

Hedgehog care

OR DRU'S BRAIN - THE BIT THAT STILL WORKS! THIS PAGE IS INTENDED FOR HEDGEHOG CARERS OR THOSE THINKING OF STARTING OUT IN HEDGEHOG CARE contact me for more information or to discuss anything on these pages on jerseyhedgehogs@hotmail.co.uk

If you are thinking about starting a hedgehog rescue group, the most important thing is to establish a good working relationship with your vet. A veterinary surgeon who has an interest in wildlife and especially in hedgehogs is absolutely invaluable to any hedgehog rescue organisation. We were supremely lucky for many years in that our former Chairman, Hugh Forshaw was also one of the leading UK vets in all species of wildlife, marine, land dwelling and flying....until his sudden death in 2015.

There is a lot of information available elsewhere about hedgehog rehabilitation, this is just a brief look at some of the things I have found useful or that work for me and the hedgehogs I look after. Everyone works differently and maybe hogs in different parts of the country are also different. For example, Jersey hedgehogs do not respond to Baytril - but it is widely used everywhere else....the only carer I have met who does not use it lives in France, so is this a clue to the origin of Jersey's hedgehogs?? Were they imported from France rather than from UK which we always assumed??

LET'S START AT THE VERY BEGINNING.....

The first thing to establish is, "does this hog need to come into care"? People sometimes rescue a hog mistakenly but with the best of intentions..... For example if they see one in the road at night, they think it might be safer in their garden or with us.....

The first question to ask is what time of day was the hedgehog found? If it was in daylight, then more than likely there will be something wrong..... the only exceptions to this are usually, if the nest has been disturbed by gardeners or if it's a nursing or expectant mother when their time clock can go funny! So check the sex of any hedgehog you are called to! If you decide that it was picked up in error - make sure that the hedgehog is taken back to as near to where it was found as is sensible and safe. REMEMBER HOW SHORT THE NIGHTS ARE round the end of June/July, healthy hogs will often come out early in the evening when it's still light or stay out in the morning just to make up foraging time. This is especially true of mothers with young, if you take her into care even for a few hours, you could be endangering the babies. BE VERY WARY in summer about admitting any mature females, there must be a really good reason to take her from the wild.

The only time we take in hedgehogs that are found after dark - unless they are hurt or obviously sick/thin of course- is autumn juveniles from November to February if they are under 450g.

If you aren't sure from the description over the phone if the hog should be brought into care, it is less stressful for it, if you can go or get someone to go and take a look at it in situ, rather than put it through the trauma of a car ride, but if you are very pushed for time, ask the finders to bring it to you for assessment. Remember people's idea of a "tennis ball" or an "apple" when describing a hog or when they give you its length - can all be very misleading, even if they have weighed it, they can get it totally wrong too!

INITIAL EXAMINATION

The first time you pick up the hog may be the only time you get to see its underside for quite a long time! So make sure you check it has 4 uninjured legs and feet, and that there are no maggots or fly eggs on its tummy and round its anus, and of course check its sex, you will need this for the records anyway! Some people use a mirror to help.

The next question to ask yourself is, is it a proper hedgehog shape? Is it symmetrical, are there any bulges round its face and head? Are all its legs OK and not swollen? Are there any wounds anywhere? Does it smell OK?? Not of rotting flesh! Hoggy smell is OK! If there is anything odd about its shape, it will need to see a vet and if you are unsure how urgent it is, better to take it sooner than later.

POPOFF



There are 2 rare conditions which you should be aware of: Popoff - when a hog's spine coat has popped off at the back and the purse string (orbicularis) muscle is right up its back instead of down by its hind legs, this can be caused by any sort of trauma. You may be able to coax it back into place if it's a small weak hog, otherwise the vets will do it under anaesthetic.

Balloon Syndrome



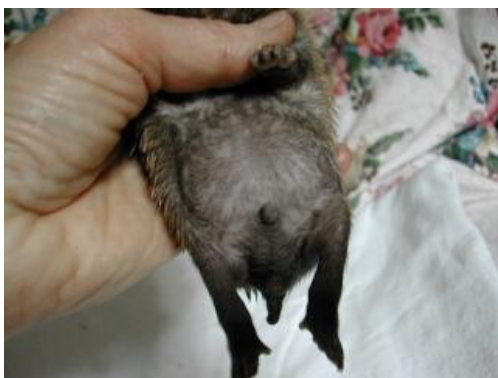
Balloon syndrome is very rare, the hog will be double the size it should be but not weigh heavy, it will be obvious! It will need immediate veterinary treatment to remove the air which has collected under its skin, the only case we ever had, healed himself in a few days, when the little hole sealed up again.

HOW TO ADMIT A HEDGEHOG

Admission forms/record sheets - It is vital to record the basic facts about any hedgehog in your care: Find out from the finder where and when they found the hog, and their address and phone number if it is to be released back with them. Only keep this information for as long as you need to and only record what you need, because of GDPR. If finders do not want to release the hog in their garden we don't take any details now, if they want a progress report they can ring us.

Give it an admission number or name.

Weigh the hog and record its admission weight. Sex it and record its sex



TO UNROLL A HOG:

If the hedgehog is in a tight ball and you really cannot sex or examine it, just put it in its hutch/box/cage and try later or the next day when you clean it out. If it is half unrolled, you can either jiggle it up and down on your hands until it unrolls, or put it on the work surface and gently press on its back and roll it onto its side a bit so you can see its underside, or if you can get the hind legs, hold both of them and do a "wheelbarrow" with it so you can check its tummy and legs. If you

think it is injured or has a ligature, netting or plastic round it which it will not let you remove, then take it to the vets for anaesthetic.

GETTING THE NEW PATIENT SETTLED

Put the hog in a heated hutch with some bedding - we use shredded newspaper for a nest and give it a bowl of water and some tinned/wet and dry food. Once the hog is settled in its hutch give it a label on the hutch door, with its number, sex, date admitted. Make a note of which hutch you have put it in on its record sheet and continue to note all the hutches and pens it uses, in case of an outbreak of some contagious disease e.g. ringworm, you will be able to know which hogs have used each pen or hutch.

Rule of thumb, if the hog was found out in daylight, it is going to need antibiotic cover and possibly fluid therapy. Start worming the day after admission - if this is necessary.

Hygiene: If you have long hair and especially if you are blonde/grey (now we are all getting older!) it makes it harder to see loose hairs which may get caught round hogs' legs or bodies, especially if they are babies, so it is advisable to tie back and up any long hair! Also nicer if you are dealing with maggots etc! Hairs can get wrapped tightly round hogs' legs and cut off blood supply.

Wash your hands before and after handling hogs and change gloves in between each patient or family. Keep littermates together, but do not be tempted to put unrelated hoglets together until they are big enough to go in an outside pen (400g in summer - bigger as the year goes on), as you will only risk spreading infection.

Zoonoses - Hedgehogs can carry all sorts of bacteria (Salmonella, E Coli etc) and also ringworm which can be transmitted to humans, I think there are about 14 different things which we can catch from them.

MEDICATION

To inject under the skin, pull up a few spines with your (left if you are right handed) hand and with your (right) hand inject just under the skin, so the tip of the needle feels free and is not in the muscle at about 45 degree angle. We all wear disposable gloves now when working with hogs, this photo was taken before I did! Please ignore bare hands, bad practice!



Most hogs will fall into the following categories:
thin and dehydrated/ possibly with diarrhoea (worms)
Breathing and chest problems (worms)
Injuries/wounds / Abscesses

Hogs which have become trapped in something, netting, swimming pools, sheds, holes, drains.....
Orphans, either not yet weaned or partially or fully weaned.

RECORDING PROGRESS

Use the record sheet to note weight, what the hog has eaten and what it has passed during the preceding 24 hrs, and what medicines you are giving it. Take this sheet with the hog to any vet's appointment so you can show the vet what you have been doing and can answer any questions!

DEHYDRATED HOGS



very thin and dehydrated hog

You can tell a hog is dehydrated because it will look flat and listless and probably be very thin, when you pinch some spines and pull them away from the body, they will not "ping" back quickly but go back sluggishly. Its eyes will be sunken in - you may not even be able to find them at first. If you give rehydration fluid and it isn't needed it will just pee it out anyway, with no harm done, better to give too much than too little!

Give 10% of body weight during a 24 hr period (or more if hog is really flat)

No 11 Hartmanns solution is for hogs dehydrated and with diarrhoea

No 1 normal saline is for flushing out wounds and using in nebuliser.

Do not put too much fluid at any one site, 5ml is about the maximum for an adult hog at one site, warm the syringes before administering. Make sure that the heat pad in the hutch is on, especially important for cold dehydrated hogs. The hog will need antibiotic cover, decide on which a/b according to symptoms:

DIARRHOEA in addition to rehydration fluid give Norodine/ Diatrim 24 0.6ml/kg and Buscopan 0.1ml if very runny and/or in pain - can be given 3 times a day if yelling a lot.

