UDN – Ulcerative Dermal Necrosis

• What is UDN?
UDN is a skin disease that affects mature salmonids, mainly salmon and sea trout when they return into fresh water, but cases of brown trout and other freshwater fish have been reported in the past. The disease mainly occurs in cold water temperatures.
As the name suggests, UDN affects the skin and results in skin ulcers.
Those ulcers may become infected with secondary pathogens, mainly with a fungus of the *Saprolegnia* species, which gives the fish a cotton-wool like appearance and can ultimately cause death of the fish.
There have been 2 major outbreaks of UDN in the UK in the past, one in the 1880’s and the other in the late 1960’s/early 1970’s. Normally, the disease persists in an affected river for 3 to 4 years and then disappears again. It is likely however that UDN is present at low levels at all times.
The primary cause of the disease is still unknown, despite extensive research that has been conducted during the last major outbreak.
It is still unknown if UDN is caused by a pathogen or if it is due to some environmental factors the salmon encounter at sea. Interestingly enough, the farmed salmon appear to be unaffected by the disease.

• The first signs of UDN are:
• Slight discolouration (small, grey-white areas) on the scale-less areas of the fish. The opercula, snout and area above the eyes are most commonly affected
• The lesions are often symmetrical
• The adipose fin can be affected as well
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• More examples for the first stage of disease:

• As the disease progresses, the discolouration begins to spread over a larger area and starts to ulcerate:
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- The ulcers become deeper and more and more widespread:
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- **Final stage of disease:** fungal infections and spread of disease over the whole body

- **Prognosis:**
  Affected fish can recover as long as the damage done by the secondary infections is not too extensive.
  Higher water temperatures also support the recovery of diseased fish.
  As soon as the fish return to sea, the fungal infections heal.
  However, if the fish are affected and the water conditions are not in their favour, UDN and the associated secondary infections can cause high mortality and leads to a decrease of the salmon population of a river system in the following years.
  If fish recover, they can go on to successfully spawn.
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• What to do if you see an infected fish:
If you see or catch fish that shows signs of UDN, please contact the local river authorities and keep the fish alive and in a holding net if possible.
The river biologists are trained to take all the necessary samples.
Ideally, samples should be taken from the early stages of UDN since fungal infections tend to overgrow everything and it is very difficult to evaluate what was the primary cause of disease once the fungus starts growing on the tissue.
In order to get good samples, the fish has to be kept alive until a qualified person arrives who can take the samples!

• Further advice:
If you see a moribund fish, remove it from the water and dispose it locally to keep the infection risk for other fish to a minimum.

As said earlier, the cause of the disease is still unknown, so no specific protocols to prevent the spread of UDN are in place. However, it is good practise to disinfect all angling equipment, not only to prevent the spread of UDN, but also to prevent the spread of other pathogens.

It is not recommended to cull diseased fish on the belief that other fish will be directly infected!