Myths and Realities Involving Grain Food Consumption
What Does the Scientific Evidence Say?

Yanni Papanikolaou, PhDc, MHSc

Joint 2018 CWFHB and CWS Conference, Winnipeg, MB
Current environment leaving many to think enriched grains and/or all grains are not part of a healthy diet…but where is the evidence?
MYTHS

FACTS
What lessons can we learn from the past? These foods were once considered to be unhealthy?
2015-2020 Dietary Guidelines no longer include a limit on cholesterol

Eggs are included in the recommended dietary patterns
We once believed nuts made us fat!
A handful of your heart's desire.

Meet the criteria for heart-healthy food.

Per 1 oz serving.
Dairy also had a bad reputation, until....
2015-2020 Dietary Guidelines: Dairy products included in all 3 recommended dietary patterns
So let’s talk about grains and how they fit into the diet...
Rationale for conducting grains research in American kids and adults.... is this needed and does it fill a gap in the literature and advance public health?
7 studies completed to date
5 have been published in peer-review journals
How do American adults and children consume grain foods?

Are grain foods associated with overall nutrient intakes and shortfall nutrients (i.e., dietary fiber)?

Are grain food patterns of consumption linked to BMI?

Are grain food patterns linked to diet quality?
Certain Grain Food Patterns Are Associated with Improved 2015 Dietary Guidelines Shortfall Nutrient Intakes, Diet Quality, and Lower Body Weight in US Adults: Results from the National Health and Nutrition Examination Survey, 2005-2010

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All Grain Consumption (Whole and Refined/Enriched Grains)
8 Unique Grain Food Patterns Identified in US Adults, 19+ Years-Old

Grain Patterns (whole/enriched)

- Bread/Rolls
- Cereals
- Pasta/Cooked Cereals/Rice
- Quick Breads
- Cakes, Cookies, Pies
- Mixed Grains
- Crackers & Salty Grains
- No Grains
What are Adults in the No Grains Group Consuming?
Comparison of Energy Intake Based on Grain Clusters In Those 19+ Years

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Adults Consuming Enriched Grains Had Reduced Risk of Being Overweight or Obese and Smaller Waist Sizes

7.6 lbs and 1.2 inches in adults consuming pasta/cooked cereals/rice vs. no grains (p<0.01, vs. no grains)

27% reduced risk of being obese in adults consuming pasta/cooked cereals/rice vs. no grains (p<0.03 vs. no grains)
Certain Grains are Associated with a Better Diet Quality, Adults 19+ Years Old, NHANES 2005-2010

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Certain Grains are Associated with Higher Dietary Fiber

Comparison of Dietary Fiber Intake Based on Grain Clusters
In Those 19+ Years

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Comparison of Sodium Intake Based on Grain Clusters In Those 19+ Years

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Comparison of Folate Intake Based on Grain Clusters In Those 19+ Years

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Unintended consequences of a low carb diet...

Low carbohydrate diets may increase risk of neural tube defects

Tania A. Desrosiers, Anna Maria Siega-Riz, Bridget S. Mosley, ... See all authors

First published: 25 January 2018

Women with restricted carbohydrate intake were 30% more likely to have an infant with NTB
Comparison of Whole Grain Intake Based on Grain Clusters
In Those 19+ Years

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2016 Food and Nutrition Sciences
Several grain dietary patterns are associated with better diet quality and improved shortfall nutrient intakes in US children and adolescents: a study focusing on the 2015–2020 Dietary Guidelines for Americans

Yanni Papanikolaou 1, Julie Miller Jones 2 and Victor L. Fulgoni III 3

Abstract

Background: The present study identified the most commonly consumed grain food patterns in US children and adolescents (2–18 years old; N = 8,367) relative to those not consuming grains and compared diet quality nutrient intakes, with focus on 2015–2020 Dietary Guidelines for Americans (2015–2020 DGA) shortfall nutrient intakes.

Methods: Cluster analysis using data from the National Health and Nutrition Examination Survey 2001–2004 identified 8 unique grain food patterns: a) no consumption of main grain groups, b) cakes, cookies, yeast bread and rolls, c) cereals, d) pasta, cooked cereals and rice, e) crackers and salty snacks, g) pizza and French toast and other grains, and h) quick breads.

