

**SMALL THING,  
BUT A BIG DEAL**

Peoria spa offers special treatments for cancer patients. **PAGE C6**

# TASTE

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SECTION C

**“Any processing step can add or subtract nutrients, so the closer you eat to whole foods the better. Cut down on portions, eat more frequently, eat more whole foods and less processed foods. Eat a lot of variety, and you will definitely see improvement in your physical being.”**

Mark Berhow, a researcher at the National Center for Agricultural Utilization Research



# Research good enough to eat

Food scientists understand your body runs better on premium fuel

**C**hemists Mark Berhow and Jill Winkler are eating their research knowledge.

Berhow, who earned his doctorate in biochemistry at Washington State University, worked on citrus fruit with the U.S. Agricultural Research Service in southern California. When he was transferred to Peoria, his focus changed to soybeans. Today, citrus and soybeans are integral elements in Berhow's diet.

Winkler, who earned her doctorate in food science at the University of Illinois, worked at Land O'Lakes on food microbiology and testing. She joined ARS and began working at the Peoria Ag Lab on food and industrial oils.

Today, she avoids hydrogenated and partially hydrogenated oils, eats chocolate regularly and minimizes consumption of red meat to one or two servings a month. She uses canola oil, sesame oil and extra-virgin olive oil. Vegetables are her major food group.

What happens in the food research laboratories at the National Center for Agricultural Utilization Research, 1815 N. University St., often enters the development pipeline of commercial food companies and years later appears on grocery store shelves accessible to the general public. But scientists like Berhow and Winkler are able to translate their research findings more immediately.

Berhow said the next major frontier of nutritional science is food that prevents chronic illness. Soy already has been linked with prevention of heart disease, cancer, diabetes and osteoporosis.

That link convinced him to devise a soy snack. He eats two or three handfuls daily of his soy trail mix with roasted soybeans, almonds, sunflower seeds and raisins.

Berhow said tofu is a good source of its nutritional power. His trail mix uses whole roasted soybeans, a richer source of soy phytochemicals. He also buys fresh edamame (immature soybeans) whenever he finds them at Schnucks Supermarkets. (Frozen edamame is sold at Naturally Yours in the Metro Centre and at area Kroger stores.)

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**LEFT:** A tofu appetizer — firm tofu covered with ginger, green onions and dried bonito flakes — is one of Mark Berhow's favorite dishes. Berhow's research as a chemist at the National Center for Agricultural Utilization Research in Peoria, has helped him develop a diet rich in fish and fruits, as well as the subject of his studies — soybeans. Berhow created his own snack mix of roasted soybeans, almonds, sunflower seeds and raisins. **FAR LEFT:** Jill Winkler, a chemist at the National Center for Agricultural Utilization Research, works on a stir-fry dish in a kitchen at the lab.

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# Healthy doesn't need to be boring

## JILL WINKLER'S STIR FRY

- 1 cup chopped vegetables per serving**
- Firm tofu or diced cooked chicken breast (2 ounces per serving)**
- 2 to 3 tablespoons canola oil**
- 1 to 2 cloves garlic, crushed**
- 2 to 3 tablespoons low sodium soy sauce**
- 1 teaspoon sesame seeds**
- 1 tablespoon sesame oil**
- Pepper**
- ¼ teaspoon grated fresh ginger (or dash of dried ginger powder)**

Mix garlic, soy sauce, sesame seeds, sesame oil, pepper and ginger.

Toss vegetables with the sauce in large bowl. Allow to marinate for several minutes. Heat canola oil in large pan on medium-high. Toss in vegetables. Stirring until vegetables are crunchy yet cooked through. Add diced tofu and mix until tofu is heated through. If needed, add a few teaspoons of water or a dash more soy sauce, cover and steam for 1 to 2 minutes until vegetables are softer.

For vegetables, try broccoli, carrots, green peppers, red peppers, onion, scallions, celery, water chestnuts and squash.

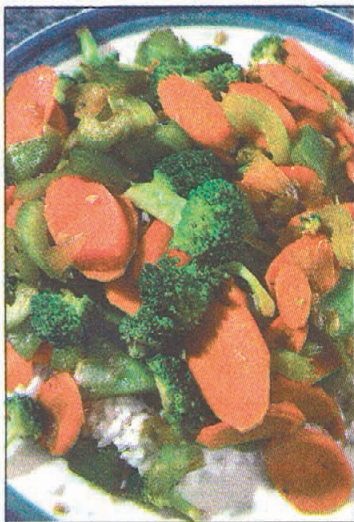
Pepper options include: crushed red or black pepper, pepper blend or pepper steak seasoning, to taste.

Serve over steamed brown or white rice.

