Comfort Food for Colder Weather

What’s in a Study: Tulane University Research Findings on Low-Carb vs. Low-Fat Diet

Plus: Holiday Classics, Nutrition Updates and More...
A Word From Judi Adams

As a registered dietitian, I’m constantly looking for the latest information about nutrition and health, including new research studies. But however “hungry” we all are for new information, we also know that not every study lives up to what I’ll call “scientific rigor” encompassing factors like the design of the study, sample size, and whether it was peer-reviewed. And, of course, we must always be mindful that the media frequently misreports scientific information so reader beware!

In this issue of Kernels, we’ll take a closer look at a study which received a large amount of media “hype” in early September 2014 due to its finding that a low-carbohydrate diet is more effective for losing weight and reducing cardiovascular risks, as compared to a low-fat diet. Working with the Wheat Foods Council Advisory Board, we put together some key points that raise questions about the study’s conclusions as well as how it was reported in the media. We’ve also put together some important nutrition information for you related to grains and whole grain consumption. As a science-based organization, we want to keep you up-to-date on key topics currently being discussed by the 2015 Dietary Guidelines Committee like fiber, Vitamin D, and sodium as they relate to grains.

Just in time for the holidays, we also have a wealth of recipes for you to try from holiday classics to tasty comfort foods to warm up chilly nights. We include some healthful tips to help you navigate this festive period so that a little indulgence doesn’t derail your weight management goals.

In our Wheat Growers’ Corner, we include photo highlights of our 2014 Wheat Safari. Twenty-seven of the nation’s most influential food and nutrition professionals visited North Dakota in early August to learn more about wheat, from farm to fork. Over the course of two-and-a-half days, the group visited a wheat farm to observe the harvesting process, the North Dakota Mill in Grand Forks, the Conte Luna Pasta Plant in Grand Forks, and the Northern Crops Institute and Wheat Quality Labs at North Dakota State University.

Enjoy!

Judi Adams, MS RDN, President, Wheat Foods Council

![Holiday Classics](image)

Celebrate the Season with Wheat Foods

As the popular holiday song proclaims, “It’s the most wonderful time of the year...” The holidays are the perfect opportunity to spend time with loved ones, gathering around the dining table to reconnect and reminisce while sharing delicious holiday foods and family favorites, which often are wheat foods.

Festive bags of WFC’s Cranberry Date Bars make great gifts.

Holiday food calories add up quickly, so consider portions when navigating buffets. Eat a healthy snack before the party or bring your own healthier appetizer or treat to share. Choose plenty of vegetables and fruits as part of your meal, in addition to a few decadent favorites, and engage with friends away from the food. If you overeat at one meal, lighten up at the others during the week.

Make physical activity a part of your holiday plans as well. Take advantage of cooler weather and hike or bike with family and friends or throw the football around at half time. Register everyone for a local “Turkey Trot” or “Jingle Bell Jog,” or plan a neighborhood race, and invite friends to run or walk and bring their favorite potluck dishes to celebrate afterward. indulge in winter weather fun like ice skating, sledding, snow-shoeing or skiing.

If bad weather keeps you indoors, try running up and down stairs during TV commercials, pull up an exercise video on your laptop, or just put on your favorite music and get moving!

So when your family gathers this holiday season to enjoy traditional – or new --favorites, remember to make moderation and movement (exercise) your mantra. In fact, cooking/meal preparation is an easy way to burn around 100 calories/hour so get in the kitchen and start prepping now on those wonderful holiday classics!
What’s In a Study:
Tulane University Research Findings on Low-Carb vs Low-Fat Diet

The media was full of reports in September 2014 about a study from Tulane University (Bazza-no et. al.) that found a low-carbohydrate diet more effective for losing weight and reducing cardiovascular risks, as compared to a low-fat diet (1). The results were loudly proclaimed in a number of major outlets including the New York Times, Forbes, TIME, Boston Globe, and NBC “Today Show.”

Following publication of the study, the Wheat Foods Council, along with other groups, asked Dr. Glenn Gaesser, director of the Healthy Lifestyles Research Center at Arizona State University, and Dr. Julie Miller Jones, St. Catherine University in St. Paul, to take a closer look at the findings. Both Dr. Gaesser and Dr. Miller Jones are members of the Wheat Foods Council’s Scientific Advisory Board. Based on their input, as well as input from the nutrition experts at the Wheat Foods Council, we have put together the summary below that helps put the findings in perspective.