Results: Energy intake was higher for all grain cluster patterns examined, except ‘cereals’, compared to those consuming no grains. Children and adolescents in the ‘yeast bread and rolls’, ‘cereals’, ‘pasta, cooked cereals and rice’, and ‘crackers and salty snacks’ patterns had a higher diet quality relative to no grains (all p < 0.01). Energy intake was greater in five of the seven grain patterns, ranging from 18 – 28 g more per day compared to those consuming no grains. All grain patterns, except cakes, cookies and pastries, had wider intake (16–28%) relative to children in the no grains pattern (all p < 0.0001). EA total fat was higher in the ‘cereals and rice’, and ‘pancakes, waffles, French toast and other grains’ compared to the no grains pattern (all p < 0.01). EA magnesium intakes were greater in children and adolescents consuming ‘cereals’, ‘pasta, cooked cereals and rice’, and ‘quick breads’, while EA iron was higher in all grain patterns (all p < 0.01). EA vitamin D intake was higher only in children consuming ‘cereals’ and significant differences in total or added sugar intake across all grain patterns were observed.

Conclusions: Consumption of several, but not all, grain food patterns with improved 2015–2020 DGA shortfall nutrient intakes was associated with differences in diet quality compared to children consuming no grains.

Keywords: NHANES, Grains, Children, Adolescents, DGA
8 Unique Grain Food Patterns Identified in US Children, 2-18 Years of Age

Grain Patterns (whole/enriched)

- Bread/Rolls
- Cakes, Cookies, Pies
- Cereals
- Pasta/Cooked Cereals/Rice
- Crackers & Salty Grains
- Quick Breads
- Pancakes, Waffles, etc.

No Grains
What are Children in the No Grains Group Consuming?
Most Grain Patterns are Associated with Greater Calories

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2017, *Nutrition Journal*
Body Mass Index (BMI) Scores in Children and Adolescents

- Children and adolescents consuming yeast breads and rolls had lower BMI z-scores compared to children and adolescents not consuming grains.

- No increases in BMI z-scores were seen with any grain pattern of consumption vs. no grains.
Children Consuming Grain Patterns Tend to Have Higher Dietary Fiber Intake

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2017 Nutrition Journal
Comparison of Sodium Intake Based on Grain Clusters In Those 2-18 Years

![Graph showing comparison of sodium intake based on grain clusters]

* Significantly different from None, p<0.01; Papanikolaou & Fulgoni, 2017, *Nutrition Journal*
Current study in progress...
Kids Who Include Grains in Morning Eating Patterns Get More Fiber

NHANES 2011-2014; Children 2-18 Years-Old; n=5,876

* Significantly different from No Morning Foods, p<0.0025; (unpublished data)
Kids Who Include Grains in Morning Eating Patterns Get More Fiber

**Graph:**

- **Y-axis:** Dietary Fiber (g/day)
- **X-axis:** Morning Food Patterns
  - No Morning Foods
  - RF-Milk/All Cereals/Breads/Juice
  - RF-Milk/Higher Sugar RTEC
  - RF-Milk/Pancakes/Waffles/Sauces
  - Eggs/Protein/Juice
  - RF-Milk/Sweet Pastries

- **Note:** Significantly different from No Morning Foods, p<0.0025; (unpublished data)

**Arrow:** -4.1 lbs

**NHANES 2011-2014; Children 2-18 Years-Old; n=5,876**
Conclusions

- Encouraging certain grain food patterns in the diet of US children and adults, including selecting a mix of enriched and fortified grains is linked to increased nutrient intakes, including several shortfall nutrients.

- Several grain food patterns are linked to a better diet quality in kids and adults.

- As we have shown that grain foods can be nutrient-dense foods, eliminating grains from the US diet may lead to nutrient intake and health consequences.
Objectives of the Canadian Study

• To determine daily energy and nutrient contribution from all grain products and sub-categories of grains (i.e., breads, ready-to-eat cereals, etc.) in the Canadian diet of children and adults.

• To identify patterns of grain consumption and compare nutrient intakes and weight-related variables relative to no main grain foods intake, among Canadian children and adults.
For 25% of daily calories, grains (whole and enriched) provide 45% of folate, 41% of iron and 35% of fiber in the total diet.
Eliminating grains may have nutrient intake consequences in adults and children...

