

Basic Stabilization of Wildlife

By

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This manual contains basic information for the stabilization of injured and sick wildlife. It is a quick reference to assist with the treatment of wildlife while waiting for the Blue Ridge Wildlife Center or a wildlife rehabilitator to pick up an animal.

Remember, you must have a permit from the Virginia Department of Game and Inland Fisheries to keep and rehabilitate wildlife. Veterinarians without permits are allowed to treat these animals when needed, but then must turn the animal over to a wildlife center or an individual permitted to rehabilitate that species.

It is very important to get as much information as possible from the finder of the animal, such as where was the animal found, who found it, and contact information for anyone who touched it. The finder of the animal can frequently give clues about what may have happened to an animal. Location information is needed if a young animal has been accidentally “kidnapped” and can be returned to its parents. It is also needed to release adult animals back into their territories where they have their best chance of survival. This information also may be needed by the health department if there is a possible rabies exposure. Additionally, the Department of Game and Inland Fisheries requires wildlife rehabilitators to euthanize some species (reptiles) if they cannot be released back where they were found, because release into a new area may introduce a new disease to that area. Attached is a sample information form for the finder to fill out.

The most important thing to remember when handling wildlife is Less is Best.

Less handling.

Less noise.

Less light.

Less stimulation in general.

And less drugs, especially **steroids**. Studies have shown that survival rates in raptors are higher if they are not given steroids. It is now recommended that steroids never be given, even if the birds have head trauma. There is no proof they do any good, and we now know they decrease survival by increasing susceptibility to infections such as aspergillus.

The only thing these animals usually need more of is heat and fluids. Keep them warm, especially the babies and the reptiles. Rehydration and heat are usually the most helpful things we can do for these animals.

Please do not feed these animals.

Feeding wildlife the wrong foods can cause severe GI distress, making what is already a bad situation much worse for the animal. Only give food when it has been recommended by a wildlife rehabilitator who is knowledgeable **with that species**.

Animals that are cold, dehydrated, in shock, or in a state of starvation, will not have a functioning GI tract (ileus), and feeding them can make them sick because they will not be able to digest the food. Food given in these situations will sit in their GI tract and cause the overgrowth of toxic bacteria, making the animal very sick.

Animals need to be warmed and rehydrated before putting anything into their GI tract. After that, oral feeding should be started with electrolyte solutions only. Food should not be given until you are sure the GI tract is functional.

If the animal is stable, you don't need to do anything but keep them in a dark, quiet, and warm environment until the animal is picked up. If you do treat them, please write down what you do, and give this information to the person who picks up the animal.

***Remember wildlife can carry zoonotic diseases. Always wear gloves!**

***Remember their weapons – teeth, claws, beaks or talons. Be careful!**

PHYSICAL EXAM

First give the animal a **quick** superficial exam. Determine if there are life threatening problems such as breathing difficulties, profuse bleeding, or head trauma. If not, then check for wounds, external parasites, possible fractures, and dehydration. Get a weight in gm or kg. If you have life threatening problems, take care of these before worrying about other things like treating external parasites or cleaning wounds.

Then put the animal in a dark quiet box or cage to rest while you gather materials needed for treatment, i.e. wound lavage solution, SQ fluids, antibiotics, pain meds, or bandage materials. Set up for radiographs or suturing if needed.

Have everything prepared before you take the animal out again. Use proper restraint, cover their eyes with a towel to decrease stimulation, and minimize noise. Give anesthesia if needed. Gas anesthesia can be very useful for restraining birds. Work quickly and quietly and then put the animal away again. Try to keep the animal where it cannot hear or see people, dogs or cats. Resist the urge to show them to others.

Excess stress can be more deadly to these animals than their injuries.

EMERGENCIES

Breathing problems: Put in an oxygen cage. Do not try to restrain in an oxygen mask.

This is too stressful for a wild animal. A Vari Kennel with plastic over the door and vents can work as an oxygen cage.

Profuse bleeding: Apply a pressure wrap, add to bandage rather than changing a soaked bandage. Give replacement fluids IV, IO, SQ

Severe blood loss or severe dehydration: IV or IO fluids (If you are interested Dr. Burwell can teach your hospital how and where to give this to wildlife)

Head trauma: Minimize stress and handling. Treat with metacam, not steroids.

