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CWRA fall 2008
"So, it's a raccoon"
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QUESTIONS FOR THE FINDERS OF RACCOON BABIES

- Is there a possibility of reuniting the baby and mom?
 -
 - Is the baby healthy?
 -
 - Who has handled it?
 -
 - Was there protection?
 -
 - Was there a bite or scratch?
 -
 - Were the family pets exposed/ vaccinated?
 -
 - Was the baby attacked and bitten by a family pet?
 -
 - Was a family pet attacked and bitten by the baby?
-

Raccoon

Natural History:

Birth Season: March - June

Gestation: 60 -73 days Average 65

Size of Litter: 1-8. Average litter is 4

Activity Period:

Mainly nocturnal, however, in baby season mother raccoons may be out during the day.

Natural Habitat:

Anywhere: Forests, cities, beach communities and marinas.

Age Clues: Appearance and Behaviors

Birth	Birth weight 45 to 90 grams. They are born sparsely furred with barely discernible mask and other markings. Ear canals and eyes are closed at birth. Formula feed 6 to 8 times a day, once during the night.
1 Week	Weight at one week is between 100 and 150 grams. The umbilicus falls off between 3 to 5 days. They begin to crawl the first week but their legs will be spread wide, spider-like, as they are unable to support their full weight.
2 Weeks	They weigh approximately 150 to 200 grams. The fur thickens. Tail rings start to develop. Facial mask appears and eye slits are noticeable. Babies start to vocalize and are noisy. Formula feed 6X a day. Eliminate the night feeding.
3 Weeks	The average weight is between 200 and 250 grams. The eyes and ears are beginning to open. The eyes are cloudy blue. The babies do not respond to sounds and sights for a few days. Formula feed 5 times a day.
4 Weeks	The average weight is between 250 and 450 grams. They are now crawling and walking. Eyes and ears are fully opened and they now respond to sound and sight. They still do not see clearly. Baby teeth start to erupt. Formula feed 4 to 5 times a day.
5 Weeks	The average weight is between 500 and 700 grams. They will be starting to run and climb. They can be outdoors during the day in a protected area in a cage that allows exercise. Formula feed 4 times a day. Offer a few pieces of puppy chow in the nest area.
6 Weeks	The average weight is between 750 and 1200 grams. Guard hairs appear. They should be proficient at climbing, running, walking, vocalizing, and play behavior. They may start to use a latrine area. Formula feed 3-4x a day, bowl feed once a day. Begin to limit your contact with them. Don't speak around them.
7 Weeks	The average weight is between 900 and 1700 grams. Their eyes will now react to objects. They begin serious rough and tumble play. Offer solid foods in nesting area and see how much is consumed. Formula feed 2-3 times a day, bowl feed 2 times a day.
8-12 weeks	They should be nibbling on whole foods. Formula feed 2 times

	a day then reduce to once a day. Bowl feed 2 times a day. Eliminate formula feedings as you see more evidence of self-feeding.
12-20 weeks	They should be completely weaned by 12 weeks. Permanent teeth erupt. Start your search for an appropriate release site. Give them opportunities to “hunt” by hiding treats. Provide challenges with food games and cage enrichment. There should be minimal interaction with humans now.
20 –24 weeks	Release if they have appropriate behavior, good weight and are healthy, strong, and have a good hair coat.

*Older babies coming in from the wild will be weaned earlier and can be placed on the weaning diet.

Reuniting Strategies:

Raccoons take advantage of enclosures such as chimneys, attics, barns, and crawlspaces under out buildings.

Often babies are separated from their mothers when the mothers have been excluded from these areas. If circumstances are right, the raccoon babies can be successfully reunited with their mothers.¹

If the mother has been excluded from a building in which she has been denning, the babies can be moved out of the nest and placed in a pathway the mother usually travels. Paths can be observed in the grass or dirt or there may be smudges on the sides of buildings or downspouts. Remember the babies must be kept warm and safe from predators.

If the mother hasn't been excluded, there are several methods that can be used to convince her to move. A product called Evict® has the odor of male adrenal glands. A mother raccoon will feel threatened by this odor and will move her family in order to protect herself and her babies. Other methods of convincing raccoon families to move are explained in the Humane Society of the United States Book, **Wild Neighbors** or can be found on their website www.hsus.org.

Formula:

One part KMR powder and two parts water

Raccoons that cannot digest KMR can be placed on Goat's Milk Esbilac (GME) or Esbilac

We do not recommend adding baby cereals, ground chow, applesauce or yogurt to the bottle of formula. The formula provides the appropriate nutrition. In the wild, the mother's milk does not suddenly have other ingredients. Babies just start on solid foods along with mother's milk

Weaning Diet:

90% Puppy chow and kitten chow as the main staple.

