Keep Your Koi Healthy

TOP 10 TIPS

When you get a new puppy or kitten, you take your furry friend to the veterinarian to have their health checked and to get the proper shots and treatment to ensure future good health. Ongoing visits are scheduled as a preventative measure. Unfortunately, it's not so easy to take your favorite koi to the doctor for regular check-ups. The responsibility to assess and treat koi health falls on your shoulders.

Fortunately, you don't need a degree in veterinary science to assess and treat basic pond fish diseases. What you do need, however, is a watchful eye and a bit of knowledge you'll find inside this handy koi guide.

Veterinarian Dr. Erik Johnson, a world-renowned expert in koi health and author of *Koi Health and Disease* says that

"Proper care and good quarantine practices stop fish diseases cold. When fish get sick, there should be a series of simple measures to restore health that anyone can get a handle on."

Before we get started with our list of measures to maintain or restore proper koi health, understand that the most important thing you can provide for your finned friends is a clean and healthy living environment. All the medicine in the world will NOT heal a fish that continues to live in an unclean pond. Conversely, a perfectly managed pond will not necessarily prevent a fish from being vulnerable to a serious bug.

If some day you sadly find your prized koi is behaving strangely, use this guide to help assess and treat your fish, if needed. And even if your fish exhibit the best of health, these words of wisdom are invaluable for maintaining a happy healthy home for your koi.

TAKE STOCK OF YOUR FISH RATIO

Overcrowding of fish is perhaps the leading cause of illness in koi, followed closely by overfeeding. When your pond is overstocked with fish, you encounter high feeding rates, lack of appropriate levels of filtration, and the resultant buildup of noxious compounds including nitrogen, fish waste, and carbon dioxide.

Ponds should never contain more than one inch of fish per ten gallons of water. An even better rule of thumb is to limit stock to just one-half inch of fish per ten gallons of water.

In practice, it's very common to encounter ponds crowded with as many as two to three inches of fish per 10 gallons of water. These fish might seem to be "okay," so what's the problem? Unfortunately, the density and ecological strain of this loading make the pond a fragile ecosystem, resulting in a higher risk of fish becoming sick. Not to mention, it's more difficult to nurse koi back to health in a crowded pond.

To combat the problem of overcrowding without having to enlarge the pond, you could add a wetland filter which greatly improves and increases filtration. This can be a viable option for anyone who doesn't want to part with any of their koi and doesn't have room to expand their pond. For the sake of your fish, be sure to hire a Certified Aquascape Contractor if you opt to go this route.

DETERMINE IF YOUR FISH ARE OVER- OR UNDERFED

Overfeeding is the most common mistake that koi owners make. Feeding your koi once or twice per day is plenty, and you should only give them what they can eat in five minutes. Overfeeding manifests itself in the form of cloudy water and the overgrowth of green algae in your pond.

Underfeeding results in fish which appear to have pinched-looking heads and drawn up bellies. A fish with a large head and thin body is usually underfed. Over- or underfeeding koi can adversely affect the overall health of pond fish.

3.

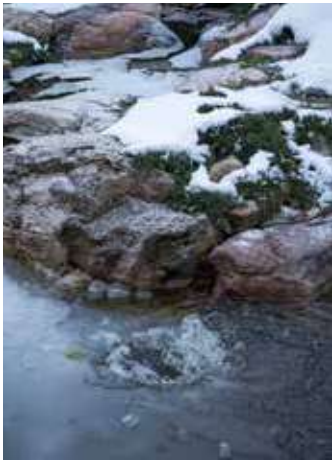
BE MINDFUL OF OXYGEN

While fish can survive without food for months, oxygen cannot be compromised. If you have an ecosystem pond with proper circulation and filtration, then summer and winter are likely the only times when you might need to concern yourself with oxygen levels in your pond.