Give mannitol if you suspect CNS swelling.

Place in dark quiet area. If recumbent, keep head elevated.

Oxygen can decrease brain swelling. Do not scruff or grab around the neck as this can increase brain swelling.

SONG BIRDS

Disoriented due to head trauma (i.e. hit a window):

Put in a small box or a closed brown paper bag in a dark, quiet, warm area and wait.

Keep head elevated if they are recumbent

Most of these birds will come to their senses in an hour or so. There are no drugs you can give to help them. Less stimulation is best.

If they can swallow, you can give a very small oral dose of metacam (0.1-0.2 mg/kg)

Wounds:

Lavage with sterile IV fluids

Do not pluck feathers around the wound edges as this can further tear the skin.

Clean lacerations that are not under tension can be glued with tissuemend II

Cover with tegaderm, do not use oily topical medications which will damage the feathers. Wound hydrogels work well.

Start antibiotics – Clavamox or Baytril (dosages below)

Attacks by cats or dogs: Even if you cannot find a wound, assume the skin may have been punctured somewhere and start antibiotics immediately. Infections from a cat's or dog's mouth will be deadly within 72 hours if antibiotics are not started right away

Fractures:

Wings- stabilize with a wing wrap. If fracture is below elbow, wrap as in diagram 1.

If fracture is above the elbow, wrap as in diagrams 1 then wrap wing to body.

Legs- stabilize with a tape splint or wrap to body (see diagram 2& 3)

If they have open fractures or have any other wounds, start antibiotics.

Baby birds: Keep warm at 80-90 degrees using a heat lamp or warm water in a rubber glove reheated in microwave. Watch temp.

Place bird in a small bowl or cup lined with Kleenex or paper towels.

FLUIDS FOR BIRDS:

Maintenance fluid requirements (see chart 1 for a quick way to calculate volume)

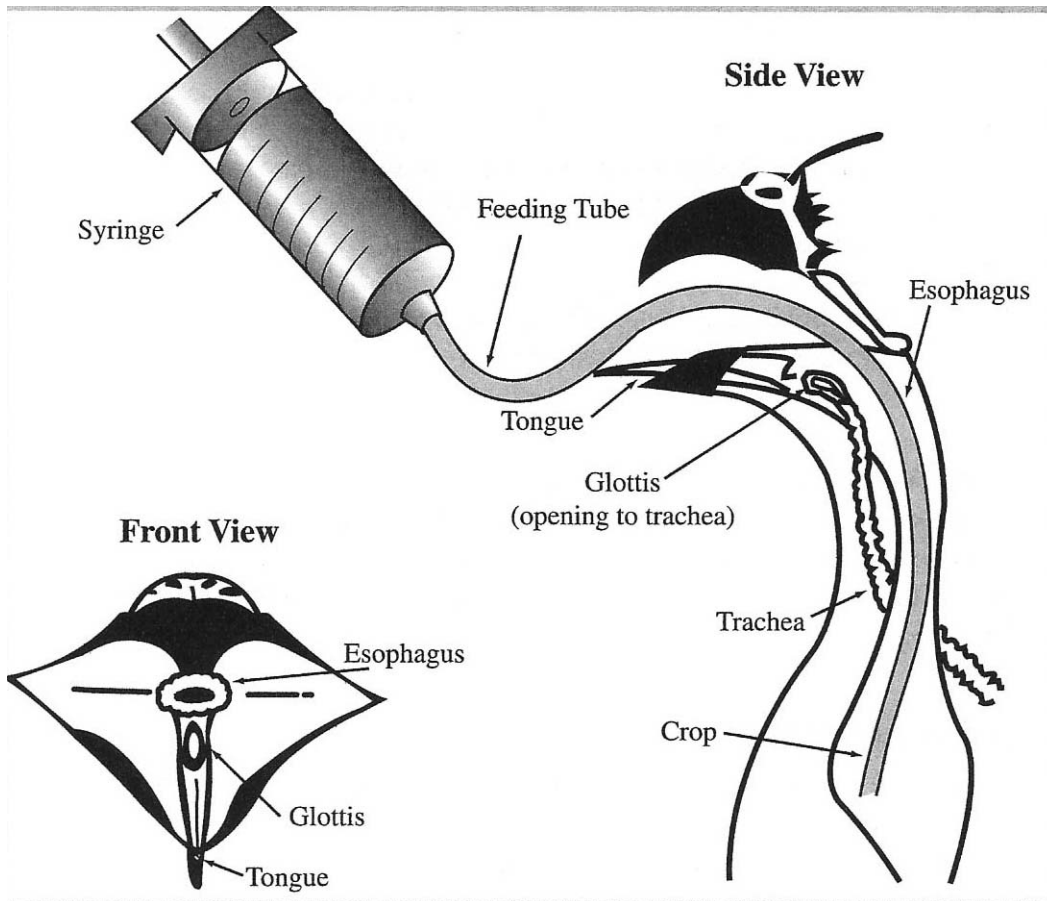
Baby birds : 100-150 ml/kg/day divided 3-6 times a day PO or SQ

