

# **Poison Ivy and other Toxic Plants**

Meets education Standards:  
Indiana Standard 4: The Living Environment 5.4.7 and 7.4.14  
Illinois Learning Standards: Stage F – Science, 12B

## **Objective:**

To educate the student to be able to identify poison ivy and be familiar with preventives and treatments.

After completing this lesson, the student should be able to:

- Identify poison ivy
- Be aware of poison ivy's place in the ecosystem
- Know preventive measures
- Be able to reduce symptoms
- Be familiar with the physiology of contact dermatitis
- Know myths vs. facts

## **Lesson Plan:**

- I. Identification
  - A. Interactive website
    1. Tutorial
    2. Visual quiz
  - B. Table 1
  - C. Range of habitat
- II. Ecological Role
- III. Contact dermatitis
  - A. Preventive measures
    1. Clothing
    2. Barrier creams
  - B. Symptoms
    1. Phase I
    2. Phase II
  - C. Treatment
    1. Soap and water
    2. Topical ointments
- IV. Myths and Facts
- V. Other Toxic Plants

**Interactive websites:**

Review photographs and take the Quiz at: [www.cattail.nu/ivy/](http://www.cattail.nu/ivy/)

Read more at: [www.kidshealth.org/kid/health\\_problems/skin/poison\\_ivy.html](http://www.kidshealth.org/kid/health_problems/skin/poison_ivy.html)

**Range and habitat**

Poison ivy can be found in the South from Florida to Arizona and in the North from the Atlantic coast west to Nebraska and north to Canada. It is particularly abundant in the Lake Michigan area.

Poison ivy can grow in a variety of habitats. It grows the best in wooded areas with dapples of sunlight, but can be found growing in prairies. It is very commonly found at the edge of a meadow or wooded area, where it gets partial sunlight. Wherever the land has been disturbed, poison ivy is one of the first plants to take root.

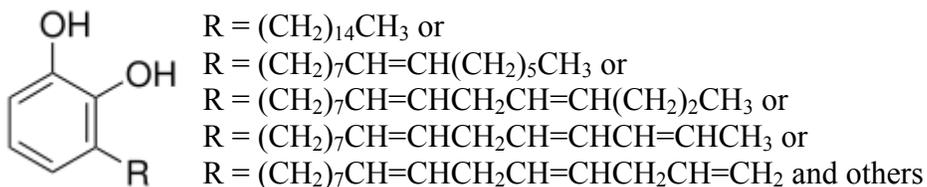
**Ecological role**

The toxins of poison ivy do not generally affect animals. The plant is an important food source for wildlife. Deer feed in its nutritious leaves and berries. Birds eat the berries and because of a tough root system, poison ivy is often planted in dune areas to help prevent erosion.

In the past, poison ivy has occasionally been used medicinally. Precautions must be taken because it is an extremely poisonous plant and only a qualified practitioner should use it.

**Table 1**  
**Urushiol**

Is an oil found in plants of the [Family Anacardiaceae](#), especially *Toxicodendron* spp. (e.g. [poison oak](#), [poison ivy](#), and [poison sumac](#)). It is also found in the nut shell of [cashew fruit](#) (*Anacardium occidentale*). It causes an allergic [skin](#) rash on contact, known as [urushiol-induced contact dermatitis](#). The name comes from the [Japanese](#) word *urushi*, which denotes a [lacquer](#) produced in [East Asia](#) from the sap of *kiurushi* trees ([Lacquer Tree](#)). The oxidation and polymerization of urushiol in the tree's sap in the presence of moisture allows it to form a hard lacquer, which is used to produce traditional Chinese and Japanese lacquerwares



From: Wikipedia Online Encyclopedia

## **Contact Allergic Dermatitis**

An allergic reaction when direct contact has been made to the source irritant.

### **Preventive measures:**

Know what plants are toxic! Wear protective clothing, long sleeved shirts, long pants with socks and gloves. Washing clothing in regular laundry detergent will decontaminate them. Touching a plant is not enough to cause an allergic response; the plant must be bruised so that the sap can be allowed to escape. Therefore, you are more likely to get poison ivy in the spring, when the young leaves are easily bruised.

Wash pets that may have the sap on their fur in soapy water. Be sure to wear gloves when you do this.

Barrier creams can be used as a preventive measure. They have a varying effect on each individual, but research shows that they can be a good preventive measure.

