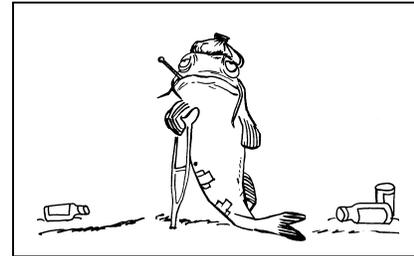


You've had your cup of coffee, got a glance at a few pages of the news and it's off to the mines. As you're walking to your car... Oh no! One of your prize Koi, stiff as a board, lying just on the edge of the drive. So you pick it up and head for the trash...

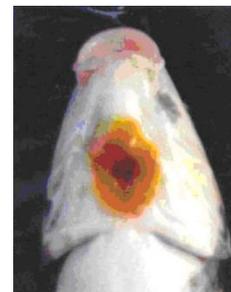


Hold on! Koi are really pretty resilient and their heart continues to beat an hour or more after they've stopped breathing (or is that "gilling"). No way!

Koi CPR

Actually there is. Here's the drill. Get your Koi to the pond... like NOW! If it only went on its walk a few minutes ago it most likely will just swim away. If it was on a really long walk, but you can still see some movement in its gill covers, start CPR! Here's how.

Jump in the water with the fish and flip it over... belly up, head facing away from you, grabbing on either side, with your thumbs facing up. In smaller fish place one thumb, for larger fish two thumbs, on the brown area in the picture. The heart lies just below the lower part of the spot, so you might even feel a faint pulse.



Your goal is to force highly aerated water through the mouth and over the gills by a combination of thumb movement and by physically moving the Koi back and forth through the water. Gently press your thumb(s) down and move them forward. You want to use just enough pressure to force the mouth and gill covers to open with each push of the thumb(s). If you're doing it right you should see air bubble from the mouth with each push. Keep repeating the maneuver at the rate of 60 – 90 pushes per minute.

If you got to the fish in time, it will start coming around in a few minutes. Keep up the CPR, but try and match the Koi's rate and don't push quite so hard. Once the Koi is fully oriented, active and insistent on getting the heck away (depends, but probably 15 minutes), let it swim away.

But this little guy is stiff as a board and there is no movement of the gill cover! When you get it back into the pond you'll be amazed and how quickly the body softens and the slime coat returns. But you must act! In the advance first aide kit (see April newsletter), Dexamethasone is listed. This drug can literally bring a koi back to life. So start CPR as above, and get someone or stop a few seconds to draw up a 3 cc syringe with 2 cc of Dex. (If it's a 6" fish give 0.5 cc intraperitoneally (IP); if 12 " give 1 cc IP; if 18" give 1.5 cc; if 24 " give 2 cc; if 30" give 2.5 cc). Then resume CPR. Results are really amazing and save many a fish that others might write off.

That was my original article, but a fair number of you folks are fighting ulcers that just don't go away. So let's talk about that a bit. Before getting into the specifics, we need to talk about how Koi get sick, your real job in keeping koi and a concept called "benign neglect."



How Do Fish Get Sick

Here's a great picture I found on the net. It's called a Venn diagram and it is used to explain the inter-relationships between groups.

Look real closely at the little red star in the middle.  That represents a **disease**. Notice **disease only occurs** in that little bitty area **where all three**

of the circles overlap. The **bug** doesn't make the fish ill. **Not by itself.** **Poor water quality** doesn't make the fish ill. **Not by itself.** A **husbandry issue** (like overcrowding) doesn't make the fish ill. **Not by itself.**

All three must get together and join forces to have enough power to make the fish ill.

Now look at the three spokes in the form of an inverted Y around the star -- **stress**. Look closely and you'll see that each occur when two of the three circles -- the contributing factors -- cross. So, either a bug combined with poor husbandry; poor husbandry joining with poor water quality or, poor water quality joined by a bug will act as a stressor. Everything else (which is the majority of the picture) represents the Koi's normal Shangri-La.



Let's think about this. It's the key to showing us what to do to help our Koi cure itself. You heard me right. Despite what we **want** to believe, **you and I don't cure our Koi; our Koi cure themselves.**

Your Job

Well, Mother Nature had everything balanced -- the bugs were happy, the water was cool and the fish were playing a game of tag. Then you came along and crowded Koisan and a whole bunch of its brothers and sisters, and neighbors yet, into a closed environment then got busy with life and let things go amuck. The crowding stressed; the poop built up and your water quality tanked; and, the bugs said "thank you very much" and went digging for their noon meal.

Look back at the diagram. Two thirds of the things that need to combine to cause illness are under your direct control -- water quality and husbandry.

Benign Neglect

Really. Our only jobs are to feed, house and change their linen every so often. Here's the deal Ma Nature made with us. 'You provide a pristine environment and your Koi will provide you with hour after hour of relaxation and pure enjoyment.' Now we can't do anything that will harm the fish (like overcrowding them) and we have to do our jobs; but **we need to spend way more time just sitting by the pond enjoying our hobby for Pete's sake.**

The problem begins when we worry more about our comfort zone than what is in the Koi's best interest. It's when we read about the latest, greatest new chemical, take off to KoiMart and dump it in the pond that our battle with Ma Nature begins. And it's not nice to mess with Mother Nature. (Think biblical like in locust, plague... you get the idea).

Wound and Ulcer Management

The operative phrase is **pristine environment**. Look back at the diagram. Two of the three contributors of illness are under your control, right? It seems to follow then, that for our Koi to get sick, **we "am" the major contributor to the illness.** So: fix the problem. Clean out the poop, move a few families to the suburbs and you've given Koisan a big boost in fighting those bugs. **Get out of the way and let him / her cure itself.**

That wasn't too hard. But you're not sold? You want one of my magic pills right? You don't have time to do all that? Well. You just created a bunch more work for yourselves.

1. Add salt at 0.1 % (1 pound or 1 ¼ cups per 100 gals) each day for 3 days. Maintain this level by adding salt for the amount of water you change each week at rate of 0.3 % (3 pounds or 3 ¾ cups per 100 gals).

2. Call one of the KHAs and get them to come by and **see if you need to clean the wound /ulcer**, and then show you how to do that. They'll badger you into promising NEVER to clean the wound unless you are **ABSOLUTELY POSITIVELY SURE** that it's infected.
3. If it requires cleaning, it requires a topical antibiotic. You have what you need in the EM kit you put together in April – Provoidone Iodine 10 %. Dry the lesion, swab the inside of the freshly cleaned wound / ulcer and about 1/8 " around the lesion, no more than that or you'll be damaging healthy tissue. While the Iodine is still wet, liberally sprinkle on denture powder. Wait 15-30 seconds and blow off excess. (Left the powder off the list).
4. If you feel like you **have** to clean and treat the wound / ulcer a second time, **don't**. At this point re-treatment is problematic and definitely an art, so call one of the KHA's before destroying what you just accomplished.

What else? Nada... nothing... **Your job. Keep a pristine environment and your Koi will heal itself.** Healing generally occurs in 3-6 weeks. Well I've ranted interminably in this article. Maybe Joe can jump in next time and explain what to do when you slipped and your water is less than pristine.

'Til next time. Koisan Harold