10% Fruits, Cereals, nuts, eggs, chicken cooked for one-minute, other meat leftovers, mice, raw vegetables etc.

Weaning Process:

¹ See Requirements For Successful Reunions pg **Error! Bookmark not defined.**

To start the weaning process leave solid foods such as small pieces of Fig Newton, oatmeal cookies, raisins, whole grain cereal, cut grapes or kitten chow or small breed puppy chow in with the babies. The chow can be softened with warm water or formula.

Some rehabilitators wean with bowls of formula with chow in it. Babies can't eat this without getting it into their fur. The formula chow mixture can cake on to their fur and cause it to fall out, especially on their faces and paws. It also provides an opportunity for bacterial growth and can lead to sore, raw patches on their skin and may even lead to illness.

There are many options and techniques to encourage self-feeding. One option is to soften chow with warm water, then place it into formula long enough for it to get coated, drain the formula off and serve the chow. This will give it the smell and a little taste of the formula without the mess and the potential for bacteria.

Another option is to add cut up bananas, applesauce, raisins, fig cookies, oatmeal cookies, scrambled eggs, fruit yogurt or cottage cheese to kitten or puppy chow. Try one item at a time to see what entices them to eat their chow. The "goodie" should be mixed in well with the chow to eliminate the chances of the babies just eating treats.

Natural Diet

- Mast crops (acorns, beech, hickory, hazelnut etc. and other seeds)
- Frogs, salamanders, fish, turtles
- Crayfish and other crustaceans
- Grasshoppers and bugs
- Earthworms
- Small mammals (mice, moles, birds, etc.)
- Eggs
- Fruits and berries (including Grapes and Pokeweed)
- Plants such as wheat, corn, oats, barley, sunflowers, some grasses, etc.
- Deer carcass and other carrion

Special Circumstances:

Geographic Differences: Warmer climate raccoons are much smaller than raccoons residing in colder climates. Northern raccoons have a more dense fur coat and the fur covers the entire leg. Raccoons in colder climates need to be more robust prior to release.

Health Issues:

Raccoons are considered rabies vector species in most states. Use extra caution when handling them. Rehabilitators handling RVS species should have pre-exposure rabies vaccinations. This may be required as part of the permitting process. Blood titres should be checked every two years to be sure the titre is at an appropriate level. The level must be >0.5.

Vaccine Recommendations For Raccoons

- Vaccinate your raccoons against **rabies**² with Rabvac3 or Imrab3 at 12 weeks of age and give a booster shot at discharge whenever possible. Purevax®, Merial's rabies vaccine can be given as early as 8 weeks of age.
- Vaccinate against **feline distemper**³ (panleukopenia) cat parvo with Fel-O-Vax® or other killed distemper vaccine. Raccoon Parvo most closely resembles cat Parvo so it is felt the vaccine will help prevent this disease. Start the vaccine at 8 to 10 weeks of age. Heska and Pfizer manufacture intranasal and intraocular vaccines. These vaccines may be safely administered to kits as young as 3 weeks old. A second dose is recommended at 12 weeks of age. Animals coming in at 12 weeks or older require only 1 dose.
Raccoons do not get the canine strain of Parvo⁴. The Raccoon strain of Parvo is different than canine Parvo. It resembles feline panleukopenia or cat Parvo. (Many canine distemper vaccines include vaccine against canine Parvo).
- Vaccinate against **canine distemper**⁵ with Galaxy D®. When canine distemper is prevalent in your area, kits 2 weeks and older can be vaccinated with the monovalent Merial canine distemper virus product for ferrets (PureVax Ferret) or at 4 weeks or older with Pfizer's Vanguard canine distemper vaccine. At least two doses of these vaccines should be given with an interval of 2-4 weeks between doses. The Merial product would be the safer of the two vaccines since it does not contain modified live canine distemper virus.
- Vaccinate against Leptospirosis⁶ only if this is prevalent in your area.

Raccoon roundworm is a concern but is controllable. Worm against roundworm and other parasites **upon admission**, as soon as the baby is stable, and then **every 10 days to two weeks until release**.

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² See Rabies pg **Error! Bookmark not defined.**

³ See Feline Distemper (Panleukopenia) Cat Parvo pg **Error! Bookmark not defined.**

⁴ See Parvo pg **Error! Bookmark not defined.**

⁵ See Canine Distemper pg **Error! Bookmark not defined.**

⁶ See Leptospirosis pg **Error! Bookmark not defined.**

Rabies

Cause: virus

Hosts: all warm blooded mammals, (especially raccoons, skunks, foxes, bats)
It is rare for rodents, opossums, or rabbits to test positive.