### **Phase I & II**

When you first contact the allergen, your body develops antibodies and your system will become sensitive to it.

Upon repeated contact with the allergen, your body will have a noticeable skin reaction. The resulting rash will vary depending on your sensitivity, but usually will show a rash within 2 or 3 days, but rarely less than 12 hours. Blisters will form and clear fluid. You cannot get poison ivy rash from this liquid. Care should be taken to keep these blisters clean and scratching needs to be avoided, otherwise, the blisters could become infected.

### **Treatments**

Once you have made contact with poison ivy, the best thing to do is to wash right away with soap and cold water. Calamine lotion is sometimes helpful to quiet the itch and dry the blisters. Pharmaceutical products are also available to help soothe the rash and itching.

<b>Myths</b>	<b>Facts</b>
Only the leaves of poison ivy/oak/sumac can cause the rash	Nearly all parts of the plant, including stems, roots, flowers, berries and leaves contain urushiol.
Wearing long sleeves, gloves and pants will always prevent a reaction to poison ivy.	Wearing these items will decrease the likelihood of a reaction; only heavy duty vinyl gloves are effective.
Burning is a safe way to get rid of poison ivy.	The urushiol in the plants will be carried in the smoke, making it highly toxic.
Dead poison ivy/oak/sumac are no longer toxic.	Urushiol remains active for at least 5 years in dead plants.
Rubbing weeds on the skin can help the rash.	Jewelweed, a folklore remedy, has no real effect on easing the blisters.
Antihistamines help the rash and reduce the itching.	No study has ever proven that antihistamines help the itching of a rash.
You can spread the rash from one part of your body to another if the part you touch still has urushiol on it.	The blister fluid can make the rash spread from one part of the body to another or from one person to another.
The blister fluid does not contain urushiol, so it cannot spread the rash.	The rash can spread
Once allergic, always allergic.	Allergic reaction seems to decrease with age. Also, if you do not have contact with urushiol for at least a year, you may be less likely to have a reaction.
	From Zanafel Laboratories

Other Plants to avoid:

Wood Nettle (*Laportea Canadensis*) will cause a very painful rash

Nightshade berries (*Solanun spp.*) the berries are deadly

Wild cherry and wild plum contain cyanide

Celandine poppy (*Stylophorum diphyllum*) causes severe gastroenteritis and maybe death

European buckthorn (*Rhamnus cathartica*) causes severe diarrhea

**Remember: Unless you are a plant expert,  
Never ever eat any wild plant!**

## **Test Yourself**

1. What time of year are you most likely to get poison ivy?
  - A. spring
  - B. fall
  - C. winter
  - D. summer
  
2. The best way to avoid a poison ivy rash is to
  - A. burn the plants
  - B. avoid the woods
  - C. know what the plant looks like
  - D. avoid people with the rash
  
3. Which of the following will help protect you from poison ivy?
  - A. vinyl gloves
  - B. long pants
  - C. preventive creams
  - D. all of the above
  
4. What treatment should you do first after contacting poison ivy?
  - A. use an anti-itch cream
  - B. rubbing weeds on the skin
  - C. taking antihistamines
  - D. washing with cold water and soap
  
5. Why would you wash with cold water instead of warm water?
  - A. it is more comfortable
  - B. cold water keeps your pores closed
  - C. cold water is easier to find and use
  - D. none of the above
  
6.     T     F     All plants with three leaf clusters are poisonous
  
7.     T     F     Once you are allergic, you are always allergic.
  
8.     T     F     The group of chemicals in poison ivy that makes you itch is called urushiol.
  
9.     T     F     Poison ivy is the only plant in the *Toxicodendron* genus.
  
10.    T     F     Poison ivy plants grow best in partial shade.

## **Glossary**

**allergy:** an inflammatory response produced by the body in response to invasion by foreign materials

**antihistamine:** a natural or artificial chemical that draws excess fluids away from damaged or irritated cells.

**dermatitis:** a non infectious inflammation of the skin often characterized by rose colored patches.

**epidermis:** the outermost layer of skin.

**irritant:** a foreign material that annoys or chafes when in contact with body tissue

**topical:** an application to the top layer of skin

**Toxicodendron:** the genus of plants which includes poison ivy and its relatives

**urushiol:** the component in a *Toxicodendron* plant that contains the allergen and irritant