BREATHING PROBLEMS Try Synulox (0.7 ml per kg b/w) for chesty hog , Ventipulmin injectable 0.1ml/kg twice a day change after 10 days to Ceporex (0.2ml/kg). If it makes a noise when breathing in only it's nasal congestion, if it makes a noise when breathing out and you can probably feel it rattle if you hold the hog on its back on your hand for a very short time, this will squash its lungs so not nice for the patient, then it's a chest problem. If its sides heave when it breathes and makes noises breathing in and out, take it to your vet and possibly get it x-rayed - may have abscess or tumour or some other major problem which isn't treatable.....Dexamethasone is good for some respiratory problems. We have got a nebuliser which seems to be working, I have been giving them 2 ten minute sessions a day, it seems very effective for old snotty pigs, and new arrivals with lungworm and chest infections. Once they come out of the nebuliser they often start eating at once - their noses must be clearer and they must be able to smell the food! Other rescues use drugs in their nebulisers, but so far I have been using saline with a tiny bit of F10 concentrated antiseptic in it 1:250 is what is recommended on the bottle, so that is only 0.1ml F10 to 25ml of saline. You can use a mask to nebulise but to save time I got a box to put the hogs in so I can get on with cleaning out its accommodation and do another few while each one is in the chamber! Here is a hog in the fog!



EXAMINING DROPPINGS FOR PARASITES Take a yucky bit of poo, green or slimy and put a tiny smear on a slide, put a drop of water on it and mix a bit with the knife, then put cover slip on top and clean off excess with loo roll. Place slide on microscope and move around so you look at the whole coverslip, record what you see and treat accordingly. In practice don't worry about the 3 different types of Capillaria (roundworm) they are all treated the same anyway. Vale are recommending Ivomec Super (0.5ml/kg give 3 doses one week apart) tor Capillaria and Advocate dog (make sure it is DOG not cat as they are different) (0.3ml/kg 2 doses, second dose 10 days later) for Crenosoma.

After Fluke damage or for liver damage or problems give Synulox, Dexamethasone and B12 for 5-10 days

If hogs aren't eating Dex and vit B12 injected together with antibiotic cover can pick them up and improve appetite along with worming treatment. Our vets cannot get B12 on its own now we have a Vit B complex injection.

More information about internal parasites are found in the Endoparasites section.

WOUNDS AND INJURIES - ABSCESSSES Give Synulox (0.7ml/kg) and Rimadyl/Carprofen (0.1ml/kg) and 10% b/w No 11 Hartmanns fluid if there is an open wound, hog has lost a lot of blood or looks dehydrated. See a vet as soon as possible. To clean up a wound clip spines round the wound and remove grotty scabby bits with forceps, clean round the wound with saline on a wad of damp cotton wool. Flush wound with saline Aquapharm No 1- warm it up first. Flush well with needle on syringe to give greater pressure, or just with syringe. For wounds which track back under the skin, this often happens as the spine coat is only loosely connected to body, to enable hogs to roll up, so

maggots and infection often go a long way back from original wound use a catheter fixed to a syringe to flush and suck out pus and fluid. Clean wound twice a day if necessary or just once as routine, until completely healed.

Raw flesh must be dressed with Intrasite gel or Aloe Vera gel or Vetericyn.

Once hog is eating, Antirobe (Zodon) 25mg/kg can be put on food. Clindamycin is a very good antibiotic for smelly wounds and mouth infections as it kills anaerobic bacteria.



SPINAL INJURY may be evident by a definite line across the hog's back where the spines do not stick up but lie flat below the break. It may not be able to move its hind legs, but may not be in pain, all feeling may have gone.

PELVIC FRACTURES some pelvic fractures can be healed with cage rest, but hog will need an xray and vet examination to confirm it. Sometimes they can retain urine and not be able to defecate, so will need putting to sleep.

This hog had multiple fractures to all 4 legs and was put to sleep



MAGGOTS AND FLY EGGS Try to remove these, but if you find it is impossible take the hog to the vets at once, they can do more under anaesthetic or if it is really too bad can put it to sleep. Maggots can be picked out of a wound with forceps or tweezers, flushed from the eyes and ears, with saline in a syringe. Apply F10 spray to kill maggots. Fly eggs can be combed out with a flea comb from the fur and brushed off the spines with an old tooth brush. Make sure you check all orifices, eyes, ears, nose, mouth, anus, vulva/penis sheath. Flies like to lay their eggs down the ears and round the bum/groin, and in the folds at the tops of all legs! Anywhere where it is warm and moist, blood and other bodily fluids will attract them like magnets. They do not lay their eggs on

healthy hogs, so make sure you find the reason for the maggot/fly egg infestation, ie wound,



diarrhoea, runny eyes, bad teeth etc.

Nose wounds: Synulox and Rimadyl/Carprofen and Fluid until it eats. Continue on this regime + Dexamethasone after 5 days if breathing still bad

Swollen face and breathing problems give Synulox and Rimadyl/Carprofen



RTA - blow to head Give Rimadyl 0.1ml and Synulox 0.7ml/kg b/w but NOT Dex. Wait 36-48 hrs to see if starts to eat. Get vet to check for injuries.

Ceporex for brain problems or central nervous damage/injury, and Dex after 10 days.

DON'T GIVE DEX IF THEY TWITCH or have fits OR ANYTHING SIMILAR -

DO NOT GIVE THE FOLLOWING DRUGS ON THE SAME DAY:

Dexamethasone and Rimadyl/Carprofen

2 sorts of sulphonamide ie Tribissen/Norodine/Seprin/Trimacare/Diatrim/Duphatrim

DRUGS WHICH MUST BE GIVEN TOGETHER:

Dexamethasone should be given with antibiotic cover to prevent bacteria spreading madly.



FLEAS AND TICKS

Do not generally cause a problem to the hog unless it is really poorly and anaemic. Fleas can be killed with pyrethrum flea powder anything safe for cagebirds is safe for hogs. **DON'T USE FRONTLINE ON HEDGEHOGS.** Ticks can be left till they fall off, unless there are loads of them. If you try to pull them off and leave their mouthparts in the hog, the site can go septic, to remove them, use tweezers or a tick remover and use a twisting action. Ivomec helps.

SURFACE MITES will look like sand, put 0.5ml/kg of Ivomec spot on on the skin, may need to repeat it after 10 days, or try puppy or kitten stronghold.



MANGE MITES AND RINGWORM





same hog getting better after treatment

You can use Stronghold Puppy or kitten or Ivomec spot on for mange mites and ear mites. (Ivomec injectable can also be used as a spot on)
Imaverol diluted 1:50 in warm water for ringworm

MANGE MITES AND/OR RINGWORM

MOST IMPORTANT - TAKE A SAMPLE OF THE CRUD, SCABS AND MUCK AND PUT IN PLASTIC BAG BEFORE YOU GIVE ANY TREATMENT SO VETS CAN IDENTIFY MITES AND DO RINGWORM CULTURE.

If Ringworm is found (takes 12 days to culture) get Imaverol from vets and give 4 baths at 3 day intervals (10ml per 500ml water see packet) If you want to check if it is clear wait 10 days then get culture done again, then wait another 12 days for result. We have stopped getting cultures done now we are more familiar with ringworm symptoms, but would do it in severe cases to check if mites and ringworm are both present.

ALL THIS TIME KEEP HOG IN COVERED PEN OR IN HUTCH INSIDE ON ITS OWN, TAKE GREAT CARE WITH DIRTY BEDDING AND WEAR GLOVES ALL THE TIME WHEN DEALING WITH IT. BOTH MANGE MITES AND RINGWORM CAN BE TRANSMITTED TO HUMANS, OTHER HOGS AND PETS SO KEEP CATS AND DOGS AWAY FROM HOG UNTIL IT IS CLEAR OF BOTH.

Imaverol can also be sprayed onto patches of ringworm - diluted as per instructions on the box 1:50 with warm water. lasts for 6 weeks diluted. Vetericyn, tea tree cream 1% (don't use tea tree oil neat on hogs far too strong) and other antifungal preparations (Daktarin, Canestan etc) have also been tried for persistent cases of ringworm.

HAZARDS AND WHAT INJURIES THEY CAN CAUSE

Hedgehogs fall into or get trapped in all sorts of things, either dry or with water in them! They get trapped in sheds, garages, trenches, drains, under oil tanks, ponds, pools etc etc. So they can be emaciated and starving and dehydrated or waterlogged and cold. Check claws to see how short they are if they have been trapped somewhere hard, if they wear their claws down too far the nailbeds can become infected and will need treating with antibiotic and possibly even removal if badly infected.

