ENVIRONMENTAL POLLUTANTS AND NUTRITION
Eating Right for a Healthier You: Nuts and Seeds

Background for Extension Educators

Environmental pollutants contribute to an increased risk for chronic diseases including cardiovascular disease, diabetes, and cancer. Researchers at the University of Kentucky have studied how nutrition can modulate the toxicity of environmental pollutants, particularly polychlorinated biphenyls and other chlorinated compounds. This research includes studying how nutrition affects health and disease outcomes associated with exposure to these pollutants. Nutrition researchers have also provided support and guidance by providing critical information on nutrition and health-related issues to meet the needs of individuals and communities affected by environmental pollutants.

UK researchers and others have shown that PCBs and other chlorinated compounds may induce cancer, suppress immune function, alter nervous system performance, disrupt hormone function, produce reproductive abnormalities, and promote cardiovascular and other chronic diseases (1). Most of the current evidence indicates that PCBs cause disease by producing free radicals leading to oxidative stress (1). It is now understood that many disease processes, such as atherosclerosis, cancer, type 2 diabetes, and neurological problems are also associated with increased oxidative stress (1-3).

Phytonutrients are naturally occurring, bioactive compounds found in plant foods that have various disease fighting properties, including antioxidant, anti-inflammatory, anti-tumor and antibacterial properties and protect against cardiovascular disease (4). Those phytonutrients with anti-oxidant properties may provide protection against oxidative stress (5-8). Wise food choices and a healthy, balanced diet, which includes whole grains, fruits, vegetables, legumes, nuts, and seeds can protect against oxidative stress and chronic diseases (9).

Adding plant proteins, like nuts and seeds, to your meal plan contributes phytonutrients, fiber, vitamin E and magnesium, which can reduce the risk of chronic diseases. This program will explain the link between environmental pollutants and disease risk, the health benefits of nuts and seeds, and creative ways to include them in your diet.

The Dietary Guidelines for Americans recommend:

- Eat a variety of foods
- Include five or more fruits and vegetables each day
- Choose three servings of whole grains each day
- Eat lean protein choices
- Balance calories taken in with calories used
Train-the-Trainer

When training volunteers and leaders, who will be presenting programs on Environmental Pollutants and Nutrition, it is important that they can

- Identify environmental pollutants.
- Describe where environmental pollutants are found.
- Define a Superfund site.
- Explain how environmental pollutants negatively impact health by increasing oxidative stress in the body.
- Identify diet changes that may protect against oxidative stress.
- Define a nut and a seed.
- Explain why nuts and seeds are part of a healthy diet.
- Distinguish the fats found in nuts and seeds.
- Demonstrate a serving size of nuts and seeds.
- Define phytonutrient.
- Discuss the beneficial health effects from phytonutrients.
- Provide the nutritional information on common nuts and seeds.
- Select healthy nuts and seeds in the supermarkets.
- Identify proper storage techniques for nuts and seeds.
- Use nuts and seeds in their diet (relate to serving suggestion)

Serving sizes for nuts and seeds

According to the USDA MyPyramid, http://www.mypyramid.gov, a 1/2 ounce serving of nuts or seeds is equivalent to a 1 ounce serving of meat or poultry. This comes to about 12 almonds, 24 pistachios, 7 walnut halves, or 1 level tablespoon of nut butter. One-half ounce would be a good serving size for your snack.

Nuts and some seeds may be counted as the protein in a meal instead of always relying on meat, cheese, or eggs. If you choose to substitute nuts and seeds as the protein in your meal, a 1.5 ounce serving would be equal to the 3 ounce serving of meat, poultry, or fish that is a recommended serving. This substitution is in agreement with the Federal Drug Administration recommendation of 1.5 ounces of nuts and seeds per day as part of a heart healthy diet. It is important to note that this 1.5 ounce portion does not refer to a fluid-ounce cup measure, but to weight. (If you do not have a food scale that weighs in ounces or grams, 1.5 ounces is approximately 1/3 cup.)

Although health publications may recommend a 1.5 ounce serving of nuts for good overall health, it is important to recognize that this may be too much for your height, weight, and activity level. It is also not intended to be calories in addition to your current meal plan. The FDA’s 1.5 ounce daily serving of nuts and seeds applies to almonds, hazelnuts, peanuts, pecans, pine nuts, pistachios, and walnuts. Brazil nuts, cashews, and macadamia nuts are not included in this health claim because they contain more saturated fat.

Evaluation

An assessment tool, Test Your Knowledge: Environmental Pollutants and Nutrition Eating Right for a Healthier You: Nuts and Seeds, has been provided to evaluate the lesson.
References


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