Food Fact vs. Fiction: Paleo, Keto, Vegan, Vegetarian. What is the Truth and Why?

Chef Sharon Schaefer, SNS &
Dr. Jim Painter, PhD, RDN
Affiliation or Financial Disclosure

• Sharon Schaefer
  • ..... 

• Jim Painter
  Board Member/Advisory Panel/Consultant
  Present
  • Emeritus Professor- Eastern Illinois University, University of Texas, Sun-Maid Raisins, National Dairy Council, United Sorghum Checkoff Board, Sugarwise.
  • Past
  • American Heart Association healthier diet business committee. Eastern Illinois University, University of Illinois – Champaign, American Heart Association Eat Well Task Force, California Raisin Marketing Board, Wonderful Pistachios, White Wave Foods, Davidson’s Safest Choice Eggs, Chic-fil-A, Tree Top Apples, Bush’s Beans,
  • Honoraria
  • Honorarium underwritten by Today’s Dietitian, Atkins Nutritionals Inc.
Learning Objectives:

1. Learn the basic theoretical principles that are true behind the keto, paleo and vegan diets
2. Explain how keto, paleo, and vegan can be healthful if they are based on whole foods and can fail to be healthy if they are not based on whole foods
3. Demonstrate how to leverage these nutrition concepts to promote positive food cultures in schools.
4. Plan appropriate responses for stakeholders’ Fact vs. Fiction questions.
Jim Painter, PhD, RDN
Outline

- Paleo, keto, vegetarian, vegan diets - where they differ
  - How they compare
  - Basic principles
- Paleo, keto, vegetarian, vegan diets - where they agree
  - Reduce the SAD Standard American Diet
    - Eat non starchy vegetables, greens
    - increase fiber consumption and nutrients consumption
  - Reduce added sugar consumption
    - What is the problem?
    - Using raisins as a sugar substitute

Conclusion: Eat whole foods
Basic principles

- **Paleo** - eating whole foods. Considered to be based on what our ancestors used to eat.
- **Keto** - reducing carbohydrates and increasing dietary fats to a point where the body starts producing ketones.
  - These have been shown to be helpful in controlling some neurodegenerative diseases.
  - Has the most consistent data on weight loss.
- **Vegetarian/vegan** - limiting or eliminating animal foods, eating whole plant foods
  - It is typically low fat and has been used as a heart-healthy weight loss diet
<table>
<thead>
<tr>
<th></th>
<th><strong>Keto</strong></th>
<th><strong>Paleo</strong></th>
<th><strong>Vegetarian</strong></th>
<th><strong>Vegan</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Meat /seafood</strong></td>
<td>Processed and unprocessed</td>
<td>Only unprocessed</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Dairy</strong></td>
<td>Full-fat low-carb dairy, no milk or light cream</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Eggs</strong></td>
<td>yes</td>
<td>yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Vegetables/fruits</strong></td>
<td>Low carb, non-starchy, low sugar only</td>
<td>All, starchy veggies in moderation</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Fats</strong></td>
<td>Healthy oils, butter, mayo</td>
<td>Healthy oils, no refined veg. Oils, no butter</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Grains</strong></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Nuts and Seeds</strong></td>
<td>Limited</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Are you tired of conflicting nutrition advice?

**Keto diet:** Fat is the answer, animal products are good

**Ornish diet:** Fat is the enemy, animal products are the problem

**Atkins:** Animal products are the answer, carbs are the problem

**Vegan:** Animal proteins are the problem, plant carbs are the answer.

Did you know that there is a large area of agreement. What if it is the areas of agreement that are causing the benefit??
Where All Nutrition Experts Agree

Don’t eat the Standard American Diet (SAD)

1. Eat more vegetables, green leafy & cruciferous veggies
2. Eat more herbs, spices, nuts and seeds
3. Reduce added sugar consumption
   - Use fruit as a natural sugar substitute
STANDARD AMERICAN DIET
Based on data from the United States Department of Agriculture, Courtesy Dr. Joel Fuhrman, author: Eat to Life; Anti-Aging and Wellness Medical (Aluvalife company) USDA Economic Research Service 2009

The Standard American Diet (SAD)

U.S. Food Consumption by % Calories

- 63% Processed Food
- 25% Plant Food (Vegetables, fruit, nuts, beans, and whole grains)
- 12% Animal Food

Almost 50% of fruits and vegetables consists of French fries and Ketchup
1. More Dark Green Vegetables!

