

Venomous Plants and Animals

On average, each day approximately 40 people visit an emergency department for an injury due to contact with venomous plants or animals. The overwhelming majority of incidents involve being stung by a bee, wasp, or hornet. Individuals who have an allergy or suspect they have an allergy should consult with their doctor and take the necessary precautions.

Results

During the 2005/06 fiscal year, there were a total of 13,607 emergency department visits and 125 hospitalizations for injuries due to contact with venomous plants and animals (See Methods Section for Data Sources). These numbers translate into provincial rates of 108.3 per 100,000 population for emergency department visits and 1.0 per 100,000 for hospitalizations (Table 1).

Due to the relatively low incidence of hospitalizations for this type of injury, the remainder of this report will focus on emergency department visits.

Overall, males represented a slightly higher proportion of emergency department visits (Figure 1). In addition, injury rates varied by region, with the highest rate of emergency department visits for injuries due to contact with venomous plants and animals, reported in the south west region of Ontario (Table 2).

Injuries from contact with hornets, wasps, and bees were the most common, accounting for over 90% of all injuries (Figure 2). Injuries due to contact with snakes and lizards as well as contact with venomous spiders were the next most common, though accounted for less than 1% of all injuries requiring a visit to the emergency department. The majority of cases occurred during the summer months through September (Figure 3).

Over 90% of individuals who visited an emergency department for injuries due to contact with venomous plants and animals were discharged to their place of residence. Close to 5% were triaged and then left the emergency department. These individuals were not seen by a physician or primary care provider. Fewer

FIGURE 1. Emergency department visits for injuries due to contact with venomous plants and animals (Ontario, 2005/2006)

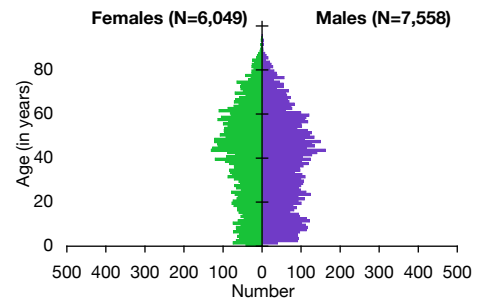


FIGURE 2. External Cause of Injury (Ontario, 2005/2006)

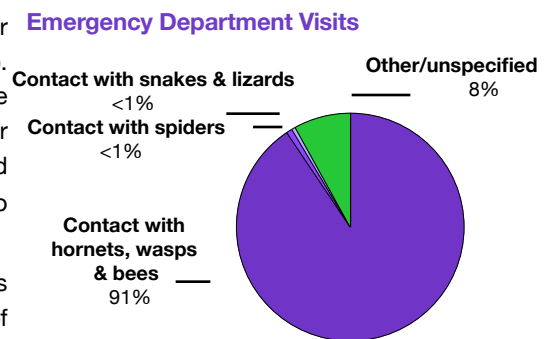


FIGURE 3. Emergency department visits for contact with venomous plants and animals by month (Ontario, 2005/06)

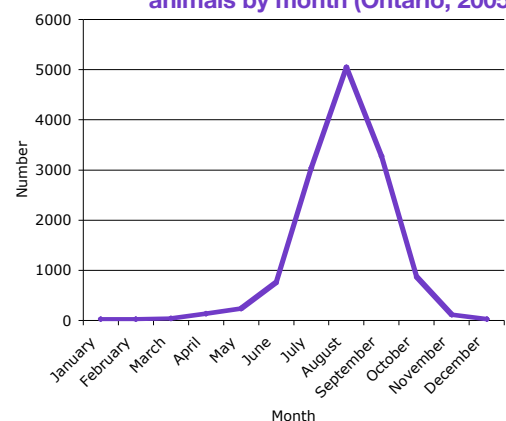


TABLE 1. Regional comparison of injuries from venomous plants & animals (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits								
Number	3,319	2,114	1,485	2,405	1,143	1,937	941	13,607
Rate per 100,000^a	211.5	177.5	63.2	109.2	42.8	115.2	108.5	108.3
Average Age	38.56	38.11	37.37	38.37	41.8	39.95	38.99	38.84
% Male	53	56	56	57	54	56	59	56

a. Age-standardized rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 263 emergency department visits.



Ontario Injury Prevention Resource Centre



Ontario Injury Prevention Resource Centre

1-888-537-7777
info@oninjuryresources.ca
www.OnInjuryResources.ca

Produced by

SMARTRISK



SAUVE-QUI-PENSE
preventing injury with smart thinking

in collaboration with



Ontario Injury Compass

is produced by

SMARTRISK

with support from

The Ontario Public

Health Association

and

The Government of Ontario



Edited by

Philip Groff, PhD

Director,

Research and Evaluation

Ontario Injury Prevention Resource

Centre at SMARTRISK

(416) 596-2718

pgroff@smartrisk.ca

Principal Analyst

Pamela Farmer, MSc

Research Associate

Ontario Injury Prevention Resource

Centre at SMARTRISK

(416) 596-2720

pfarmer@smartrisk.ca



Ontario Injury Prevention
Resource Centre

1-888-537-7777

info@oninjuryresources.ca

www.OnInjuryResources.ca

To subscribe to
Ontario Injury Compass
please email your request to:

compass@oninjuryresources.ca

TABLE 2. Regional comparison of injuries from venomous plants & animals (Ontario, 2005/06)

