

PRACTICAL DRAGONHEALING



GENERAL HINTS WOUNDS AND FCHORING INFECTION
BURNS FTHREADSCORE AND COMPLICATIONS
BONE, JOINT AND MUSCLE INJURIES MISCELLANEOUS CONDITIONS

This document is intended only as a guide to Dragonhealing. The aim is to standardize some of the techniques in an easy to use format. However, each situation requires a different diagnosis and therefore treatment, which should always be taken into consideration when healing Dragonkind. This summary has been prepared with Dragons in mind. However, it will only take a little imagination to alter the notes for Firelizards and/or Whers. It is by no means extensive, information is being added as the need, and time, arises.

Written by H. Schappell, and reprinted at the Kadanzer Weyr by author's permission (<http://www.silvertree.org/~romany/dragonhealing/>); non-Kadanzer-specific Pernese language preferred by author left untouched.

GENERAL HINTS

- Get a gold dragon to control the Dragon if necessary, they can ease pain and still movement of an injured dragon. Other colours can also aid somewhat, although this is to a much lesser extent.
- Take control of the situation, but never forget to ask the Rider of the injured Dragon for permission to start work on their lifemate.
- Wash all instruments in Redwort solution.

● Wash your hands and those of helpers in Redwort solution, then coat liberally in oil if you will be using Numbweed. Through a major injury, i.e.. wingsail damage, you will need to protect your hands more than this once. If you do not, you are putting the injured Dragon at risk through your hands being too numb to work. Remember your hands may become scratched and nicked after healing, therefore re-coat your hands to protect them on going *between*.

● Dragons may need to be convinced that the pain of a Threadscore will dissipate, since Numbweed will take a few seconds to penetrate the epidermis of the hide.

● Stitching should be performed so as not to pucker the hide but still provide a barrier to infection (i.e. not too tight and not too loose).

● Remember Dragons are *large*! To work on most of their injuries you will need some kind of height advantage, i.e. a table or a ladder.

● Afterwards, you will need to get the Dragon to the infirmary or ground Weyr. Other Dragons can be used to support the injured one.

● Make sure plenty of water is available for the Dragon to enable dehydration to be held at bay.

● In cases of emergency, a Beastcrafter or Healer can be called upon to assist a Dragonhealer.

WOUNDS AND ICHORING

Any abnormal disruption of Dragon hide or surrounding the body surfaces is known as a wound. Most wounds can be classified as open: with a break in the hide through which ichor and other body fluids may escape. This also permits the subsequent entry of germs, which may in turn cause infection. A closed wound allows ichor to escape from the circulatory system, but not the body and is known as internal ichoring. The nature of the force creating the wound determines the type of wound and influences the treatment given.

Types of Wounds:

● **Incisions** - are made by a clean cut from a sharp edge, such as a knife. There may be profuse ichoring because the edges of ichor vessels are cut straight across. Generally, this type of wound is rare in a Dragon, and is usually the result of some surgery on the part of the Dragonhealer.

● **Lacerations** - are rough tears caused by crushing or ripping forces, generally from another object or Dragon. Lacerations may ichor less profusely than clean cut wounds; though there is more tissue damage. Contamination risk from the germs and subsequent risk of infection is high. These may happen during a mating flight when talons may shred the hide of an opponent.

● **Abrasions** - are superficial wounds in which the top layers of the hide are scraped off, leaving a raw tender area, and are caused predominantly by a sliding fall or a friction burn. They often contain foreign particles that may cause infection.

In Dragons these can occur from brushing against rock, bad landings on hard dirt, etc., especially during Weyrlinghood.

● **Punctures** - are caused by the entry of a sharp foreign body into the hide, such as stepping on a Needlethorn. They are characterised by having a small site of entry but a deep track of internal damage. As dirt and germs can be carried far into the body risk of infection is high. Generally, because Dragon hide is so thick, these injuries are extremely rare, but may occur in the frenzy of bleeding with sharp bone fragments from the Herdbeasts and Wherries, or as the result of re-using a Needlethorn.

● **Threadscores** - are similar to an incision wound in tissue damage, but with the complication of a burn. Depending on the resultant damage, Threadscored wounds may ichor profusely or ooze slowly. These are discussed in a further section (see [Threadscore and Complications](#)).

Several of these wound types can cause serious ichoring, and it is imperative that a Dragonhealer learn to recognize the various types of ichoring from the various types of vessels. When the ichor vessels are severed or torn, their damaged ends constrict and retract in order to minimize ichor loss. At the same time, the ichor that escapes from damaged vessels begins to clot. However, the physical condition of the Dragon will deteriorate exponentially to the amount of ichor lost. At first, the heartbeats will increase in tempo, the gradually the skin will grow grey, as the hearts divert ichor to the major organs. Eventually shock will become evident, which will be followed by the Dragon becoming unconscious and life eventually failing. It is important, therefore, that the type of ichoring is recognised.

Types of Ichoring:

● **Arterial** - the ichor is under pressure from the pumping hearts. Therefore, ichor is spurted from the wound in time with the hearts beat. A severed artery may produce a jet of ichor several feet high and can rapidly empty the circulation of ichor.

● **Venous** - the ichor is under less pressure than arterial ichor, but since the vein walls are capable of great distention, ichor may pool. Thus, ichor from a severed major vein may gush profusely.

● **Capillary** - can be characterised as oozing and occurs at the site of all wounds. Although capillary ichoring may at first be brisk, ichor loss is generally negligible.

External Ichoring:

● **Slight** - not a danger and will eventually stop on its own, the flow of ichor helping to cleanse the wound.

● **Moderate** - often stopped by the sealing action of Numbweed once applied to the wound. If the ichoring still does not stop, a pressure bandage should be applied. A pad of bandaging material should be applied to the wound and held tightly in place. If this soaks through, it should not be removed; instead, a second bandage should be applied on top of the first. In most cases, this will be enough to stop ichoring.

● **Severe** - if it does not respond to a pressure bandage, or if ichor is spurting from a wound, stronger measures are needed. Apply pressure to the artery feeding ichor to the area. The easiest way on a Dragon to do this is to find the severed vessel and clamp it. Stitches then need to be used to repair the damaged vessel. If pieces have to be cut away from the vessel do not worry, the vessels are flexible and will adjust.

MINOR WOUNDS

Cause:

Generally mating flights and fights, accident-prone Weyrling Dragons.

Symptoms:

Wounds, likely to be dirty and differing in severity. The wound may be gushing, oozing, or spurting ichor. Rider and Dragon likely to be distressed to some degree.

Treatment:

1. If the Dragon is in pain, then ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury. If this is the result of a mating flight, make sure you start handing the Rider skins of wine. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Clean wound with Redwort.
3. Slather with Numbweed Remove any dirt, foreign articles etc. with forceps.
4. If ichoring has not stopped, apply a pressure bandage to the wound. A pressure bandage is merely a pad of bandaging material that is applied over the wound and pressed tightly in place. If this soaks through, it should not be removed; instead, a second bandage should be applied on top of the first. In most cases, this will be enough to stop ichoring.
5. Apply more Numbweed.

