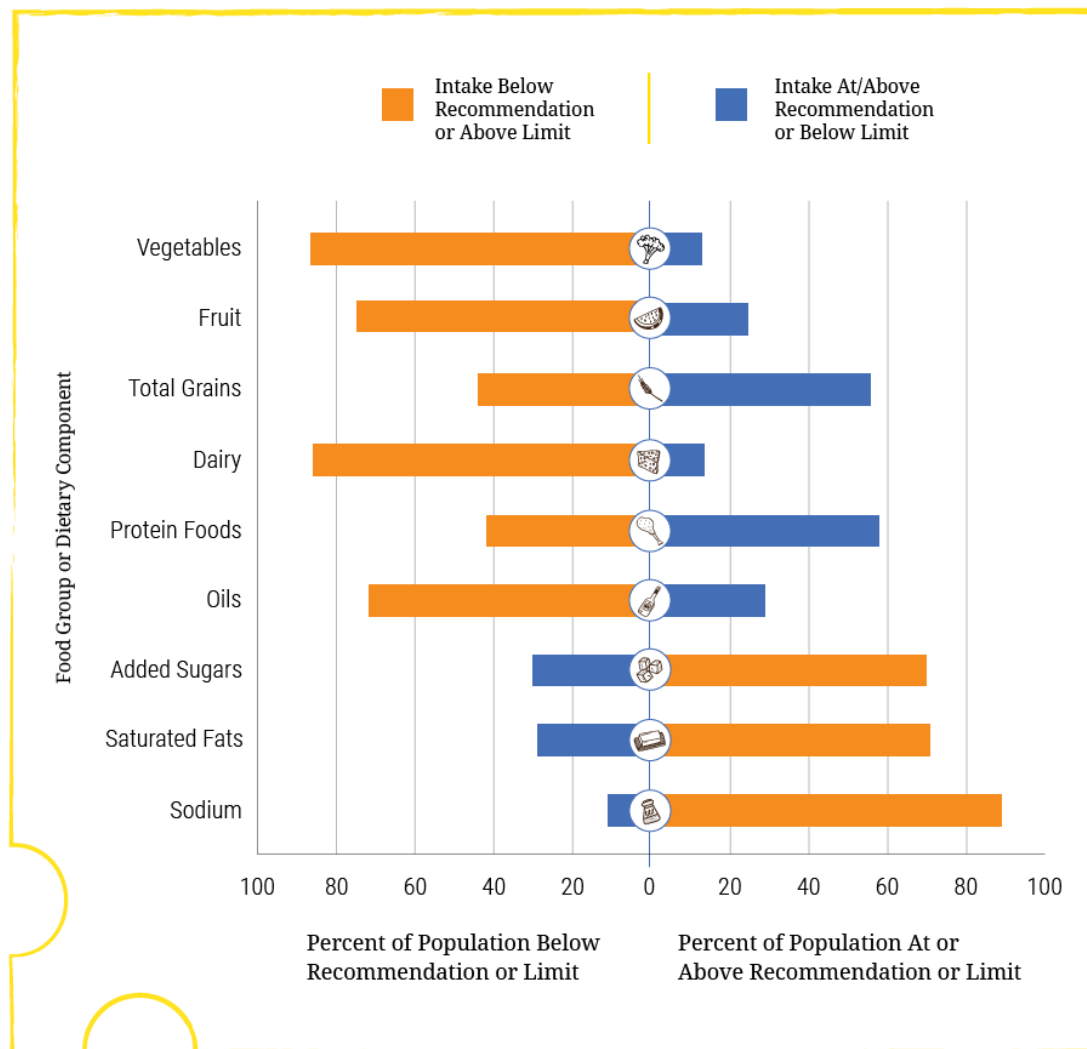
Learning Objectives

By the end of the session, participants will be able to:

1. Cite nutrition and health **benefits** of fruit and vegetable juicing
2. Describe **barriers** that may keep consumers from juicing
3. Discuss research supporting or refuting various claims consumers are seeing on social media related to juicing that shape their **beliefs**

Basics

More Americans need to “Have A Plant”