Transmission: Saliva contact with mucus membranes or open wounds.

This may to happen through a bite or scratch, or the virus may be transmitted by an infected mom grooming a baby's face.

Incubation: The time can vary widely. It is commonly 2-8 weeks, but as long as 260 days in some species

Definitive diagnosis: Diagnostic test, post mortem only, brain tissue sent to lab

**An animal may exhibit any or all of the following symptoms.
There are two categories of behaviors.**

Symptoms of Rabies in Wildlife

Dumb (paralytic form)	Furious
<ul style="list-style-type: none">• Depression	<ul style="list-style-type: none">• Anxiety, restlessness,
<ul style="list-style-type: none">• Loss of fear of humans	<ul style="list-style-type: none">• disoriented behavior, random movements
<ul style="list-style-type: none">• Progressive paralysis	<ul style="list-style-type: none">• Extreme aggression
<ul style="list-style-type: none">• Drooping head	<ul style="list-style-type: none">• Soft vocalizations or screaming, constant vocalizations
<ul style="list-style-type: none">• Salivation	<ul style="list-style-type: none">• Self mutilation
<ul style="list-style-type: none">• Anorexia	<ul style="list-style-type: none">• Partial or complete paralysis
<ul style="list-style-type: none">• Sudden death	<ul style="list-style-type: none">• Seizures, Coma, Death

Possible Treatment

- None once the virus reaches the brain
- Death generally occurs within 2 weeks
- Quarantine animals with old bite wounds
- Vaccinate against rabies
- Takes 2-3 weeks for the animal to mount an antibody response

Rabies in Humans

- Incubation: Generally 2-12 weeks, may be as long as several years

■ Symptoms

- Anxiety
- :flu-like symptoms
- , pain at site of infection
- Slight increase in body temperature
- Malaise
- Sensory changes
- Muscle spasms, swallowing dysfunction
- Convulsions
- Paralysis
- Death

Pre-exposure Rabies Vaccinations

- Initial series of three shots
- Get a rabies titer every two years to determine if you have a therapeutic level
- All set if > 0.5
- One booster shot if the titer is sub-therapeutic or < 0.5

RABIES

Cause: virus

Hosts: all warm blooded mammals, (especially raccoons, skunks, foxes, bats) It is rare for rodents, opossums, or rabbits to test positive.

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Symptoms of Rabies in Wildlife

There are two categories of behaviors. An infected animal may exhibit any or all of the following symptoms :

<u>Dumb form</u>	<u>Furious form</u>
Depression	Anxiety
Loss of fear of humans	Disoriented random movements, restlessness
Partial or complete paralysis	Constant vocalizations- quiet mumbings or screaming
Excessive salivation	Attacking inanimate objects
Drooping head	Self mutilation
Anorexia	Seizures
Sudden death	Coma and death.

Possible Treatment

- None once the virus reaches the brain
- Death generally occurs within 2 weeks
- Quarantine all animals with new or old bite wounds
- Protect by vaccinations against rabies
- It takes 2-3 weeks for the animal to mount an antibody response

Rabies in Humans

Symptoms:

- Anxiety
- Slight increase in body temperature
- Malaise
- Sensory changes
- Muscle spasms, swallowing dysfunction
- Convulsions
- Paralysis
- Death

Pre-exposure Rabies Vaccinations

- Initial series of three shots
- Get a rabies titre every two years to determine if you have a therapeutic level
- You are all set if the titre is > 0.5
- You need a booster shot if the titre is sub-therapeutic or < 0.5

Distemper

Canine Distemper or “Hard Pad Disease”

Cause: Virus (paramyxovirus)

Host: Raccoons, skunks, most canids and members of the weasel family.

Transmission:

The virus is communicable primarily through airborne particles up to 30 feet. It is also thought to be transmitted through secretions (eyes, nose, respiratory system) and on fomites.

Incubation: 9-14 days but can be as long as 4-5 weeks

Distemper affects the respiratory tract, gastrointestinal tract and the central nervous system.

Symptoms begin with the mucosal phase, affecting the respiratory tract involvement:

- Fever which often comes and goes and may be unnoticed
- Coughing which may develop into pneumonia
- Lack of appetite
- Goopy discharge from the eyes and nose
- Lesions of the eyes

This progresses to the gastrointestinal phase

- Callusing swelling and thickening of the nose and foot pads, giving the disease the name “hard pad disease”.
- Vomiting
- Diarrhea
- Lethargy

The virus then attacks the central nervous system for the neurological phase.