Recovery:

For minor injuries usually a day or two is all that is required. Numbweed will help clot the ichor, and so the wound will heal quickly. For more moderate injuries, usually no more than a sevenday is required. Obviously, if the injury is in a place that would be exacerbated, such as under the straps, on the wingsails, they will need to rest longer.

MAJOR WOUNDS

Cause:

Threadfall, broken bones, flights and fights.

Symptoms:

Ichor may be pooling from severed arteries and veins (usually veins: arteries are generally too deep). Rider and Dragon will be distressed to varying degrees. Silvery muscle will be easily visible.

Treatment:

1. Ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury. If this is the result of a mating flight, make sure you start handing the Rider skins of wine. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. If wound has become dirty, clean thoroughly, but quickly with Redwort solution.
3. Slather with Numbweed. Remove any dirt, foreign articles etc. with forceps.
4. If ichoring has not stopped, apply a pressure bandage to the wound. A pressure bandage is merely a pad of bandaging material that is applied over the wound and pressed tightly in place. If this soaks through, it should not be removed; instead, a second bandage should be applied on top of the first. In most cases, this will be enough to stop ichoring.
5. If ichoring is severe and does not respond to a pressure bandage, or if ichor is gushing and spurting from a wound, stronger measures are needed. Apply pressure to the vessel feeding blood to the area if possible. This may entail having an assistant physically clasp the vessel and stopping ichor from escaping in such large quantities. If not, quickly (time is of the essence here), use surgical clamps to restrict the flow or loss of ichor.
6. The vessel then needs to be sutured to the severed end as quickly as possible (*see Suturing for more details*). The longer the tissue is without ichor the less healthy it will become. However, this is no excuse for rushing and making mistakes!
7. Remove the clamps slowly, check for any formation of ichor. You may have to clear some of the Numbweed away with oil-soaked pads to see clearly.
8. Reapply Numbweed.
9. Suture any wounded muscle together and then finally the hide.
10. Apply more Numbweed

Recovery:

Severe wounds are likely to keep the Dragon out of the air for several sevendays. Obviously, if the injury is in a place that would be exacerbated, such as under the straps, on the wingsails, they will need to rest longer. It is important during this time to replace lost fluid by making sure the Dragon drinks. If the amount of ichor lost is great, then a transfusion may become necessary (*see Transfusions for further details*). A wound that has been stitched needs to be kept moist to avoid further scarring. Stitches should be removed by a Dragonhealer approximately a sevenday after they have been placed (*see Suturing for further details*). Generally when the Dragon begins to complain of itching, sufficient healing has taken place to allow the suture removal.

DEHYDRATION

The lack of adequate body fluids for the body to carry out its normal functions and operate at an optimal level (by loss, inadequate intake, or a combination of both) is a classic definition of dehydration. In Dragons it can be caused by diarrhea, usually after a constipated Dragon has been purged, from consistently flying at high altitude for long periods of time, desert climes, and also from loss of ichor.

It is imperative that dehydration is treated as soon as it is identified. Mild cases are often cured by oral rehydration, but for moderate to severe cases of dehydration, intravenous fluids will be required.

Cause:

Severe, or unidentified injury. Diarrhoea High altitude flying. Desert climates.

Symptoms:

Dragon and Rider may both complain of unslakeable thirst. Dragon hide may be grey, and he/she will be lethargic. The Dragon will likely be distressed, and both Dragon and Rider may be delirious. There may be decreased urine output. The hide may have lost its elasticity (you can test this by pinching the hide into a fold, and watching it return: does it sag? If yes, then they have poor hide turgor). Hearts may be beating faster. They may have a dry mouth, and their stomach may hurt.

Treatment:

1. If dehydration is mild, then ensure that the Dragon starts drinking a lot of water, and continues to do so until they are recovered. Water should always be provided for a Dragon after any treatment by a Dragonhealer as a mostly precautionary measure.
2. If the dehydration is moderate, try treating with water, and watch for 3-4 hours. If there is no sign of improvement, treat as severe dehydration.
3. For severe dehydration, you must try transfusing the Dragon with ichor from another Dragon (*see [Transfusions](#) for further details*). Following the steps for removing ichor, and then inject this into a vein. You must inject slowly, or you risk having the vein collapse. Needless to say this is very bad. If this does happen, you need to inject ichor at a lower point on the vein to where you were injecting, and hope that you have the same vein. This is a very delicate procedure, with a lot of inherent problems and should only be carried out by experienced Dragonhealers.

Recovery:

Depending on the severity, recovery may take a couple of days to upwards of a month or even six months.

TRANSFUSIONS

Ichor is to Dragons what blood is to mammals. Copper-based as opposed to iron, it is a dark green in colour, and smells metallic in nature. In some cases it may be necessary to withdraw ichor from a healthy Dragon for transfusion into an injured one. A syringe is necessary for this operation. The essential components for a syringe are the glass body of the syringe itself, Needlethorn, and wax. Needlethorns need to be long enough to get through hide, muscle, and tissues to the veins: 3 inches or longer. They're strong enough to use for injections, so bending or breaking should not be a problem. The larger the aperture of the needle, the more ichor can be drawn, and the maximum aperture should be used wherever possible. The wax is obtained from a tree and is used to attach the Needlethorn to the body of the syringe. When kneaded, the wax becomes a soft gel, which enables it to seal the syringe as it hardens.

Everything needs to be sterilised. Sterilisation is achieved by boiling the syringe for approximately an hour in water, washing it in Redwort and then rinsing it in clean boiling water (excess Redwort

dilutes the medication, interferes with the action of Numbweed and tends to sting).The Needlethorns are sterilised in Redwort and rinsed in water (boiling them tends to make them soggy and therefore useless!) Mold the wax around the entrance of the syringe, then secure the Needlethorn in place before allowing the wax to seal off the juncture between 'thorn and syringe. Needlethorn should never be re-used, as it increases the chances for infection, but syringes should be re-sterilised (they are expensive, so care must be taken when using them with oily hands).

Cause:

Threadscore, wound, infection.

Symptoms:

Dragon and Rider may both complain of unslakeable thirst. Dragon hide will be grey, and he/she will be lethargic. In the case of dried-out cartilage following a wing injury, the Dragon will likely be distressed, dehydrated (*see Dehydration for further details*), and parched.

Treatment:

1. If the Dragon is delirious, enlist the assistance of a gold Dragon to dampen the pain and keep the Dragon still enough to administer the cure. Get assistance, a healthy Dragon to withdraw ichor from, and the necessary equipment as soon as possible.
2. Check, and treat, any wound complication.
3. Remove ichor from a healthy Dragon, and use this to treat the sick Dragon.
4. Clean the hide of the healthy Dragon with Redwort, usually over a bone (wings are good for this), and then palpitate the hide for a vein.
5. Then, using a syringe, puncture that vein, and remove ichor from the Dragon.
6. Once the syringe is full, carefully remove the needle from the vein, and hold the Redwort-soaked pad over the needle entry site for a few moments.
7. Infuse into the area that is being drained of ichor. Even dropping the ichor on externally can aid greatly (*see Dried Out Cartilages for further details*).