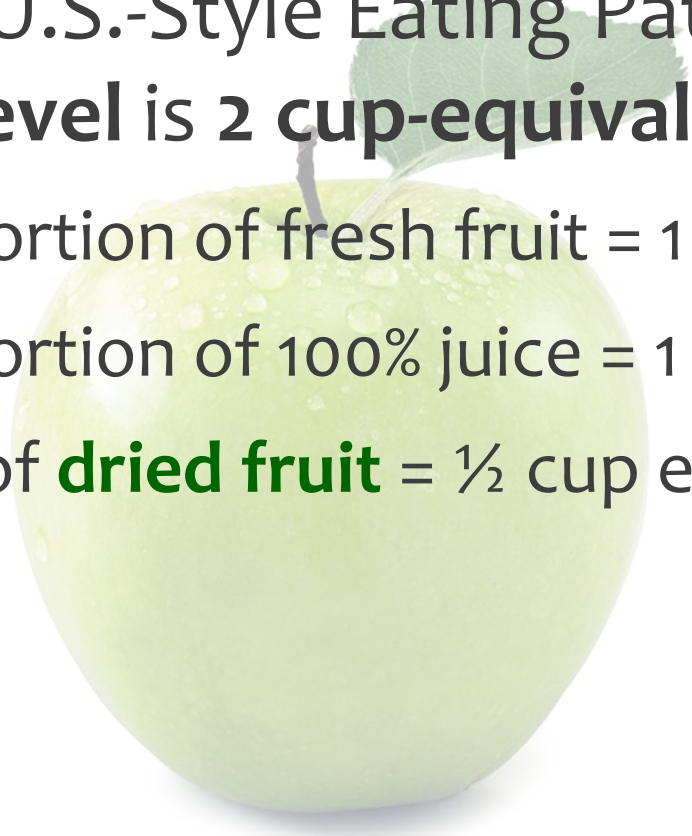


Daily Goal for Vegetables

- ▶ The recommended amount of vegetables in the Healthy U.S.-Style Eating Pattern at the **2,000-calorie level** is **2½ cup-equivalents of vegetables per day**.
 - ❖ 1 cup portion of cooked vegetables = 1 cup equivalent
 - ❖ 2 cups portion of **leafy green vegetables** = 1 cup equivalent

Daily Goal for Fruit

- ▶ The recommended amount of fruits in the Healthy U.S.-Style Eating Pattern at the **2,000-calorie level** is **2 cup-equivalents per day**.
 - ❖ 1 cup portion of fresh fruit = 1 cup equivalent
 - ❖ 1 cup portion of 100% juice = 1 cup equivalent
 - ❖ ¼ cup of **dried fruit** = ½ cup equivalent



How much do we need?

Calorie Level of Pattern	1,600	1,800	2,000	2,200	2,400	2,600	2,800
Vegetables (cup-equivalents per day)	2 c-eq	2 ½ c-eq	2 ½ c-eq	3 c-eq	3 c-eq	3 ½ c-eq	3 ½ c-eq
Dark Green Vegetables (cup-equivalents per week)	1 ½	1 ½	1 ½	2	2	2 ½	2 ½
Red and Orange Vegetables (cup-equivalents per week)	4	5 ½	5 ½	6	6	7	7
Legumes (beans and peas) (cup-equivalents per week)	1	1 ½	1 ½	2	2	2 ½	2 ½
Starchy Vegetables (cup-equivalents per week)	4	5	5	6	6	7	7
Other Vegetables (cup-equivalents per week)	3 ½	4	4	5	5	5 ½	5 ½
Fruits (cup-equivalents per day)	1 ½ c-eq	1 ½ c-eq	2 c-eq	2 c-eq	2 c-eq	2 c-eq	2 ½ c-eq

What about juice?

- ▶ Healthy eating patterns include a variety of vegetables from all of the five vegetable subgroups—dark green, red and orange, legumes (beans and peas), starchy, and other.^[10] These include all fresh, frozen, canned, and dried options in cooked or raw forms, **including vegetable juices.**
- ▶ Healthy eating patterns include fruits, especially whole fruits. The fruits food group includes whole fruits and **100% fruit juice.** Although fruit juice can be part of healthy eating patterns, it is lower than whole fruit in dietary fiber and when consumed in excess can contribute extra calories.



Benefits

Diets Rich in Fruits and Vegetables

- ▶ May reduce risk of cardiovascular disease (CVD)
- ▶ May reduce risk of coronary heart disease (CHD)
- ▶ May reduce blood pressure
- ▶ Greater intake of leafy green vegetables and anthocyanin-rich fruit may reduce risk of Type 2 diabetes
- ▶ Emerging research points to a relationship between fruit and vegetable consumption and emotional well-being.
- ▶ *Complexities in drawing conclusions include diversity between fruits and vegetables and within each category...*
- ▶ *What if limited evidence of benefit is related to limited intake?*

Benefits of Consuming Fruits and Vegetables Through Juicing

- ▶ Convenience
- ▶ Ability to consume greater amounts
- ▶ Ability to consume greater variety
- ▶ Potential for increased intake of F&V



Barriers

What does it take to juice at home?

- ▶ Buy the fruits and vegetables.
- ▶ Wash the fruits and vegetables.
- ▶ Prep (e.g., peel, core, cut, slice, dice) the fruits and vegetables.
- ▶ Juice the fruits and vegetables.
- ▶ And then... clean the juicer... ugh.



Yeah... say, Peter, I'm going to need you to come in on Saturday...



and clean my juicer. That'd be great. Thanks.