- Imbalance
- Limb weakness
- walking in circles or making rhythmic motions
- Tremors
- Partial or complete paralysis
- Seizures, snapping or tremoring of the jaws,(classic Distemper “chewing gum fits”) progressing to convulsions of the whole body

There may be a bright green eyeshine that is seen in daylight.

There is often a distinctive odor, sickly sweet and foul.

Some of these neurological signs (except Chewing gum fits) are the same as signs seen with rabies virus.

The type of symptom with which a raccoon presents is determined by the strength of his immune response and when it kicks in during the course of the disease.

Treatments:

In the early stages of the disease **symptoms** can be treated to make the animal more comfortable. Fluids can correct an electrolyte imbalance, anti-emetics can control vomiting, broad spectrum antibiotics can be used to prevent sepsis. However, it may be best to euthanize right away, as there is no cure. Treatment to make the animal more comfortable prolongs the disease. There is also the risk of exposing the healthy animals in your care. This disease is very contagious and can spread through a facility quickly.

Special Considerations:

Sometimes the animal recovers from the acute illness but two to three weeks after the clinical symptoms subside the animal will show neurological damage. Often the animal develops seizures which can only be controlled with medication. Once an animal is placed on anti-seizure medication it will need to stay on the medication indefinitely, which is not an option with raccoons in rehab. This is not a practical solution even though the seizures may be controlled. The disease continues to destroy neurological function. The animal will never get any better and there is no quality of life. In addition an animal thought to be recovered may shed the virus for up to three months, and can relapse at some time in the future. The virus can "hide out" in the skin and nervous system for long periods of time.

The virus can survive in the environment for weeks at near freezing temperatures, but at ordinary room temperatures will only survive a short time(a few minutes to a few hours). Disinfection is still important because of bacterial contamination.

The virus can also be carried on fomites such as your shoes, clothes, hands etc. Clean the cages, dishes and anything that has come in contact with the animals with a virucide such as Parvosol® or a bleach solution mixed 1:16.

Healthy animals in rehabilitation can be vaccinated to prevent the disease. Preventive vaccination also protects animals in rehabilitation from possible exposure from new admissions and wild animals that live near the prerelease cages. The manufacturer of the vaccine will provide the minimum age recommendations for starting the series of shots. Distemper vaccine can provide protection within hours of administration.

Vaccinate raccoons with any of the following vaccines: Biovac-D®, Fervac-D™ or Duramune 5 Way® or Recombitek-C4

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Parvo Viruses affecting raccoons

Mink virus enteritis, feline panleukopenia, raccoon parvovirus

Raccoons do not get canine Parvo.

Transmission: Fecal-oral route

Incubation: 7-10 days

Symptoms

- Anorexia
- Vomiting
- Severe hemorrhagic diarrhea
- Dehydration
- Endotoxic Shock
- Fever or hypothermia
- Weight loss

Treatment

Provide supportive treatment (rehydrate, electrolyte replacement, normalize temperature), withhold food until vomiting and diarrhea stop. Control vomiting and diarrhea. **HOW??** Once the vomiting and diarrhea are controlled, provide a low fat highly digestible diet for recovering animals.

EXAMPLE Administer antibiotics such as Ampicillin. Provide an anti-inflammatory agent to help prevent septicemia. Dexamethasone is also helpful in treating this disease.

Special Considerations

Isolate animals who are suspected of having Parvo. The virus is passed in feces of an infected animal AND is highly CONTAGEOUS. IT can remain ACTIVE in the environment for years. Clean with viruscidal agents or a 1/30 dilution of Bleach.

The best control is through prevention by vaccinating using Biovac® by United Vaccine to prevent Parvo in raccoons

Pasturellosis -hemorrhagic septicemia-

THIS IS A BACTERIAL RESPIRATORY DISEASE OF RODENTS, OPOSSUM AND RABBITS.

Pastuerella multocida is a strain which is

There are a number of strains of *P. multocida* which are rod-shaped, coccobacilli bacteria that cause Pasturellosis. *Pastuerella* are usually associated with respiratory infection in most animals. In rabbits and mice it is often called **Snuffles**. *P. multocida* are also responsible for infections caused by dog and cat bite wounds. This bacteria is present in the saliva of healthy felids, dogs, and wolves but also rabbits and rats.

Cause: Gram negative bacteria

Host: Rabbits, rodents (mouse, rat, squirrel etc.), opossums, birds

Transmission:

- A **bite or scratch** from an animal who carries the bacteria in their saliva
- Contact direct (nose to nose)
- Or indirect (coughing, sneezing) contaminating water or food
- Eating diseased flesh of infected animals

Incubation: This bacterium can kill swiftly, sometimes as quickly as 6-12 hours after infection

Symptoms

- Nasal discharge
- Torticollis
- Respiratory distress (pneumonia)
- Conjunctivitis, **watery eyes**
- Abscesses
- Lameness
- Weight loss
- Septicemia
- The infection can spread via the circulatory system or lymphatic system causing problems in other organs
- Death

Treatment

Pencillin G, Ampicillin, Clavamox® Trimethaprim sulfamethoxazole, Cefazolin or Enrofloxacin.