This is not a new idea!

Genesis 1:29

And God said, Behold, I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be food for you.
Photosynthesis: Powering the Planet!
Greens are Great Sources of Nutrients

Spinach: 1 cup (approximately 1 ounce):

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>0.4 (~7 calories)</td>
</tr>
<tr>
<td>Vitamin K</td>
<td>181</td>
</tr>
<tr>
<td>Vitamin A (in the form of beta carotene)</td>
<td>56</td>
</tr>
<tr>
<td>Folate</td>
<td>15</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>14</td>
</tr>
<tr>
<td>Magnesium</td>
<td>6</td>
</tr>
<tr>
<td>Iron</td>
<td>5</td>
</tr>
</tbody>
</table>

Figure 5: Spinach 1 cup (approximately 1 ounce) source USDA
Cancer associated with intakes of selected nutrients

McCann, S. E. et al. 2005.
Getting Children to Eat Greens

- Start the meal with a salad
  - Start with the mild flavored ones, leaf lettuce or spinach instead of kale
- Cooked greens
- On sandwiches
- Blended up in smoothies
- Added to soup and stews
- Let children make something with it
Insert recipes here working with greens

My recipe suggestions are:

Hulk Smoothie

Massaged Kale Salad

Chicken, Spinach, Alfredo Calzone
Cruciferous Vegetables, Broccoli (DG), Cauliflower (O), Brussel Sprouts (O), Cabbage (O)

- Cruciferous, Brassica
- Allyl isothiocyanate
- Phase II enzymes
  - Quinone reductase
  - Glutathione S-transferase

Cruciferous Vegetables

- Arugula (DG)
- Bok choi (DG)
- Broccoli (DG)
- Brussels sprout (O)
- Cabbage (O)
- Cauliflower (O)
- Chinese broccoli
- Chinese cabbage
- Collard greens
- Horseradish
- Kale
- Kohlrabi
- Pak choi
- Radish
- Rutabaga
- Wasabi
- Watercress

Inhibition of proliferation of a colon cancer cell line by indole-3-carbinol

H. R. Frydhoonfar, D. R. McGrath, A. D. Spigelman

First published: 07 May 2002 | https://doi.org/10.1046/j.1463-1318.2002.00346.x
Effect of Indole-3-carbinol on Prostate Cell Proliferation

![Graph showing the effect of Indole-3-carbinol on prostate cell proliferation. The x-axis represents UV intensity, and the y-axis represents UV intensity. The graph shows a downward trend as the UV intensity increases.]
Cruciferous Vegetables

- Consumption has protective effect on development of colorectal cancer
- Sulforaphane
- Consumption inversely related to incidence of colon cancer

The Challenge!!! Getting Children to Eat Cruciferous Vegetables

- Use the milder ones, not horseradish
- Serve as finger food
  - Serve with a dip: Ranch, Italian, French
- Add to other cooked veggies
- Covered with a cheese sauce
- Grate cauliflower use as a pizza crust
- Mash cooked cauliflower like potatoes
- Cabbage in coleslaw
- Don’t try juicing!!!!
Insert recipes here

My recipe suggestions are:

Roasted Cauliflower
Pineapple Cabbage Slaw
Mystery Sticks with Dip
2. Eat more herbs and spices

Rosemary (Rosmarinus officinalis)

Leaves are used as a spice
Contains antioxidants
Used commercially as a antioxidant
Prevents oxidation in vegetable oil
Potency comparable to BHT & BHA
Turmeric:

- Used as a yellow food coloring and spice.
- A principal ingredient in curry powder (28%).
- Contains three major curcuminoids, which are responsible for the yellow color of the herb.
- Curcumin (diferuloylmethane) is the most significant curcuminoid.
Insert recipe here adding spice!