Gourmia® GJ750 Wide Mouth Fruit Centrifugal Juicer

110% Enjoyment. 0% Effort.

If you're ready for the ultimate juicing experience, you're ready for the Whole Fruit Extraction Juicer from Gourmia. Thanks to our highly efficient CentriTract Centrifugal Extraction System you don't just get the most juice – you get the purest and healthiest juice as well! That's because CentriTract combines the science of centrifugal juicing with the raw power of extraction juicing to turn anything from the softest seasonal fruits to the toughest root vegetables into deliciously refreshing, nutrient-rich juice quickly and easily.

Speaking of nutrients, our Maxi-Feed wide mouth feeder chute lets you add most fruits and vegetables whole so there's no losing valuable nutrients to cutting and peeling. Love salsas, compotes and preserves? Then you'll really love turning the contents of the large 8.5 cup pulp tank into healthy treats!



Cost



Breville Juice Foundation
Cold Juicer
\$180

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect.

Beliefs

Consumer Insights: Vegetables

- ▶ About 8% of the 2.6 million social media mentions of vegetables specifically describe the use of vegetables in juicing regimens.
- ▶ Juicing vegetables and adding vegetables to fruit juices are seen as an **EASY way to get nutrients and servings of vegetables.**
- ▶ Consumers make green smoothies and juices with vegetables as a **QUICK way to add more servings of vegetables and additional nutrients.**
 - ❖ “Juicing” comes with pushback because of **the fiber content that is lost** when removing the pulp from a vegetable.



Consumer Insights: Vegetables

- ▶ There is a general trend of consumers using smoothies and juices as **meal replacements**.
 - ❖ Vegetables most commonly used: spinach, kale, vegetable scraps.
- ▶ Consumers are oftentimes using these as methods to **detoxify or cleanse** their bodies with specific regimens.
 - ❖ Vegetables most commonly used: spinach, kale.
- ▶ Biggest challenge with vegetables? **Unpleasant taste** and negative perception of **loss of fiber**.

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100-150 calories/bottle
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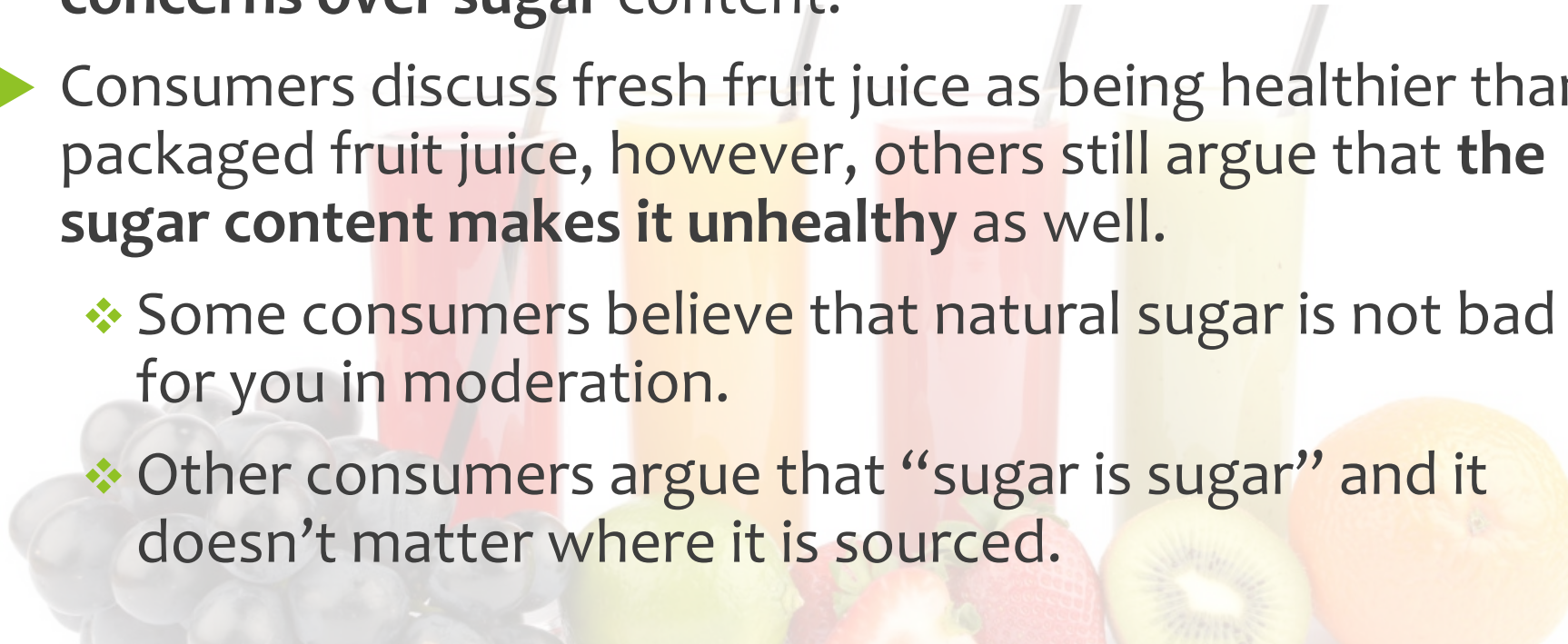
3 DAY ~~\$200~~
NOW \$99.99

