

Iowa Governor's Safety & Health Conference

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Environmental Hazards

Plants, Animals, and
Arthropods, Oh My!

Background

- 1990 Graduate Luther College, Decorah, Iowa
- 1994 – Graduate University of Iowa Medical School
- 9 years – Family Practice
- 3 years - Pain Clinic
- 13 years – Occupational Medicine
- Current – UnityPoint Health - DSM
- Occupational Health

Outline

- Poison ivy
- Poison oak
- Wild parsnip
- Ticks
- Fleas
- Animal bites (spiders, dogs, etc.)

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Poison ivy, oak (and others)

Few people are willing, that I find out, and that I find out. These symptoms of poison ivy, poison oak, and poison sumac can easily be seen a few hours to several days after exposure to the plant oil found in the sap of these poisonous plants.



POISON IVY



POISON OAK

Sumac is a tree about 10




POISON SUMAC

Sumac is a shrub or small tree with large, oval-shaped leaves. It is a tree about 10



Poison ivy - cause

- Contact with oil found in/on plant
 - Oil is an allergen and body reacts to allergen



Poison ivy - symptoms

- Itchy skin where plant touched skin
- Red streaks where plant brushed skin
- Small bumps or red, raised areas
- Blisters filled with fluid
- Systemic reaction can occur



Poison ivy - treatment

- Prevention
 - Plant recognition and avoidance
 - Cover your skin when around plants
 - Apply product to protect against plant oils
 - Wash thoroughly after exposure

Poison ivy - treatment

- May need medical attention
 - Creams – mainly for itch
 - Medications (steroids)

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Wild Parsnip

- What the heck is this? Some sort of Iowa thing?



Wild Parsnip

- Invasive plant from Europe and Asia
- "Colonizes" open fields and lawns
- Can cause a painful, burning, and blistering of skin
- Photosensitive reaction needing UV light to activate phototoxic agent

Wild Parsnip



Wild Parsnip - prevention

- Protective clothing (long sleeves, pants, etc.)
- Sunscreen blocking both UVA and UVB
- Avoid midday sun (between 10-4)
- Identify the plant and avoid
- Remove the plants, if possible, and avoid the plant with long sleeves, gloves, etc.

Wild Parsnip - rash



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Wild Parsnip - treatment

- Treat similar to sunburn
- Remove offending agent
- Cool compresses, oral OTC meds
- May need steroid pills for up to 2-3 weeks

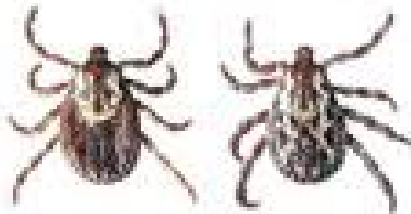
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Ticks



Deer ticks : Lyme disease



Dog ticks : Rocky Mt. spotted fever



Lone Star ticks : Ehrlichiosis

Fig. 1 Most common human biting ticks encountered in the U.S. & disease association

Blacklegged (Deer)	Anaplasmosis (HGE)	<i>Anaplasma phagocytophilum</i>
	Babesiosis	<i>Babesia microti</i>
	Lyme disease	<i>Borrelia burgdorferi</i>
Lone star	Ehrlichiosis (HME)	<i>Ehrlichia chaffeensis</i>
	Tularemia	<i>Francisella tularensis</i>
American dog	Rocky Mtn spotted fever	<i>Rickettsia rickettsia</i>
	Tularemia	<i>Francisella tularensis</i>
	Tick paralysis	toxin

Ticks - concerns

- Fevers/chills
- Aches and pains
 - Headache, fatigue, muscles, joint pain/swelling
- Rash

Ticks - concerns

- Lyme disease
- Rocky Mountain Spotted Fever
- Ehrlichiosis
- Babesiosis
- Several others

Ticks – Lyme disease

- Transmitted by bite of tick
- Bacterium *Borrelia burgdorferi*
- Symptoms of fever, headache, fatigue and skin rash



Erythema migrans

Ticks – Lyme disease

- Early signs and symptoms
- Late signs and symptoms
- Treated with antibiotics depending on what stage of disease

Ticks – Rocky Mtn Spotted Cow (Fever)

- Transmitted by dog or wood ticks
- Fever, headache, rash, nausea, pain, decreased appetite
- Variable appearing rash
- Can be deadly
- Antibiotics

Ticks - Ehrlichiosis

- Transmitted by bite of lone star tick or blacklegged tick
- Fever, chills, headache, aches, upset stomach
- Antibiotics

Ticks - prevention

- Before you go outside
 - Know where ticks might be
 - Products with Permethrin may help kill ticks
 - Apply on clothing and/or skin
 - Products with DEET also protective
 - If using sunscreen, apply sunscreen first followed by tick prevention agent



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Common Fleas

- Cat Flea
 - Murine Typhus, Cat Scratch Disease
- Dog Flea
- Ground Squirrel Flea
 - Plague
- Oriental Rat Flea
 - Plague, Murine Typhus

Fleas





Fleas - issues

- Plague
 - Caused by *Yersinia pestis*
 - Transmitted to humans flea bites or contact with infected bodily fluids of infected animals
 - Fever, chills, weakness, abdominal pain
 - Treated with antibiotics

Fleas - issues

- Murine typhus
 - Caused by Rickettsia typhi
 - Contact by animal bites or contact with "flea dirt" (flea poop)
 - Similar symptoms
 - Treated with antibiotics

Fleas - issues

- Cat scratch disease
 - Caused by *Ctenocephalides felis* flea and the bacteria *Bartonella hensalae*
 - Scratch from cat that has been infected
 - Symptoms of fever, enlarged, tender lymph nodes 1-3 weeks after exposure
 - Antibiotics

Fleas - prevention

- Eradication via cleaning, vacuuming, insecticides
- Checking with veterinarian about pets
- Careful history of past few days/weeks

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Animal Bites - Cats

- Around 5-10% of animal bites
- Often get infected mainly due to deepness of bite
- Antibiotics, check rabies status, don't forget checking tetanus status

Animal Bites - Cats

- Prevention
- Education
- Keep vaccines up to date
- Avoid cats



Animal Bites - Dogs

- 80-90% of animal bites
- Less chance of infection (not as deep as cat bites)
- Can be more traumatic due to jaw pressure and movement of dog during bite
- May need antibiotics
- Tetanus update, if needed
- Rabies prevention



Animal Bites

- Dog Bites
 - Prevention
 - Vaccinations and routine care (can be an issue)
 - Being careful around unknown dog



Animal Bites

- Human Bites
 - Not as common
 - Can become infected (mouth not exactly sterile)
 - Remember tetanus and blood borne exposure
 - Concern about Hepatitis B, C, and HIV

Animal bites – other, including spiders

- Not always easily diagnosed
- Can cause redness, swelling, pain
- Concern about venom from spider but more so for infection due to skin being broken
- Rarely know it was a spider unless you see a spider biting you or right after the bite

Take homes

- Wearing protective clothing is primary line of defense
- Sunscreen blocking both UVA and UVB
- With break in skin, update tetanus status (possibly pertussis as well)