Adults : 50-100 ml/kg/day + deficits

Oral Fluids: Must be given by gavage tube feeding. Do not squirt fluids into a bird's mouth because they may aspirate the fluid into their lungs. Warm all oral or SQ fluids before administration.

Baby birds: Give 2-5 ml /100 gms BW PO at one time. Start with lesser amount.

Adults : Give 2-4 ml/100 gm PO. Start with the lower amount to prevent aspiration



SQ fluids

Give warm SQ fluids in the inguinal area anterior to where the leg meets the body.

Do not give dorsally at base of neck because of air sacs there.

Volume: Give only as much as possible without making the skin excessively taught.

After withdrawing the needle apply pressure over puncture site to prevent leakage.

Antibiotic Dosages for Birds

Clavamox 125 mg/kg PO q 12 hours

Amoxi 100 mg/kg PO q 8 hours

Trimethoprim/Sulfamethoxazole 10-50 mg/kg PO q 24 hours

Baytril 10-20 mg/kg PO, SC, IM q12-24 hours (dilute if giving SQ or IM)

For suspected toxicity:

Toxiban 1-2 ml /100 gm

Atropine 0.2 mg/kg IM q 3-4 hours for cholinesterase toxicity

Waterfowl – Ducks and Geese

If suspect botulism or other toxicity

Give Toxiban 10-20 ml/kg PO and supportive care of SQ and oral fluids

Raptors

Head trauma:

Put in a dark quiet place to rest. Give metacam 0.1-0.2 mg/kg. Please do not give steroids. Mannitol can be given if the injury is acute and you suspect CNS swelling. Most of these birds also have eye trauma (hyphema, retinal detachment). Apply topical ophthalmic NSAIDS.

Wounds:

Use gas anesthesia if needed and the bird is stable
Lavage wounds with sterile saline
Torn skin can be replaced over clean wounds and taped in place for suturing later.
Plucking feathers around the edges of a laceration can tear the skin further. Instead cut the feathers or just wet them down and push out of the way.
Apply tegaderm over open wounds. Do not allow the exposed tissues to dry out.
Do not apply oil based products to a fresh wound that can be sutured.
Start antibiotics.

Broken bones:

Use gas anesthesia to get radiographs if the bird is stable.
If the patient is unstable don't stress them with radiographs.

Wing fractures: If distal to elbow use a figure 8 wrap (see diagram 1)
If fracture is in the elbow, humerus, or shoulder, apply a figure 8 wrap and wrap the wing to the body, or just wrap whole wing to body.

Leg Fractures: A leg splint will not be enough. You should support the bird in a box filled halfway with packing peanuts or shredded paper which keeps their weight off the leg.

Start pain meds: Metacam and butorphanol (see dosages below)
Start antibiotics if the fracture is open (Baytril or clindamycin - see dosages below)

Bird bones heal very rapidly so surgical repair should be done ASAP. Please call our center as quickly as possible.

