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To keep the mind sharp, attendees participated in regular five-minute fitness activities, led by a variety of fitness experts (Photo courtesy of Loma Linda Health).

## Expanding the Vegetarian Nutrition Conversation to Include the Health of the Planet and the Quality of the Food | BY BONNIE DWYER AND VICKI SAUNDERS

Every five years, scientists, nutritionists, and physicians gather in Loma Linda to share their research on plant-based nutrition and the latest ways to incorporate it into everyday life. It is a big event, drawing 600-700 people from around the world. This year's program also included reports on environmental nutrition—planetary health, a relatively new frontier for public health. Epidemiology and the correlation between nutrition and specific diseases is always discussed at the Congress. Plus, there were tastings of barley risotto with seasonal vegetables, curried quinoa with peas and almonds, and a posole soup made with beans instead of pork (see recipes on the following pages). Because what good is a purely theoretical discussion of nutrition?

“Environmental nutrition addresses the sustainability of food systems by integrating the environmental sciences with the nutritional sciences,” says Joan Sabate, director of the LLU Center for Nutrition, Lifestyle and Disease Prevention, and chair of the Congress. It includes a range of issues from farming production practices to societal food demands on a biospheric scale. In a 2016 article for the *American Journal of Public Health*, Sabate and fellow researchers, Helen Hanwatt and Samuel Soret, outlined an environmental nutrition agenda for food production, food consumption, nutrition policy, and the integrated assessment of these areas.

Research over the last fifteen years has shown that vegetarian and plant foods are soft on the environment; they

leave less of a footprint. Production of the foods for a vegetarian diet decreases greenhouse gases by 30 percent when compared with production for animal-based diets. Vegetarians consume less carcinogens and have a lower mortality rate. Their diet is environmentally friendly and more healthy, Sabate says.

At the February 2018 Congress in Loma Linda, the program began with reports on epidemiological studies, including the European Prospective Investigation into Cancer and Nutrition (EPIC), plus cohort studies of the Adventist Health Study 2.

In a keynote address, Dr. Frank Hu, chair of Harvard's Department of Nutrition, made the point that plant-based diets are good for health and only some of them are vegetarian. The Mediterranean, Okinawan, and DASH diets, for example, are plant based without being vegetarian. He also stated that only some vegetarian diets are healthful. A diet high in refined starches and sugars, hydrogenated fats and saturated dairy fats, and low in fruits and vegetables is not a healthful diet be it ever so meat free. On the far right of the continuum are the healthful plant foods and on the far left of the continu-

## Posole Soup

**Portions: 6**

### Ingredients:

½ lb	hominy, dried, soaked overnight in water
5 ea	New Mexico chilies, dried
½ lb	Ayocote Blanco beans (or white navy bean), dry, soaked overnight
1 ea	yellow onion, small
2 ea	cloves
1 ea	bay leaf
2 cloves	garlic, chopped
1 tsp	cumin seeds, toasted, ground to a powder
½ cup	vegetable oil
1 cup	white onion, diced, soaked in ice water
1 ea	lime, cut into 6 wedges
As needed	cilantro leaves

### Method:

1. Drain hominy and put into large pot with enough water to cover. Bring to a boil and reduce heat to a simmer, let simmer 1 hour.
2. Toast dried chilies lightly in a heavy bottomed skillet. Wearing gloves, split chilies in half and remove the seeds, stems, and white veins. Soften chilies by simmering in 2 cups water about 15 minutes, then removing from heat and letting sit another 15 minutes. Blend well in a high power blender to puree. Strain through a fine mesh strainer and set aside.
3. Peel and cut onion in half. Stick cloves into onion.
4. Drain beans and add to cooking hominy along with onion, bay leaf, garlic, cumin and oil. Add enough water to cover by at least 2 inches and bring back to a simmer. Cook an additional 1 to 1 ½ hours until beans are tender and creamy.
5. Stir in ½ cup of the chili puree and simmer for 10 minutes. Taste and correct seasoning with additional chili paste, salt and/or honey to taste. Remove the onion, cloves, and bay leaf.
6. To serve, ladle into bowls and garnish with soaked onion, lime juice and cilantro as desired.