Recovery:

Anywhere from one month to one Turn, depending on the severity of the injury and any complications. With dried-out cartilages, recovery time depends on the severity of the wing injury, but will generally be at least a few months. Dehydration should be treated as quickly as possible.

DRIED OUT CARTILAGES

Cartilage can, and does, dry out if exposed. This is a particularly prevalent problem in any injury to a wing. The major injury may have been treated, but the cartilage remains exposed as the wing heals, but dries quicker than other tissues.

Cause:

Poor ichor supply, usually to wing after scoring.

Symptoms:

The Dragon will be distressed, dehydrated (see [Dehydration](#) for further details) and parched, the hide tone greyish. The Rider may also be delirious.

Treatment:

1. Suture vessels that are ichoring (see '[Deep Threadscoring](#)', [Major Wounds](#), and [Suturing](#)).
2. Remove ichor from a healthy Dragon, and use this to treat the sick Dragon (see [Transfusions](#)).
3. Apply ichor directly to the dried out cartilages and joints as often as is necessary.

Recovery:

With dried-out cartilages, recovery time depends on the severity of the wing injury, but will generally be at least a few months.

Notes:

Dehydration (see [Dehydration](#) for further details) should be treated as quickly as possible.

SUTURING

Stitches should be taken in any wound that is deep or gaping and in which the the edges of the wound seem unlikely to stay together without some sort of assistance. Stitches help provide a barrier to prevent infection of the underlying tissues. Care should be taken to draw the edges of the wound together neatly, so there is no puckering of the surrounding skin and to take as few stitches as possible, so the scar is as small as possible. A stitched wound should be kept moist, to further avoid scarring. Stitches should be removed by a Dragonhealer approximately a sevenday after insertion, but this may be adjusted on a case-by-case basis. In general, when a Dragon begins to complain of itching, sufficient healing has taken place to allow the removal of the stitches.

Applying Stitches to a Wound:

1. Oil your hands so that you can perform the dexterous movements required.
2. Follow the normal procedure for washing up and cleaning a wound.
3. Apply a thin coat of Numbweed, using just enough to deaden the area.
4. Caution the Rider not to look at what you're doing. Many people are distressed by the sight of stitches being put into hide.
5. Using a sterile Needlethorn, or one of the steel needles produced by the Smithcraft, and treated thread, usually coated with wax, make small neat stitches.
6. Push the needle through the hide, towards the wound, then through the other side of the wound, from the wound and out, with the same piece of thread.
7. Loop one end twice over the other and tighten, this will form a knot.
8. Clip the excess and start the next stitch.
9. Continue until the edges of the wound is drawn together, but not tightly. Tight stitches will cause puckering of the surrounding hide, and may become impossible to remove. Always make as few stitches as possible but make sure the wound does not gape. You need this to be a barrier to infection. Leave a small gap of no more than 2.5cm to assist in preventing infection: if you close the wound completely

some germs reproduce even quicker!

10. Apply a thicker coat of Numbweed to the wound.

11. Explain the signs of infection to the Rider and warn them to see a Dragonhealer if they notice any of them. You should check on them periodically.

12. In a sevenday remove the stitches.

Removing Stitches from a Wound:

1. Wash up and cleanse the area as usual.

2. Apply a light coat of Numbweed.

3. Ask the Rider to look away, so they will not be upset by the sight of you withdrawing the threads from their lifemates hide.

4. Clip the threads with scissors, or cut them with a sharp knife, being careful not to cut the hide.

5. Using small forceps, remove each of the threads from the hide.

6. Apply a light coat of Numbweed over the punctures left by the threads to seal them.

Most Dragonhealers utilize one method of stitching which can cause substantial scarring of the tissue, leaving the wound unsightly. The removal can be unpleasant for the Dragon as scar tissue can form around the knots. However, some higher qualified Dragonhealers now utilize another technique (it being harder to learn). This method consists of starting at one end and not at any point tying off. This means there are no knots for scar tissue to form around and thus, when removing the stitches by simply cutting one end and pulling on the other, causes less pain to the patients. Wounds are less puckered with these 'running' stitches than previously observed with regular stitches.

INFECTION

Once ichoring has been stopped, the greatest danger from wounds is that of infection. Wounds should be well cleaned with both water and Redwort, and great care should be taken to remove all dirt or other foreign objects from a wound. This is especially true with puncture wounds, as dirt may be driven deep into the skin. If stitches are to be taken, the wound should be only lightly coated with Numbweed, and then re-coated more heavily after placing the stitches. All other wounds should be well-coated with Numbweed

It is important to keep wounds clean and protected from further injury; however, the flow of air over a wound promotes healing. These two objectives may be accomplished by covering the wound for two to three days to allow healing to begin and then leaving it uncovered except when the Dragon will be doing something that involves getting dirty, for example feeding. Alternatively, the wound can be covered during the day and uncovered at night. Wounds that show no signs of healing within two days should also be considered to be infected and treated as such. Covering a wound is not always as simple as it sounds, especially on a Dragon because of their size. In cases where it is simply not possible to bandage the wound, which is true about 90% of the time, make sure the wound is kept clean. If there is a danger of infection, soak bandages in Numbweed, and allow the drying herb attach the pads of the bandages to the wound.

In spite of a Dragonhealer's best efforts, wounds can become infected. When this happens, a Dragonhealer must be able to recognise and treat the condition.

The signs of infection include:

- Increasing pain and soreness.
- Swelling, greenness and a feeling of heat around the wound.
- Pus within, or oozing from, the wound.
- Faint trails leading away from the wound.
- If the infection is advanced, signs of thirst, grey hide and lethargy.

Cause:

Badly tended wounds, talon loss, decaying teeth.

Symptoms:

Increasing pain and soreness. Swelling, greenness and a feeling of heat around the wound. Pus within, or oozing from, the wound. Faint trails leading away from the wound. If the infection is advanced, signs of thirst, grey hide and lethargy.

Treatment:

Any of these signs are cause for concern and treatment should begin as any of them are recognised. Hot poultices may be used to try to draw out the infection and are often effective. If this treatment does not improve the condition, it may be necessary to pierce the wound to allow it to drain, or to re-open a wound and re-clean it, sometimes with a scrubbing brush and Redwort. Both of these procedures are extremely painful, and the Dragon will need to be controlled by a Gold Dragon during the process. Extreme care should be taken to prevent further infection, and infection of others from infected materials. Dressings used on an infected wound should be destroyed, and tools should be boiled in water before re-use. The Dragon should be watched carefully until the wound is fully healed.

Recovery:

Depending on the severity, wounds will take between 2-3 days and just over a month to heal correctly. It may be necessary to drain the wound several times if infection is sufficiently advanced.

BURNS

Burns result from dry heat, from corrosive substances and from friction. Burns can also be caused by extreme cold, and by radiation from the sun's rays. In Dragons, burns are common throughout a Dragon's life, because of the thickness of their hide they don't suffer from any deleterious effects of sunlight, but flame, Agenothree, and friction are all problems.