Resistant to Clindamycin and Erythromycin

Special Considerations

The faster you can administer antibiotics after a bite or scratch the more favorable the outcome for the animal. Antibiotics may cause a temporary remission but a fatal infection may occur. The bacteria is easily destroyed in the environment by heat, drying, and disinfectants. Vaccinate with Fervac-D™ or Duramune 5 Way® or Duramune 6 Way® which includes parvovirus. For raccoon parvovirus, vaccinate with Biovac®.

Plague

The plague is a re-emerging infectious zoonotic disease.

Cause: Gram negative bacteria

Host:

Wild rodents, rabbits, bobcats, chipmunks, ground squirrels, coyotes, prairie dogs, feral cats, opossums

Transmission:

- Bite of an infected flea, or **bite of an animal infected with the disease**
- , ingestion of infected fleas,
- nasal discharge, sneezing and occasionally other body fluids of infected animals.
- ingestion of infected carcasses

Incubation: 2-7 days after fleabite or ingestion of infected fleas

Symptoms:

- Fever
- Lethargy
- Weight loss
- Vomiting/diarrhea
- Dehydration
- Oral ulcers
- Enlarged lymph nodes
- Unstable gait- **general incoordination**
- Discharge from the eye
- Lymph nodes may abscess and rupture
- Coma

Treatment

Treat for fleas to control the spread of the disease. Provide supportive care, particularly hydration and electrolyte balance. Treat vomiting and diarrhea. **Treat with Tetracycline® or Doxycycline®. for 21 days** If you suspect plague, a smear or culture of lymph node aspirate or serological testing can provide a definitive diagnosis. Work with your veterinarian.

Special Considerations

Prognosis is poor if not treated early. Animals with lung involvement should be euthanized **to prevent** due to transmission to humans and other animals.

It is a zoonotic disease and is very contagious to humans. Use flea control products for the premises if indicated. Clean with a dilute bleach solution.

Poxvirus

rabbit fibromatosis

direct contact with an infected animal, or contaminated environment
pox- skin rash, fever, nasal and eye discharges

no treatment exists- prevent by vaccination with small pox vaccine in areas where it is prevalent.

squirrel fibromatosis

insect bites, esp mosquirtos-multiple skin tumors

there is no effective treatment, extreme supportive care

Cause: Virus

Host: Rodents, Bobcat

Transmission: Bites from insects such as mosquitoes,

Incubation: 7-14 days

Symptoms:

Lesions often appear on the skin, particularly on the head around the eyes, mouth and forepaws, paws and tail. In severe cases the lesions can be all over the body. The lesions may be circular, red or abscessed.

Severe cases symptoms may include, vomiting, diarrhea, pneumonia or discharge from the eyes and nose. Lesions may also be present inside the animal as well.

Animals should be kept separate from other juveniles to prevent possible transmission.

Treatment

Supportive care. The animal may require wound care and antibiotics for the treatment of secondary bacterial skin infections. The animal may also require rehydration fluids. Mild cases will improve generally over one to two month's time. Severe cases where there is respiratory involvement may require euthanasia.

Special Considerations

This disease is not considered zoonotic however; gloves should be worn when handling an animal with pox lesions. The virus can live in the environment for years. Clean with a virucide. A skin biopsy can provide a definitive diagnosis.

Rabies

Cause: Virus

Host:

All mammals, particularly rabies vector species, raccoon, skunk, fox, and bat. Rarely in squirrels, mice, opossum.

Transmission:

Bite or scratch or saliva in an open wound or mucous membrane. Contact with brain or CNS fluid in an open wound.

Incubation:

Incubation time can vary widely. The location of the bite determines how quickly the virus reaches the brain. The virus travels along nerve pathways. The farther the bite is from the brain, the slower the onset of symptoms. Often onset is within 3 weeks from the time of the bite or exposure. Once the virus hits the brain, the salivary glands are affected and this is when the animal is shedding the virus in saliva. The virus is not shed in blood, urine or feces, or secretions from the eyes or nose. It does not cross the placental barrier however; the mother can transmit the virus in her saliva to her young during grooming of the eyes, mouth and nose.