Eye injuries:

Hyphema: Treat with NSAID ophthalmic drops, or BNP-HC
Metacam oral or injection if hydration status good and not in shock

Emaciation:

Emaciated raptors cannot immediately be started on food or they will die of "refeeding syndrome". Start by rehydrating them with oral electrolytes supplemented with K+, **and without dextrose**, to start their GI system working again. (These animals are extremely hypokalemic and dextrose drops their K+ level further).

Dehydration:

If dehydration is not severe, give warm electrolytes orally using a long red rubber tube passed into the ventriculus. Max volume = 2.5-4% BW or 25-40 ml/kg
Or give warm SQ fluids in the inguinal area where leg meets body or over back between scapulas. Only give an amount that does not make the skin excessively taught.
Fluid requirements: Daily maintenance 50-75 ml/kg + deficits + losses

Antibiotics

Baytril 15 mg/kg PO, SC, IM (dilute if giving SC or IM) q 12-24 hours
Ceftazidime 50-100 mg/kg IM, IV q 4-8 hours
Cetiofur 50-100 mg/kg q 4-8 hours
Trimethoprim/Sulfamethoxazole 48 mg/kg PO q 24 hours
Clindamycin (good for open fractures) 150mg/kg q 24 hours

NSAIDS

Meloxicam 0.1-0.2 mg/kg PO or IM usually given SID but duration of therapeutic blood level in question

Pain meds

Butorphanol 0.5-0.75 mg/kg IM q 12 hours or 0.5-2.0 mg/kg IM q 24 hours
Buprenorphine 0.1 mg/kg IM BID (effectiveness in birds is disputed)

Misc Meds

Activated Charcoal: Toxiban 10-20 ml/kg PO
Atropine for cholinesterase inhibitor toxicity: 0.1 mg/kg q 3-4 hours

Mammals

Know your rabies vector species: Skunks, Raccoons, Foxes, and Bats.

Groundhogs often contract rabies from raccoons, foxes, and skunks that share their borrows. (Remember any mammal, even opossums, can contract rabies).

It is extremely important to get contact information from the finder of these animals in case the animal is found to be rabid. Contact information should be taken from all good Samaritans who bring in wildlife.

Do not let anyone who is not vaccinated for rabies touch these species.

Always wear gloves.

Orphan baby mammals

Rewarm: Use water bottles or heat lamp. Keep at 80-90 degrees. Watch temp: babies can overheat if they are unable to move away from the heat source.

Rehydrate SQ: 80-100 ml/kg divided into three doses daily (see chart 1 for a quick way to calculate volume)

Once hydrated and warm, you can start oral electrolytes (Pedialyte)

Do not immediately start formula. If the baby is cold or dehydrated, feeding it can cause more harm than good. Also, giving the wrong formula can cause problems. Each species of orphan needs a different formula. If you have fed them the wrong formula and then a wildlife rehabilitator has to switch them to the correct formula, this change can cause diarrhea which is stressful and sometimes fatal to these babies.

Once the baby is warm and rehydrated, oral electrolytes are given before any formula is started. Pedialyte is a good oral electrolyte solution for use in baby mammals.

Volume per feeding: 5% BW in grams (for 100 gm give $.05 \times 100 = 5$ ml).

Stimulate to urinate and defecate at every feeding. Feed every about every 3 hours.

Attacks by cats or dogs: Always start amoxi or clavamox immediately
Give usual mammal dosages

Adult mammals

Treat similarly to cats

Anesthesia may be needed for treatment.

The ketamine, dexmedetomidine, butorphanol combination works well at the cat dose.

Bunnies with torn skin or degloving injuries:

Lavage the area with sterile saline, Do not try to clip the hair (this is impossible and very stressful to the rabbit) Never apply disinfectant solutions or oily topical medications to fresh wounds since this will interfere with primary healing

Glue the skin back over the clean wound at the skin edges with Tissuemend II – this is an absorbable glue so it doesn't matter if some gets under the skin.

Use only Baytril or Trimeth/Sulfa

Antibiotic dosages for mammals:

Trimethoprim/Sulfamethoxazole 30 mg/kg PO q12 hours

Baytril 5 mg/kg PO, SQ, IM q 12-24 hours

Amoxi 22 mg/kg PO, SQ q 12 hours

Clavamox 13.75 mg/kg PO q 12 hours

Do not use oral Amoxi or Clavamox in rabbits or rodents

Deer

Adult deer with fractures are rarely successfully rehabilitated. Euthanasia is usually required. Due to concerns about the spread of Chronic Wasting Disease, rehabilitation of adult deer is currently banned in Northeast Virginia.

