



Poison ivy, poison oak and poison sumac

Poison ivy is the name commonly applied to several species (poison ivy, poison oak, western poison oak and poison sumac) of the cashew or sumac family of plants, which are native to the temperate regions of North America. Within the resin ducts of their leaves, flowers, barks and fruits, they all produce an almost non-volatile phenolic substance called urushiol.

1. The hazard common to these plants is allergic contact dermatitis, which results from urushiol irritating the skin. Whether a person develops dermatitis depends on the person's sensitivity to urushiol. Dermatitis can result from any of the following occurrences:
 - Bodily contact with any part of the plant
 - Exposure of any part of the body to smoke from the burning plant
 - Contact with clothing or other objects that have previously been in contact with the plant
2. Poison ivy, poison oak and poison sumac collectively are the most common cause of allergic contact dermatitis in the United States. In many areas they are a leading

cause of occupational dermatitis, affecting surveyors, firefighters, park and highway maintenance workers, utility employees, farm laborers and other employees whose occupations demand outdoor work.

3. Common myths about poison ivy, poison oak and poison sumac are:
 - Once allergic, always allergic.
 - Just touching a leaf is enough to promote a rash.
 - You can't get a poison oak or poison ivy rash in the winter.
 - Ooze from the blisters spreads the rash.
 - Eating the leaves can make you immune. (Actually, this not only fails to provide protection, it can cause death.)
4. This data sheet will discuss sensitization of the individual to the poison, methods of prevention and first aid treatment.

Dermatitis sensitivity

5. In North America, more than 60 varieties of plants can cause local irritations resulting in contact dermatitis. However, most people

are immune to the irritating action of a majority of these plants. In the case of poison ivy, poison oak and poison sumac, almost no one is completely immune to their irritation. At least 50 percent of those who come in contact with these plants will develop severe dermatitis. Only 15-25 percent will respond with incapacitating swelling, blistering eruptions requiring oral corticosteroids and significant loss of time from work.

6. No one is born sensitive to poison ivy; the sensitivity is acquired by contact with the plants. These first contacts sensitize the person, so future contact will lead to allergic contact dermatitis. Therefore, immunity on one occasion does not necessarily mean the person will be immune later. Some people develop sensitivity to these plants after several exposures. Even after the person has become sensitized, not all further exposures will necessarily cause a dermatitis outbreak.

Contracting dermatitis

7. As mentioned, the irritating agent urushiol is contained in the oily secretion, or oleoresin, of these plants. The resin droplets of the plants are so small they can be conveyed by insects or clothing. Also, because urushiol is not very volatile, these small droplets can be carried easily by smoke. At times dermatitis spreads from one person to another by bodily contact. Scratching further spreads dermatitis to various parts of the body.
8. Dermatitis may appear from one to three days after contact with the plant or resin. (If it does not appear on the third day and does so later, it may be due to oleoresin that remained on clothing and later contacted the skin.) The affected area at first becomes red, swollen and intensely itchy. Later, small blisters appear, possibly uniting to form large ones. The redness and blisters often appear as streaks in a linear arrangement. (If the dermatitis reaches this latter stage, seek medical treatment.)
9. The rash usually lasts a week or less. However, in highly sensitized individuals, it may last two to three weeks. Once the rash has developed, compresses and soothing lotions may keep it from spreading

and reduce the itching, but the rash will remain until it disappears spontaneously. There are, however, some reports of controlling the rash with drugs such as adrenocorticotrophic hormone.

Prevention

10. Avoidance is the key to effective prevention. If possible, learn to identify poison ivy and stay away from it. If it is necessary to work in the area of poisonous plants, wear protective clothing, use a suitable barrier preparation, and decontaminate after any known exposure and at the end of the day.

Identifying poison ivy

11. If a plant looks suspicious you can determine whether it is poison ivy, poison oak or poison sumac by using the "black-spot test." Grasp a leaf of the plant with a piece of paper, then crush it with a rock. The sap of poison ivy, poison oak and poison sumac will turn dark brown in 10 minutes. In a day, the spot will turn black.
12. When young, poison ivy is low and woody but later may become a high-climbing or creeping vine. It usually is found in uncultivated areas such as at woodland borders, along fences or walls, or around isolated trees or poles. Rarely does it occur on elevations above 5,000 feet. In North America, it is most common in the Midwest and along the eastern seaboard, south to Florida and the Gulf Coast to Texas.
13. Poison ivy bears dark green leaves composed of three oval-shaped leaflets, which may be slightly or entirely toothed along the edges (Table 1). The leaves have an oily appearance. This, plus their green color and three-leaf grouping, serves as an easy mark of identification. When mature, the plants bear a white waxy berry that, if touched, also may cause allergic dermatitis. The leaves turn scarlet early in the fall.
14. The poison oak (oakleaf poison ivy) plant is a small branching shrub, 3-6 feet tall. Like poison ivy, it is seldom found in cultivated areas. This type is found in the southeastern United States.