Symptoms:

In the aggressive form, there may be biting, excessive vocalizing, anxiety, self-mutilation, anorexia and paralysis. The symptoms often depend on what part of the brain is affected. In the non-aggressive form the animal will be sick and have a rapid downhill course to unconsciousness and then death. **(are these seperate forms or stages of the same disease?)**

Treatment:

None once the virus reaches the brain and the animal is exhibiting symptoms. Death occurs within two weeks of onset of symptoms and often within one week of onset. Although the rabies vaccine is off label, animals who may be exposed to the virus can be vaccinated. If the body is able to develop immunity to the virus before it reaches the brain, the animal will not develop rabies. It takes the body approximately 2-3 weeks for a mammal to develop antibodies. Animals exhibiting any neurological signs should be quarantined. Animals who have old bite wounds, (sometimes this is difficult to assess because wounds can heal and are difficult to see on a fully furred animal) exhibit a change in behavior, vocalizing, staggering, biting the cage, towels and other objects should be euthanized.

Special Considerations:

Since rabies is a zoonotic disease, all rehabilitators who handle mammals should get pre-exposure rabies shots and then have blood titres tested every two years. Pre-exposure rabies series may be a condition of your obtaining your rehabilitation permit. In addition, gloves should be worn to prevent exposure.

The virus is very fragile outside of the body. Once the virus dries it is no longer viable. Cleaning of cages, tools and dishes can be accomplished with a bleach and water solution.

Animals who have been handled by the public and are suspected of having the rabies virus should be necropsied (Talk to your state health department or wildlife agency) to obtain a definitive diagnosis. When animals test positive for rabies, anyone who has handled the animal should be advised to discuss their exposure with their private physician.

Ringworm (dermatophytosis)

Cause: Fungus (Microsporum, Trichophyton and M. gypseum)

Host: Infected animals spread Microsporum and Trychophyton. M. gypseum is transmitted from infected soil.

Transmission:

Direct and indirect contact with an infected animal. Most common in young animals.

Incubation: One to four weeks

Symptoms:

- Patches of hair loss
- Circular ringed rash
- Thin fur particularly around ears, mouth and paws
- Pustules
- Scales
- Redness

Treatment:

Isolate from other animals until treated to prevent contagion to other animals. It is often a self limiting disease and can resolve on its own within three weeks. Ringworm can be diagnosed by Wood's lamp (an ultraviolet light source) or plucking fur or skin scrapings and testing the samples in a Dermatophyte test media. Your veterinarian will be able to assist in the diagnosis.

Clip the fur using a grooming, 10 blade of a dog clipper or use scissors. Smaller blades (40 blade) can aggravate the lesions. The fungus lives on the skin and hair follicles. Clipping the fur in the initial phases can reduce the chance of environmental contamination.

Pat soaked gauze pads around the area with miconazole or lime-sulphur dip to remove scales and crusts. Rubbing with shampoos can sometimes spread the fungus.

Conofite cream can be used in mild cases. Creams were once strongly advocated but are now not felt to be very effective.

Severe and chronic cases may need treatment with Griseofulvin (not in pregnant animals) 3-6 weeks. Itraconazole is also effective. It generally needs to be made up by a pharmacy and tends to be expensive. Systemic treatment with Griseofulvin requires monitoring for side effects and the medication also can be expensive.

Special Considerations:

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This treatment should start within 48 hours of the first symptom Which may be Tachapnea, rails, wheezing, consolidation with auscultation fever, lethargy, loss of appetite- all would signal something is wrong.

Measure 10 cc of water.

Mix the contents of a 75mg capsule into the water and shake well.

The dose is 1cc of this solution per 10 pounds or 1/10 cc (0.1) per pound
**Always dose at least 0.2 cc even if animal weighs less than 2 pounds.
0.2 cc is the minimum dose.**

**The medicine needs to be given every 12 hours for a total of 10 doses.
The timing is crucial. If a dose is missed or late, start all over at the beginning with another 5 days of treatment.**

Refrigerate any leftovers and toss after 10 days

If the animal is vomiting, the meds can be given rectally, or given in small increments placed in between the lip and gums...allow for buccal adsorption.

At the same time, the animal must be treated to deal with other symptoms

Dehydration

Vomiting

Septicemia

Pain

Also put them on white bedding, Vomiting will show on bedding.

FIRST SYMPTOMS : treat anyone that comes in with respiratory compromise, clinical signs and symptoms. Yucky eyes, runny nose, but if the problem is distemper, it may be too late at that stage.

First choice for respiratory symptoms would be tamiflu followed by clavamox.

Treating at first sign is critical.

Usually if its going to work, you'll see positive results in less than 24 hours.

If no response after the 3rd treatment, you must not have parvo .Confirm with a fecal antigen test and/or look for other causes...