RESCUED FROM WATER: If they are rescued alive from swimming pools, we give them 5 days antibiotic as a precaution in case the chlorine (or whatever pool chemicals are used) has damaged their lungs. They may also need antibiotic if they have fallen into untreated water - especially filthy

drain water, depending on how long they have been there and how bad they are. They may have taken in a lot of water and so their weight may drop dramatically for the first few days, we keep them in care until their weight has stabilised and they seem to have fully recovered. You will probably worm it as well but see if it's necessary.

Ligatures - NETTING - hogs caught in nets can have nasty injuries, wire, string, plastic rings etc, can all get twisted round limbs or bodies - the blood supply can be cut off , so be very sure that it is all removed and even if there is no obvious sign of injury keep for observation for 48 hrs, in case of internal injury, unless it is a large female in the breeding season and she looks completely unhurt with no swelling anywhere. You may need the vets' help with netting hogs.

Hog's legs caught in netting: Constriction/ligatures Lasix and Dex and Synulox NOT Rimadyl and MASSAGE the legs to get circulation back. Bathe in WARM water as cold water will shut circulation down. Don't let bracelets of scab build up, remove and massage and put Intrasite or Vetericyn Gel on them.



POISONING - you may never know for sure if the hog has been poisoned unless the finder owns up. Vitamin K can be given for rat poisoning or if the hog passes blood (0.15ml) inject into the purse string muscle. This is what slug pellet poo looks like: the hog died shortly after passing this turquoise mess....



To wash off oil or tar, use liquid paraffin and then wash well!
Lime poisoning wash in water with a bit of vinegar and give liquid charcoal by mouth

IF YOU SUSPECT A HEDGEHOG IS PREGNANT: (which is very difficult to know, and most damage is done in the first trimester when you won't know that she is pregnant!)

Only use Ovex/Ivomec Super if Capillaria are really bad
Don't give Norodine 24/Diatrim

Safe to use are:

Engemycin
Droncit
Bisolvon
Ceporex
Synulox

Kitten/puppy foods are good to build up Mum too! They seem to love Royal Canin Mother and Babycat

If she aborts - take to vets for scan and oxytocin jab 0.2ml twice 24 hr interval

PREGNANCY: Any adult female may be pregnant anytime from May to October, if she is in care and suddenly goes off her food, becomes active and makes a nest of all her bedding, she may be about to give birth, so take extra care when cleaning her out!! If there are babies, then take care not to touch them and put Mum and everyone back in the nest box together and leave well alone! She may not feed for 48 hrs after giving birth. They move the babies to a new nest, (so provide a second box in plenty of time) on about day 23.

HAND REARING HOGLETS

Hoglets are born blind, deaf and with a fluid-filled membrane covering their spines, which disappears soon after birth, the first spines are white and quite soft, there are about 90 of them (they say, haven't counted them!) If you admit more than one from a litter, mark the spines with nail varnish, so you can tell who is who, the "big" one can become the "little" one overnight! DON'T MIX LITTERS, keep families together on their own.



For the first few days they should be fed 2 hourly and toiletted at every feed of course. They are kept warm on a heat pad with very soft fleecy bedding, Esbilac (or Royal Canin Babycat or Babydog) milk replacer is mixed 1:2 with warm water, once mixed it can last 24 hrs, but I usually make small amounts and mix fresh every few feeds, they seem to go off it when it is more than 12 hrs old. I add vitamin drops 1 per baby (Abidec) and probiotic powder to the milk. Keep them warm on a heat pad while feeding and toileting them. You can move to 3 hourly feeds once they are stable.

CALCULATING HOW MUCH TO FEED: don't over feed them, it can cause dreadful stomach problems and bloat which can sometimes be fatal. Mixing fennel tea into the milk replacer can prevent this happening. The German literature recommends feeding $\frac{1}{4}$ of bodyweight per 24 hours. 1ml = 1g so a 48g hoglet would get 12ml of feed over 24 hours, say 6 feeds of 2ml each. Milk replacer is best taken warm ie body temperature, they often refuse it if it has gone cold. If the hoglets are too cold, ie off the heat pad for too long, they will probably not feed either.

TOILETTING: As with other baby mammals, you need to stimulate them to urinate and defecate, until they are able to do it for themselves, it varies how long this takes, it can be after the eyes are open, some are faster than others, but check every so often, so urine and faeces do not build up inside, they won't feed if they are full the other end. Massage the whole tummy to get the internal organs working. They poo for themselves earlier than they wee, so you will go on tickling them to make them pee for several more days, boys take longer than girls, they enjoy it I think!! While they are very small you can see the milk and faeces through their skin, so you can see how much they have inside them.



We always wear disposable gloves to handle hoglets now this was taken before we did, we all got ringworm from NOT wearing gloves so be careful!

CLEANING: It is obviously very important to keep them clean, especially when they start defecating themselves, And there are several of them, they do it on each other. On replacement milk normal faeces are pale green and formed, if they turn dark green or beige, give them antibiotic drops (Synulox), anyway ask a vet! Or a smidge of Norodine/Diatrim 24% if you feel brave enough to inject them so small! Wee should also be colourless and clear and not dark. After each feed, wipe them with warm, damp cotton wool and dry them well, especially

behind the back legs in the fold of the skirt. If they develop nappy rash I find Weleda Calendula Nappy Cream, very good, I use Vaseline on the cotton wool or cotton bud to toilet them rather than water. Use whatever works for you. Some people recommend almond oil.



Trying to roll up around day 9 or 10 - how do I get those legs tucked in?

LAPPING FOR THEMSELVES: If they are really strong and hungry, you may be able to get them lapping from a flat lid for themselves, you will still have to toilet and clean them up, but it is easier if they will do it. Usually I have to wait until their eyes are open, but this family started when their eyes were still shut, it happened on the same day as they could all roll up.



EYES OPEN - DAY 14 - this is the big day when the eyes should start to open, first one then the other, I don't think they can see anything at first! You can now move to 4 hourly feeds. Then you can calculate how old they were when they were admitted, it is the only good way of working this out really! By this stage they are much greyer in the skin and have many more brown spines. As soon as you feel the teeth under the gums with the syringe when you feed them you can very gradually add some sort of meaty jelly, puppy mousse, Hills A/D or pureed kitten food or even ground up kitten biscuits like Royal Canin Babycat, especially if you find that the milk on its own is not giving them enough nourishment. You will know this if you weigh them at the same time every day, and always at the same point in the routine, either after or before the feed and toilet. As soon as the weight stays static, add some

extra protein, but only very small amounts, and stop if it upsets their digestion.

Sometime between 2 and 3 weeks you should be able to stop toileting them, they will let you know by staying rolled up when you try to tickle their bits! Check the bedding for signs of wee and poo to be sure and go on trying to toilet them for a few more times as they often seem to need it every 12 hours or so for a couple of days while they are getting the hang of it!

IF YOU ADMIT AN OLDER HOGLET EVEN WITH A FURRY TUMMY AND OPEN EYES WHO IS YELLING HIS HEAD OFF, (IT'S USUALLY THE BOYS!) THEN DO TRY TO TOILET HIM EVEN IF HE LOOKS TOO OLD TO NEED IT. I HAVE FOUND THAT THIS IS SOMETIMES THE MAGIC BULLET WHICH SHUTS HIM UP AND HE WILL START FEEDING AS SOON AS HE HAS EMPTIED HIS BLADDER/BOWELS. If you try some Ceporex (0.05ml per 100g) for 5 days he may pee for himself after a few times of being toiletted. Remember having a full bladder will kill them. They should splay their back legs for you if they need to be toiletted when they feel you trying to stimulate them. But sometimes it takes a bit of time for them to get the hang of it, your cotton bud or cotton wool ball is going to feel very different from Mum's tongue!



Self anointing: one other thing to mention is that babies will often self anoint if fed or handled by a new person or if offered different foods to try - they will lick the new food or person until they produce a lot of froth and then proceed to anoint themselves all over their backs with this froth.....it seems to be their way of getting to know a new taste or smell - if they are determined to do this you won't be able to get their attention to feed them, you have to just let them go through the process!



This little one was being re-introduced to her finder who came to visit her (I didn't give him any gloves as I hoped she would self anoint for him!)

TEETH ERUPT - AROUND DAY 21 the next big step is when the first teeth come through. This is when weaning can begin. This can be a difficult period, getting the balance right for them and getting them onto solid food. Use either kitten or puppy food, add some pureed into the milk very gradually, and encourage them to lap from a flat lid or

small saucer, once they have the hang of feeding themselves, you can breathe a sigh of relief! Gradually add more and more meat to the milk, resume hand feeds if they are not gaining weight, just enough during the day to ensure they are getting enough nourishment. Soon you will be adding milk to the meat, rather than the other way round. You can continue to offer a little saucer of milk replacer for a few days when they are eating meat. They will decide for themselves when they no longer need any milk at all. Milk = Esbilac or whatever you have been feeding them up to now not cow's milk. Royal Canin Babycat and Bogenia Mynah Bird food can also be offered as a dry alternative to wet food.