5 DAY ~~\$335~~
NOW \$149.99

7 DAY ~~\$500~~
NOW \$199.99

Consumer Insights: Fruit

- ▶ About 15% of the 2.9 million social comments analyzed feature comments on fruit juices.
- ▶ The health value of fruit juices is hotly debated due to **concerns over sugar** content.
- ▶ Consumers discuss fresh fruit juice as being healthier than packaged fruit juice, however, others still argue that **the sugar content makes it unhealthy** as well.
 - ❖ Some consumers believe that natural sugar is not bad for you in moderation.
 - ❖ Other consumers argue that “sugar is sugar” and it doesn’t matter where it is sourced.



Consumer Insights: Fruit

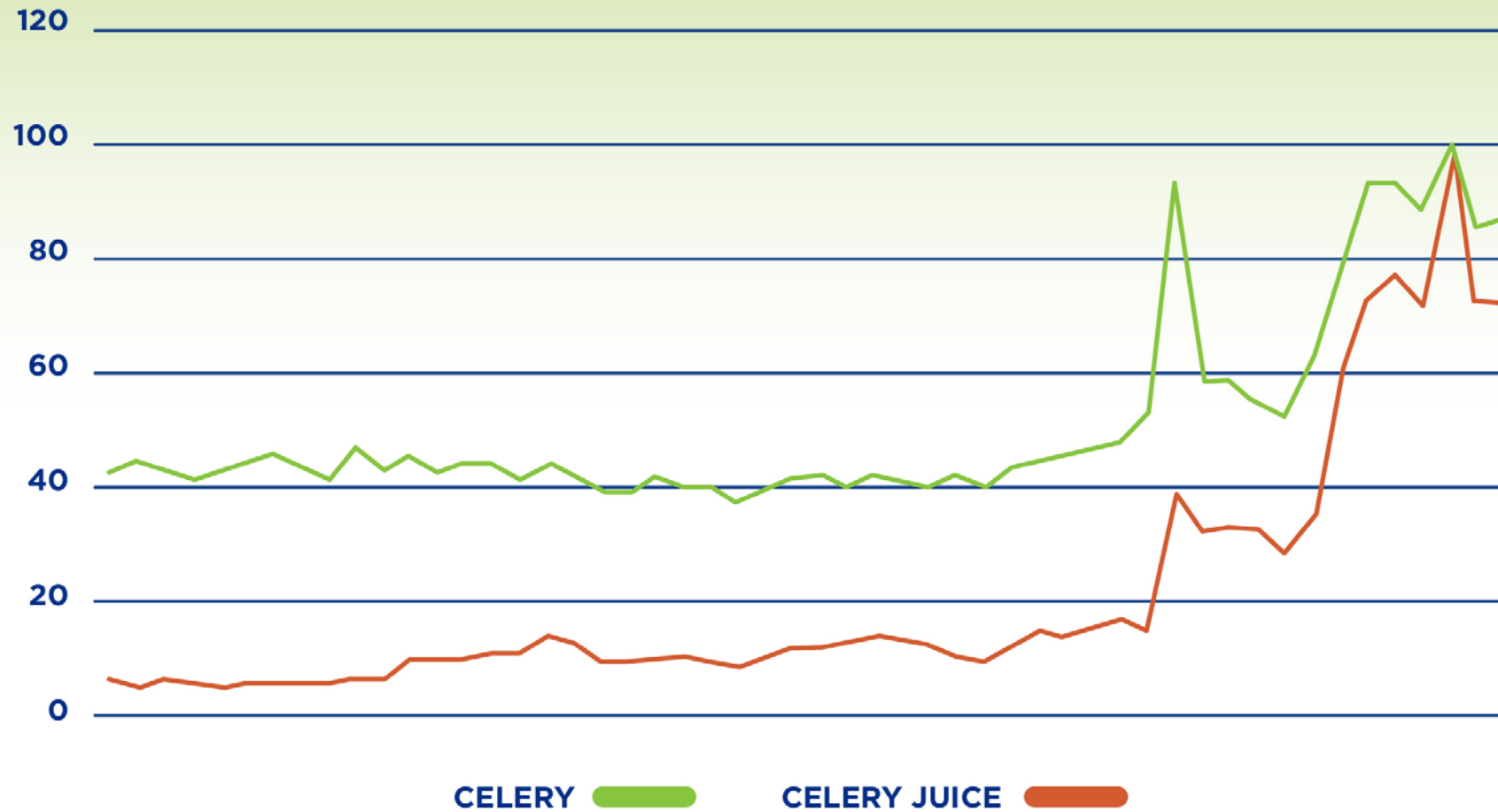
- ▶ Consumers are using both **fresh and frozen fruit** in homemade smoothies.
 - ❖ A group of consumers drink fruit in the form of a smoothie rather than juice in order to **keep the fiber** content intact.
- ▶ When consumers buy natural juices or juicing their own fresh fruits, the most common are **apple juice, orange juice, and fruit punch**.
- ▶ Consumers also mention making fruit-infused water for the **added antioxidants and vitamins**, as well as for a **flavor-enhancement**.
- ▶ When consumers include fruit in a beverage their goal is to **add extra nutrients**, however, they also acknowledge the downfall that it then **loses fiber and has sugar**.