## BLACK BEAN BURGERS WITH HORSERADISH SAUCE

### BURGERS

- 1 15-ounce can black beans, undrained**
- 1 4.5-ounce can chopped green chiles, undrained**
- 1 cup unseasoned dry bread crumbs**
- 1 teaspoon chili powder**



MATT DAYHOFF/JOURNAL STAR

**A healthy stir-fry meal for chemist Jill Winkler consists of broccoli, carrots, onions, celery, and green peppers with canola oil and soy sauce. Winkler, who has a doctorate in food science, avoids hydrogenated and partially hydrogenated oils.**

- 1 egg, beaten**
- ¼ cup yellow cornmeal**
- 2 tablespoons vegetable oil**
- 6 burger buns, toasted**
- 1¼ cups shredded lettuce**
- 3 tablespoons chunky-style salsa**

### HORSERADISH SAUCE

- 1 cup sour cream**
  - 2 tablespoons mayonnaise or salad dressing**
  - 2 tablespoons coarse mustard**
  - 2 tablespoons prepared horseradish**
- In small bowl, mix all sauce ingredients. Cover and refrigerate 1 hour to blend flavors.
- Place beans in food processor or blender. Cover and process

until mashed; remove from food processor. In medium bowl mix beans, chiles, bread crumbs, chili powder and egg.

Place cornmeal in pie plate or shallow dish. Shape mixture into 6 patties each about ½-inch thick. (If mixture is too sticky to form patties easily, coat your hands with about 1 teaspoon of oil or spray your hands with cooking oil.) Coat each patty with cornmeal.

In 10-inch skillet, heat oil over medium heat. Cook patties in oil 5 to 10 minutes, turning once until crisp and thoroughly cooked on both sides. Do not crowd pan. If necessary, cook patties in two batches.

Spread bottom halves of buns with sauce. Top with lettuce, patties and tops of buns. (Makes 6 servings)

(From "Betty Crocker; Why It Works," Wiley Publishing)

## MARK BERHOW SNACK MIX

- 2 cup roasted soy nuts**
- 1 cup sunflower kernels**
- 1 cup whole almonds**
- 2 cup raisins (or 1 cup raisins and 1 cup dried apples)**

Mix all ingredients and keep in zipper lock plastic bag in cool dry area.

## MARK BERHOW TOFU APPETIZER

- 1 chunk firm tofu cut into chunks**
- 3 or more tablespoons dried fish shavings**
- 2 or more scallions, finely chopped**
- 1 small section fresh ginger, grated**
- 5 tablespoons soy sauce or tempura sauce**

Place tofu on plate. Sprinkle with dried fish shavings, scallions and ginger. Serve with chop sticks and soy sauce for dipping.

# EAT

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Berhow uses edamame as a substitute for lima beans and other beans. He suggests expanding a three-bean salad to a four-bean salad by adding edamame.

"Plants can't run from stress, so they deal with stress by making chemicals. The compounds plants make have pest control and anti-disease effects in humans," Berhow said. "Plants are very good at dealing with biological stresses in chemical ways."

Berhow was eating quite a bit of soy before moving to Peoria.

"I was living in southern California enjoying Japanese and Thai foods that use a lot of soy, but I grew up in Washington state and ate very little soy growing up," he said.

Concerning the link between soy phytoestrogens and breast cancer, Berhow believes there is little likelihood the lower levels found in foods cause cancer. He thinks the link is more possible with supplements containing very high concentrations of soy phytoestrogens.

"I think from a food source it is just fine. Oriental cultures eat high quantities of soy all their lives, and there is no evidence of more breast cancer," he said.

Berhow likes all kinds of fish and eats it regularly, especially paired with citrus garnishes to bring out flavor. He also eats nuts daily, particularly soy, almonds, filberts, Brazil, cashews and peanuts. Sunflower seeds, a rich source of vitamin E, magnesium and selenium, are a regular part of his diet. He eats red meat once or twice a month.

"I eat a lot of chicken, fish and cheese. Not soy cheese. Classical European, Italian and English cheeses," he said. "Cheese and a glass of red wine."

He eats cruciferous vegetables almost daily. Included in his diet are broccoli, cabbage and cauliflower. He reads labels on prepared mustard, noting that the condiment high in whole ground mustard with few other added ingredients is a good source of cruciferous phytonutrients.

True wasabi is also high in nutrients. "Any processing step can add or subtract nutrients, so the closer you eat to whole foods the better," he said. "Cut down on portions, eat more frequently, eat more whole foods and less processed foods. Eat a lot of variety, and you will definitely see improvement in your physical being."

Winkler grew up in a meat-and-potato family. She recalls eating a doughnut and candy bar each day when she was in high school.

"I finished my bachelor's degree and started to think differently about food. No more doughnuts," she said. "I would not say I'm vegetarian, but I've reduced the amount of meat I eat not just for health but also because of the impact of meat on our environment."

She reads food labels thoroughly and likes to test herself on each ingredient and its function in the product.

Her classic stir fry is a fast and nutritious meal she can prepare even faster if she chops and bags vegetables in advance. She also makes black bean burgers, which freeze well.

Winkler eats spinach regularly as a good source of calcium and iron. She has read studies indicating high protein consumption causes the body to excrete calcium.

"We don't need to eat meat to get protein," she said. "Other sources of protein are nuts, whole grains, vegetables. We think we need more protein than we really do."

Winkler would like to see change based on knowledgeable individual decisions, not change mandated by legislation. She would like people to ask more questions in restaurants about the oil used for frying foods. Restaurateurs will respond to public interest, she said.

"I'm concerned about the health of our nation. We all need to eat many fruits and vegetables. You can eat a meal at a fast food restaurant and be stuffed but not eat a single serving of a vegetable," Winkler said.

"A lot of people have the attitude you only have one life and live it up ... but who wants to live the last 20 years of life with ailments. We are living longer but suffering longer."