Fawns: If the fawn does not appear sick or injured, make sure it was not accidentally kidnapped. If it was, it can be returned to its mother hours (sometimes even 24 hours) after being taken. If the fawn is sick, injured, or truly an orphan, our center treats sick and injured fawns and then fosters them out to wild does who will raise them along with their own fawns. This is much better for the fawns because it prevents them from becoming too friendly and they learn natural behaviors. This increases their chances of survival in the wild.

Due to concerns about the spread of chronic wasting disease, fawns found in Frederick County should not leave Frederick County because they may carry this disease and spread it to new areas.

Stay educated about the current status of CWD and the surveillance area in Virginia.

DGIF is changing their rules regarding the movement of deer as this disease moves closer to Frederick County.

Please remember: It is important not to let wild animals become too accustomed to, or friendly toward people. They are not allowed to be kept as pets without a permit, and if they become friendly and are then let go, they will not survive long in the wild. Friendly wild animals are likely to be killed either because they become pests, or because someone will mistake their friendliness for rabies.

Reptiles

Turtles hit by cars, lawnmowers, etc.

Lavage the wounds with sterile saline. Do not apply oil based topical antibiotics to wounds in the shell because these substances should not be put inside a broken bone and will impede healing.

Align the pieces of shell as well as possible then wrap the shell with vet wrap or tape to stabilize it.

Wrap broken legs into the shell. When the turtles try to walk on a broken leg, their fractured bones often puncture the skin and create a more serious injury.

Start Antibiotics



Heat: Keep at 80-90 degrees

Maintenance fluids: 10-30 ml/kg/day + replace deficits (see chart 1 but halve the weight for reptiles to get the correct fluid amount)

Site for SQ fluids: dorsal to back leg

Some references advise avoiding LRS in turtles. Normasol R is recommended.

Many turtles will rehydrate themselves if allowed to soak in a shallow pan of warm water.



Administer SQ fluids to turtles dorsal to rear legs.

Snakes

Wounds: Lavage with sterile saline
Cover with tegaderm
Start antibiotics

Reptile Medications

Antibiotics

Ceftazidime 20 mg/kg SQ, IM, IV q 72 hours

Ceftiofur 2.2 mg/kg IM q 48 hours snakes

5.0 mg/kg q 24 hours turtles

Baytril 5 mg/kg SC or IM q 24 hours –irritating – best to dilute with saline

NSAIDS

Meloxicam 0.1-0.2 mg/kg PO q 24 hours

Pain meds:

Buprenorphine 0.01-0.02 mg/kg IM q 24 hours – best for pain relief in reptiles

Butorphanol 0.4-1.0 mg/kg SC, IM length of pain relief unknown – there is currently a debate whether this drug works at all in reptiles.

Anesthesia

Ketamine 10 mg/kg + medetomidine 0.1-0.3 mg/kg IM

Ketamine 10-30 mg/kg + butorphanol 0.5-1.5 mg/kg IM

They can be intubated and maintained on isoflurane

Useful Products:

Screw worm spray (permethrin) works well for maggots. Capstar can also be used. Tegaderm is a wonderful covering to put on wounds on animals. It sticks to hair, feathers, and skin or scales, but not to the wounds. It provides a barrier that keeps the wound moist and keeps contaminants out. Hydrogels are wonderful water soluble wound coverings to use under tegaderm. Tissuemend II is an absorbable tissue glue that can be used to close small wounds

Helpful phone numbers:

Blue Ridge Wildlife Center: 540-837-9000

Dr Belinda Burwell: Wildlife rehabilitator and veterinarian 540-664-9494

Vicki Windham: Wildlife rehabilitator 757-749-5640

Local Conservation Police Officers (Game Wardens):