Keep in mind that warmer water carries less oxygen and fish are the most active during summer (which means they consume more oxygen) so it can be helpful to add an aerator. During summer, your pond is likely to be the most deficient in oxygen during the early morning hours. This is due to plant photosynthesis. During the daylight hours, plants give off oxygen, and at nighttime the fish absorb that oxygen. So, in the early morning hours, the oxygen is at its lowest level. If you have a pump continuously recirculating the water in your pond, however, this situation shouldn't pose a problem because your water is constantly oxygenated.

In the winter, many pond owners choose to shut down their pond's circulation system, the same circulation system that helps oxygenate the water. Also, when ice forms over the surface of the pond, a hole must be kept open, allowing built-up gases to escape. To replicate oxygenation and keep a hole open in the ice, an aerator or supplemental pump should be set inside the pond, bubbling at the surface of the water.

A pond de-icer can also be used to keep a hole open in the ice, but never without the recirculating pump or aerator. De-icers keep a hole open in the ice by heating the area around it when the water reaches a pre-set temperature. Remember, the de-icer does not oxygenate the water. In fact, the process of heating the water around it uses up oxygen.


Regardless of the season, the best solution for keeping oxygen available in your pond is to have a continuously operating pump pushing water, combined with a sufficient filtration system that keeps water moving by means of a waterfall or fountain. Having constant water flow and movement introduces more oxygen into the water.

4.

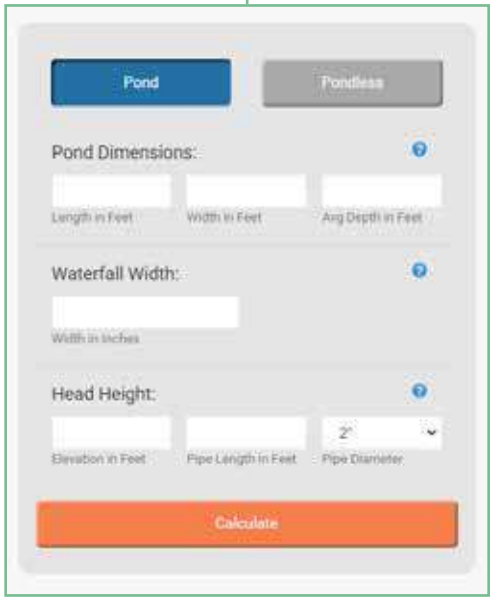
ENSURE SUFFICIENT WATER MOVEMENT

There are actually two measures for providing water movement in a pond. The first part is to know that koi and goldfish are riverine fish. This means they are physically and intellectually engineered for a river environment, not a pond environment. This doesn't mean they can't thrive in a pond; it just means that pond life is an adjustment for them.

Koi and goldfish have barbels and a torpedo shape, which help them survive in a river environment. Your pond should have considerable water movement to mimic the natural habitat of your fish. Ideally, your pond should have a waterfall or stream to create movement in the water. If it doesn't, consider adding a Pond Powerhead to create a stream of turbulence in the pond.

The second component to sufficient water movement is your pond's filtration. No filtration system works up to par unless the filter processes the pond's total volume of water every hour. A proper turnover rate creates higher oxygen levels and results in clearer, cleaner water.

Your pond pump's gph capacity will determine how quickly the filtration system can turn over the water. Use a pump calculator to determine whether you have the proper size pump for your pond. Your fish will thank you!



5.

KEEP AMMONIA LEVELS IN CHECK

When ammonia levels are high in your pond, you might witness your fish attempting to jump out of the water to get away from it. This is often the first sign that pond water has an ammonia problem (although there *is* the occasional fish who just likes to jump). Ammonia is the primary chemical waste product of fish. It's basically fish urine and can accumulate in ponds and cause health problems for your finned friends if left untreated.

If you suspect high ammonia levels, or a test kit confirms an unhealthy level, you can easily treat the pond with Ammonia Neutralizer. A partial water change can also be performed although using Ammonia Neutralizer is a much easier process for removing the offending ammonia.