Nutrition Facts	
Serving size (approx 2/3 cup) (147g)	
Amount Per Serving	
<b>Calories</b>	<b>380</b>
% Daily Value*	
Total Fat 19g	24%
Saturated Fat 1.5g	8%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 140mg	6%
Total Carbohydrate 40g	15%
Dietary Fiber 13g	46%
Total Sugars 6g	
Includes 0g Added Sugars	0%
Protein 13g	26%

Not a significant source of vitamin D, calcium, iron, and potassium  
\*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

um are the unhealthy plant foods along with the high animal foods. The data is strong that a diet of healthful plants reduces the risk of Type 2 diabetes significantly, and a diet of animal products, especially red meats and processed meats, promote diabetes. Unhealthy plant products may have a slightly higher risk of diabetes than the non-vegetarian diet. He identified saturated fat as risky and said that trans fats are so bad they should be

banned by law. Another population intervention he recommends is a tax on sodas. Berkley, CA passed such a law and their soda intake has dropped significantly accompanied by an increase in water intake.

Next, conference attendees listened to presentations on plant-based diets and life-cycle stages from infancy through childhood and on to aging. Gut microbiomes are now a major focus of research, too. Three presentations touched

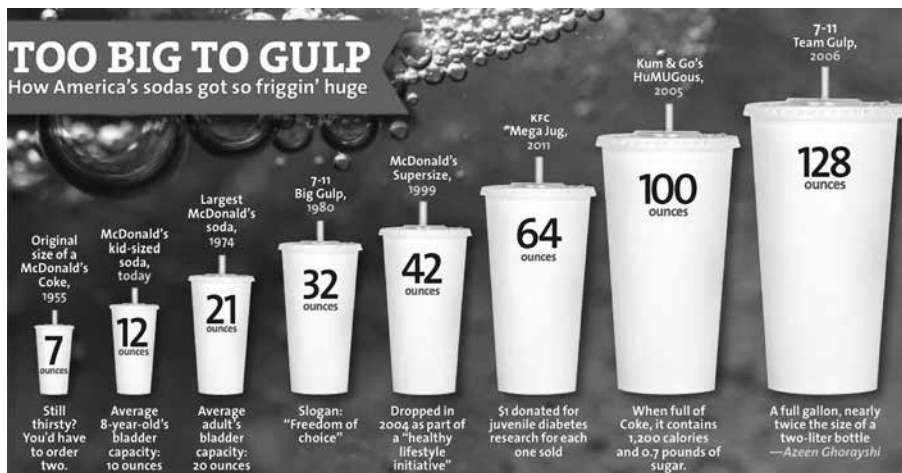


Chart from presentation by Frank Hu showing the increase in American soda sizes



Attendees visited exhibitors present throughout the event. Pictured here are attendees learning more information about programs offered at the Loma Linda University School of Public Health booth (Photo courtesy of Loma Linda Health).

on the subject assessing the microbiomes.

Cancer, stroke, heart disease, and diabetes all were addressed as researchers presented their findings on vegetarian diets and health outcomes.

And then came the environmental studies about protecting biodiversity with healthy soil, and healthy seeds, and the effect of vegetarian diets on planetary and population health outcomes.

The task of bringing research to the table in the form of food fell to Chef Cory, also known as P. Cory Gheen, assistant professor of Nutrition and Dietetics at LLU. Congress organizers requested recipes combining legumes and grains. Chef Cory wanted to create something that people would actually make in

## Curried Quinoa with Peas and Almonds

**Portions:** 4

### Ingredients:

2 Tbsp	vegetable oil
1 medium	onion, ¼ fine dice, ¾ coarse chop
1 cup	quinoa, white, rinsed
2 tsp	curry powder, yellow
¾ tsp	salt, kosher
2 ea	zucchini, small dice
1 cup	carrot juice
1 cup	peas
¼ cup	green onion
½ cup	almond, slivered
2 Tbsp	cilantro leaves, rough chop

### Method:

1. Heat 1 Tbsp of the oil in a small soup pot. Add the fine diced onion. Cook over medium heat about 3 minutes until soft.
2. Stir in quinoa, ½ tsp curry powder, and ¼ tsp of the salt. Cook 2 minutes while stirring.
3. Add 2 cups boiling water, lower heat to low simmer, cover and cook 15 minutes.
4. Heat remaining oil in a large skillet. Add large chopped onion, zucchini and remaining curry powder.
5. Cook, stirring frequently, over medium heat for 5 minutes.
6. Add ½ cup water, carrot juice and remaining salt.
7. Cover and simmer for 5 minutes.
8. Add peas and green onion, cook an additional 2 minutes.
9. Stir in the nuts and cooked quinoa.
10. Taste and adjust seasoning as needed.
11. Garnish with cilantro.