Summary:
A study was published September 2, 2014, in the journal Annals of Internal Medicine that looked at the effects of low-carbohydrate and low-fat diets for weight loss or cardiovascular risk factors. The conclusion was weight loss is determined by the calorie deficit regardless of calorie type and most cardiovascular improvements can be attributed to the weight loss.

• It is of concern that so many influential media outlets picked up this trial of 148 participants while the other major studies and meta-analyses have been mostly ignored.

• Diet quality counts. Severely limiting carbohydrates in the diet means removing healthful food items like fruits, vegetables, dairy and grain products.

• Other recent major studies and meta-analyses were ignored. Two other meta-analyses just this year (Naude et. al – July 2014 (2) which included 19 randomly controlled trials with a total of 3,209 participants; and Johnson et-al – Sept. 2014 (3) which included 48 randomly controlled trials with 7,286 participants) showed no difference between low-fat and low-carb diets for weight loss or cardiovascular risk factors. The conclusion was weight loss is determined by the calorie deficit regardless of calorie type and most cardiovascular improvements can be attributed to the weight loss.

• A 2012 study by Legouis et al (4) with a random population sample, 43,396 Swedish women, aged 30-49 years at baseline, completed an extensive dietary questionnaire and were followed-up for an average of 15.7 years. The authors concluded “Low carbohydrate-high protein diets, used on a regular basis and without consideration of the nature of carbohydrates or the source of proteins, are associated with increased risk of cardiovascular disease.”

Information from Wheat Foods Council:
• As with any research study, there were design limitations with this trial and it is important to recognize both the strengths and drawbacks to better apply the findings.

• Extremely small number of participants. There were 148 participants involved with the study at baseline (73 on the low-fat diet and 75 on the low-carb diet). After 12 months, 82.7% of the low-fat dieters were still on the diet and 78.7% of the low-carb dieters remained. It would be premature to make sweeping generalizations based on a study of this size, especially when other, larger studies have drawn different conclusions. If anything, this study merely points to the need for continuing research.

• Issues with methodology. The dietary data were obtained by 24 hour recall – which has its limitations. If the participant has actually reduced their caloric intake by 550-600 calories each day (as reported), they should have lost 55-60 pounds, for the low fat group or 14 lbs, on average for the low-carb group. Physical activity was also self-reported which is the least accurate method possible.

• Not a true low-carbohydrate eating pattern. Participants in the low-carbohydrate group were advised to consume fewer than 40 grams of carbohydrates per day.

o However, at each point in the study when dietary recalls were collected, participants were consuming 93-127 grams of carbohydrates each day. This was double to triple what was called for in the study design.

o Put another way, approximately 30% of calories came from carbohydrates, exceeding the target goal. Participants were not following a true low-carbohydrate eating pattern which is usually less than 10% of calories.

o Not a true low-fat diet. Participants in the low-fat group were assigned 30% of calories from fat which is in the range [20% - 35% of calories] of fat recommended by the 2010 Dietary Guidelines for Americans for adults aged 19 years and older. Low-fat diets are technically less than 20% of calories which makes this diet not a low-fat diet.

o Other recent major studies and meta-analyses were ignored. Two other meta-analyses just this year (Naude et. al – July 2014 (2) which included 19 randomly controlled trials with a total of 3,209 participants; and Johnson et-al – Sept. 2014 (3) which included 48 randomly controlled trials with 7,286 participants) showed no difference between low-fat and low-carb diets for weight loss or cardiovascular risk factors. The conclusion was weight loss is determined by the calorie deficit regardless of calorie type and most cardiovascular improvements can be attributed to the weight loss.

References:


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**Chicken and Noodles**

*Ingredient List:*
- 2 cups cooked chicken breast or turkey, diced
- 6 cups chicken broth
- 1 pound egg noodles
- 1/2 medium sweet red pepper, chopped
- 1/2 large onion, cut into rings
- 8 ounces fresh mushrooms, sliced or 1/4 ounce can sliced mushrooms
- Salt and pepper to taste

*Directions:*
Place chicken in a large pot with broth. Add peppers and onions; simmer 10 minutes. Add noodles and cook according to package directions. Five minutes before noodles are done, add mushrooms. Serve hot.