When compared to the no grain group, those consuming several grain food patterns had:

Significantly higher daily intake of folate, dietary fiber, folic acid, niacin, thiamin, calcium & magnesium
Grain Product consumption was not Associated with BMI

Adults and Children:

No significant association observed between grain food patterns and BMI, relative to the no grain group
Take Home Messages

1. Grains are nutrient dense foods contributing key nutrients at higher levels than their caloric contribution.

2. Adults consuming grain foods have higher intakes of dietary fibre, folate, and calcium in comparison to adults with no grain foods in their diet.

3. Children consuming grain foods have higher intakes of fibre, folate, calcium, magnesium, niacin and thiamin compared to children not consuming grain foods.

4. A balance of whole grains and enriched non-whole grains is required to meet key nutrients iron, folate, and fibre.

5. The BMI of grain eaters is no different from the BMI of non-grain eaters.
Grain Products: Contribution to Energy & Nutrient Intakes
Article

Certain Grain Foods Can Be Meaningful Contributors to Nutrient Density in the Diets of U.S. Children and Adolescents: Data from the National Health and Nutrition Examination Survey, 2009–2012

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Received: 10 March 2017; Accepted: 7 April 2017; Published: 14 April 2017
Abstract: Grain foods may play an important role in delivering nutrients to the diet of children and adolescents. The present study determined grain food sources of energy/nutrients in U.S. children and adolescents using data from the National Health and Nutrition Examination Survey, 2009–2012. Analyses of grain food sources were conducted using a 24-h recall in participants 2-18 years old (N = 6195). Sources of nutrients contained in grain foods were determined using U.S. Department of Agriculture nutrient composition databases and excluded mixed dishes. Mean energy and nutrient intakes from the total diet and from various grain foods were adjusted for the sample design using appropriate weights. All grains provided 4% 0.2% kcal/day (20±5 kcal/day), 22% ± 0.9% (1 ± 0.1 g/day) dietary fiber, 39.3% ± 0.9% (25 ± 4 g/day) folate equivalents (FEPs) folate and 34% ± 0.9% (36 ± 10 mg/day) iron in the total diet in children and adolescents. The current analyses showed that certain grain foods, in particular breads, rolls and tortillas, ready-to-eat cereals and quick bread products, are meaningful contributions of folate, iron, thiamin, niacin and dietary fiber, a nutrient of public health concern as outlined by the 2015-2020 Dietary Guidelines for Americans. Thus, specific grain foods contribute to nutrient density and have the potential to increase the consumption of several under-consumed nutrients in children and adolescents.

Keywords: NHANES; energy; nutrients; children; grains

Article


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Received: 13 March 2017; Accepted: 7 April 2017; Published: 14 April 2017
Abstract: The 2015-2020 Dietary Guidelines for Americans (2015-2020 DGA) recommend intakes of whole grains while limiting intake of enriched/ refined grains. A variety of enriched grains are sources of several shortfall nutrients identified by 2015-2020 DGA, including dietary fiber, folate, iron, and magnesium. The purpose of this study was to determine food sources of energy/nutrients for free-living U.S. adults using data from the National Health and Nutrition Examination Survey, 2009–2012. Analyses of grain food sources were conducted using a single 24-h recall in adults (N = 11,333). Sources of nutrients contained in all grain foods were determined using U.S. Department of Agriculture nutrition composition databases and the food grouping scheme for grains including mixed dishes. Mean energy and nutrient intakes from the total diet and from various grain food groups were adjusted for the sample design using appropriate weights. All grains provided 50.9 ± 20 kcal/day (1.8 ± 0.2 g/day) in the total diet in adults. The daily diet, grain category provided 7.2 ± 2.1 kcal/day (0.4 ± 0.2 g/day) total energy, 11.8 ± 3.5 kcal/day (0.4 ± 0.2 g/day) dietary fiber, 1.1 ± 0.2 kcal/day (0.0 ± 0.1 g/day) folate, 9.7 ± 3.8 kcal/day (0.0 ± 0.1 g/day) protein, and 3.2 ± 0.4 kcal/day (0.3 ± 0.1 g/day) magnesium. Individual grain category analyses showed that breads, rolls and tortillas provided minimal kcal/day in the total diet in men and women 19 years of age. Similarly, breads, rolls and tortillas, and ready-to-eat cereals supplied meaningful contributions of shortfall nutrients, including dietary fiber, thiamin and iron, while concurrently providing minimal amounts of nutrients in excess. Consequently, a variety of grain food groups summarized by adults contribute to nutrient density in the total diet and have the potential to increase consumption of shortfall nutrients as identified by 2015-2020 DGA, particularly dietary fiber, thiamin, and iron.