Celery Juicing:

A Case Study in Consumer Perceptions

Google search interest in celery, celery juice over last 52 weeks



CELERY JUICE

BENEFITS & SIDE EFFECTS

HELP FIGHT FREE RADICALS

LOWERS BAD CHOLESTEROL

REDUCES MIGRAINES

HELPS WITH SKIN PROBLEMS

REDUCES BLOOD PRESSURE

THE DANGERS

CAN PROVOKE ALLERGIC REACTIONS

NOT RECOMMENDED DURING PREGNANCY

HELPS RESTORE ADRENALS

FIGHTS AUTOIMMUNE DISEASE

HELPS ERADICATE STREP BACTERIA

CRITICAL FOR CHRONIC ACID REFLUX

NEUTRALIZES AND FLUSHES TOXINS OUT OF THE LIVER

KILLS EPSTEIN-BARR & SHINGLES VIRUS

UNDERSTANDING CRITICAL THREATS

POWERFUL WEAPON AGAINST SIBO & IBS

BRIGHT LIVER

RAISES HYDRACID & HIGHER LIVER PRODUCTION

10 HEALTH BENEFITS OF CELERY JUICE

MEDICAL MEDIUM
@medicalmedium | @celeryjuicebenefits

10 BENEFITS OF CELERY JUICE

May Prevent Cancer

Improves Digestion

Prevents Urinary Tract Infections

Fights Infections

Important for Liver Health

Helpful for Ulcer Prevention

Treats & Prevents High Blood Pressure

Reduces Inflammation

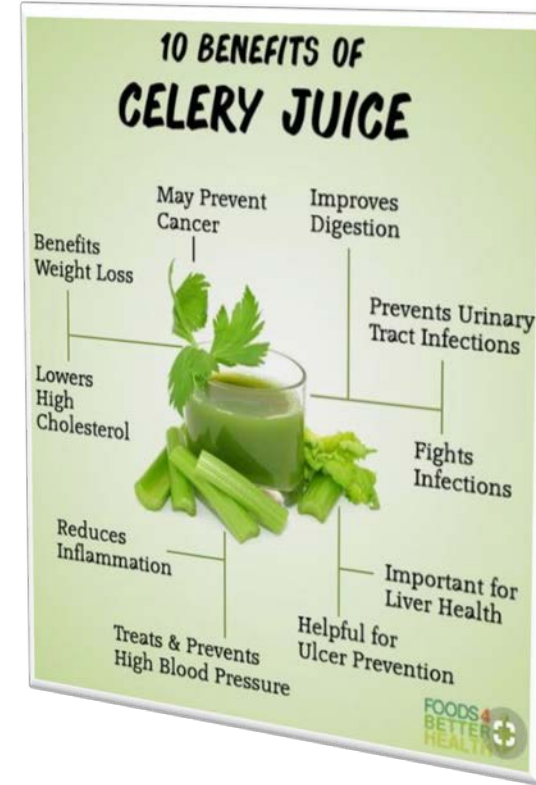
Lowers High Cholesterol

Benefits Weight Loss

FOODS 4
BETTER
HEALTH

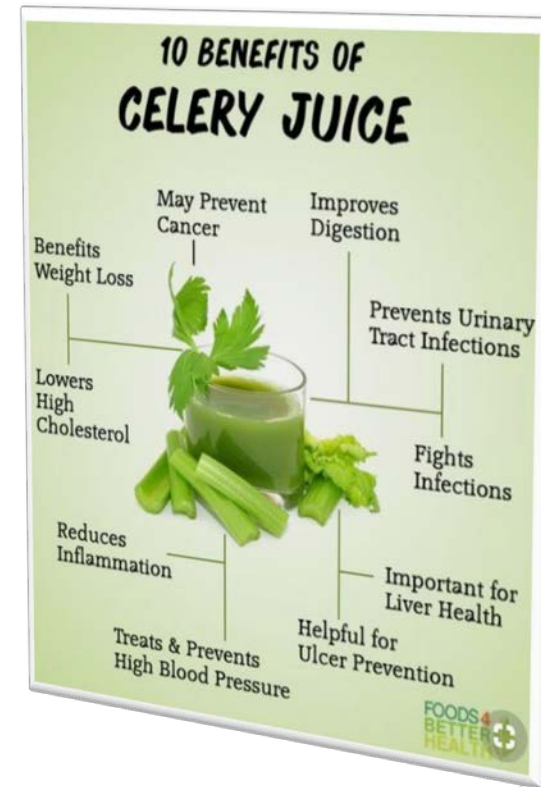