There are a number of factors to be taken into consideration when assessing a burn. These include the cause of the burn, the depth of the burn and its extent. The extent of the burn will tell you whether shock is likely to develop, as tissue fluid leaks from the burned area and is

replenished by fluids from the circulatory system. The greater the area covered by the burn, the more severe the shock will be. Burns also carry a serious risk of infection, and the larger and deeper the burn, the greater this risk will be. The damage to the hide breaks down the body's natural barrier to infection, leaving it exposed to germs.

Causes of Burns:

● **Dry** - flames, contact with hot objects, friction from ropes etc.

● **Chemical** - exposure to Agenothree.

Types of Burns:

● **Superficial** - involve only the outer layer of the hide. Characterised by greenness, swelling and tenderness.

● **Partial-thickness** - involves a partial-thickness of the hide. Characterised by its raw appearance and blisters.

● **Full-thickness** - all layers of the hide are compromised. Damage may extend behind hide to nerves, muscle and fat. Hide may appear pale, waxy and sometimes charred.

Cause:

Flame from untrained Dragon, flame from Threadfall accident, flame from misdirected Flamethrower, acid burn from Agenothree, friction from bad takeoffs and landings, etc.

Symptoms:

Greenness, swelling, tenderness. There may be blisters. Hide may be compromised completely, and ichoring. Dragon and Rider will be in mild to severe discomfort.

Treatment:

1. The Rider should still be conscious, though more than slightly distressed at the condition of their lifemate. For severe burns, the assistance of a gold Dragon will be required to dampen the pain and keep the Dragon still enough for you to do your job. Take control of the situation, but make sure you ask the Rider before approaching the Dragon. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination. Get as many details as you can of the injury from the Rider.
2. Keep talking to the Rider if at all possible, to keep them lucid and in the here-and-now. It is also useful to keep the Rider from panicking at their lifemate's injury. Do your best to assess exactly how the burn happened, as this can help determine the best way to treat the wounds.
3. Coat wound thoroughly with Numbweed.
4. Douse the burn with copious amounts of water. Depending on the extent of the burn, it may be more practical to get them to a lake, or other clean body of water. Salt water can help, but may, at this time, be more painful.
5. Remove straps, cut them loose if need be.
6. Slather a mixture of Aloe gel and Numbweed over the burn, and leave uncovered.

7. Keep the Dragon in an infirmary, and make sure the infirmary is warm, since the hide has been compromised heat from the major organs can dissipate more quickly.

Recovery:

Depending on the severity of the burn, the injury may take two-three days, to several months to heal. Generally, the deeper the burn, the longer the heal time. Keep the injury moist with a mixture of Aloe gel and Numbweed, pay particular attention to dehydration (*see Dehydration for further details*).

THREADSCORE & COMPLICATIONS

Thread is a parasitic fungal organism not native to the planet Pern. It is carbon-based and omnivorous. Although its exact origins are unknown, it is believed to hail from the Red Star, since its appearance in the sky heralds a Pass of Thread. As it passes through the Pern's atmosphere, Thread takes on its threatening form, a tangled, writhing mass of grey filaments which devours everything organic in its path. Thread can only be killed by flame, by a lack of air like that experienced *between* or by immersion in water.

Dragon Threadscores, unlike human 'scorings, do not need dousing with water. This is because they've generally gone *between*, as soon as sustaining the injury, in an attempt to kill the Thread. However, in the odd case when you need to drown the Thread on a Dragon, try and get them into a lake, or near one, or you'll be carrying a lot of buckets of water.

Threadscore is a severe burn, caused by the fact that the mycorrhiza grows very hot on its trip through the atmosphere. The edges of any Threadscore wound will be blackened and burned as if it were lanced through by a very hot blade.

SIMPLE THREADSCORE

Cause:

Threadfall.

Symptoms:

Clean lacerations of a burn-nature, edges blackened and burned. Score will be shallow and simple in appearance. Rider and Dragon will be uncomfortable at most.

Treatment:

1. Make sure that the Threadscoring is definitely of a basic nature. Look for deeper, more serious injuries.
2. If wound has become dirty (often char dust will be the main culprit), clean quickly but thoroughly with Redwort solution.
3. Cover wounded area with Numbweed.

4. Leave unbandaged if at all possible. If not, then bandage loosely (*see prevention of Infection*). Remember, if the area cannot be physically bandaged, you can soak the bandages in Numbweed, then apply, and the Numbweed will help stick the bandage to the wound.

Recovery:

Simple scores are unlikely to trouble Dragons once treated. Slightly deeper scores with no complications or infections may keep the Dragon out of the air for a day or two.

DEEP THREADSCORE

Cause:

Threadfall.

Symptoms:

Clean lacerations of a burn-nature, edges blackened and burned. Ichor may be pooling from severed arteries and veins (usually veins: arteries are too deep). Wound will be deeper and more widespread. Rider and Dragon will be distressed to varying degrees.

Treatment:

1. The Rider should still be conscious, though more than slightly distressed at the condition of his lifemate. For severe body scorings, the assistance of a gold Dragon will be required to dampen the pain and keep the Dragon still enough for you to do your job. Take control of the situation, but make sure you ask the Rider before approaching the Dragon. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination. Get as many details as you can of the injury from the Rider.
2. Keep talking to the Rider if at all possible, to keep them lucid and in the here-and-now. It is also useful to keep the Rider from panicking at his lifemate's injury. Do your best to assess exactly how the clump of Thread hit the Dragon as this can help determine the best way to treat the wounds.
3. If wound has become dirty, clean quickly and thoroughly with Redwort solution.
4. Coat wound thoroughly with Numbweed.
5. Use surgical clamps on either side of any severed vessels to restrict the flow and loss of ichor and to make your job easier.
6. Suture any severed vessels as quickly as possible (*see Suturing for further details*). The longer tissue is left without a steady ichor flow the less healthy it becomes. However, this is no excuse for rushing and making mistakes.
7. Remove clamps.
8. Clean out the wound with Redwort. Check for formation if ichor around the vessels. It may be necessary to clean away some of the Numbweed with oil-soaked cloth pads. This is important, so check carefully. You may need to reapply the Numbweed after this step.
9. Stitch together muscle, then hide.
- 10 . Apply Numbweed to the entire stitched area.

Recovery:

Severe, deep scorings are likely to keep the Dragon out of the air for at least a sevenday, if not more. It is vital during recovery time that the Dragon replace lost fluid. A tub of water should be kept near the Dragon at all times. (See [Dehydration](#) for further details)

Notes:

Check that any exposed cartilage from other scored areas has not dried out. If it has follow instructions in '[Dried Out cartilage](#)' section.

WING TEARS

From a practical point of view, a Dragon's wings are the most important part of their anatomy, after all, Dragons were bred specifically to be an effective aerial fighting force, and in order to fulfill this goal, usable wings are a requirement. Wing injuries are some of the most delicate and involved repairs any Dragonhealer can ever do. There are three levels of wing scorings.

Levels of wing scoring:

● **Light** - consist of light tracks, the occasional hole, and maybe scores along the edges of the wing. Both Dragon and Rider will be uncomfortable.