Ray Solomon: Office: 540-248-9360 Cell 434-906-1386

Carl Martin: Office: 540-248-9360

After hours 804-367-1258

Winchester Animal Control: Nancy Mellott: 540-545-4730

After hours 540-662-4131

Frederick County Animal Control: 540-662-6162

Clarke County Animal Control: Jenny Zallman 540-955-5104

After hours 540-955 1234

Department of Game and Inland Fisheries:

24 hour dispatch: 804-367-1258

Crimes or wildlife violations: 800-237-5712 or email wildcrime@dgif.state.va.us

U.S. Fish and Wildlife Service

Law Enforcement Al Hudley 540-898-1755

Migratory Bird Violations 804-771-2883

Wildlife Rescue League of Loudoun County: 703-391-8625

Wildlife Center of Virginia: 540-942-9453

Blue Ridge Wildlife Center
PO Box 326
Millwood, VA 22646
540-837-9000

Wildlife admission Form

Name _____ Phone _____

Address _____ Email _____

Species: _____ Approx. Age: _____

Date and Time found: _____

Reason for Rescue: _____

Where was the animal found? Please be as specific as possible.

Please describe the circumstances: (near a road, in a yard with dogs, cat dragged in, etc.)

How long have you had the animal?

Was it fed, and if it was, what was it given and did it eat or drink?

Was anyone bitten or scratched by the animal? If so, who?

Was any medical care given? If so, what was done?

FLUID THERAPY CHART (Maintenance and Replacement)

ANIMAL WEIGHTS: 1 to 10 grams										
Incoming weight (in grams)	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10
Corrected body weight (in grams)	1.1	2.2	3.3	4.4	5.5	6.6	7.7	8.8	9.9	11
Day 1 (cc per dose*)	0.04	0.07	0.11	0.14	0.18	0.21	0.25	0.28	0.32	0.35
Day 2 (cc per dose*)	0.03	0.05	0.08	0.11	0.13	0.16	0.19	0.21	0.24	0.27
Day 3 (cc per dose*)	0.03	0.05	0.08	0.11	0.13	0.16	0.19	0.21	0.24	0.27
Day 4 or maintenance only (cc per dose*)	0.02	0.04	0.06	0.07	0.09	0.11	0.13	0.15	0.17	0.18
ANIMAL WEIGHTS: 10 to 100 grams										
Incoming weight (in grams)	10	20	30	40	50	60	70	80	90	100
Corrected body weight (in grams)	11	22	33	44	44	66	77	88	99	110
Day 1 (cc per dose*)	0.35	0.7	1.1	1.4	1.8	2.1	2.5	2.8	3.2	3.5
Day 2 (cc per dose*)	0.27	0.5	0.8	1.1	1.3	1.6	1.9	2.1	2.4	2.7
Day 3 (cc per dose*)	0.27	0.5	0.8	1.1	1.3	1.6	1.9	2.1	2.4	2.7
Day 4 or maintenance only (cc per dose*)	0.18	0.4	0.6	0.7	0.9	1.1	1.3	1.5	1.7	1.8
ANIMAL WEIGHTS: 100 to 1000 grams										
Incoming body weight (in grams)	100	200	300	400	500	600	700	800	900	1000
Corrected body weight (in grams)	110	220	330	440	550	660	770	880	990	1100
Day 1 (cc per dose*)	3.5	7.0	10.5	14.0	17.5	21.0	24.5	28.0	31.5	35.0
Day 2 (cc per dose*)	2.7	5.3	8.0	10.7	13.3	16.0	18.7	21.3	24.0	26.7
Day 3 (cc per dose*)	2.7	5.3	8.0	10.7	13.3	16.0	18.7	21.3	24.0	26.7
Day 4 or maintenance only (cc per dose*)	1.8	3.7	5.5	7.3	9.2	11.0	12.8	14.7	16.5	18.3