Are these truthful and not misleading claims?

1. Benefits Weight Loss
2. May Prevent Cancer
3. Improves Digestion
4. Prevents Urinary Tract Infections
5. Fights Infections
6. Important for Liver Health
7. Helpful for Ulcer Prevention
8. Treats & Prevents High Blood Pressure
9. Reduces Inflammation
10. Lowers High Cholesterol



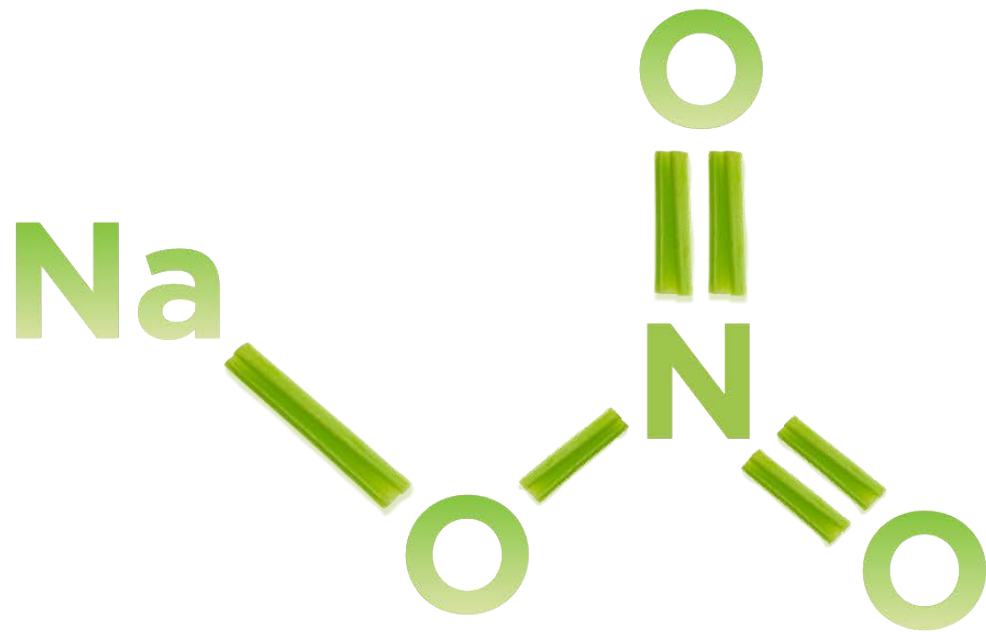
Are these truthful and not misleading claims?

1. Benefits Weight Loss: **Only if total calories are decreased.**
2. ~~May **Prevent** Cancer~~
3. Improves Digestion: **No evidence.**
4. ~~**Prevents** Urinary Tract Infections~~
5. Fights Infections: **No evidence.**
6. Important for Liver Health: **No evidence.**
7. ~~Helpful for Ulcer **Prevention**~~
8. ~~**Treats & Prevents** High Blood Pressure~~
9. Reduces Inflammation: **No evidence.**
10. Lowers High Cholesterol: **Only in context of overall diet.**



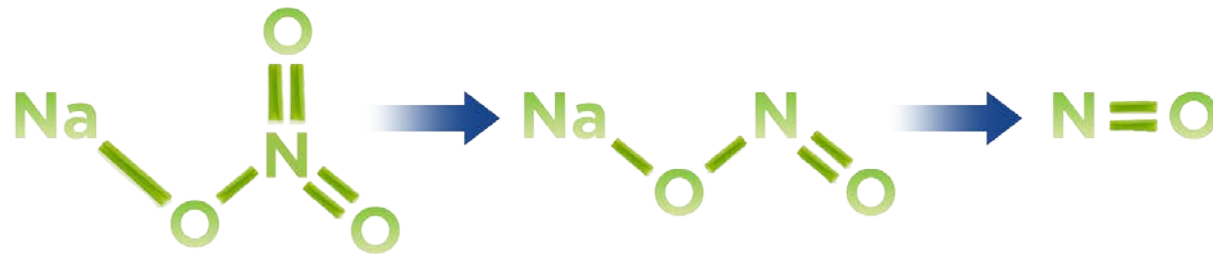
Sodium Nitrate: Celery's Super Hero Power

- ▶ Celery contains a natural compound, sodium nitrate.
- ▶ Celery, parsley, and beets are the only vegetables that contain significant amounts of sodium nitrate.



