

# POTATO GREENING FACT CHECK



**Q:** Will consuming potatoes with green patches make you sick?

**A:** No. Green spots or patches on potatoes (known as “greening”) are just chlorophyll, a harmless compound found in all green plants.<sup>1</sup> At the same time, when a potato turns green, there’s usually an increase in a compound called solanine. If eaten in very large amounts, solanine can cause gastrointestinal symptoms.<sup>1-3</sup> Just to be safe, if you see a green spot on a potato, cut it out and eat the rest. It’s also helpful to store potatoes in a cool, dark place.

## FACTS

- **Greening occurs naturally in potatoes:** Greening can occur any time potatoes are exposed to light—in the field, in storage, on grocery store shelves, or at home. Greening happens due to the formation of chlorophyll, a pigment found in many plant foods, including lettuce, spinach, and broccoli. Chlorophyll itself is harmless and tasteless, but in potatoes, chlorophyll formation is associated with the formation of **glycoalkaloids**, most notably **solanine**. Increased solanine levels can cause potatoes to taste bitter, and if eaten in very high quantities, solanine can cause gastrointestinal symptoms like nausea and vomiting.<sup>1,2</sup>
- **Only light exposure causes chlorophyll formation, but other factors (including light) can increase glycoalkaloids like solanine in potatoes.** These include<sup>1</sup>:
  - Bruising, cutting, or slicing during or after harvesting.
  - Processing, particularly if it removes water (e.g., making chips or fries), because it can concentrate the glycoalkaloids.
  - Storage under very hot or very cold conditions or excessive exposure to sunlight.
- **Potatoes as typically eaten contain little solanine.** Breeding programs have produced potatoes with very low levels of solanine for commercial use.<sup>2</sup> The highest levels of glycoalkaloids are typically found in the sprouts, flowers, leaves, or other actively growing areas of the tuber, which aren’t the parts of potatoes people typically eat.<sup>1</sup> Concentrations of glycoalkaloids are also higher in immature potatoes and decrease as the tuber grows.<sup>1</sup>
- **The FDA sets limits on glycoalkaloids:** The FDA considers the maximum acceptable glycoalkaloid content to be 20-25 mg/100 g fresh potato weight (or 200-250 parts per million (ppm)). A person would have to consume much more solanine than is ever found in a serving of potatoes for it to be toxic. For example, assuming that a potato contained glycoalkaloids at the advisory level of 200 ppm, a 176-pound person (80 kg) would have to consume over 2 pounds (1 kg) of the affected areas of a potato in a serving to trigger a toxic response. It’s also worth noting that potatoes with this high level of glycoalkaloids would have an unpleasant, bitter, burning taste.<sup>4</sup>
- **Minimizing glycoalkaloid formation:** Strategies can be employed at harvesting and post-harvesting to reduce glycoalkaloid formation in potatoes.<sup>3</sup>
  - **Harvesting:**
    - Keep tubers well covered with soil during growing.
    - Allow tubers to mature before harvest. Avoid harvesting on warm sunny days.
    - Avoid handling methods that cause bruising or physical damage to potatoes.
  - **Post-Harvesting:**
    - Store in a cool, dark place.
    - If you see a spot of green on a potato, cut it out and eat the rest.

## REFERENCES

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2. University of Nebraska-Lincoln Extension, Institute of Agriculture and Natural Resources. Green potatoes: the Problem and the Solution. [https://digitalcommons.unl.edu/cgi/viewcontent.cgi?params=/context/extensionhist/article/1089/&path\\_info=g1437.pdf](https://digitalcommons.unl.edu/cgi/viewcontent.cgi?params=/context/extensionhist/article/1089/&path_info=g1437.pdf). Accessed April 4, 2025.
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