Faces are now more pointed and faces are furry.

WEEK FOUR: By week 4 they look like miniature hedgehogs and should eat for themselves, we keep them inside until they weigh 450g in summer and 600g in winter and then put them in an outside enclosure until they are 600g+ in summer and 750g+ in winter when we release them.

PROBLEMS: this all sounds easy, but most babies will have some sort of antibiotic treatment and be wormed before release. They should not need worming before 6 weeks of age, but may be infected via the placenta - they can get worms from Mum, there are no rules on this but we think they do. Worm them if you think they need it, you won't see eggs or larvae in the poo until they are older and the worms themselves have had time to mature and have young! For worming guidelines go to the Endoparasites section.

Glop: Some youngsters with teeth are not going to feed for themselves so will need hand feeding longer than they would if they were well. Synulox is a good antibiotic for problem babies. (0.07ml per 100g) for at least 5 days – you will feel confident to inject them at this stage! or you can give them Synulox palatable drops if not. Vit B 12 injections also get them going.



feeding glop

TO MAKE UP GLOP TO FEED BABIES SCOOP SOME CAT/DOG OR KITTEN WET FOOD (LOAF IS EASIER TO GET SMOOTH) INTO A BEAKER, THE AMOUNT WILL DEPEND ON THE NUMBER OF HOGLETS YOU ARE FEEDING. ADD SOME WARM WATER. ADD ONE DROP OF ABIDEC VITAMINS PER HOGLET PER 24 HOURS. WHISK WITH HAND MIXER - MIXTURE MUST BE LIQUID ENOUGH TO GO THROUGH THE SYRINGE, BUT NOT TOO WATERY EITHER! POUR SOME INTO YOGHURT POT USE 2ML SYRINGE.

HOGLETS WHICH SHOULD BE FED GLOP ARE NOT EATING FOR THEMSELVES AND HAVE MOST OF THEIR TEETH. IF THEY ARE NOT EATING AT ALL THEY SHOULD BE FED $\frac{1}{4}$ OF THEIR BODY WEIGHT IN ML PER 24 HOURS (1G = 1ML). IF THEY ARE EATING A LITTLE FOR THEMSELVES, THEN GLOP CAN BE FED DURING THE DAY TO GIVE THEM AN EXTRA BOOST, THE AMOUNT SHOULD BE REDUCED TO ENCOURAGE THEM TO EAT FOR THEMSELVES, BUT NOT SO MUCH THAT THEY DO NOT GAIN WEIGHT. IDEALLY HOGLETS BEING HAND FED SHOULD GAIN 4g A DAY AND THOSE EATING FOR THEMSELVES 10g A DAY (according to the German literature.)

There are now puppy mousses on the market or Hills A/D which can be mixed with water and used instead of home made glop, they are more easily digested by young tums.

Admitting juveniles:

Most of the juveniles we admit are found out in daylight and are dehydrated, we give them sub cut fluid and antibiotic as routine on admission, usually Norodine/Diatrim 24 unless they are injured in which case I would give Synulox and Rimadyl (Carprofen). I give Norodine/Diatrim first on the assumption that diarrhoea will kill them quicker than anything else! After that I would give Synulox if there was a breathing problem and Synulox if they are "difficult" and fussy eaters and generally not doing well. Vit B12 and Dexamethasone also give them a boost and get them eating for themselves. If autumn juvies are found out after dark and are apparently healthy I try with no meds at first, but after the first poo sample has proved positive I am straight back to the medicine cabinet! So in effect medication usually starts the next day after admission unless we are very lucky!

Accommodation: They start off in a hutch with a heat pad underneath in a warm room. We use shredded newspaper and hay for bedding. Cardboard boxes or paper sacks are used to contain the bedding, paper sacks filled with hay can calm hyperactive pigs.



In the summer I usually give them a heat pad until they reach about 300g, it varies of course on how they are doing, then I keep them inside with no heat until they are about 450-500g



We have some floor pens which are ideal if hogs are hyperactive or just very messy! The floor is cement covered

with vinyl so is really cool and can encourage them to hibernate (in cold winters!)



and then put them outside in one of the enclosures and think about release once they are at least 600g in summer. These weights go up as the year progresses – depending on the weather too. In the autumn I put them outside at 600g and release at 650-700g but by the end of winter I have every one under 650g inside and am releasing at 750g-800g!

Releasing: In Jersey we continue releasing throughout the winter as long as the weather is mild enough and not too wet. My rule is that the forecast for the next five nights has to be above +5C - so that they would have time to make a nest before more cold weather comes along. Our winters are mild and it is very unusual for our temps to fall below freezing, usually it only happens for a week or two at most. I realise that this is different in some parts of the UK.

We release them in paper sacks stuffed with hay so they have a ready made bed.



2 waiting for the off!

Release sites: We always try to return hogs to their finders' gardens if possible (if they were found there of course)

or put them in a hedgehog friendly garden near to where they were found with food and water supplied. In winter I would prefer a soft release slightly further from their original site, then it's up to them if they want to go back to where they came from and ignore the extra food!

Food: In recent years we have been using more and more Royal Canin cat biscuits, outdoor 30 once they are bigger, kitten and baby cat for smaller hogs, they seem to love them all. We also use James Wellbeloved adult cat Turkey biscuits these go down well with bigger hogs. Hills Science Plan doesn't seem to be so well liked.

We start off by offering a choice of wet and dry food, Butchers Loaf or Pedigree Loaf and see what goes. I have stopped using wet cat food now we can't buy any without lumps in jelly or gravy unless you go for Gourmet varieties which are too expensive and rich! I find they lick the jelly or gravy and leave the lumps and the gravy goes through them like a dose of salts and gives them runny poo so I avoid it!



WEIGHING:

They are weighed every day and at first a daily weight gain of 10g is ideal until the correct bodyweight is attained. In winter once they are over 650g when they are very quiet (ours do not hibernate very much) we weigh them every 2-3 days to try to encourage them to nod off! Any sign of hyperactivity, digging or green poo and we step up our vigilance and weigh, poo check and medicate as necessary. Coccidia can be a problem during the winter. Sometimes it can be hard to know if the hog is wanting to hibernate or has Coccidia or even fluke which we may have missed.

If they do hibernate I still weigh them at least once a week, as we have had deaths in hibernation in the past. Soiled nests can be changed at the same time without disturbing the sleeper!

DAILY CLEANING ROUTINE



All hogs inside are cleaned out every day. If they have not soiled the hutch you may not need to disinfect it, just replace all the newspaper on the floor and give it new bedding in its nest box, newspaper sheet underneath and shredded newspaper for nest material. You may need to replace the cardboard box or bag every day or even more frequently, depending on how dirty the patient is.

Slide the hog out of its nest box on the newspaper “draw sheet” into the hutch, put another sheet in the bottom and one side of the box and fill with shredded newspaper, then take the hog to the scales, weigh it, and on its record sheet write the weight down, and what it has eaten and what it has passed - give it the injections it is due to have. Put it back into its clean nest box, upright on the floor! And then remove all the soiled paper and food/water dishes. Replace the paper, washing the hutch if necessary, put the hog back and then give it fresh food and water. Very active hogs can be given sacks or bags full of hay and moved to a floor space (with a heat pad if necessary) this may quieten them down, some just hate being in a hutch where they can see out of the mesh door, an enclosed wooden pen on the floor is often less stressful. They may need Droncit and/or Norodine/Diatrim, even if you don't see fluke or Coccidia in their droppings, it's often worth a go to see if they will quieten down, can sometimes just be a sign of digging a hibernation nest, if it's the right time of year! When I am short of floor pens I often just cover the mesh door of the hutch with cardboard and stick down with duck tape and this often will quieten the hog down as it can't see through the mesh.

DISINFECTION:

Always wash out the hutch or pen when moving a hog on to new accommodation, and always disinfect all traces of faeces and urine or blood etc as necessary. We use Anigene but any safe animal disinfectant is fine.

WASHING UP AND CLEANING THE FLOOR

We disinfect all the bowls and other utensils used each day by leaving them overnight in a bowl of water with disinfectant in it.

Brush and mop the floor every day however busy you get this will keep down the germs!

MOVING ON, EAR TAGGING AND RELEASE



Once the hedgehog has finished its basic treatment and has gained in weight, try turning off the heat pad, if it decides to move off the heat, then you know its OK to switch it off! This is hard to give rules about, it depends on the weather... If the hog stops eating or loses weight, turn heat back on, check poo and consider if more meds are needed....