● **Moderate** - includes damage to edges and sails, but not to cartilages. The Rider will probably be uncomfortable, and the Dragon will be in some pain.

● **Severe** - sails, cartilages, wingbones, and veins are all likely to be affected by these injuries. The injured Dragon will have to be restrained by a queen or perhaps two, depending on the severity of the injury, and the Rider will most likely need to be treated with a great deal of wine.

Cause:

Threadfall.

Cause 1: Light Threadscoring**Symptoms:**

Little damage to any sails, veins, cartilages or edges. Rider and Dragon likely to be uncomfortable.

Treatment:

1. Apply Numbweed to area.
2. Stitch hide back together, if applicable.
3. Apply Numbweed once more if required.

Recovery:

Approximately a sevenday. Check that there are no further injuries that have been missed. Depending on the location of the injury rehabilitate slowly.

Cause 2: Moderate scoring

Symptoms:

This may include damage to edges, sails etc., but will not include cartilages. Rider likely to be uncomfortable, Dragon will be in some pain.

Treatment:

1. The Rider should still be conscious, though more than slightly distressed at the condition of his lifemate. For severe body scorings, the assistance of a gold Dragon will be required to dampen the pain and keep the Dragon still enough for you to do your job. Take control of the situation, but make sure you ask the Rider before approaching the Dragon. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Keep talking to the Rider if at all possible, to keep them lucid and in the here-and-now. It is also useful to keep the Rider from panicking at their lifemate's injury. Do your best to assess exactly how the clump of Thread hit the Dragon as this can help determine the best way to treat the wounds.
3. Apply Numbweed to area. Be generous.
2. Stitch hide back together (*see [Suturing](#) for further details*).
3. Apply Numbweed once more if required.

Recovery:

Several sevendays. Check that there are no further injuries that have been missed. Rehabilitate slowly, using exercises designed for Weyrlinghood.

Cause 3: Severe scoring

Symptoms:

Wingsails, batten cartilages, wingbones, veins are all possibly affected to some degree. Dragon will need to be restrained by a queen as he/she likely to be in considerable agony. Rider will probably need dousing with wine into unconsciousness.

Treatment:

1. The assistance of a gold Dragon will be required to dampen the pain and keep the Dragon still enough for you to do your job. Take control of the situation, but make sure you ask the Rider, if still conscious, before approaching the Dragon. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Apply Numbweed to area. The more the better.
3. Check for the formation of ichor. If it is not forming, either clear away some Numbweed with oil-soaked pads to check or start looking for severed veins that will need stitching first (*see [Suturing](#) for further details*).
4. Splint bones if necessary. Thread can sever through the thinner bones. Stiff reeds serve admirably as splints for these bones.
5. Cut lengths of fine cloth, usually the length of the leading or trailing edge is a good measure.
6. Support the wing underneath with the cloth and stitch to wingbone, stretching it. You will need to stretch and relax the cloth as you stitch. This step will need a minimum of two people to accomplish.
7. Fasten to underside with small stitches (*see [Suturing](#) for further details*). Try and stitch to areas that are not damaged.

8. Lay on the wing fragments and brace trailing edges if required, using the gauze as a support. You will basically be figuring out a jigsaw puzzle. Take your time.
9. Apply Numbweed, not the usual consistency but a thinner grade, over the cloth (Numbweed liquid).
10. Float the wing pieces into some order and stitch where applicable and/or possible.
11. If the tendons are damaged, basket reeds will need to be stitched (see [Suturing for further details](#)) to them in order to give support.
12. Cover with more Numbweed!

Recovery:

Can be anywhere from a few months to a full Turn, depending on the severity of the injury. Dragonhealers should be careful of dehydration (see [Dehydration for further details](#)). Scar and new tissue will overgrow the old pieces causing the wing to look thick and unsightly. This will at first imbalance the Dragon. Over time the Dragon will compensate and the regenerated tissue will smooth out with wind-sand abrasion. Dragons can fly with one third of their exterior sails damaged. Inner wing injuries tend to be more serious, especially those closest the torso, since Thread can, depending on angle, sear through the wing and into the body, which may be fatal if it hits the lungs. Dragonhealers should rehabilitate their patients using wing strengthening exercises designed for Weyrlihood.

Notes:

The cloth and basket reeds provide a guide for the shattered battens and sails to grow back correctly. If the cartilages dry out see information contained in '[Dried out cartilages](#)'.

BONE, JOINT AND MUSCLE INJURIES

BROKEN BONES

A fracture is a break or crack in the bone. Generally, considerable force is required in order to break a bone, but as Dragons get older their bones may get weaker, just as a human's might. Conversely, bones in young Dragons, especially those still growing, are supple and instead may split, bend or crack rather than break. With the exception of the wing bones, a fracture in a Dragon is extremely rare, with a Dragonhealer maybe seeing one, at most two, in their lifetime.

In some cases, broken bones will be obvious, the limb may be bent at an impossible angle or the bone may have torn through the skin. Caution should be paramount since even clean breaks or cracks may appear distant to the point of impact, so examine the Dragon carefully if they complain of certain types of pain. In other cases, the injury may appear to be a severe sprain or

dislocation. A broken bone may usually be differentiated from a severe sprain by limitations in mobility, or in the case of feet injuries, the inability to grip effectively with the affected foot. If a cracking noise was not heard, then differentiate between a fracture and a sprain by looking for limitations in mobility, or the inability to grip effectively if it is a foot. If a cracking noise was heard, ask the Dragon if they feel tenderness over the affected area. If the injury is a dislocation the pain will be 'sickening', as opposed to 'painful'. If the hide has not been broken, the limb should be straightened and returned to its normal configuration with the aid of other Dragons, splinted securely, elevating where possible. An attempt should be made to prevent motion of the bone as much as possible.

Types of fracture:

- **Simple** - a clean break or crack in the bone.
- **Comminuted** - a fracture with multiple bone fragments.
- **Greenstick** - a split in a young, immature bone, common in Weyrling Dragons.

States of fracture:

- **Open** - often complicated by damage to other structures. Greater risk of infection, both in treating the injury, and subsequently.
- **Closed** - hide is intact around a fracture, can be associated with bruising and swelling.

Cause:

Heavy blow, twist or wrench to area.

Symptoms:

May hear cracking noise. Difficulty in moving the 'broken' area. Tenderness over area (this is different to dislocation where the pain is 'sickening'). Distortion, swelling. Limb can be bent at an impossible, or distorted, angle. Wound may be open or closed. Dragon and Rider are likely to be distressed.

Treatment:

1. Ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury, and keep them with you (don't get them too drunk, you need to ask them questions!). Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Immobilise immediately, get weight off area and support if possible. Remember that Dragons are huge! You may need to enlist the help of other Dragons, and or use a ladder or table to properly treat this injury.
3. Wash your hands in Redwort, water, and then coat then in oil. These will help prevent infections, and protect them from the numbing effects of Numbweed. If instruments are needed, presoak these in Redwort.
4. Numb the wound and then make thorough assessments. It is likely that for most broken bones (wings and toes) Numbweed will be enough to deaden the pain, but for larger bones (leg bones, etc.), the Numbweed will not penetrate the hide deep enough to work.
5. Determine whether the injury is open or closed, if it is a comminuted, or

greenstick fracture. If comminuted and open, multiple fragments will be seen, if comminuted and closed, you should be able to feel them under gently probing fingers. Additionally a comminuted fracture isn't usually bent at such a severe angle as a simple bone fracture, although there is a higher possibility of it breaking through the hide. A greenstick will almost always occur in any Dragon under 18 months of age, and will appear as more of a bend in the limb, rather than an awkward angle. If uncertain, treat as a simple fracture.