### Nutrition Facts

Serving size (approx 1 cup) (267g)

Amount Per Serving  
**Calories 380**

	% Daily Value*
<b>Total Fat 17g</b>	<b>22%</b>
Saturated Fat 1g	5%
Trans Fat 0g	
<b>Cholesterol 0mg</b>	<b>0%</b>
<b>Sodium 450mg</b>	<b>20%</b>
<b>Total Carbohydrate 48g</b>	<b>17%</b>
Dietary Fiber 9g	32%
Total Sugars 13g	
Includes 0g Added Sugars	0%
<b>Protein 12g</b>	<b>24%</b>

Not a significant source of vitamin D, calcium, iron, and potassium

\*The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

their kitchen. It needed to be very approachable, offer the nutrition that people need, and still be interesting. He decided upon barley risotto to show that you can use any grain for risotto and added fresh vegetables to make the dish all the more tasty. "Mix and match ingredients," he says, "because great ingredients are what make a great dish. In other words, find the ingredients first and then look for a recipe, rather than the other way around. The job in the kitchen is to take a great ingredient and keep it great," he says. "Ingredients don't get better." He also likes to simplify recipes, taking out unnecessary ingredients. "Focus on one thing and make it great," he says. "Find good local sources. Be a locavore."

Dietitian Nasira Burkholder-Colley provided the nutritional information during the presentation of the dishes. While the food demonstrations enlivened the Vegetarian Congress, Chef Cory makes a point of saying that the Vegetarian Congress is a venue for researchers. It is not a culinary event.

Thirty years ago, when the first Congress was held in Washington, DC, it was envisioned as a way to bring cultural and political attention to the significance of the vegetarian diet. Allan Buller, then president of Worthington Foods, came up with the idea and solicited the help of the General Conference of Seventh-day Adventists in sponsoring it. The organizers soon realized they needed a scientific component to the event and requested that Loma Linda University step in. From the third congress on, Loma Linda University researchers have been in charge. Sabate took over the event twenty years ago. At LLU, with research as the focus, it has flourished. The American Journal of Clinical Nutrition has published the proceedings of all of the meetings. This year, scientists from Harvard, Yale, Tufts, Oxford, and of course Loma Linda University are involved. There are researchers from Taiwan, Brazil, the UK, Chile, India, the Netherlands, Spain, Canada, and the United States. Sabate says that scientists in Europe are leading the way in research regarding nutrition and the environment.

## Barley Risotto with Seasonal Vegetables

**Portions: 4**

### Ingredients:

1 Tbsp	vegetable oil
1 medium	onion, spring*, small dice
2 cups	pearled barley, pre-cooked
1 cup	vegetable stock
1 cup	green garbanzo Beans, shelled
½ cup	asparagus tips
1 Tbsp	heavy cream
1 Tbsp	parmesan, grated
1 Tbsp	parsley, chopped fine

\*spring onions have not been dried so they still have green tops and no yellow skins (paper) on the outside

### Method:

1. Heat oil in a large, wide sauté pan over medium-high heat.
2. Add onion and cook until it begins to brown (caramelize).
3. Add barley and ½ cup of vegetable stock. Cook and stir until liquid has been absorbed. Add enough remaining liquid to create a slightly thickened sauce consistency.
4. Add the vegetables and cook 2 minutes until heated through, adding more stock as needed to maintain sauce. Remove from the heat.
5. Finish by adding the cream, parmesan and parsley, stirring until the cheese is melted.
6. Taste and adjust the seasoning with a bit of salt if needed.

Nutrition Facts	
Serving size (approx 1 cup) (266g)	
Amount Per Serving	<b>250</b>
<b>Calories</b>	
	% Daily Value*
Total Fat 7g	9%
Saturated Fat 2g	10%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 110mg	5%
Total Carbohydrate 42g	15%
Dietary Fiber 8g	29%
Total Sugars 6g	
Includes 0g Added Sugars	0%
Protein 8g	16%

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And while plant-based diets are environmentally friendly, that does not mean they are without challenges and controversies, as Marco Springmann, from the University of Oxford, reminded attendees. Consumer attitudes towards meatless diets are one challenge. Ruben Sanchez, from the Universidad de La Frontera in Chile, provided details. Matthew Ruscigno, a registered dietitian from Nutrinic Inc., Los Angeles, talked about the vegetarian athlete. The cultural context for vegetarian diets was provided by Sharon Palmer, from The Plant-Powered Dietitian. Nasira Burkholder-Cooley closed the conference with a discussion of what replaces meat? Are meat analogs the best protein? Not everyone thinks so.

Research on new foods continues. As do studies on the effect of a vegetarian diet on people and the planet. The Eighth Vegetarian Nutrition Congress will be in 2023. ■

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