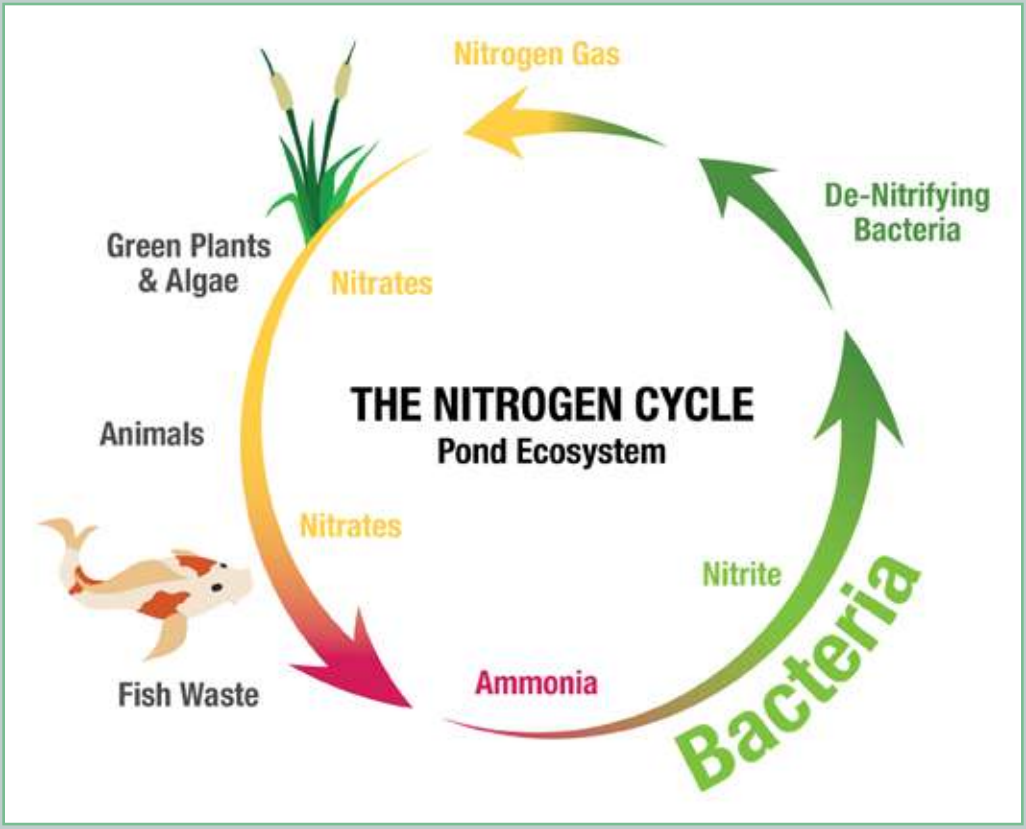
6.

ASSESS NITRITE LEVELS

In ponds with healthy colonies of beneficial bacteria living in the filter and on the rocks and gravel, ammonia is naturally reduced to nitrite. In some cases, nitrite can build up in the pond and cause harm to your fish. Fortunately, nitrite levels can be easily assessed with a test kit.

If you identify high levels of nitrite, add Pond Salt to the water, or perform water changes to block the harmful levels of nitrite. Soon after, beneficial bacteria will begin to establish in the pond and will help remove the nitrite.

As a preventive measure, you can reduce feedings in order to decrease ammonia production by the fish, which is then converted to nitrite. A chronic high nitrite level in pond water is a common result of over-feeding fish or overstocking the pond.


Nitrogen Gas
De-Nitrifying Bacteria
Green Plants & Algae
Nitrates
THE NITROGEN CYCLE
Pond Ecosystem
Animals
Nitrates
Nitrite
Fish Waste
Ammonia
Bacteria

ASSESS NITRATE LEVELS

All research performed on nitrate levels in the pond shows that it's not toxic to fish in the short term. On the long term, however, high nitrate levels (> 80 ppm) will cause a depressed immune system in your koi, which can result in red veins appearing in the fins, along with slowed growth.

Nitrate is made from nitrite by beneficial nitrogen-reducing bacteria. Ponds with a lot of plants typically have nitrates under control since plants and algae consume nitrate. So, nitrates can easily be reduced through less frequent feedings and the addition of pond plants.