6. If the hide has been broken, the wound should be treated carefully. Control the bleeding, elevate the wound if possible and cleanse with Redwort since the chance for infection is great.

7. Pull steadily in a line with the bone, keeping it as straight as possible. You will have to have assistance from a larger Dragon. A block and tackle apparatus, with strong rope, means a lot less energy needs to be expended.

8. You may have to remove bone fragments. Do so carefully. If you cannot, an internal mechanism will likely deal with this problem.

9. If the hide was broken, stitch the wound (*see [Suturing](#) for further details*).

10. Splint with tree trunks, branches or other materials that have been prepared before hand. Supplies of these are kept in every Dragon infirmary.

11. Move the Dragon to the infirmary or a ground Weyr. Other Dragons can be used to help with supporting the injured one. Make sure that they have plenty of water to prevent dehydration.

12. Soaking in the lake or ocean will help further with swelling reduction, but support will be needed to and from the lake or ocean.

Recovery:

This will vary, depending on the age of the Dragon and the severity of the break. Figure on two months for a minor break (wingbone) and six months for a major break (leg bone). Some Dragons will be permanently disabled after fractures, and might not be able to launch from the ground, fly in a straight line or fly an entire Threadfall. Once the bone has begun to knit (approximately half the recovery time), then gentle exercise may begin to bring muscle strength back. It is recommended that these start in the water.

Notes:

Impact forces can cause bones to break elsewhere. Swelling can be reduced by a soak in the lake once ichor has coated the wound. Dragonkind bones are not easily broken. If fracture is open, then you will need to apply Numbweed and possibly stitch the hide back into place. In some injuries where bones split apart, and the fragments cannot be removed, Dragons will complain of 'grinding' at the point of injury, and this may never be corrected. Rest therefore, particularly immediately after injury is fundamental to healing this type of injury. Greenstick fractures, whilst traumatic for the Weyr as the young Dragon is likely to broadcast loud and clear what pain it is in, aren't problematical from a healer standpoint. They heal quicker than most fractures, and have few, if any, complications.

DISLOCATED JOINTS

The displacement of a bone at a joint can be caused by a strong force wrenching the bone into an abnormal position or sometimes by violent muscle contractions. Additionally, there may be tearing of the ligaments associated with the injury. Those joints most often affected include the hip, shoulder, digits and jaw. It can be difficult to distinguish a dislocation from a fracture, though

they are usually differentiated from fractures by severe and 'sickening' pain rather than tenderness over the bone.

Cause:

Joint wrenched by a strong force into an abnormal position or violent muscle contraction.

Symptoms:

Difficulty in moving 'broken' area. Sickening pain at the site. Distortion, swelling. Dragon and Rider are likely to be distressed.

Treatment:

1. Ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury, and keep them with you (don't get them too drunk, you need to ask them questions!). Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Immobilise immediately, get weight off area and support if possible, use tables, or other Dragons to assist.
3. Numb the wound and then make thorough assessments. It is likely that for most joints (wings and toes) Numbweed will be enough to deaden the pain, but for larger joints (shoulders, etc.), the Numbweed will not penetrate the hide deep enough to work.
4. Pull steadily in a line with the bone, keeping it as straight as possible. You will have to have assistance from a larger Dragon. You will have to exert quite an immense amount of force to get the joint to re-align, block, tackle and strong rope help immensely.
5. Splint with tree-trunks. There are always tree trunks available for this purpose in the Dragon infirmary.

Recovery:

Full recovery will take approximately two-four months. Soaking in the lake or ocean and doing gentle exercise in the water can reduce the swelling and help promote recovery. Dragons should be careful of repeat dislocations to the injury site, as this area will now become prone to this type of injuries.

Notes:

Dislocated joints are relatively uncommon among Dragonkind, although they do happen.

MUSCLE INJURIES

Injuries that seem to effect the muscles may also include the tendons and ligaments. Sprains happen when ligaments at, or near to, a joint are stretched, or damaged. A strain is a partial tearing of the muscle, often near the junction where the muscle and tendons anchor to the bone. Muscle may also be ruptured. This is where there is complete tearing of the muscle, which may occur in the fleshy part of the muscle, or in the tendon. Finally, there is always the association of deep bruising that can be extensive in large bulky muscles, such as the hind legs.

Types of Muscle Damage:

● **Strain** - a partial tearing of the muscle, often at the junction of the muscle and the tendons that joins it to a bone.

● **Rupture** - complete tearing of the muscle, which may occur in the fleshy part or in the tendon.

● **Deep bruising** - this may be extensive where there is a large bulk of muscle.

Sprains, strains and deep bruising are very common and may occur from a wrenching, a sudden or violent, movement that tears at surrounding tissues, or from overstretching muscle groups. Injuries of this nature can occur to wings, forelimbs, hindlimbs, necks and even tails (from mating flights!) In young Dragons it can be prevented through the use of muscle exercises, especially utilizing the water to develop muscle groups before they can be used as the water will cushion any deleterious effects. In older Dragons muscle injuries may occur after a mating flight or after a Threadfall that has encountered heavy winds. The Dragon and Rider should be cautioned to use care when resuming normal activities, as the injured area will be weak and may be more prone to reinjury for several sevendays.

Cause:

Mating flights, over-enthusiastic Weyrlings, bad takeoff and landings etc.

Symptoms:

Will likely be favouring the other wing or limb. There may be swelling. Local pain may be eased by elevation of the area.

Treatment:

1. If the Dragon is in pain, then ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury. If this is the result of a mating flight, make sure you start handing the Rider skins of wine. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Numb the area with Numbweed.
3. In severe cases it may become necessary to splint the injury, and allow it to rest properly. Splint with tree trunks, branches or other materials that have been prepared before hand. Supplies of these are kept in every Dragon infirmary. To splint an injury you will have to utilise block and tackle apparatus', as well as enlisting other people, and Dragons, help.
4. Rest and immobilise the site of injury. No flying if there is an ankle, leg, or wing injury. If it's a neck or tail injury, only gentle flying should be allowed, and certainly they should be restricted from mating flights (the Dragon should not want to participate if they aren't feeling well!)

Recovery:

Recovery time depends on the severity. This could be anything from a day or two, to several sevendays. Muscle injuries often benefit from immersion in salt water, and gentle exercise in the water. Both Rider and Dragon should be cautioned about returning to duty as the area may remain prone to similar injuries for some time.