Once you are sure it can do with no heat pad and is doing well and is probably making a mess of the hutch, try moving it somewhere cooler, either in a hutch or a floor pen. Once treatment is completely finished and its droppings are looking

good, consider moving outside to a pen or enclosure.



Good rule of thumb given to me by Anne Jenkins who used to run the BHPs, if hog stops doing well, whatever stage you are at, just go back a stage, whether that means putting it back inside or into the warm room on heat or re-starting medicines or hand feeding it again.

In summer babies can be moved outside from 400g, in winter I increase the size according to the weather, but don't put them out under 600g in winter, you will see how they do and decide accordingly.

MOVING OUTSIDE We mark all hogs before putting them outside with nail varnish and record the mark we have given it on their record sheet, check that you haven't marked 2 the same in the same pen!! Even though we do use ear tags, they are so small and if the hogs are not unrolling, it is very hard to see an eartag!

Ear tagging: We have been tagging since 1997 and use tags from the National Band and Tag Co
<http://www.nationalband.com/1005.htm>

Record the ear tag number on the record sheet or in any other way



that makes it easy to refer to when the hog is found again in future.
The scientists tell me it is important to monitor post release when we can.

EARTAGGING WESTERN EUROPEAN HEDGEHOGS (ERINACEUS EUROPAEUS)

Hedgehogs should weigh at least 400g before an ear tag is applied. I always put them in the right ear for ease of checking when the hedgehog is found again (and because I am right handed)!. The hedgehog has to be fully open with face and ears

fully exposed before attempting to ear tag it.



I put the tag in the pliers with the number on the LEFT hand side, the hook on the RIGHT on the pliers will bend the sharp end over against the tag once it has come through the ear, so it doesn't stick out and hurt the hedgehog or get ripped out easily or get caught in undergrowth. For the same reasons the bend in the tag should be placed against the edge of the ear.

The tag number, hedgehog identification number, date of tagging, sex, date of release, release site and ordnance survey grid reference are recorded.

When any tagged hedgehogs are found again, the date, weight, site where found, whether dead, alive in the wild or readmitted to care are also recorded.

If the hedgehog is readmitted for care, its new identification number, subsequent release date, release site and grid reference, or if it died in care are recorded.

Tag details are recorded on each hedgehog's record sheet, when readmitted previous record sheets are attached to the back of the current form to provide a history of care for that animal.

Only hedgehogs which have been taken into care are ear tagged, no animals in the wild are ever tagged.

DECIDING IT'S TIME TO RELEASE- Release in mild damp weather, don't release if it's very dry or very cold with ground frost. In summer youngsters can be released at 600g+ and in autumn and winter at 700g-800g. Adults' weights will vary according to the size of their frame! They can go when they look nice and big and healthy! Keep hogs outside for at least 5 days after their last drugs, and keep youngsters outside for at least 2 weeks to be sure they are acclimatised.

Release where found if at all possible, finders can be very interested in having "their hedgehog" back in their garden.

Give the finders some food and tell them to put it out with some water for the first few nights.

Take the hog back in a clean sack of hay and tell the finders to leave the sack under some sort of cover in their garden until the hog no longer uses it.

To release in the wild, when the hog cannot go back to the finder.... Take it in a sack filled with hay to a good release site as near to where it was found as you can, look for somewhere away from main roads, with a natural source of water and plenty of cover to nest under, somewhere where there won't be too much disturbance or agricultural activity and put the hog under some brambles or similar in its hay ball, without the sack, so you don't have to come back the next day and collect the sack! I prefer to find an alternative garden near where they were found where food and water will be provided, I only rarely do wild releases now.

HIBERNATION

Things change in winter! Hibernation is an amazing process and does affect the hogs quite markedly. You will notice changes in behaviour and droppings and of course eating habits! Sometimes it is hard to decide if the hog is thinking of hibernating or is not well ! Droppings can have dark green plugs or be all green, but never pale and slimy, that is diarrhoea! If it does pale green slime warm up the hog and treat again with wormers and antibiotic (Norodine/Diatrim 24%).



A hibernating hedgehog is stone cold and in a tight tight ball and may huff at you if you disturb it. They will gradually eat less and less and sometimes will dig a lot trying to make a winter nest, so give them extra bedding, hay and a paper sack to make a nest in. They can wake up at any time during hibernation, so always leave clean water and some dry food with them, and check every day to be sure they have not woken up and made a mess! They can lose 25% of their body weight during hibernation. But in care, if they drop below 500g I tend to warm them up to wake them up to get them eating again. Then once they have put on a bit of weight, they can go back to sleep, if that is what they want to do. There don't seem to be any rules for hibernation, there can be 2 hogs next to each other in exactly the same temperature and conditions, and one will be fast asleep in hibernation and the other will be eating its head off!! They will stir about every 7-10 days even if they don't come out of their nests, or they make get up for a poo and a drink and possibly something to eat! So at least every 4 weeks - and usually more frequently - I check the hibernators even if they do not appear to have stirred and weigh them and give them clean beds if they have been up for a pee or poo. The males wake up in Spring first and are the first to be released usually, the girls can sometimes go on being sleepy or in hibernation until even the end of April, depending on the weather! Don't panic, just think how chilly it may still be getting in the middle of the night - the girls have plenty of time to regain their condition in the wild while they are pregnant - even though the ones in care will be released in tip top condition and don't need this extra month! This is in Jersey of course where our temps are much higher than in the UK and I guess we release earlier than people do further north! In recent years our hogs in care have not been hibernating for very long at a time at all, we don't seem to get the cold winters we once did.

PERMANENT RESIDENTS

THIS IS VERY CONTENTIOUS OUR VET DOES NOT ALLOW US TO KEEP ANY HEDGEHOG IN

PERMANENT CAPTIVITY OR KEEP ANY NON BREEDING HEDGEHOG ALIVE, THIS IS IN ACCORDANCE WITH RSPCA AND BWRC GUIDANCE

WE DO NOT HAVE ANY HEDGEHOGS OFF SITE IN FOSTERER'S GARDENS

I WILL LEAVE THE INFO I HAVE ON THIS HERE IN CASE SOME OF YOU STILL HAVE PERMANENT RESIDENTS:

There are some hedgehogs which cannot be released back into the wild because they are disabled in some way which would make their survival unlikely. ALWAYS check with a vet first before condemning any hog to life imprisonment.

Only put hogs of one sex into each enclosed garden, it is not fair to let them breed with the problems they already have and mating and courtship might lead to injuries.

Hedgehogs with one front leg have very limited mobility and our vets no longer amputate front legs. Those with only one hind leg cannot groom themselves properly and are very prone to mites and other external parasites, but our vets will sometimes amputate on the understanding that the hog will be released. Sometimes a leg is not amputated but is stiff from an old injury leaving the hog with limited mobility and an inability to groom, leading to mite infestation. Leg amputation is a controversial issue, vets all seem to differ in their opinions. I know some rescues release hind leg amputees. I have also done this and one stumpy has been seen quite a way from his original release site but goes "home" each winter to the nest box they have provided for him in their garden to recover from his summer philandering!

Other reasons for keeping hogs in care can include: total blindness, if the hog really cannot tell day from night and continually comes out during the day. This can also happen if they are brain damaged. Sometimes neurological issues resolve themselves in time and the hog can be released. We had one who was hit by a car, at the start she couldn't even stand, then walked backwards not forwards, but gradually over about 5 months she put herself completely right again and was released. But then some wobbly hogs never get completely fit again so are not released. Some old hogs have had too many teeth removed so that they would not cope with foraging for food in the wild. And occasionally some hogs have such chronic chest conditions that the vet decides they would not last long in the wild.

Some who came in with head or back wounds are unable to roll up properly even when they are healed. This is not safe if faced with predators or during hibernation and so they are kept in care too. So any hog which cannot roll up properly is kept in care until it can, sometimes after a winter we find that they can roll up again and if so they are then released.

Hogs in an outside enclosure or enclosed garden should be checked every few days and regularly weighed. Their claws should be clipped when necessary and they must be given a thorough examination for mites and other problems, including bites from other hogs - this often happens in Spring !

If you foster out disabled hedgehogs - when checking out a new enclosed garden, interview the people very carefully! Make sure their motives in offering their garden are for the hogs' benefit and not just to remove their slugs! Check all round the garden for hazards and escape routes. Hogs with 2 front legs can climb granite or other rough walls where they can get a foothold and fenced gardens are not safe unless the boards on the fence panels do not allow any foothold, there is a right and wrong way round! Even a blind hog has escaped from a walled garden with just one section of granite.