Table 1. Common poison ivy



	Where it grows	In all parts of the United States except the extreme Southwest – and in all Canadian provinces.
	How it grows	As a woody vine, the vine stems look like “fuzzy ropes.” As trailing shrubs, mostly on the ground. As erect woody shrubs, without supports.
	Leaves	Always in groups of three leaflets. The edges may be quite smooth or notched. Green through spring and summer, colorful in the early fall; with scarlet, orange and russet shades.
	Flowers	Small white flowers in clusters, growing from the side of the stem, above a leaf.
	Fruit	White or creamy and usually wax-like, but they can have a downy look. They have distinctive lines, like a peeled orange.

Table 2. Poison oak (Oakleaf poison ivy)

	Where it grows	Throughout the southeastern United States – from New Jersey into eastern Texas.
	How it grows	Usually as a low-growing shrub. The slender branches often have a downy look.
	Leaves	Always in groups of three leaflets. Center leaflet usually has an oak-leaf look. The side leaves may have uneven edges and a downy appearance on the top surfaces
	Flowers	The flowers look and grow like those on common poison ivy.
	Fruit	Also like common poison ivy but more likely to have a downy appearance.

15. The foliage of poison oak occurs in groups of three leaflets, which are somewhat hairy and lobed or deeply toothed (Table 2). (Although its leaves partially resemble oak leaves, poison oak is a variety of poison ivy, not a type of oak tree.) The fruit is a whitish, wax-like berry, which also is irritating to the touch.

16. Western poison oak is usually an erect shrub from 3 inches - 6 feet high. In forests, poison oak may be a vine up to 30 feet tall. Its leaves appear in groups of three oval or roundish leaflets that are variously lobed (Table 3). In other respects, it is much like any other variety of poison ivy. It is found west of the Rockies, from California to Canada.

17. The poison sumac (poison dogwood) plant is a shrub or small tree that sometimes reaches a height of 25 feet. It grows in swampy areas

and is most prevalent in southeastern North America. The leaves are somewhat like those of the ash tree or elder bush, and they occur in groups of anywhere from seven to 13 leaves that have a smooth, oily appearance (Table 4). The margins of the leaves are never toothed.

18. In spring, the new leaves on the poison sumac are bright orange with a velvety covering. Upon maturity, they become dark green and glossy, then gradually turn a brilliant red, orange or russet in the fall. The flowers are minute yellow blossoms growing in long, narrow, drooping clusters. The berries are a smooth ivory white, sometimes with a yellowish cast. They are slightly elongated.

19. Poison sumac can be distinguished from the non-poisonous variety of sumac by the way the

Table 3. Western poison oak



	Where it grows	All along the Pacific Coast, from Southern California into Canada.
	How it grows	Most often as an upright shrub, with several woody stems growing from the ground. In open fields it can grow into large spreading clumps – sometimes 6 feet tall. In forests it becomes a vine and grows upward for 25-30 feet.
	Leaves	Always grow in groups of three leaflets. The center leaflet is likely to be similar on both sides and have a definite oak-leaf look. The side of the leaflets often take irregular shapes. Sometimes all of the leaflets have smooth edges. They are glossy and leather-like.
	Flowers	They grow and are shaped much like common poison ivy flowers. They are about 1 inch in diameter and greenish white.
	Fruit	Creamy or greenish white, the size of small currents. The segments are clearly defined with lines.

Table 4. Poison sumac

	Where it grows	Damp areas of almost every state. The general prevalence is east of the Mississippi.
	How it grows	As a coarse woody shrub or as a small tree. Never as a vine.
	Leaves	Seven to 13 leaflets, arranged as pairs along a central midrib with a single leaflet at the end. They have a smooth texture, bright orange in the spring. They turn to a dark glossy green with scarlet midribs in summer. Early in the fall they have red-orange and russet colors.
	Flowers	Yellowish green, they hang in long clusters from the axis of the leaves.
	Fruit	Ivory white or green colored – similar to the fruit of the other poisonous plants, but they hang in loose clusters – 10-12 inches long. Non-poisonous sumacs have red fruit and seed clusters at the ends of branches.

blossom and fruit spring from the notch between the leaves and the stem. The non-poisonous shrub is a terminal bearing variety; the fruit appears at the end of the branch instead of in the notch of the stem. Also, the number of leaves on the harmless sumac varies from nine to 21, or even as high as 31, while the flower clusters are dense and upright, compared with the droopy clusters of poison sumac. Finally, non-poisonous sumacs bear red, not white, berries.