MISCELLANEOUS CONDITIONS

CARDIOVASCULAR PROBLEMS

Cardiovascular problems can occur in older Dragons, or in those Dragons that's hearts are under terrific strain from other injuries or circumstances. As a Dragon ages, the hearts often weaken and may develop problems, such as an erratic beat, or incorrect ichor pressure which may cause loss of feeling, or a tingling sensation, in extremities. Exertion, such as in a mating flight, may also cause a sudden onset of cardiovascular problems, such as a heart attack. This can result in a Dragon going *between*.

Cause:

Old age, strain on hearts from mating flights, or from high altitude.

Symptoms:

There may be severe pain or weakness, which may extend down one wing/forelimb or the other. General lethargy may also be evident, and the hearts may be beating irregularly.

Treatment:

Reassure the Dragon, get a gold to calm the Dragon down if necessary, and ask questions of the Rider.

Recovery:

A Dragon will never fully recover from any cardiovascular problem of this nature. Dragon should be pulled from a fighting wing, and allowed only light exercise, but daily. They should be closely monitored, and kept in low stress situations where possible. Symptoms may be managed, but exertion should be avoided at all cost.

CONSTIPATION

Constipation is common amongst the Weyrlings, as adults rarely lack the good sense that keeps them from overeating, though it may occur in infirm Dragons who aren't exercising. If a Dragon is allowed to overeat repeatedly, he or she will become constipated, complaining about their stomach being in pain, and occasionally even complaining about their genitals being in pain. Most often accompanied by minor neglect, a Dragon's tail will swell and the Dragon will no doubt let his/her Rider know about the discomfort until some sort of treatment is delivered.

Treating constipation is a fairly simple process, though inherently messy, and one every Weyrling should be familiar with though shouldn't have to use. A purge of some sort, most often linseed, is the best cure for this affliction, and a day or two of rest for the afflicted Dragon. Though cured easily enough, this illness can be avoided entirely if the Rider is attentive enough to keep the Dragon from overeating.

Cause:

Overeating, usually in young Dragons.

Symptoms:

Tail becomes thick with stored excreta.

Treatment:

1. Get the Dragon to consume at least a gallon of linseed oil, or aloe juice, though the latter is rarer in some climes.
2. Wait several hours, to a day. At this time, the Dragon needs to be restricted to gentle activities since the bowels will loosen, and the stored excreta will be expelled.

Recovery:

The Dragon may need a day or two to recover. Riders should clean up after their lifemate, unless the Rider is infirm, to remind them to watch what their Dragon eats.

Notes:

The Weyrling/Rider should be told to pay more attention to their lifemates. Cleaning up after the purge is effective in deterring the Weyrling from indulging their lifemates in the future.

EYE LOSS

Whilst rare, eye loss can, and does, happen. It is always the result of a serious accident, often acquired during mating flights, pre-flight bleeding when too many talons are bared in a comparatively small feeding ground, or during Threadfall. Eye loss will always retire a Dragon from the fighting wings. Their balance may be affected, but they should be able to compensate for most of this once the loss becomes accepted. It is unknown how the loss of two eyes would affect a Dragon, though it is postulated that they would go *between* at this stage, since it would essentially ground them, and make hunting and eating a near impossibility.

Cause:

Mating flight, fight, Threadfall.

Symptoms:

Eye will be absent, ichoring, damaged. Ichoring and damage may be restricted to the socket, so check.

Treatment:

1. Ask a Gold to dampen the pain and still the movement. Involve the Rider. Ask the Rider for details of the injury. If this is the result of a mating flight, make sure you start handing the Rider skins of wine. Take control of the situation, but never forget to ask a Rider first for permission to approach their lifemate: big Dragon, in pain, equals a dangerous combination.
2. Slather the injury with Numbweed, and let it soak in to take effect.
3. Clean ichor away, and check that it's not damage to an eyelid, or to the eyeridges, blinding their vision.

4. Clean injury with Redwort as there is a high chance of infection from this injury.
5. If the eye is damaged, but not severely so, then suture eyelids shut, coat with Numbweed. It may be that the tissue will regenerate.
6. If the eye is damaged beyond what is treatable, then remove the damaged tissue with a sharp, sterile knife, and coat with Numbweed. If other structures look damaged you may have to suture the eyelids closed.

Recovery:

Obviously some of this injury may or may not heal. Use judgment to determine whether or not to remove the stitches in the eyelid for the complete eye loss, this will take around six to seven sevendays to heal. For the eye damage you should remove the stitches after about a sevenday. The Dragon may have some loss of sight, or may not. Make a determination on their fighting capacity based upon their sight loss.

Notes:

Dragonkind will generally adjust to the absence of the eye. However, the Dragon should be removed from a Threadfighting wing if the injury is permanent as he/she cannot fight thread if blind on one side.

HIDE COMPLAINTS

Hide complaints can arise from three areas of neglect. The first is that hide needs to be oiled regularly, if not, then cracks appear which can be fatal when going *between*. This can be a problem in young Dragonets, who grow rapidly, but older Dragons are not exempt. In Weyrling Dragons, oiling is a daily necessity, the benefit in this is that the Rider's hands end up incredibly soft. The second is the problem of straps. Ill-fitting straps, those that are insufficiently oiled, those that have cracked or are damaged, can all rub and irritate a Dragon's hide. The hide beneath these areas can become sensitive and chafed, and may crack, again leading to problems going *between*. The third, and final, problem is that of dull, lackluster and grey hide. If this is your diagnosis your immediate thought should be dehydration (*see [dehydration](#) for further details*), followed by some injury that has not been treated correctly.

Cause:

Ill-fitting fighting straps, insufficient oiling of the hide.

Symptoms:

Itching, flaky, dry hide. Hide may be different colours where it has been rubbed. In severe cases there may be cracks. Are the straps ill-fitting? Are the straps broken, twisted? Are the straps not flexible? Does the problem develop when the straps are put on? Or does it develop when they are laying in their couch? Is it more painful, than itchy?

Treatment:

Dry or Cracked Hide:

1. Instruct Rider to bathe the Dragon, paying particular attention to the region that's problematical. Use copious amounts of sand, and scrub any dead hide away.
2. Thoroughly oil the Dragon, and pay particular attention to the region that's

problematical.

3. Numbweed may be applied at Dragonhealer's discretion if applicable.

Recovery:

Dragon should not *between* when there is a risk of the dry hide cracking. Problem should clear up in a day or two. Riders should be instructed to pay closer attention to their lifemates and in particular to that region.

Chafed Hide:

1. Instruct Rider to bathe the Dragon, paying particular attention to the region that's problematical. Use copious amounts of sand, and scrub any dead hide away.
2. Thoroughly oil the Dragon, and pay particular attention to the region that's bothering them.
3. Numbweed may be applied at Dragonhealer's discretion if applicable.
4. Riding straps need to be corrected, but if this does not seem to be the problem, start checking couches etc. for stones or lips that might irritate the hide.

Recovery: Dragon should not *between* when there is a risk of the hide cracking. Problem should clear up in a day or two. Riders should be instructed to pay closer attention to their lifemates and their straps. Straps should be inspected daily for wear and tear. If it continues being a problem, think about padding out parts of the straps with strips of suede.

Notes:

Remind Rider to check and oil Dragon regularly.