My recipe suggestions are:

Pesto
Turmeric Savory Yogurt Parfait
Jerk Chicken
3. Decrease Added Sugar
   - Substitute with Whole Fruits
   - Increase Nutrients and Fiber
What is the Problem with Added Sugar?
Original Investigation

Added Sugar Intake and Cardiovascular Diseases Mortality Among US Adults

Quanhe Yang, PhD; Zefeng Zhang, MD, PhD; Edward W. Gregg, PhD; W. Dana Flanders, MD, ScD; Robert Merritt, MA; Frank B. Hu, MD, PhD

**IMPORTANCE** Epidemiologic studies have suggested that higher intake of added sugar is associated with cardiovascular disease (CVD) risk factors. Few prospective studies have examined the association of added sugar intake with CVD mortality.
Hazard Ratios of CVD Mortality According to usual % of Calories from Added Sugar

Adjusted Hazard Ratios of CVD Mortality

- 7.40%
- 11.40%
- 14.80%
- 18.70%
- 25.20%
Reduction in Nutrients as Added Sugar Increases


- Reduce intake of free sugars throughout the lifecourse
- Reduce intake of free sugars to less than 10% of total energy intake
- A further reduction of the intake of free sugars to below 5% of total energy intake is beneficial

Recommendations do not apply to “intrinsic” sugars
Free sugars:
- Monosaccharides and disaccharides added to foods and beverages by the manufacturer, cook or consumer

Intrinsic sugars:
- Those incorporated within the structure of intact fruit and vegetables; sugars from milk (lactose and galactose)
What is the answer?
- We need to reduce added sugar
- But we still want sweet...
- Replace added sugar with intrinsic sugar
What Sets Added Apart from Intrinsic Sugars?

- High in Nutrients
- Fiber content
- Lower glycemic index
- Polyphenols
Caloric Content of Sweeteners

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Fiber Content of Sweeteners

Fiber g/100g
Fruit sugar vs Added Sugar in the Body

![Graph showing blood sugar levels over time for Sucrose (Table Sugar) and Fructose (Fruit Sugar)]
Raisins and Blood Glucose

In a recent randomized, un-blinded, single research site, comparator study of raisins versus alternative snacks on cardiovascular risk factors in generally healthy subjects:

• Compared 4 snacks of equal calories:
  • Cookies
  • Chips
  • Crackers
  • Raisins
• Consumed 3 times a day for snacks.

Raisins and Blood Glucose


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Blood Pressure and Raisins

Why Raisins May Reduce Blood Pressure

Raisin Paste!
Substitute for Added Sugar

Raisin Paste:

– Natural sweetener
– Adds fiber and nutrients
– Preserves moisture
– Natural preservative (inhibits mold)
Raisin Paste Recipe

- 1 ½ cups raisins
- ¾ cup water

Combine raisins and water and let sit for 10 minutes. Process in food processor until smooth paste.

Tutorial:

https://www.youtube.com/watch?v=RxQqNkxlfXs
Cocoa Torte Bites

(20 Servings)

**Ingredients:**
- 1 cup raisins
- 3/4 cup pitted dates
- 3/4 cup hot water
- 1 1/4 cup sorghum flour
- 1/2 cup cocoa powder
- 1 tsp baking soda
- 1/4 tsp salt
- 3 eggs
- 2 Tbsp. coconut or canola oil
- 2 tsp vanilla
Asian Citrus Sauce

Ingredients %
roasted garlic, freeze dried 0.24
rice wine, vinegar 16.83
soy sauce 17.79
raisin puree 31.25
orange juice 19.23
ginger root 7.21
sesame oil 0.24
water 7.21
Total 100

Procedure:
• pre-soak freeze dried vegetables in hot water
• combine all ingredients and blend until smooth
• bring to a rolling boil and package
• simmer for 30 minutes
Substitute Raisin Puree for Sugar:

- Pecan pie – 1 ½ c. whole golden raisins paste in place of 1 ½ c. sugar
- Pumpkin pie – ¾ c. golden raisin paste in place of ¾ c. sugar
- Eggnog – 2 T. golden raisin paste in place of 2 T. sugar
- Chocolate milk – 2 T. golden raisin paste in place of 2 T. sugar
- Stir-fry sauce – 1 T. raisin paste in place of 1 T. sugar

There are 44% less calories in raisins than in sugar of equal volume

1 cup of sugar = 773 calories!
1 cup of raisins = 435 calories!
Add recipes

Pumpkin Spice Parfait and Chocolate Hummus
Conclusion

1. Popular diets disagree:
   a. Carbohydrates vs. fats
   b. Animal vs. plant based foods

2. Popular diets agree
   a. Eat more Vegetables
   b. Use more herbs and spices
   c. Eat less of the highly processed food high in added sugar

3. Replace added sugar with intrinsic sugar in fruits

4. Eat more whole foods!!!!!!
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