Eradication

20. Although the ideal method of prevention is to completely avoid the plant and any oleoresin-con-

taminated materials, this is seldom practical. The only other sure method of prevention is eradication.

- 21.** A possible eradication method is to use herbicides. For the latest recommendation, consult the appropriate government authorities. Carefully follow the directions on the herbicides and use proper personal protection.
- 22.** The other method of eradication is digging or grubbing. Repeatedly go over the ground to get all the long roots and tendrils. If the plants are growing up the trunks of trees or poles, chop the stems through at the base, then strip them from the trees or poles.

- 23.** The proper method of disposal is to bury the grubbed plants. The grubbed plants should not be burned, because the smoke from burning the plants (or contaminated clothing) can spread the urushiol toxin. If burning is the only method, keep people away from the smoke.
- 24.** Grubbing is the less preferable method because it is no more effective than using an herbicide, and the workers who are grubbing are exposed to dermatitis.

Protection

- 25.** None of the “preventive” measures can give complete protection from the possibility of running into unexpected poison ivy plants, so it is a good idea to give employees additional protection. There are two recommended types of protection: barrier creams and protective clothing.
- 26.** Apply a silicone protective cream to the hands, arms, face and neck, and other exposed portions of the body. The protective cream should be applied before the employee starts work for the day, and again after each washing of the hands or other exposed areas of the body during the workday.
- 27.** The perfect barrier film has not been found. Therefore, if direct skin exposure is anticipated, the method of choice is to wear protective clothing.
- 28.** Wear heavy leather gauntlet gloves. Tuck shirt sleeves inside the gauntlet, and keep the shirt collar up to prevent any contact with the plants. Take particular care not to touch the gloves or clothing while removing them, because the irritating oils have been known to remain on clothing for as long as a year.
- 29.** Tie the bottoms of trousers at the ankles, and make certain socks are pulled up beyond the point at which the trousers are tied. Leather leggings give good protection, but be careful not to touch them until they have been cleaned.
- 30.** After contaminated clothing is removed, it should be dry-cleaned because soap and water are not always effective. The dry cleaner should be warned that the clothes have been exposed to poison ivy.

First aid

- 31.** If poison ivy, poison oak or poison sumac has touched any part of the body, wash that part immediately, using plenty of soap and tepid water or a liberal amount of rubbing alcohol (not swab-type dabs). The oleoresin enters the skin so rapidly that washing may be effective only if done within 5-10 minutes after exposure. Wash the affected area five or six times, then treat it with a 5 percent alcoholic solution (5 percent tincture) of ferric chloride. (This solution may be obtained from a pharmacy.) Should eyes or genitals become exposed, consult a physician immediately.
- 32.** When washing the hands with a soap and water solution, do not use a brush or a rough cloth, as it may irritate the skin and increase the danger of dermatitis. If rubbing alcohol is available, use it to rub the affected part (except for eyes or genitals) after the soap and water treatment. Rinse with clear water.
- 33.** For relief from the severe itching, apply calamine lotion. Dab this on with a cotton sponge, and allow it to dry. Never wipe or rub lotions and other such preparations, as they may spread the dermatitis.
- 34.** Another method of relief is to immerse the affected area in plain water hot enough to redden the skin but not burn it. Heat releases histamine, the substance in the skin’s cells that causes itching. As the histamine is released, the itching is initially intense, but the cells become depleted of histamine, providing relief for up to 8 hours.
- 35.** Another good home remedy is to apply, after proper washing, hourly applications of 1-2 teaspoons of sodium bicarbonate in a cup of water.

- 36.** Do not use non-prescription hydrocortisone cream.
Do not rub or scratch the rash.
- 37.** After applying lotion, protect the affected parts with a light dressing of gauze until a physician can be seen.

Sources of information

National Safety Council, Cutting and clearing vegetation (data sheet 575), Itasca, IL, National Safety Council, 2016.

First Aid and CPR, Itasca, IL, National Safety Council.

Tree trimming (data sheet 244), Itasca, IL, National Safety Council, 2016.

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