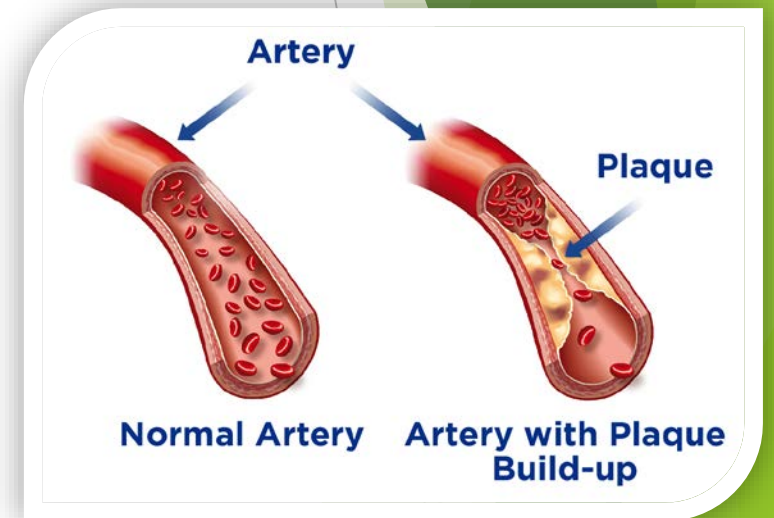
Our Bodies Convert Sodium Nitrate to Nitric Oxide

- ▶ When we eat celery or drink celery juice, bacteria in our mouth convert the sodium nitrate to sodium nitrite.
- ▶ Sodium nitrite is then converted to nitric oxide by bacteria in our gut.
- ▶ Using anti-bacterial mouthwash halts the conversion of nitrate to nitrite, which reduces the potential health benefits of nitric oxide.



What are the potential benefits of nitric oxide?

- ▶ **Nitric oxide is a vasodilator** that improves blood flow and reduces blood pressure by relaxing the lining of our arteries.
- ▶ Research shows **nitric oxide promotes cardiovascular health** by reducing the stickiness of platelets that adhere to the walls of our arteries, potentially causing blockages.
- ▶ Dietary nitrate from celery also **may improve cognitive function** in older adults by enhancing blood flow in the brain.



Sources: (1) Lidder, S and Webb, A. Vascular effects of dietary nitrate (as found in green leafy vegetables and beetroot) via the nitrate-nitrite-nitric oxide pathway. [Br J Clin Pharmacol](#). 2013 Mar; 75(3): 677–696. (2) Gee, L and Ahwulalia, A. Dietary Nitrate Lowers Blood Pressure: Epidemiological, Pre-clinical Experimental and Clinical Trial Evidence [Curr Hypertens Rep](#). 2016; 18: 17. (3) Presley, T et al. Acute effect of a high nitrate diet on brain perfusion in older adults [Nitric Oxide](#). 2011 Jan 1; 24(1): 34–42.

Sodium Nitrate: A Natural Ergogenic Aid?

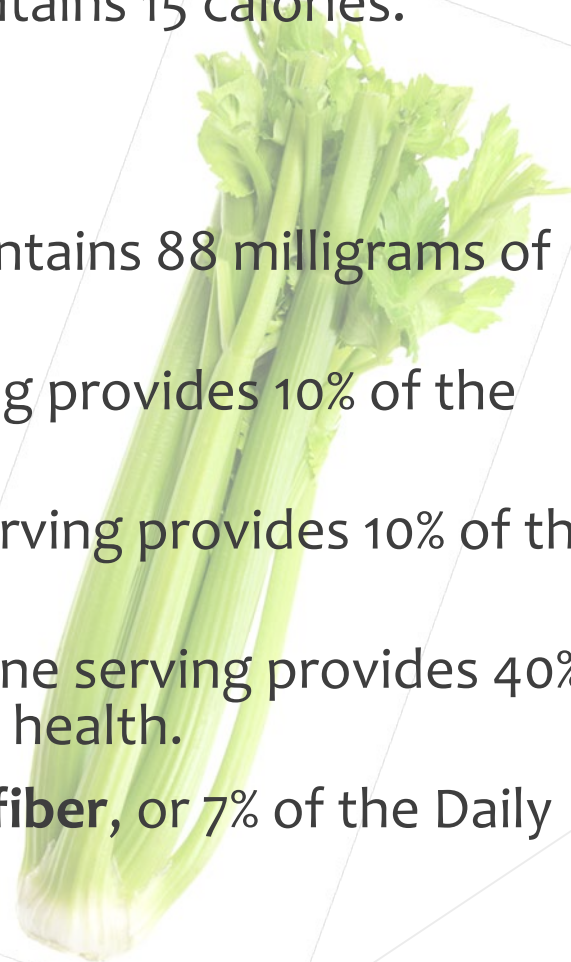
- ▶ Research shows consuming **dietary nitrates** from vegetables **can enhance exercise performance** by increasing blood flow in “fast twitch” muscles that enable powerful bursts of movement for activities like sprinting.