In an uncomplicated case, treated within 48 hours of onset of signs, there should be no vomiting after first dose, (unless due to bitterness of meds) no diarrhea after 2nd dose, alert and eating after third.

If you don't get a response after the 1st treatment...double your starting dose for the 2nd treatment and third treatment...

If no clinical response after 3rd dose, you have either started too late, have a secondary medical problem or have the wrong diagnosis. Other drugs should be used to address the various reactions such as vomiting, endotoxic shock, pain, bacterial septicemia, GI mucosal ulcerations and general organ failure.

AS A PREVENTATIVE if animals have been exposed, but are not yet showing signs, give 1 cc/ lb once a day for 5 days.

If any of the clinical signs show, -vomiting, bloody diarrhea, anorexia- change treatment to every 12 hours for 10 treatments.

Coccidiosis

Cause: Coccidia are small protozoans, one-celled organisms that multiply in the intestinal tract of infected animals. They are common in the normal intestinal flora of adult animals but generally does not cause illness, except in young animals or compromised adults. There are many species of coccidia, each named differently and affecting different target animals. The term coccidia is commonly used to refer to all the different types. Some specific names are Isospora, Toxoplasmosis, Cryptosporidium and Eimeria.

Host: Most mammals (raccoons, lagomorphs, ungulates, canids, felids, mustelids, rodents, marsupials,)

Transmission: Oral fecal contact with contaminated water or objects. Babies often acquire the infection from the mother's feces.

Incubation: Ranges from 4-13 days

Symptoms:

- Diarrhea and as the disease progresses the animal may develop bloody stool
- Abdominal pain
- Lethargy
- Lack of appetite
- Weight loss
- Vomiting may or may not be present
- Death

Possible Treatment: Sulfonamides, Sulfadimethoxine, Albon etc. Treatment is generally 10-21 days or longer until the animal is asymptomatic and 2 fecal tests are negative. Recheck fecal for eggs (oocytes) 1-2 weeks after treatment. The treatment does not eliminate coccidia but allows the body's immune system to become strong and able to fight off future flare-ups. If vomiting is present, it can be controlled with diphenhydramine (Benedry®) or metoclopramide (Reglan®).¹

Another treatment option is amprolium, Corid® particularly when treating a large number of animals such as deer fawns. It is put into the drinking water. The Bayer company developed Baycox , a one time treatment for coccidiosis, but it is not available in the U.S. at this time.

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(To treat coccidian)

- Coccidiostats...
 - Albon suspension, pills, Other sulfa drugs
 - Medicines added to water supply
 - Albon
 - Sulfadimethoxine
 - amprolium
 - Corid
 - Sulmet

Coccidocide...BAYCOX

Special Considerations:

Coccidia is very contagious. Treat all animals who are living in the same environment even if they are asymptomatic. Eggs become infective after one day and can live in the environment up to two years. Minimize contact with fecal material by removing fecal material and cleaning daily. Dispose of the feces properly by either bagging or burying. Wear gloves when cleaning.

To kill coccidia in the environment, you can use high-pressure hot water >70 degrees C or cleaning with a diluted bleach solution (1:15), or a 9 to 1 solution of water and ammonia.

Thorough decontaminating using steam or harsh chemicals will have to be done after the animals are moved.

A thick layer of wood shavings can help reduce contamination of the cage or pen.

Sulfadimethoxine

Albon®, Bactrovet®, Di-Methox®

This medicine is used to treat bacterial and protozoal infections, especially coccidia. It is also valuable in the treatment of soft tissue infections, respiratory infections, enteric and urogenital infections.

When used to treat coccidia, it is recommended to give a double dose the first day and to continue the treatment for at least 14 days. After the two weeks, continue treatment until 2 fecal exams are negative for coccidia. If a fecal exam isn't possible, it may be advisable to continue the treatment for three weeks.

The oral suspension has a sweet caramel/minty flavor that animals seem to love.

Form: Tablets (125, 250 or 500 mg), oral suspension, 50 mg/ml

Strength: 50 mg/ml

Dosage: 25-100mg/kg

Route: Oral

Frequency: SID for at least 14 - 21 days

The Chart Dosages Are Calculated At 50 mg/kg

Weight of Animal in grams	Amount to Give in milliliters (ml)
1000	1.00
750	0.75
500	0.50
250	0.25
125	0.12
100	0.10
75	0.07
50	0.05
25	0.02
10	0.01

Caution:

Give a loading dose of twice the dosage for the first day.

Don't use with animals that are dehydrated.

Keep the animal well hydrated while it's on Sulfadimethoxine. Provide animals with extra water after dosing with any sulfa drug.