* Administer three doses per day

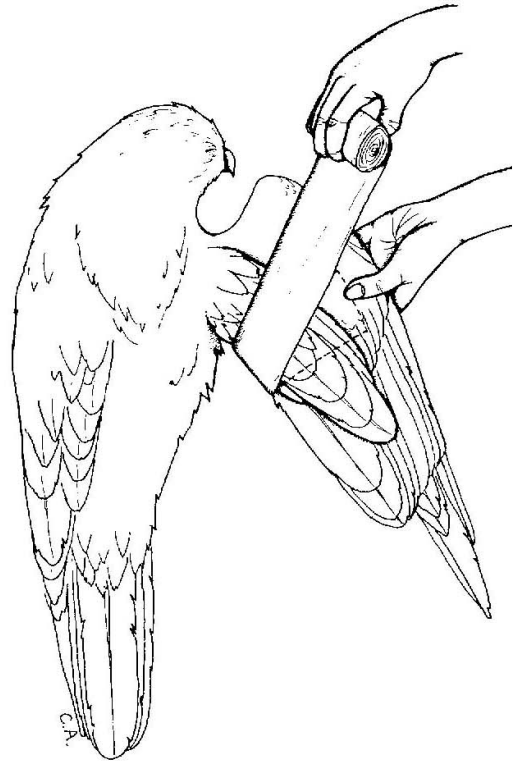
NOTE: When calculating the fluid needs of turtles and tortoises, use half their body weight as the incoming weight.

Diagram
1

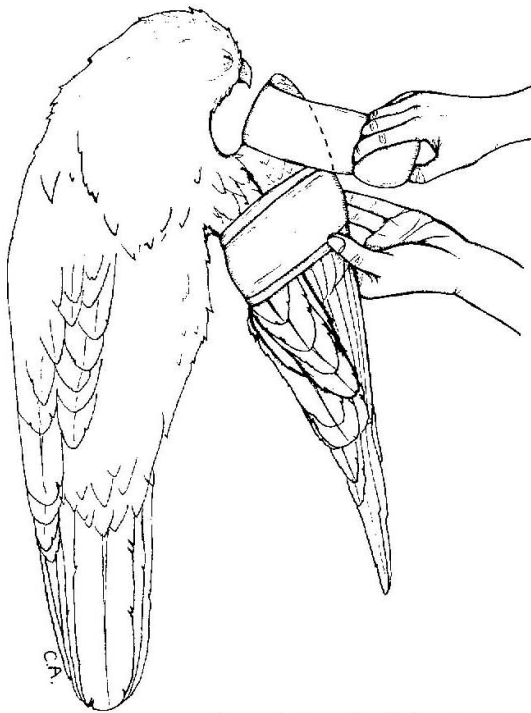
(a)



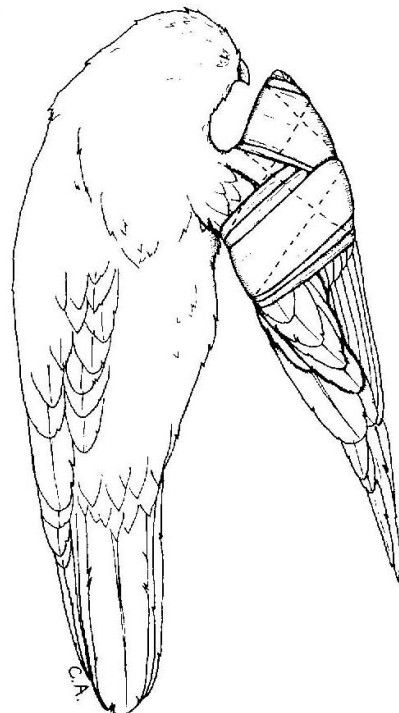
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(c)



(d)



