

Sweet Potatoes

1. What does vitamin A do for our bodies? Vitamin C? Vitamin B6? Iron?

Primary-level response:

- Vitamin A helps our body to grow normally, makes our eyes and immune system healthy, supports resistance to infections, and protects us from infections.
- Vitamin C is important to our body in healing wounds. Vitamin C is needed for a strong immune system and healthy gums.
- Vitamin B6 is involved in protein breakdown. It is also essential for red blood cells. The nervous and immune systems need vitamin B6 to function efficiently.
- Iron is a part of many proteins that maintain good health. In humans, iron helps transport oxygen. Low levels of iron limit oxygen delivery to cells making us feel tired.

Secondary-level response:

- Vitamin A helps our body to grow normally, makes our eyes and immune system healthy, and supports resistance to infection. Vitamin A helps with normal vision in low light and protects us from infections by keeping skin and tissues in the mouth, stomach, intestines, and respiratory tract healthy.
- Vitamin C is important to our body in healing wounds. Vitamin C is needed for a strong immune system, healthy gums, and connective tissues.
- Vitamin B6 is needed for more than 100 enzymes involved in protein metabolism. It is also essential for red blood cell metabolism. The nervous and immune systems need vitamin B6 to function efficiently, and it is also needed for the conversion of tryptophan (an amino acid) to niacin (another B vitamin).
- Iron is an integral part of many proteins and enzymes that maintain good health. In humans, iron is an essential component of proteins involved in oxygen transport. It is also essential for the regulation of cell growth and differentiation. A deficiency of iron limits oxygen delivery to cells, resulting in fatigue, poor work performance, and decreased immunity. On the other hand, excess amounts of iron can result in toxicity and even death.

2. What are some potential health problems associated with vitamin A deficiency?

Primary-level response:

We need vitamin A to see in the dark and to keep our skin, lungs, and intestines healthy.

Secondary-level response:

A deficiency of vitamin A will cause night blindness; this is one of the earliest signs of a vitamin A deficiency. Bacterial contamination of the eye's cornea, which can cause permanent scarring, can also result from vitamin A deficiency. This symptom is due to a lack of vitamin A for control of gene expression. Lack of vitamin A can also cause changes to the skin's appearance and the function of lungs and intestinal tissues.

3. What is the difference between a tuber and a root?

Primary/Secondary-level response:

A root is an actual root of the plant, whereas a tuber is a part of the plant's stem that grows underground.

4. How are sweet potatoes similar to and different from yams? Include nutrition content, texture, skin, and flesh colors, and geographic regions where each are found.

Primary/Secondary-level response:

Sweet potatoes are roots, feel smooth and range in color from yellow to dark purple to orange, which indicates that they are a good source of beta-carotene. They are moist in consistency and sweet in flavor. Yams are tubers, feel rough, and range in color from white to dark brown, which indicates their low level of beta-carotene and other nutrients. They can taste dry and starchy. Sweet potatoes are grown in the United States, whereas yams are imported from the Caribbean.

5. Research products that George Washington Carver made using sweet potatoes. How have those products affected or revolutionized everyday life?

The first part of this question may be found in the newsletter: The Story of George Washington Carver.

Primary-level response:

George Washington Carver created new uses for sweet potatoes. He made about 100 new products including: flour, ink, starch, synthetic rubber, tapioca, vinegar, a type of glue for postage stamps, and 500 shades of textile dye. These products changed everyday life because having them made certain kinds of work easier (e.g., stamps, synthetic rubber) and also made these kinds of products less scarce (flour, ink, starch, vinegar). Growing sweet potatoes to make these products became an alternative to other major crops like cotton and they were good for the farmers and for the land.

Secondary-level response:

George Washington Carver was an African American who revolutionized Southern agriculture with the development of a crop rotation method that helped to replenish the soil with nutrients, allowing farmers to re-plant the same land again and again. Carver was also known for creating new uses for sweet potatoes. Around 1914, the boll weevil (an insect) had invaded Southern farms and ruined many cotton growers. Carver introduced Southern growers to peanuts and sweet potatoes and showed them how they could make other products out of these crops. He made about 300 new products from peanuts and 100 new products from sweet potatoes including: flour, ink, starch, molasses, synthetic rubber, tapioca, vinegar, a type of glue for postage stamps, and 500 shades of textile dye. Growing sweet potatoes to make these products helped revolutionize everyday life, by offering alternative crops to cotton that were beneficial for both farmers and for the land. It gave farmers another source of income. They also made certain kinds of work easier and similar products less scarce.

6. Which former U.S. President was a sweet potato farmer before taking office?

Primary/Secondary-level response:

George Washington

7. What makes the flesh of a sweet potato so orange?

Primary/Secondary-level response:

The bright orange color of sweet potatoes tips us off to their carotenoids. Carotenoids are antioxidants that may help prevent some types of cancer and



Network for a Healthy California

diseases of aging by disabling the free radicals that damage the body's cells and tissues

Sources:

www.cayam.com

www.sweetpotato.org

www.ncsweetpotatoes.com

www.fruitsandveggiesmatter.gov/month/sweet_potato.html

www.biography.com/articles/George-Washington-Carver-9240299?part=1

Updated: April 2011



This material was produced by the California Department of Public Health's *Network for a Healthy California* with funding from USDA SNAP, known in California as *CalFresh* (formerly Food Stamps). These institutions are equal opportunity providers and employers. *CalFresh* provides assistance to low-income households and can help buy nutritious foods for better health. For *CalFresh* information, call 1-877-847-3663. For important nutrition information, visit www.cachampionsforchange.net.