If you would like to comment or query any of this please email me: jerseyhedgehogs@hotmail.co.uk

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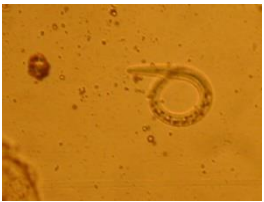
Endoparasites

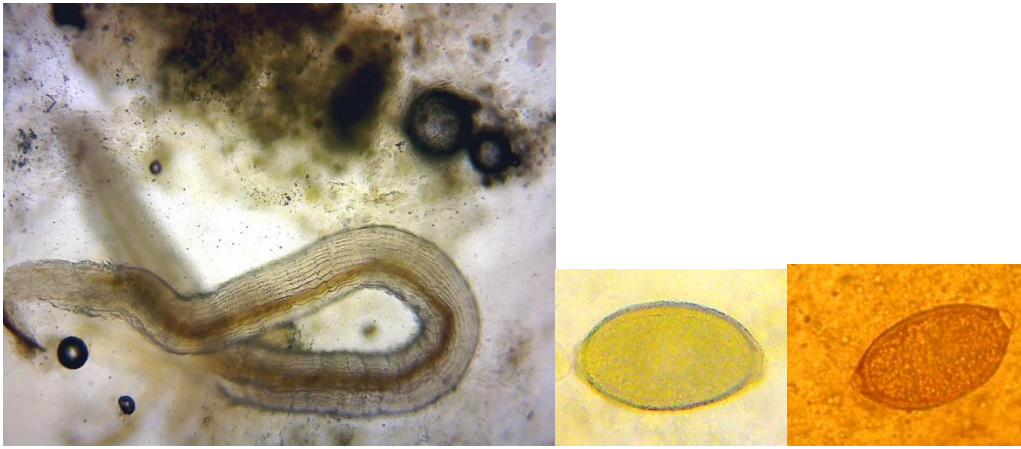
DIAGNOSIS OF WORM INFESTATION:

You will need a basic microscope magnification x 400 is sufficient, some slides and coverslips. The simplest method is perfectly adequate to check if worms are present, and that is called the Direct Smear method. You take a tiny bit of faeces, preferably that is green, runny or otherwise unhealthy looking, put it onto the slide with one drop of tap water and smear it to the size of a cover slip with the flat blade of a knife or wooden spatula, cover with the cover slip and examine under the microscope.

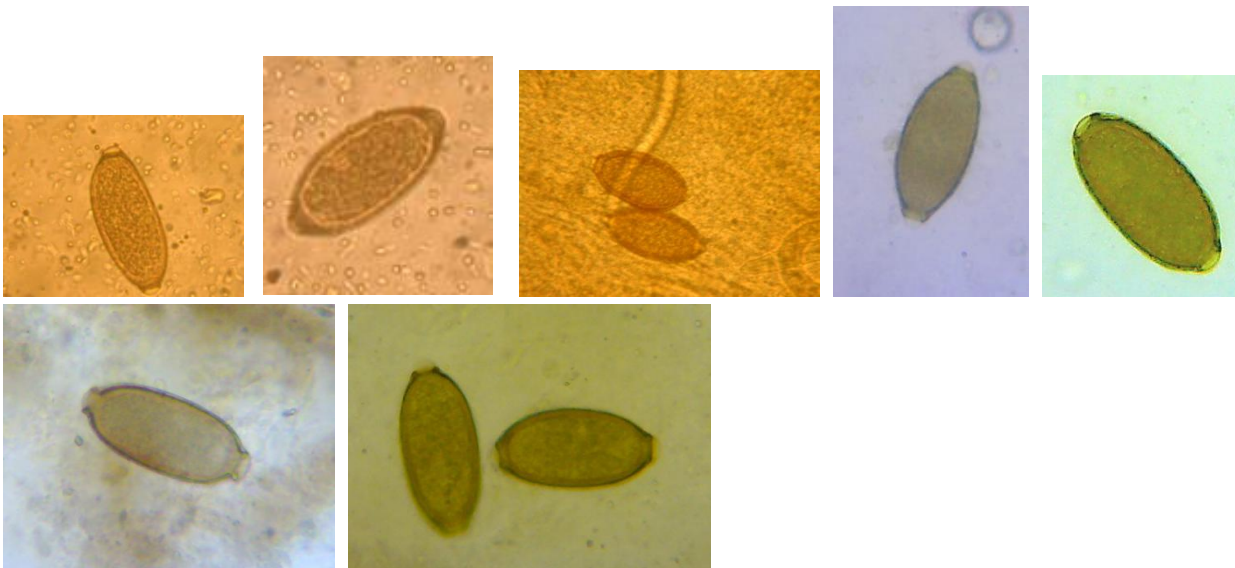
The following are the worms hedgehogs can suffer from, those mentioned in the next paragraph are pretty universal and you will find that most of the hedgehogs you look after will have at least a few of these worms.

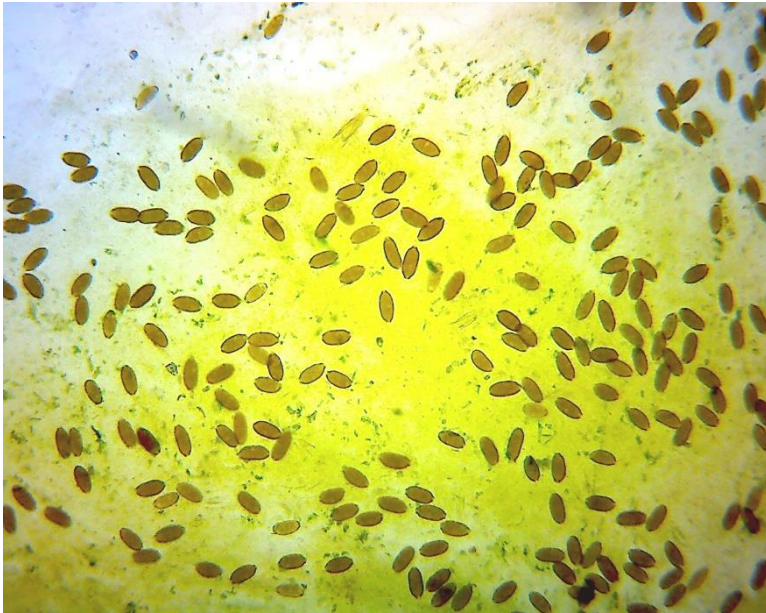
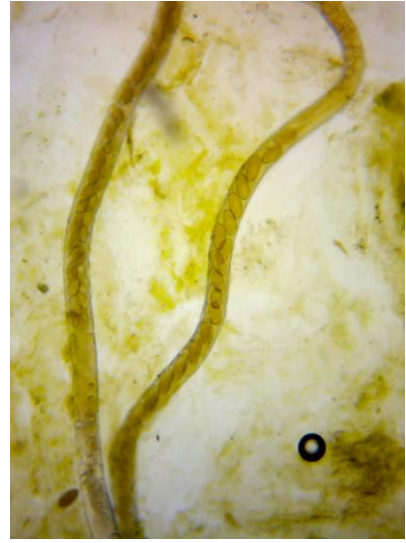
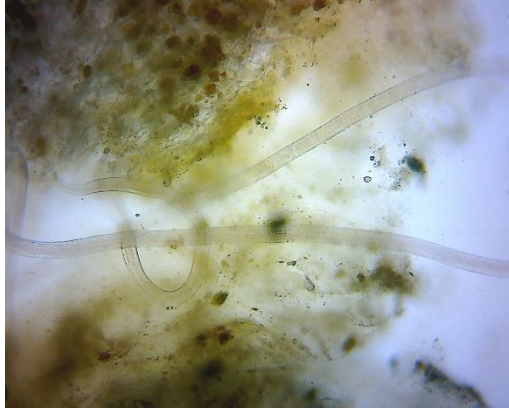
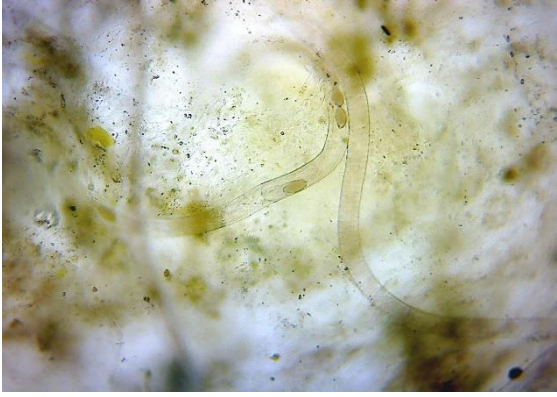
LUNGWORM AND INTESTINAL NEMATODES:





Hedgehogs suffer from two types of lungworm: *Crenosoma striatum* (which sheds larvae) and *Capillaria aerophila* (with large oval eggs) which can cause respiratory problems, coughing, wheezing, "groffling" a rattling noise they make, these problems can lead to pneumonia. Basically if you see any sort of larva wriggling about it is almost certainly going to be *Crenosoma*, unless the hog has just been admitted and it is another sort of strongyle from the soil which will do no harm and after a few days in care you will not see it again.