	South West	Central South	Central West	Central East	Toronto	East	North	Ontario
Emergency Department Visits- Rate per 100,000^a (Number)								
45-49 years	244.8 (296)	197.3 (183)	67 (121)	111 (199)	53.1 (101)	148.1 (195)	112.1 (80)	123.9 (1198)
50-54 years	226.2 (240)	185.8 (151)	68 (102)	125.3 (187)	54.4 (90)	127.9 (147)	125.2 (79)	122 (1013)
55-59 years	267.8 (251)	216.9 (157)	98 (125)	142.9 (180)	57.9 (82)	143.2 (146)	141.5 (80)	144.1 (1037)
60-64 years	248.8 (182)	197 (112)	68.5 (63)	161.3 (148)	54.1 (57)	166.7 (129)	129.5 (59)	141.8 (769)
65-69 years	241.5 (147)	164.3 (78)	96.4 (68)	148.7 (113)	72 (67)	138.5 (87)	131.5 (51)	140.6 (632)

a. Age-specific rate per 100,000 population. Note: Region of residence unknown/outside of Ontario for 263 emergency department visits.

than 1% of individuals died after arrival in the emergency department.

Discussion

This Compass highlights patterns of Ontario emergency department visits for injuries due to contact with venomous plants and animals. The vast majority of emergency department cases are for treatment of bee, wasp, and hornet stings; however, it is important to note that the arrival of spring and summer is also associated with the increased likelihood of being exposed to weeds such as poison ivy and poison oak.

For individuals whose professions involve working outdoors, poison ivy and poison oak are a major cause of occupational contact dermatitis,¹ as allergic contact dermatitis affects millions of individuals in North America each year.²

Almost everyone has been stung by an insect at least once. For most individuals, the outcome of having been stung is temporary pain; however some individuals are highly allergic to these types of injuries.³

Although the discussion of bee, wasp, and hornet stings may not be a top priority in many injury prevention circles, the relatively large number of emergency department visits in Ontario each year for treatment and the fact that for some, this type of injury can be life threatening, warrants the inclusion of some discussion on the prevention of these kinds of injuries. The following section on managing the risk will focus on ways in which public health can work with the community to manage the risk of Ontario residents for this type of injury.

Managing the risk

Wasp and bee stings can be painful and, for some individuals, life threatening.³ To reduce individuals' risk, public health can work with schools, camps, community centres, and other community agencies, to develop and implement preventive strategies. Educating the public on the steps to take if an individual is stung is especially important for those working outdoors and those working with children. Public health can emphasize the following points:

- ❖ If you suspect you or your child/family member is allergic to bee stings, get tested immediately.⁴
- ❖ Avoid wearing perfume/strong scents in areas of bee activity as they are attracted to these odours.^{5,6}
- ❖ Avoid going barefoot when walking on vegetation, especially clover or flowering plants.⁵
- ❖ Avoid wearing bright colours or patterns.^{5,6}
- ❖ Keep areas clean of food and garbage.⁵
- ❖ When a bee or wasp lands on skin, wait as it will often fly away without issue. If necessary, use a piece of paper to gently brush it away.⁵
- ❖ If a bee enters a vehicle, stop the car slowly and open all windows.⁶
- ❖ Before swimming, remove all bees trapped on the surface of the water.⁵

If an individual is stung:

- ❖ Have someone stay with that person to ensure there is no allergic response.
- ❖ Wash the injured site with soap and water.
- ❖ Wipe a piece of gauze or run a fingernail over the area to remove the stinger. Never use tweezers or pinch the area as this can cause more venom to be released.⁶
- ❖ Apply ice.⁶

If an individual has an allergic reaction to being stung or is having difficulty breathing, is wheezing, dizzy, or has swelling in the face and neck (or other parts of the body), get medical attention immediately.⁶

For Further Information

National Center for Injury Prevention and Control www.cdc.gov

References

1. Epstein WL. Occupational poison ivy and oak dermatitis. *Dermatol Clin* 1994; 12(3):511-6.
2. Gladman AC. Toxicodendron dermatitis: poison ivy, oak, and sumac. *Wilderness Environ Med* 2006; 17(2):120-8.
3. Ellis AK, Day JH. Clinical reactivity to insect stings. *Curr Opin Allergy Clin Immunol* 2005; 5(4):349-54.
4. Bonifazi F, Jutel M, Bilo BM, Birnbaum J, Muller U, et al. Prevention and treatment of hymenoptera venom allergy: guidelines for clinical practice. *Allergy* 2005; 60(12):1459-70.
5. West Virginia University. About Bee and Wasp Stings. <http://www.wvu.edu/~agexten/wildlife/bees.htm>
6. Centers for Disease Control and Prevention. First Aid for Bee and Insect Stings. <http://www.cdc.gov/>

Methods

Emergency department data were obtained from the National Ambulatory Care Reporting System and acute care hospitalization data were obtained from the Discharge Abstract Database at the Canadian Institute for Health Information for the 2005/06 fiscal year. ICD-10 coding (X20-X29) was used to isolate all emergency department visits and hospitalizations for injuries due to contact with venomous plants and animals. Note that some persons were seen in an emergency department and then admitted to hospital; however, persons can be admitted to hospital without visiting an emergency department. Regions were defined according to place of residence using the Ontario Ministry of Health Region Codes. Deaths occurring outside of the hospital setting were not included in this analysis.