*Serves 10 (hearty 1 cup servings)*

*Nutrition:*
- Calories/Serving: 243
- Carbohydrates: 35 g
- Fiber: 4 g
- Fat: 16 g (1.5 g saturated)
- Sodium: 628 mg

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**Autumn Apple Pie and Double Pastry Crust**

*Ingredient List:*
- 6 cups sliced, tart cooking apples (7-8 medium apples)
- 3/4 cup sugar
- 3 tablespoons all-purpose flour (can use whole wheat flour)
- 1/8 teaspoon salt
- 1 teaspoon cinnamon
- 2 tablespoons butter (optional)
- 1 tablespoon lemon juice
- 2 (7") refrigerated pie crusts (or you may use your favorite recipe)
- 1 tablespoon low-fat milk
- 1 teaspoon sugar

*Directions:*
Preheat oven to 450°F.

Wash apples; core and peel apples (or peel can be kept on for added fiber and chewier texture) and slice thin. In a large bowl, combine sugar, flour, salt and cinnamon. Combine sugar mixture, lemon juice and apple slices, tossing lightly to combine.

Turn into pastry-lined 9-inch deep-dish pie plate, mounding apples high in center; dot with butter (optional).

Place on the top crust; adjust over filling and trim. Fold edge of top crust under bottom crust; press together with fingertips. Crimp edge decoratively. Make several cuts or a design in center for steam vents; brush top crust with milk and sprinkle with sugar.

Bake in a hot oven for 10 minutes, then reduce heat to 350°F and bake for about 40 to 45 minutes or until crust is golden-brown.

*Nutrition Information (per slice):*
- Calories: 370
- Protein: 3.5 g
- Carbohydrates: 65 g
- Fiber: 4 g (4 g saturated)
- Cholesterol: 0 mg
- Sodium: 211 mg

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**Cover Recipe: Dressy Macaroni and Cheese**

*Ingredient List:*
- 8 ounces ziti, or other medium, tubular pasta, cooked
- 3 tablespoons butter
- 1 small onion, diced
- 1 tablespoon ground mustard powder
- 3 tablespoons all-purpose flour
- 3 cups 1/2% milk
- 1/2 teaspoon salt
- 1/4 cup grated Parmesan cheese
- 2 tablespoons minced fresh chives, or 1 teaspoon dried chives

*Directions:*
Pour the pasta into the prepared baking dish and sprinkle with crushed cheese crackers. Bake 30-40 minutes for a large casserole, 25-30 minutes for individual dishes, until very hot and beginning to brown on the edges. Serve hot.

*Serves 6*

*Calories/serving: 560*

*Nutrition:*
- Calories/Serving: 243
- Carbohydrates: 35 g
- Fiber: 4 g
- Fat: 16 g (1.5 g saturated)
- Sodium: 628 mg
Vitamin D Yeast
Vitamin D was identified as a nutrient of concern by the 2010 Dietary Guidelines for Americans (DGA). Currently, it is an optional fortification to enriched grains. In 2012, the Food and Drug Administration (FDA) increased the amount allowed in baked goods using vitamin D-fortified yeast from a maximum of 90 IU per 100 g to 400 IU. (1) By using the vitamin D-fortified yeast and also fortifying with calcium (also optional), enriched bread will be able to make a health claim for the reduction of osteoporosis, as long as it contains 20% of the Reference Daily Intake (RDI) of both nutrients. This is another example of enriched grains improving public health. Vitamin D from grains could also be useful for people following a more plant-based diet.

Fiber
The 2010 DGA labeled fiber as a nutrient of concern. While nutritionists have been trying to increase fiber intake among Americans for decades, there has been little progress. The National Health and Nutrition Examination Survey (NHANES) 1999/2000 reported fiber intake averaged 15.6 g/person for adults 18 and older. The latest report (2007/2008) shows we have only increased .3 g for that same age group despite increased recommendations for whole grain consumption. Ninety percent of Americans fall short of meeting the fiber recommendation. (2)

Whole grain foods, while having many important nutritional benefits in addition to fiber, contain a wide range of fiber. Americans are consuming less than one serving of whole grain foods per day instead of the recommended three or more which decreases fiber intake further. (3)