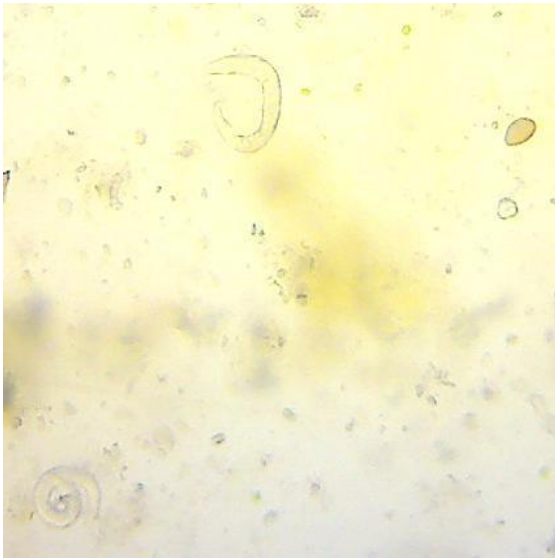
They also suffer from two types of Capillaria worms in their intestinal tract, (*C. ovoreticulata* which has larger flat ended eggs and *C. erinacei* whose eggs are smaller and oval) . These intestinal worms can cause diarrhoea and emaciation.



INTESTINAL TREMATODE OR FLUKE

Capillaria eggs above, fluke eggs are very much smaller than Capillaria eggs and much harder to see. These eggs only have one plug, Capillaria have a plug at either end.

This picture is misleading if you compare its size to that of the Capillaria eggs above, fluke eggs are very much smaller than Capillaria eggs and much harder to see. These eggs only have one plug, Capillaria have a plug at either end.



2 Crenosoma larvae and a fluke egg

Fluke eggs in worm with a capillaria egg on right to compare

You may find that hedgehogs in your area also suffer from hedgehog fluke or *Brachylaemus erinacei*, this can be lethal, especially in young hedgehogs. If the worms reach the bile ducts, the hedgehog will die. The eggs are small, clear, oval and a peachy/orange colour and are difficult to see under a microscope. However, the symptoms are very clear and you should treat on symptoms alone even if you never find an egg! These are: a pronounced lack of appetite, even if you try to hand-feed with a syringe the hog will turn its head away, restlessness and hyperactivity, sufferers climb the mesh on a hutch door, dig at the newspaper and march up and down incessantly. Their droppings can be very smelly and often runny yellowish/brown possibly with blood. You will get to recognise the very distinctive smell of this diarrhoea!

THORNY HEADED WORM OR ACANTHOCEPHALA



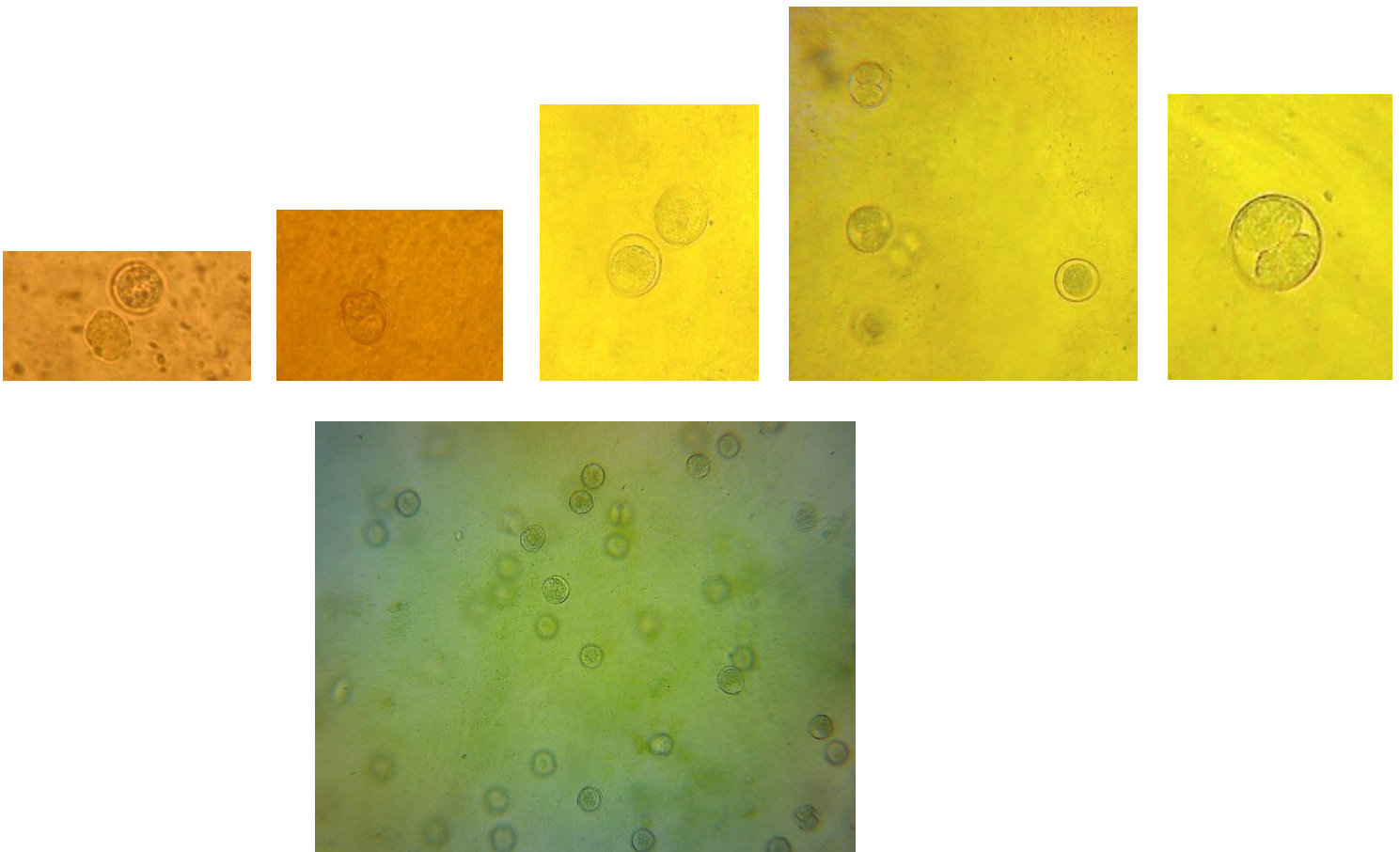
This is the head of a THW under the microscope

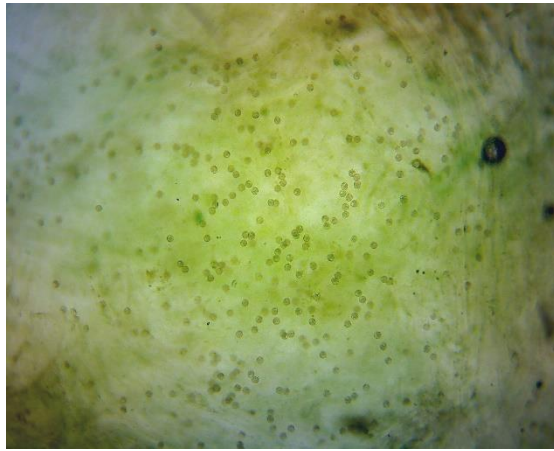
This is the whole worm on a glove no magnification

This worm has been found in hedgehogs at post mortem examination and in their droppings in life. It is meant to be rare and you may never see one. It can be lethal to young hedgehogs as it can migrate all over the body cavity and burrow through the hedgehog's gut wall twice. You may see the worm with the naked eye in faeces, it is long, white and grass seed shaped, with a "thorny head" which can be examined under the microscope, the rest of the body is too opaque to be examined in detail. Adult hedgehogs seem to pass these worms with few adverse effects.

But youngsters, if heavily infested are emaciated and in very poor condition, they squeal a lot and often die. We assume that the action of the worm burrowing through their gut wall would be extremely painful. We have used Droncit to treat this worm (see the dose rates for hedgehog fluke below) We have never found eggs or juvenile stages of this worm in faeces and so the only sure diagnosis in life is to find an adult worm in the droppings. Other rescues use Advocate or Ivomec to treat it. A Professor in Germany wrote that there is no point in treating it at all because it is either in the gut and about to be passed out or in the body cavity where no wormer can reach it. So you can take your pick! We are not even sure it is a true hedgehog parasite as it does not develop inside the hedgehog, it is definitely a parasite of birds.