PULMONARY COMPLAINTS

Respiratory conditions in Dragons are not common, and are generally restricted to irritational problems, from inhalation of dust and/or sand. Thankfully they do not tend to be affected by colds and other influenza type illnesses.

Cause:

Dust and sand inhalation.

Symptoms:

The Dragon may be out of breath, and or having difficulty breathing. The Dragon may also be coughing. Both Rider and Dragon may be distressed.

Treatment:

1. Ask a Gold to calm the Dragon and still any movement. Involve the Rider. Ask the Rider for details of their last flight (i.e., where they flying in a dust storm, etc.)
2. Make sure the Dragon rests, and that they have plenty of water.
3. If the condition does not improve then start humidifying the air, by boiling water near the Dragon.

Recovery:

Dragon should be grounded from sweeps, and movement restricted for up to a sevenday. After that, altitude flying should be of short duration for up to one month. If the condition does not improve, then the Dragon should be removed from their Fighting Wing.

STOMACH COMPLAINTS

The important thing with stomach complaints is to determine the cause, this is because they have two stomachs. Overeating generally only happens in Weyrling Dragons. It can, and will, lead to constipation if left unchecked. Additionally, flying with an overfull stomach can lead to sprains and strains. Since Dragons eat freshly killed meat, they do not encounter problems that some humans can have with bad meat. Overeating can usually be diagnosed by asking the Dragon if they've eaten recently. Dragons are fairly hardy, and apart from the odd bout of indigestion they seem to avoid other stomach problems that some humans encounter, with even bad meat, if eaten, causing just indigestion-like symptoms.

When Dragons begin to chew Firestone a stomach ache may result from chewing firestone that is of a poor grade. Bad firestone can be recognized by an uneven color, holes that vary widely in diameter, as well as tunnels that may go straight through the rock. This is why it is imperative that Weyrlings are taught to sort Firestone early on, so that when feeding their lifemates it becomes second nature to give them the right sized chunks, but also of sufficient quality to produce and sustain a good flame. However, in the case of bad freestone, the Weyrleaders need to be informed immediately so that the stores can be checked, and the Minecraft notified. Dragons may also regurgitate acid from the second stomach. This burning feeling will be fleeting and often will pass with after a swallow or two.

Cause:

Overeating, eating bad meat, regurgitating freestone acid, bad freestone

Cause 1: Freestone**Symptoms:**

Small belches of blue, and/or unsustainable, flame, Dragon will complain of a 'bad' second stomach, burning feeling in oesophagus.

Treatment:

Allow the Dragon to cough up ash. If they are complaining of the freestone acid, remind Rider to stress to Dragon about their second stomach, and get them to eat something light, like a Wherry.

Recovery:

Once the freestone has been regurgitated as ash, the problem should clear. Dragons should *not* be allowed to head into Threadfall after consuming bad freestone, but should be cleared by the next Threadfall.

Notes:

Report to Weyrleader's about the freestone

Cause 2: Eating

Symptoms:

Complaints of 'bad' stomach after eating, stomach may be distended.

Treatment:

Get them to rest and not overstress themselves until feeling better.

Recovery:

The Dragon's eating habits need to be controlled better by their lifemates, especially since overeating can lead to constipation. Dragons should not be allowed to fly in case they strain themselves. Full recovery should happen within a day.

Notes:

Ask the Rider to keep a closer eye on their lifemates.

TALON LOSS

Talon loss is quite common in young Dragons, especially when they are learning to hunt or to fly, and have trouble with the take off or landing. However, it remains a risk throughout life, especially in those Dragons that are injured or sick, or otherwise impaired. It is then that take off and landings can cause a talon to break off, either fully or partially, particularly on hard surfaces, such as rock and compacted dirt. Though much rarer, talon loss can also occur in mating flights, whereby talons are lost by fighting males. Hunting may also result in the loss of a talon, particularly when the captured beast is of a sufficient weight that a wrong move will wrench the talon from the bed of the foot. The loss of a single talon will not stop a Dragon from any activity.

Cause:

Bad landing/takeoff, mating flight consequences, hunting.

Symptoms:

Loss of talon, maybe full loss, or that talon may be hanging at an awkward angle. There may be some ichor pooling (very little) around the talon bed. Dragon and possibly Rider uncomfortable.

Treatment:

1. If the Dragon is in pain, then ask a Gold Dragon to dampen the pain. It's likely that the pain will be fleeting, with the wrenching occasionally accompanied by nausea, which will then lessen to a throb. Ask the Rider for details of the injury. If it's a flight injury, give the Rider a skin of wine unless you want their affections coming your way (not advised until *after* you've dealt with the Dragon), otherwise the Rider should only be affected a little, with an uncomfortable feeling predominating.
2. Clean the area around the talon bed with Redwort if infection seems likely. If there's some ichoring, then use apply Numbweed immediately.
3. If the talon is torn, determine whether it would be more fortuitous to remove the complete talon, or remove the damaged portion. If you decide to remove the talon, make sure that the talon bed is fully numbed. The talon is mostly dead, you do not need to numb this, only the bit near the bed is living tissue.

4. The assistance of another Dragon may be required to remove the talon, depending on how severe the injury. If it is hanging from the talon bed at an angle use a sharp, sterile knife to remove it, severing through as little tissue as possible so as not to damage the talon bed.
5. If the talon can be saved, remove the part that is damaged with a sharp knife. You will need to numb the talon bed with Numbweed, otherwise the Dragon will feel uncomfortable pressure in this area during the procedure.

Recovery:

The talon should eventually grow back, taking between four and eight sevendays to do so. However, any injury site will close within a day or two. Occasionally a talon may not grow back if the talon bed is sufficiently damaged. However, this will not impair the Dragon in any way, as they will quickly learn to compensate for the missing talon.

Notes:

Reassure both Rider and Dragon that the talon will grow back.

TONGUE BITES

Tongue Bites are a fairly common problem in Weyrling Dragons when they are learning to chew, particularly when working with freestone. There is a high probability that they will bite their tongue sufficiently hard enough to make it ichor. Distracted Dragons may also occasionally bite their tongues by accident, or those trying to eat large chunks of food, instead of using their front canines to rip it into manageable pieces.

Cause:

Error in chewing freestone, or food.

Symptoms:

Sore tongue, bite marks. Dragon likely to be uncomfortable. Freestone pieces, or meat, left in teeth. Tongue may be ichoring.

Treatment:

1. Apply Numbweed to the tongue, and let it heal. The Numbweed should help the ichor to clot. Sometimes it's better to leave it to heal on its own. The saliva should aid in the healing process and it may teach the Dragon to be more careful in the future.
2. No freestone chewing for time it takes to heal, and make sure that food is cut up into manageable chunks. Remind Dragon to use other side of the mouth where possible.

Recovery:

Saliva that is produced (extra will be produced because of the addition of Numbweed to the mouth and because of the injury) will aid in the healing of the bitten part of the tongue. Tongue will be completely healed within two to three days. Advise caution in the future, and/or smaller chunks of food.

Notes:

Inform Riders to tell their lifemates to be more careful and avoid freestone ingestion for a sevenday.

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