The Institute of Medicine (IOM) recommends 25 g of fiber for women and 38 g for men based on the fact that 14 g/1000 calories appears to be beneficial for reducing cardiovascular disease. As we struggle to reduce calorie consumption in the U.S., the fear is that we may also reduce fiber consumption unless we encourage consumption of bran and fortification of fiber in whole grains, enriched grains, and bran and germ-based products. A modeling study showed that by adding 2.2-5.9 g of fiber to existing grain foods, we could reach the recommended level without an increase in calories. (4)

The fiber content listed on the front-of-pack declaration of “Whole Grain” or “Made with Whole Grain” may encourage consumers to eat more whole grains, but not necessarily increase their fiber intake to the recommended amount. Grain foods provide 44% of the fiber in the American diet, but they could provide more with added fiber of all types. (5,6)

Individuals with high Body Mass Index (BMI) > 30 had lower fiber intakes compared with those with BMI < 30. Grain foods are the largest source of fiber in the U.S. diet (44%), followed by vegetables (21%), fruits (13%), and dry beans and other legumes (10%). (6)

Intake of cereal fiber, but not fibers from fruit or vegetables, was inversely associated with BMI, body fat, and trunk fat mass in older adults. (7)

Iron
Many fortified cereals deliver at least 25 percent of the recommended daily value for iron, and one slice of enriched bread delivers 6 percent. In a vegetarian or Mediterranean diet pattern, the presence of iron from enriched grain foods is even more vital. (8) Grains provide over 50% of iron in the American diet.

Sodium
On May 15, 2013, the IOM identified a number of research and data gaps that need to be addressed before recommending specific sodium targets for the general population. Bakers have pro-actively reduced the amount of sodium in bread, with USDA data confirming that the average sodium level in a slice of bread has dropped from 254 mg to 180 mg since 1963. Both cereals and rice mixes have also decreased their sodium content and many are working to decrease further by participating in the National Salt Reduction Initiative. (9)

Furthermore, a study recently published in the American Journal of Hypertension, “Compared With Usual Sodium Intake, Low-and Excessive-Sodium Diets Are Associated With Increased Mortality: A Meta-Analysis,” concluded that 2,645 – 4,945 mg of sodium per day, a range of intake within which the vast majority of Americans fall, actually results in more favorable health outcomes than the CDC’s current recommendation of less than 2300 mg/day for healthy individuals under 50 years old, and less than 1500 mg/day for most over 50 years. This study was a combined analysis of 25 individual studies, which measured results from over 274,683 individuals. (10)

Nutrition Updates Related to Grain Consumption
There are exciting developments in nutrition news related to grains and whole grain consumption. Here is a summary of background information to keep in mind as you are discussing grain consumption with your clients, patients, shoppers, or as a consumer:

Vitamin D Yeast
Vitamin D was identified as a nutrient of concern by the 2010 Dietary Guidelines for Americans (DGA). Currently, it is an optional fortification to enriched grains.

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(Continued on next page)
Importance of nutrition education

Accurate definitions for grains can assist consumers in understanding the various grain products, and the role each plays in a healthful diet. Accurate definitions include:

Whole grain products contain the entire endosperm, bran and germ in amounts proportional to the unprocessed grain kernel. They cannot be enriched or fortified due to the standards of identity.

Refined, unenriched, grain products have had the germ and bran removed with only the endosperm remaining. This represents less than 5 percent of the total white flour milled in the U.S. It is primarily used for organic and artisanal products and a small amount goes into mixes for overseas consumption.

Refined, enriched/fortified grain products are enriched with three major B vitamins (riboflavin, thiamin, niacin) and iron replaced in equal or greater amounts to those in whole grain products as defined by the standards of identity. They also are fortified with folic acid (another B vitamin) in amounts slightly double that found in whole grain products. This includes products such as white bread, rolls, rice and the majority of other grain foods. At least 95% of the refined grains in the U.S. are enriched and fortified and are labeled as such. Therefore, it is almost impossible to consume a diet of “refined” grains in the U.S. that has not been enriched/fortified.

Other fortified grain products are those that have a variety of minerals and vitamins added in various amounts, not defined by set standards. Breakfast cereals, granola bars, meal replacement bars, etc. can be fortified according to FDA guidelines.