INTESTINAL PROTOZOA - COCCIDIA





These last 2 pictures are of the same slide taken with different objectives so you can see how small coccidia are on a x40 objective, that was with a x10 eyepiece ie magnification of x 400

Isospora rastegaivae is a common cause of dark green droppings, possibly with blood in hedgehogs of all ages. Small, round oocysts can be seen under the microscope. These oocysts sporulate (nucleus divides into two in this species) and can reinfect the host or infect another hedgehog within 24-48 hours. Other symptoms can be restlessness with digging in corners of the pen or in its nest. Spines and fur may also fall as result of this infection. Coccidia is often found before and after hibernation or if the hedgehog is stressed. If untreated it can lead to haemorrhagic diarrhoea and death.

TREATMENT:

This is the basic treatment given to most weaned hedgehogs, hoglets under 6 weeks' of age should not need worming. (You may find exceptions to this rule as we think babies may be infected via their mothers, either in the womb or when feeding). All injections are given subcutaneously. We do not worm routinely, but in practice most hedgehogs will be wormed at some point during their stay, possibly several times, accordingly to severity of infestation.

For *Crenosoma* Vale are now recommending Dog Advocate spot on on the spines at 0.3ml/kg repeated after 10 days.

For *Capillaria* give 3 injections of Ivomec Super (which also has a flukicide in it) one week apart at a rate of 0.5ml per kg ie 0.05ml per 100g bodyweight.

Brachylaemus erinacei (hedgehog fluke) is treated with Droncit or Profender (Vale recommend Profender)

Droncit :tablets: Doses:	under 200g b/w	1/8 tablet
	200g-500g b/w	1/4 tablet
	500g - 1kg b/w	1/2 tablet
	1kg+ b/w	1 tablet

One dose is meant to be enough, but sometimes you will need more, I have given it 3 or 4 times but never less than 48hrs apart. Give at once if hogs get active or dig like mad and go off their food and/or have very smelly droppings.

We use crushed tablet on food or in glop if the hoglet is young enough to still take feed from a syringe.

I am using Droncit spot on for hogs which are not eating 20mg Praziquantel per pipette holds 0.5ml which treats a 400g hog:

dose rate is 50mg/kg

2 1/2 pipettes 50mg for 1kg hogs = 1.25ml

2 pipettes 40mg for 800g hogs = 1ml

1 1/2 pipettes 30mg for 600g hogs = 0.75ml

1 1/4 pipettes 25mg for 500g hogs = 0.625ml

1 pipette 20mg for 400g hogs = 0.5ml

1/2 pipette 10mg for 200g hogs = 0.25ml

1/4 pipette 5 mg for 100g hogs = 0.125ml

Vale Wildlife Hospital use Profender at 0.5ml per 1kg repeated each week for 3 weeks.

Apply Droncit or Profender to fur on underside where it is sparse and you can see the skin, not on the back between the spines, it will absorb better here. If you don't need a whole pipette either extract with syringe and needle (I found this difficult!) or squeeze whole pipette into an airtight phial or bottle and extract what you need with syringe. If you put the lid on the bottle securely what is left seems not to evaporate!

ANTIBIOTIC COVER is given to prevent secondary infections, this is vital in cases of severe worm infestation.

As a general rule we give Norodine/Diatrim 24 for 5-8 days at a dose rate of 0.06ml per 100g or 0.6ml/kg.

Probiotic powder on food or in hand-feeds may also be effective. For acute diarrhoea - give Buscopan at a maximum rate of 8hrly intervals ie 3x per day. This will usually only be needed for 2-3 days at most.

Dose 0.05ml under 200g and 0.1ml over 200g . Use with Norodine/Diatrim, fluid therapy, wormers and probiotic powder. If the hog has not got diarrhoea and is snuffly or a bit chesty we use Synulox dose 0.7ml/kg for up to 10 days then change to. Engemycin 5% (Engemycin is now only available at 10% so you need to dilute 50:50 with sterile water - only dilute a bit at a time as it goes dark in colour keep away from daylight) for 5-10 days at a dose rate of 0.2ml/100g b/w or Ceporex 0.1ml/100g b/w for 5-10 days.

Respiratory problems are also treated with Ventipulmin injectable 0.1ml/kg twice a day for 5-10 days.

Dexamethasone can also be effective 0.1ml for hogs over 200g and 0.05ml under 200g for 5-10 days.

We are also using a nebuliser now for chesty hogs. I am using 1:250 F10 antiseptic concentrate with saline.

The hogs get 2 treatments a day.

COCCIDIOSIS is treated with Norodine/Diatrim 24% (0.6ml/kg) for 10 -15 days

Baycox liquid can also be given for Coccidia - I haven't found it to be easy to administer - messy and hard to give orally.

Dose rate 0.4ml per kg repeated in 10 days.

Symptoms are dark green often runny or jelly-like droppings and possibly bright blood in them. Hogs are very active and dig like mad at newspaper and can lose appetite. I have found that their spines fall out as well sometimes.

I give them a paper sack full of hay as a bed, this often helps calm them down as it is a more natural bed than newspaper.

Coccidia is often found in Spring and Autumn before and after hibernation. It can spread between them when hogs are kept together. A hedgehog can infect itself by taking in its own infected poo, so take extra care with hygiene, give clean bedding every day and disinfect pen or hutch every day.

WOUNDS: Unless superficial, hedgehogs are taken to the Vet but first aid includes injections of Synulox at a rate of 0.7ml/kg and Rimadyl/Carprofen (0.05ml up to 200g b/w and 0.1ml if over 200g b/w) and sub cut fluids.

A CD Rom of really clear parasite photos is available from Pro Igel for 15 Euros These are amazing photos taken by Dora Lambert done pioneering work in bringing photos of parasites to a wide audience.

<http://www.pro-igel.de/info-best/order-e.php>

DEVELOPMENT CYCLES OF HEDGEHOG PARASITES

taken from information provided by Dora Lambert of the Arbeitskreis Igelschutz Berlin e.V.

BRACHYLAEMUS : Development cycle of the intestinal fluke *Brachylaemus Erinacei*.

The eggs of the intestinal fluke *Brachylaemus* are eaten by snails where they develop into an infective stage. The hedgehog then eats the snail and gets infected. After 17 days the adult fluke sheds its eggs. *Brachylaemus* parasitises the small intestine but in severe cases can also be found in the bile ducts.

CAPILLARIA: Development cycle of the threadworm *Capillaria*

Threadworm eggs are shed in faeces. The infectious larval stage develops in the environment within 5-7 weeks.

Earth worms can act as transport hosts. These infectious eggs are ingested by the hedgehog with its food.

Intestinal threadworm: *Capillaria erinacei*: worms take 25-26 days to develop in the gut after ingestion of the infectious Eggs and their eggs are to be found in the hedgehog's faeces.

Lung threadworm: *Capillaria aerophila*: parasitises the lungs and eggs can be found in faeces about 3 weeks after ingestion of infective eggs. To check if your worming has worked - repeat faecal smear for intestinal threadworm 2 weeks after treatment and for lung threadworm 3 weeks after treatment.

CRENOSOMA : Development cycle of the lungworm *Crenosoma striatum*

Lungworm eggs which contain stage I larvae are shed by the adults, coughed up by the hedgehog and swallowed, thereby entering the digestive tract. On the way the first stage larvae slip out of the eggs and are shed in faeces. In the environment they force their way into the foot of slugs or snails. There they develop within 3 weeks into infectious stage III larvae (via a second stage). The hedgehog ingests stage III larvae whilst eating the intermediate hosts, (snails and slugs). During digestion stage III larvae move from the gut via lymph capillaries into the heart and from there into the lungs. After 3 weeks they develop into adults parasitising the bronchiae and in their turn shed eggs containing first stage larvae.

TAPEWORM: Development cycle of hedgehog tapeworm *Hymenolepis erinacei*.

Tapeworm segments or proglottids are visible to the naked eye in droppings, measuring 1mm long and 3mm wide.

Eggs can also be found measuring 75µm which already contain 6-hooked larvae. Various beetles act as intermediate hosts.

Inside the beetle an infectious larval cyst develops out of the 6-hooked larva within 21 days. The time between ingestion of the cyst and the time it takes for an adult worm to develop.

COCCIDIA : Development cycle of *Coccidia Isospora rastegaivae*

Oocysts are shed in droppings. These oocysts sporulate in the environment within 24-48 hours and are infectious to the hedgehog in this fully sporulated state. They are ingested either with food or from the fur in grooming. In the gut sexual and asexual reproduction takes place and after 6-10 days further oocysts are shed.

ACANTHOCEPHALA- Thorny headed worms can be a problem for juvenile hogs - even causing death through gut perforation as they migrate through the gut wall, but in adults they seem to be passed in faeces without problem. This worm does not appear to develop in hedgehogs at all but is a bird parasite, using woodlice as an intermediate host.