Keywords: NHANES; energy; Dietary Guidelines; adults; grains; shortfall nutrients

Article

Grains Contribute Shortfall Nutrients and Nutrient Density to Older US Adults: Data from the National Health and Nutrition Examination Survey, 2011–2014

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4 Correspondence: papanikolaouyanet@gmail.com; Tel.: +519-564-4233
Received: 27 March 2016; Accepted: 18 April 2016; Published: 29 April 2016
Abstract: Previous data demonstrate grain foods contribute shortfall nutrients in the diet of U.S. adults. The 2015-2020 Dietary Guidelines for Americans have identified several shortfall nutrients in the U.S. population, including thiamin, folate, and iron (minerals only). Sources of some shortfall nutrients can be even lower in older adults. The present analyses determined the contribution of grains foods for energy and nutrients in older U.S. adults and ranked to other food sources in the American diet. Analyses of grain foods were conducted using a 24-h recall in adults (65-99 years old; N = 4,093) using data from the National Health and Nutrition Examination Survey, 2011-2014. All grains provided 278 kcal/day or 18% of all energy in the total diet, ranking as the sixth largest contributor of energy compared to 15 major food groups. All grains foods ranked for their contribution to shortfall nutrients, with breads and rolls ranked highest in most food groups; and breads and rolls ranked second highest in 13 major food groups for dietary fiber (13%), iron (18%), folate (18%), and magnesium (17%) and were in the 3rd largest food group contributor for daily calcium intake (17%). When considering nutrients to limit as outlined by dietary guidelines, fat groups at grains contributed 4% total kcal%, 5% saturated fat, 14% sodium and 7% added sugars. Results: outer crust provided 156 kcal/day or 4% of all energy in the total diet, ranking as the second largest contributor of energy compared to 15 major food groups. Results: outer crust ranked highest in daily iron intake (13%), folate (15%), and magnesium (17%). Results: outer crust contributed the 3rd largest food group contributor for daily calcium (6%) intake. Daily outer crust contributed 4 kcal/day or 2% of all energy in the total diet, ranking as the 8th largest contributor of energy compared to 15 major food groups. Oil bread: total kcal/day provided 104 kcal/day or 2% of all energy in the total diet, ranking as the 8th largest contributor of energy compared to 15 major food groups. Oil bread: total kcal/day contributed 4% daily iron intake (13%), folate (15%), and magnesium (17%). Together, outer crust and oil bread provided 264 kcal/day or 7% of all energy in the total diet, ranking as the 5th largest contributor of energy compared to 15 major food groups. Oil bread: total kcal/day provided 104 kcal/day or 2% of all energy in the total diet, ranking as the 8th largest contributor of energy compared to 15 major food groups. Oil bread: total kcal/day contributed 4% daily iron intake (13%), folate (15%), and magnesium (17%). Given all grains foods and specific subgroupings of grain foods provided a greater percentage of several under-consumed nutrients than cereal (excluding dietary fiber, iron, and folate), grain foods provide nutrient density in the American diet of the older adult.

Keywords: NHANES; outer crust; agings, grains, fiber
All Grain Foods in Adults Help Close Nutrient Shortfall Gaps

NHANES 2009-2012; Data are for adults aged ≥19 years of age (N = 10,697)
Papanikolaou & Fulgoni, 2017. Nutrients
All Grain Foods in Kids Help Close Nutrient Shortfall Gaps

NHANES 2009-2012; All Children & Adolescents 2-18 Years of Age
Papanikolaou & Fulgoni, 2017. *Nutrients*
Breads, Rolls and Tortillas in Kids Help Close the Nutrient Shortfall Gap

NHANES 2009-2012; All Children & Adolescents 2-18 Years of Age
Papanikolaou & Fulgoni, 2017. *Nutrients*
Ready-to-Eat Cereals in Adults Help Close the Nutrient Shortfall Gap - Females

NHANES 2009-2012; Data are for female adults 19+ years-old (N=5,349)
Papanikolaou & Fulgoni, 2017. *Nutrients*
Ready-to-Eat Cereals in Adults Help Close the Nutrient Shortfall Gap-Males

NHANES 2009-2012; Data are for male adults 19+ years-old (N=5,384)
Papanikolaou & Fulgoni, 2017. *Nutrients*
2015-2020 Dietary Guidelines for Americans recognizes ‘shortfall nutrients’ and ‘nutrients of public health concern’