from Avian Medicine by Samour

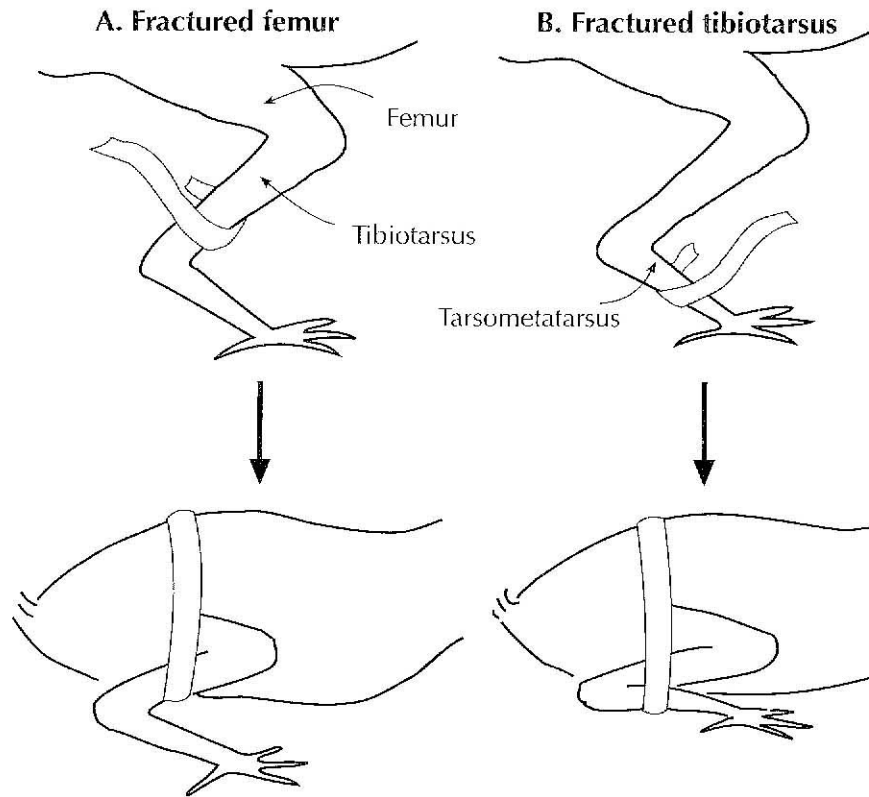
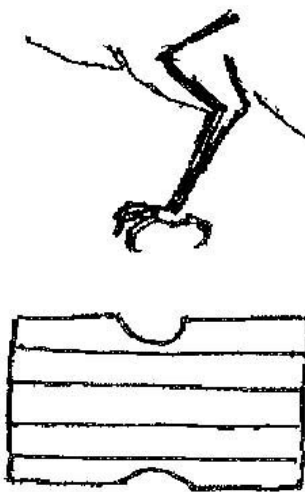


Figure 4. Application of tape leg bandages for fractures of the femur (A) and tibiotarsus (B).

Fractured femur. The tape bandage is begun with the sticky side of the tape facing the bird. A loop of tape is made around the tibiotarsus, with the tape going under and behind the bone (medial side) and back up to the tape on the outside (lateral side) of the bone. The tibiotarsus is then pulled up against the body, tape is extended up over the back of the bird, around the body and abdomen, over both the tibiotarsus and the femur, and ending at a point over the spine of the bird (Figure 4A).

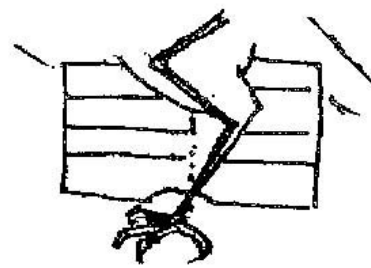
Fractured tibiotarsus. The tape bandage is begun with the sticky side of the tape facing the bird. A loop of tape is made around the tarsometatarsus in the same manner as used above on the tibiotarsus. The tarsometatarsus is then pulled up against the tibiotarsus and tape is extended over both bones and up over the back of the bird. The bandage is completed as above. The tape goes over back, around abdomen, and over tarsometatarsus, tibiotarsus, and femur to a point at center of the back of the bird (Figure 4B).

Splinting techniques for nestlings by Lessie Davis



1. Layer tape and make it unsticky.

Masking tape works well. Do not use cloth tape.



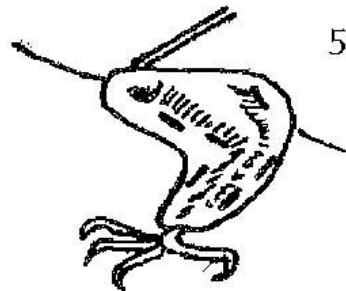
2. Notch the bandage and lay leg on top in a comfortable perching position.



3. Fold bandage and secure to leg.



4. Trim and round edges.



5. Optional: place small staples as close to leg as possible. Cover with tape.

Figure 5. Bird leg splints.

Avian Bandaging techniques by Talbot and Buhl