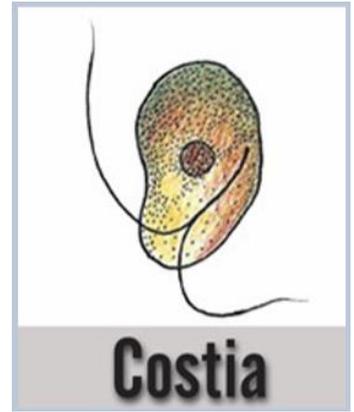
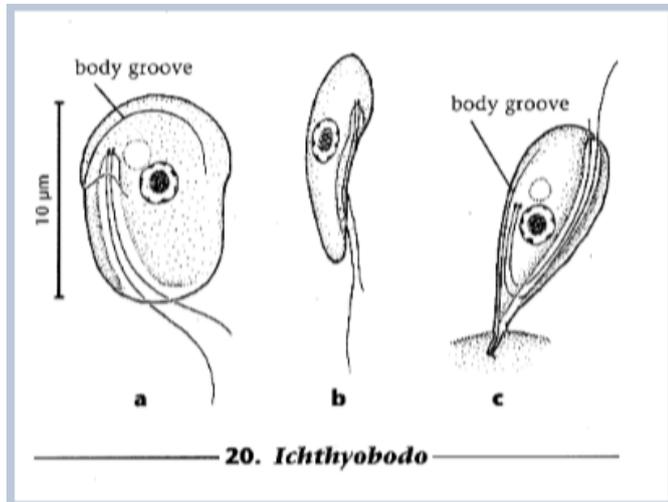


## Costia

There are two species of costia “*Ichthyobodo Necatrix*” which is the most common and “*Ichthyobodo Pyriformis*”. This nasty little critter is number two on the hit list for being responsible for high koi mortalities. It is classified as a “Flagellate” parasite, meaning it has one or more “Flagella” or hairs. Costia had two pairs of flagella, one used for propelling itself around and the other for attaching to its



host in order to feed. It can infest various species of fish both internally and externally.



Costia reproduces by longitudinal binary fission (splits itself in two from top to bottom). It is transferred by physical contact, however unfortunately it is capable of swimming should the need arise. It is unable to survive more than a couple of hours without a host,

should conditions become detrimental it is believed they are able to form a protective cyst, this may also protect them from drying out meaning when conditions improve they can emerge to re-infect your fish.

Costia feeds on the koi tissue, it causes major damage to the gills and skin. Where it attaches it will destroy the tissue at that site. Gill tissue is delicate, when it is damaged the koi is unable to get sufficient oxygen as well as weakening the host further, rendering it unable to produce adequate immune responses. It is an opportunistic parasite which will attack weakened fish. Younger fish fall victim much quicker than older koi with stronger more



established immune systems. Unfortunately, koi suffering heavy infestations may not make it through the treatment regime. It is important to provide extra air to increase oxygen



saturation, especially if they are gasping. Costia infestations can happen rapidly and can be catastrophic.

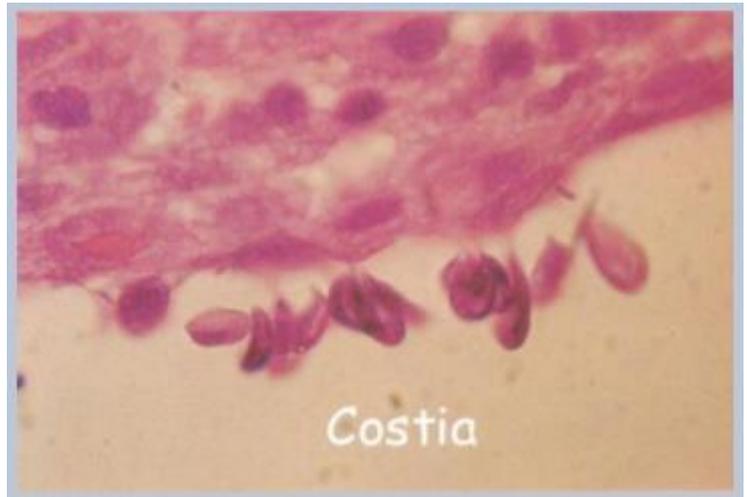
## Identification

Costia is 10-20 microns long and can be seen at a minimum magnification of x100, x400 is much better to see them moving.

They are usually found in the areas around mucous scrapes, normally in the small rivulets formed on a slide.

Therefore, it is better to try to avoid getting a thick mucous scrape as this can hinder being able to see them. Their movements are erratic and jerk like, they look to be tumbling around all over the

place. Costia is comma or bean shaped face on but very narrow side on. When attached to a host it is more pear shaped. For recognising how costia moves, see videos at the bottom of the article.



## Symptoms

Fish that become very lethargic, stop feeding, start hanging in air columns, have red areas, raised scales and excess mucous are showing classic costia symptoms. Koi may present with sunken eyes and clamped fins. There

may be multiple fatalities over a short duration. A scrape must be done to confirm a diagnosis. Inspection of the gills will identify any damage caused by costia. Gills should be a bright red colour, any discolouration is a sign of damage.

## Treatments

**\*\* Ensure UV lights are turned off\*\***

- Malachite green and Formalin is the first line treatment.  
Malachite Green 2% 10mls per 176 gallons  
Formalin 30% 10mls per 150 gallons Used together for one treatment only.
- Potassium Permanganate at 1.5 grams per 220 UK gallons for three to four hours.
- Chloramine T at 2 grams per 100 gallons. Treatment for three consecutive days only. Ensure pH is over 7.5. UV light and pH can increase the rate of release of the chloramine T into the water making it toxic.



- ICC by Duncan Griffiths has good feedback, more so when salt is used at 0.6%. 25mls per 500 gallons, treat every other day. Be aware that using salt reduces what other treatments can be used.

Do not use Formalin or PP if you have salt in the pond.  
Use a salt meter to accurately measure the ppt or %.

Before adding any treatments it is essential that you make a positive identification of the parasite causing the problems.

Test your water parameters for Ammonia (NH<sub>3</sub>), Nitrite (NO<sub>2</sub>-), pH, KH and Temperature.

Any treatments added are done so at your own risk. It is your responsibility to know your pond volume and to calculate dosages correctly. Always check the product labels. Turn off UVs if it states to do so. Add extra air.

The YKS will not accept responsibility for deaths of stock resulting from incorrect usage of chemicals/medication.

### **Videos**

[https://youtu.be/x\\_oXpgYPONM](https://youtu.be/x_oXpgYPONM)

<https://youtu.be/HTqadRGpfEI>

<https://youtu.be/DqD9F81wqdo>