“…several nutrients are under-consumed relative to requirement levels set by the Institute of Medicine (IOM) and the Committee characterized these as shortfall nutrients: vitamin A, vitamin D, vitamin E, vitamin C, folate, calcium, magnesium, fiber, and potassium. For adolescent and premenopausal females, iron also is a shortfall nutrient. Of the shortfall nutrients, calcium, vitamin D, fiber, and potassium also are classified as nutrients of public health concern because their under-consumption has been linked in the scientific literature to adverse health outcomes.”
Breads, Rolls & Tortillas Help Close Nutrient Shortfall Gaps

% of Nutrients from Breads, Rolls and Tortillas

NHANES 2009-2012; Adults ≥19 Years of Age
Papanikolaou & Fulgoni, 2017. Nutrients
Healthy Aging: Grains Are Top Contributors of Key Nutrients

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<th>Main Food Group</th>
<th>Rank</th>
<th>% Fiber Contribution</th>
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NHANES 2009-2012; Data are for adults 51-99 years-old (N=4,522)
Papanikolaou & Fulgoni, 2018, Nutrients
Healthy Aging: Grain Foods (Breads/Cereals) Are Top Contributors of Key Nutrients

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<table>
<thead>
<tr>
<th>Food Group</th>
<th>Rank</th>
<th>% Folate, DFE Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready-to-Eat Cereals</td>
<td>1</td>
<td>21.01</td>
</tr>
<tr>
<td>Breads, Rolls, Tortillas</td>
<td>2</td>
<td>13.37</td>
</tr>
<tr>
<td>Vegetables, excluding Potatoes</td>
<td>3</td>
<td>8.30</td>
</tr>
<tr>
<td>Mixed Dishes - Grain-based</td>
<td>4</td>
<td>6.16</td>
</tr>
<tr>
<td>Sweet Bakery Products</td>
<td>5</td>
<td>5.37</td>
</tr>
<tr>
<td>Plant-based Protein Foods</td>
<td>6</td>
<td>3.88</td>
</tr>
<tr>
<td>Mixed Dishes - Pizza</td>
<td>7</td>
<td>3.23</td>
</tr>
<tr>
<td>Cooked Grains</td>
<td>8</td>
<td>3.16</td>
</tr>
<tr>
<td>Mixed Dishes - Sandwiches</td>
<td>9</td>
<td>3.16</td>
</tr>
<tr>
<td>Mixed Dishes - Meat, Poultry, Fish</td>
<td>10</td>
<td>2.77</td>
</tr>
</tbody>
</table>

NHANES 2009-2012; Data are for adults 51-99 years-old (N=4,522)
Papanikolaou & Fulgoni, 2018, *Nutrients*
Modeling Whole & Enriched Grains Study

Dietary Guidelines recommends making half of your grains whole grains, while limiting intake of enriched grains…

What if you didn’t?
6 Servings of Grains Daily = 2 Whole Grains + 4 Enriched Grain Foods
Sandwich Study
Bread Has Been Made the Villain….why?

But what about the sodium and solid fats in bacon and sauces/condiments?

2 slices (50g) of bacon = ~20g fat, 7 g saturated fat, 320 mg sodium, 200 kcal

1 hamburger bun (47g) = 1.5 g fat, 0 g saturated fat, 240 mg sodium, 130 kcal
USDA Distribution of Sandwich Type*, Adults 20+ years, 2009-2012

54% of the sandwiches eaten are burgers, cold cuts, hotdogs/sausages—sandwiches with ingredients that are rich in saturated fat, sodium, and calories

*Sebastian RS et al. Sandwich consumption by adults in the US. What We Eat in America, NHANES, 2009-2012, Food Surveys Research Group, Dietary Data Brief No. 14; Dec 2015
New Study Says Sandwiches Are Ruining Your Diet

Might be time for soup and salad at lunch ...

Is your sandwich hurting your diet?