References:
3. http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/fped/Table_1_FPED_GEN_0910.pdf

Pizza – A Way to Get More Whole Grains in Kids’ Diets

While the 2010 Dietary Guidelines for Americans (DGAs) recommend making at least half our daily grain servings whole grains, most of us fall to even come close to reaching that goal. As recently as 2010, the US Department of Agriculture (USDA) reported males and females over the age of two only consumed about 12 percent of their grains from whole grain foods – not the 50 percent recommended, but still increasing 23.4 percent over 2008. [1] So information from the University of Minnesota (UMN) showing it may now be easier to offer children healthier alternatives while increasing their whole-grain intake through the use of pizza is welcome news. UMN collected plate waste data from 394 child restaurant patrons who consumed pizza made with a whole-grain crust. It also conducted a taste test for 120 school children by having them consume pizza made with an enriched-grain crust and a whole-grain crust and having them rate each product. The results showed that children consumed as much of the pizza using a whole-grain crust as they did the one with an enriched-grain crust. Researchers concluded that whole-grain pizza crust is well accepted among children and that whole grain intake could be substantially increased if national restaurant chains offered pizza made with a whole-grain crust.


References:
1. http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/fped/Table_1_FPED_GEN_0910.pdf

Recipe:

Pizza – A Way to Get More Whole Grains in Kids’ Diets

Ingredients:
- 2 cups whole wheat flour
- 1 package active dry yeast/instant yeast
- 3/4 teaspoon salt
- 1 tablespoon vegetable oil (canola or olive oil work well too)
- 1 tablespoon honey or granulated sugar
- 1 tablespoon gluten* (Optional)
- 1 tablespoon gluten* (Optional)
- 1 tablespoon oil

Directions:
- Preheat oven to 425°F
- To prepare pizza dough, stir whole wheat flour, lightly spoon into a measuring cup and level flour. In large mixing bowl, combine whole wheat flour, yeast and salt. Blend in water, oil and honey or sugar. Stir by hand vigorously until all ingredients are well mixed; about 3 minutes. Cover with plastic wrap and let rise to double the size. Place dough in greased 15 x 10 x 1-inch jelly-roll pan or 12 to 14-inch pizza pan. Press dough to cover bottom of pan and up sides to form a rim.

Source: Wheat Foods Council

Nutrition:
One slice of crust provides approximately: 5 g protein, 27 g carbohydrates, 4 g fiber, 2 g fat (0 g saturated), 0 mg cholesterol, 37 mcg folate, 2 mg iron and 219 mg sodium.

Servings: Provides 8 servings

Calories/Serving: 146 calories/slice of crust only

Source: Wheat Foods Council

References:
1. http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/fped/Table_1_FPED_GEN_0910.pdf
Wheat Foods Council Wheat Safari Takes National Media on Tour of ND Wheat Industry

“Spending time with these journalists and health professionals gave us a chance to meet on common ground and learn from each other. Consumers are often misinformed about wheat and wheat foods, and now these influencers are in a position to correct that.” - Dr. Brett Carver

Safari tour guests included prominent food and nutrition bloggers, academics from major universities across the country, newspaper editors and broadcast journalists.
See You at FNCE 2014!

If you are going to be at FNCE, we would love to see you. Visit the Wheat Foods Council’s booth, #2419, to talk to our experts.

Brett Carver, PhD
Wheat Genetics Chair in Agriculture,
Oklahoma State University,
Wheat quality/breeding expert

Fran Churchill
North American Millers’ Association Instructor of Milling Science & Management,
Kansas State University
Milling expert

Julia Debes
Kansas wheat farmer
(formerly with US Wheat Associates).

Try our Tasty Samples:
Sunday, Oct. 19 @ Noon
Couscous and Corn Salad

Monday, Oct. 20 @ Noon
Toasted Corn and Bulgur Salad

Our experts will be able to provide you with an abundance of information and answer any questions you may have. Plus: Displays, giveaways, recipes and more. We hope to see you in Atlanta!

Check Out Our Resources

The Wheat Foods Council wants to help you set the record straight. Our resource section has a wealth of information for you to use. From blog ideas to social media posts, you can find something for everything. For all of our resources, visit www.wheatfoods.org/resources.

Holiday Toolkit
The Golden Grain for your Golden Years
Busting Fad Diets