Sources: (1) Clements WT et al. Nitrate Ingestion: A Review of the Health and Physical Performance Effects. [Nutrients](#). 2014 Nov; 6(11): 5224–5264. (2) Dominguez R et al. Effects of Beetroot Juice Supplementation on a 30-s High-Intensity Inertial Cycle Ergometer Test. [Nutrients](#). 2017 Dec; 9(12): 1360.

Nutrient Content Claims for Celery

- ▶ Serving size = 110 grams = >1 cup chopped or ~ 2 large stalks
- ▶ Celery is a **low-calorie food**. One serving contains 15 calories.
- ▶ Celery is 95% **water** by weight.
- ▶ Celery is a **fat free, cholesterol free food**.
- ▶ Celery is a **low-sodium food**. One serving contains 88 milligrams of sodium.
- ▶ Celery is a **good source of folate**. One serving provides 10% of the Daily Value. Folate promotes heart health.
- ▶ Celery is a **good source of vitamin A**. One serving provides 10% of the Daily Value. Vitamin A promotes eye health.
- ▶ Celery is an **excellent source of vitamin K**. One serving provides 40% of the Daily Value. Vitamin K promotes bone health.
- ▶ One serving of celery provides 1.8 grams of **fiber**, or 7% of the Daily Value.



Call to Action

Juicing for Health: Basics, Benefits, Barriers, and Beliefs

► **BASICS: We're not eating enough F&V.**

- **Promote ALL FORMS** of fruits and vegetables, including juice & juicing.
- **Focus on VARIETY of choices** (e.g., form, color, format) throughout the week to ensure nutrient adequacy and reduce boredom.
- **Help clients/consumers develop a PLAN to increase daily consumption** (e.g., include at least 1 cup of fruits and vegetables at every meal; snack on F&V)

Juicing for Health: Basics, Benefits, Barriers, and Beliefs

- ▶ **BENEFITS:** We know there are physical health, mental health, and nutrition benefits that come from eating fruits and vegetables.
 - **Use positive, empowering messages** that highlight how delicious and nutrient-rich fruits and vegetables are.
 - **Share information on benefits;** don't take for granted what people know.
 - **Talk about the benefits you appreciate most.** (e.g., "I love using frozen bananas in my smoothies because they make the smoothies so creamy. It's like eating ice cream!")

Juicing for Health: Basics, Benefits, Barriers, and Beliefs

► **BARRIERS:** Consumers talk about many barriers. Help them overcome these barriers.

- **COST & TIME:** Focus on affordable options that save both time and money (e.g., frozen store brand F&V)
- **FIBER & FOOD WASTE:** Talk about ways to use the pulp from juicing (e.g., “I use my celery pulp to flavor soups and stock.”)
- **EFFORT:** “Love juicing? Do your F&V prep on Sundays. You can prep once, juice all week!”
- **FLAVOR:** Talk about using both F&V in juicing and smoothies.
- **SUGAR:** Talk about the total nutrient package in fruit (i.e., naturally occurring sugars, vitamins, fiber, phytonutrients, water)

Juicing for Health: Basics, Benefits, Barriers, and Beliefs

- ▶ **BELIEFS:** Focus on both the positive and negative beliefs consumers have about F&V and juicing.
 1. Juicing vegetables in an **EASY** way to get nutrients and multiple servings of vegetables.
 2. Smoothies and juices are a **QUICK** way to add more servings of fruits and vegetables to your diet.
 3. Yes, you lose the fiber with juicing, but you can save the pulp and **USE THE PULP** in other ways to add fiber, nutrients and flavor to other foods.

Juicing for Health: Basics, Benefits, Barriers, and Beliefs

► BELIEFS: Focus on both the positive and negative beliefs consumers have about F&V and juicing.

1. Need a **QUICK MEAL REPLACEMENT**? Try F&V juice or smoothies!
2. Love vegetable juicing but want **MORE FLAVOR**?
 - Add fruit for sweetness.
 - Add aromatics like lemon or lime juice for a lovely citrus boost!
 - Add herbs like mint or spices like cinnamon or turmeric.
 - Add ginger root for aroma and intense flavor.
 - Add chilies for spicy heat.

**Share your questions,
tips, recipes, hacks.**



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