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Trimethoprim/Sulfa

Bactrim®, Tribissen®, Septra®, Cotrim®, Sulfatrim®, SMZ-TMP®

This is a broad-spectrum antibiotic which can penetrate exudates and infected tissue that other antibiotics can't. It's a good choice for skin infections, abscesses or for use when the cause of the infection isn't known. It is an excellent choice to treat for enteric and urinary tract infection.

It is effective in treating coccidia, toxoplasmosis, staph infections of the skin and ear, and respiratory infections, enteritis and clostridium. It can also be used to control Pasturellosis in rabbits.

It is a pleasant tasting oral suspension. It is gentle to the gastrointestinal tract, which means less incidence of drug-induced diarrhea.

Form: Oral suspension, tablets 30, 120, 480, 960, powder 400mg/g

Strength: 50 mg/ml

Dosage: 15-30 mg/kg

Route: PO

Frequency: BID for at least 5 days. If used for coccidia, dose longer, usually 14 days or until 2 negative fecal exams 2 days apart. It is safe to use this drug for an extended period of time.

Can be used prophylactically in rabbits.

The Chart Dosages Are Calculated At 25 mg/kg

Weight of Animal in Grams	Amount to Give in Milliliters (ml)
1000	0.5
750	0.37
500	0.25
250	0.12
125	0.06
100	0.05
75	0.03
50	0.02
25	0.01
10	See Dilutions

Caution:

Keep the animal well hydrated when using this or any sulfa drug.

Baycox 5%

mammal - 20mg/kg

Give PO once, repeat in 7 days

strength is 50mg/ml

20 mg=0.4 ml

0.4 ml is dose for 1000 grams

PO once, repeat in 7 days

Doses are calculated for baycox 5% =strength 50 mg/ ml

GRAMS WEIGHT OF ANIMAL	AMOUNT TO DOSE
1000	0.40
750	0.30
500	0.20
250	0.10
100	0.04
50	0.02

This medicine treats coccidia by killing all stages of the protozoa. It is not yet available in the U.S. but is sold in Australia and Canada. It is VERY expensive. The 2 ½ % strength is sold for pigeons, and could be used at double the recommended doses listed here.

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WHY CROWDING IS HARMFUL TO RACCOONS

- Difficult to clean the cages
- It's hard to keep food and water uncontaminated
- Disease can spread easily
- Coccidia is serious threat
- You can't keep track of individuals
- There will be bullying
- Smaller shyer raccoons will be at a disadvantage

POSSIBLE SOLUTIONS TO CROWDING

- Reunite whenever possible
- Educate the public about convincing animals to move out on their own
- Recruit new RVS rehabbers
- Build new cages..\$\$
- Convert old cages or add on to existing ones \$\$
- Expand existing cage space with shelves, hammocks, ramps, ladders, etc
\$

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RELEASE CRITERIA for RACCOON YOUNGSTERS.

- The raccoon baby will trust the caretaker, but is it cautious of all other humans ..and dogs?
-
- Is it in 100% physical condition (no handicaps or missing limbs) or has fully compensated for it's "imperfections"? (completely recovered from any infections, and is parasite & mite free)
-
- Has it been acclimated outdoors for at least a month?
-
- Has it been reared and socialized with others of it's species? (Improper socialization will result in rejection, or attacks from members of it's own species.)
-
- Has it been provided the proper diet of high grade puppy and cat chow, along with fruits and nuts and a wide variety of natural foods?
-
- Has the kit learned how to forage during captivity? Were things hidden in the cage?
-
- Is it familiar with natural substances it will find after release? Rocks, dirt, leaves, branches, acorns, berries?
-
- Is the release environment appropriate to the species?
-
- Have you evaluated the release site for possible overpopulation of same species or high predator or roaming domestic pet activity? (What are the animal's chances that it will be chased out of area by it's own species?)
-
- Is the time of release appropriate?;
-
- Is there sufficient, easy to find food or do you need to leave a backup food source?
-
- Is it familiar with the materials and sites it should seek for shelter and protection in the wild? Does it know not to stay out in the open? (was it given adequate covered areas in the cage to hide?)
-
- Are the weather conditions favorable for at least 3 days? (no rain, high winds or temperature extremes)

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- Is the community receptive to that species? Is the animal mature and cautious enough for release? (not all animals emotionally mature at the same rate; being "brave and outgoing" is a characteristic that immature juveniles have which could put them in a dangerous situation)
-
- Are you releasing because the animal is ready? (or because it's convenient for you. Or because you are burned out?)
-
- Has it had an opportunity to hear the distress calls of its own and other species? (Or will it be the only one still sitting around when everyone else runs for cover?)
-
- When possible, release in small groups of 4 -6 cage mates..

RELEASE THEM AS CAREFULLY AS YOU RAISE THEM

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