JUL 25, 2016 5:29 PM EDT

SCITECH

BY RACHAEL RETTNER / LIVESCIENCE.COM

BY RHEANNA O'NEIL BELLOMO
We hypothesized that not all sandwiches are created equal, and building a better sandwich will result in lower calories and less of nutrients to limit…
## NHANES 2013-2014: Typical Sandwich, Adults ≥ 19 Years Old

<table>
<thead>
<tr>
<th>Energy/Nutrient</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy (kcal)</td>
<td>561</td>
</tr>
<tr>
<td>Total fat (g)</td>
<td>28</td>
</tr>
<tr>
<td>Saturated fat (g)</td>
<td>10</td>
</tr>
<tr>
<td>Sodium (mg)</td>
<td>1393</td>
</tr>
<tr>
<td>Protein (g)</td>
<td>34</td>
</tr>
<tr>
<td>Carbohydrate (g)</td>
<td>35</td>
</tr>
</tbody>
</table>
This is what one change can do...

<table>
<thead>
<tr>
<th></th>
<th>Whole Grain Bread</th>
<th>Enriched Grain Bread</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>-170 (7%)</td>
<td>-184 (8%)</td>
</tr>
<tr>
<td>Total Fat</td>
<td>-19 g (18%)</td>
<td>-19 g (18%)</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>-6.6 g (20%)</td>
<td>-6.6 (20%)</td>
</tr>
<tr>
<td>Sodium</td>
<td>-697 mg (20%)</td>
<td>-663 mg (-19%)</td>
</tr>
</tbody>
</table>
Building A Better Sandwich Takeaways:

• The results support the inclusion of select sandwiches within recommended dietary patterns in Americans

• Building a better sandwich with WG/enriched grain breads can lower nutrients to limit (i.e., sodium, saturated fat) and reduce calories

• The data also suggest that ingredients within a sandwich, rather than the bread component, can be an important contributor to daily calories and nutrients to limit in the diet.
What can you do with all this science?
Identify Consumer Messages

"Grain foods are the foods we love that love us back – finally, we can enjoy bread again!"

- Grain foods pack more of a nutrient punch than a caloric one in adult diets.
- Grain foods fill critical nutrient gaps.
- Not all grains are created equally.
- People who choose grains wisely have better diets.
- The grain news for kids is similar/good.
- Refined and enriched grains play a critical role in our diets.
Develop Supporting Materials

- Press Release
- Infographics
- Q&As
- Blog Posts
- Social Content
FNCE 2017: Top RD Media Influencer Meeting, Oct 22, 2017
Leverage with top media RD influencers who have consumers ear.
Nutrition Influencers

Media RD Outreach

• **Lighten Up for Holiday Parties Segment**

• Messaging Highlights:
  
  • “Fill up on grain foods and vegetables, these keep us full for a longer period of time.”
  
  • “You will hear people say, I’m giving up bread. Forget about them. Forget about those fad diets.”
  
  • “Grain foods are very important in the diet.”
  
  • “Grains keep us energized throughout the holiday season.”
  
  • “They are an important source of B vitamins, minerals and fiber. No need to give these up.”
Simple Swaps for Healthy Snacking this Summer!

Direct Use of GFF Messaging:

- Every healthful eating plan including Mediterranean and DASH diets include grain foods.
- Bread has everything your body needs – B-vitamins, selenium, iron, folate, and fiber.
- Research shows an overall healthy diet with fiber lowers risk of type 2 diabetes, heart disease, and stroke.
- “For summer, I love sandwiches…easy on-the-go, portable, road trips...”

Nutrition Influencers

Media RD Outreach
Nutrition Influencers
Media RD Outreach

- **Smart Foods to Keep in Your Diet this Summer**
- Direct Use of GFF Messaging:
  - “Grain foods and breads are part of every healthful diet…Mediterranean and DASH diets”
  - They provide beneficial nutrients – B-vitamins, folate, fiber, iron, selenium, magnesium
  - Fiber helps keep you feeling full and most of us aren’t getting enough
  - When we include grains in our diet, we can help to reduce our risk for type 2 diabetes, heart disease and stroke so “go for the bread”
  - Sandwiches are quick, portable and on-the-go options for summer
Nutrition Influencers

Media RD Outreach

- Back to School Nutrition Meals for the Kids
- Direct Use of GFF Messaging:
  - “it’s not the bread, its what we put inside our sandwich that contributes to most of calories, fat, sodium in our diet”
  - Grain foods contribute less than 15% of total calories + over 20% of shortfall nutrients
  - It’s where we get our fiber, folate, iron, more than 10% of magnesium, calcium and vitamin A
  - Sandwiches/grains come in a variety of forms that kids like!
Acknowledgment

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  – Arash Shamloo, Biostatistician
  – Luan Chu, Student RA, Biostatistician

• Scientific Board of Healthy Grain Institute
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Thank you!
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