As a preventive measure, stock your pond with waterlilies and a variety of marginal and floating plants. It's also a good idea to leave some algae growing on the rocks and gravel since algae help to consume excess nitrates.

DON'T BE OVERLY CONCERNED WITH pH FLUCTUATIONS

According to the Environmental Protection Agency, a pH level ranging between 6.0 and 8.5 is a good profile for any natural stream, yet time and again you'll see people debating levels. Koi experts believe that for their fish to thrive, pH levels should not be lower than 7.0. As a rule, ideal pH levels for ponds range from 6.5 to 8.5, but below 6.5 can be too acidic for koi.

It's important to remember that pH levels can vary significantly over a 24-hour period due to the respiration and photosynthesis of the plants in the pond. So, if you test your pond for pH, it's not uncommon to witness fluctuations throughout the day.

In the case of respiration, the resulting carbon dioxide combines with water to form carbonic acid, which lowers the water pH. Algae utilizes carbon dioxide levels and increases pH during daylight hours. At night, photosynthesis stops, and pH levels decrease.

9.

DETERMINE IF KOI WERE RECENTLY HANDLED

If you notice your koi behaving strangely, determine if they were handled recently. If they were transported from a store, or temporarily housed outside of the pond for a pond cleaning, they might be dealing with a bit of stress. Handling increases fish stress, which depresses their immune system. When the immune system is compromised, fish can more readily become sick. Use Protect for Ponds to help reduce fish stress.

10.

EVALUATE WINTER STRESS

If your fish have undergone any type of winter stress, they have about a 70% chance of recovering from an illness. It's somewhat common to experience a sick fish or two after a winter's thaw. Winter stress can occur when your pond experiences a repeated series of freeze/thaw conditions due to frequently changing temperature as winter transitions to spring. Treating your pond with Protect for Ponds reduces stress in fish and increases their chance of enjoying a happy and healthy summer season.

ADDITIONAL RESOURCES FOR KOI HEALTH

In addition to our top 10 tips, use the following chart to help identify other symptoms you might see in your koi, such as streaked fins or white spots. Catching issues early on improves your chance of nursing a sick fish back to health.

Symptoms and Possible Treatments

Fish Symptom
Erratic movement, flashing or rubbing on rocks and surfaces throughout the pond
Growths that look like cotton balls
Open wounds or ulcers
Fins appear to be rotting away
Red streaks in the fins
Small, white spots that look like salt stuck to the body of the fish
Gasping at the surface of the water
Bulging eyes
Scales protruding from a swollen body like a pine cone
Difficulty swimming underwater; floating at the surface upright
Red or swollen gills

Possible Problems	Treatment
• Parasite Problem	• Aquascape Parasite & Ich Treatment • Aquascape Praziquantel Treatment • Aquascape Pond Salt
• Fungal Infection	• Aquascape Fungus Treatment
• Bacteria Infection	• Aquascape Ulcer & Bacterial Infection Treatment
• Fin Rot • Bacterial Infection	• Aquascape Ulcer & Bacterial Infection Treatment • Aquascape Pond Salt
• Bacterial Infection • Parasite Problem • Ammonia Poisoning	• Aquascape Parasite & Ich Treatment • Aquascape Praziquantel Treatment • Aquqascape Pond Salt and water change using Aquascape Pond Detoxifier • Aquascape Ammonia Neutralizer
• Ich • Parasite Problem	• Aquascape Parasite & Ich Treatment • Aquascape Pond Salt
• Oxygen Depletion	• Aerate the pond and agitate the pond surface • Reduce fish load
• Bacterial Infection	• Aquascape Ulcer & Bacterial Infection Treatment
• Dropsy • Bacterial Infection	• Difficult to treat; treat the pond as a preventative measure • Aquascape Ulcer & Bacterial Infection Treatment
• Swim Bladder Disease	• If the fish are still feeding, feed fish with canned peas or a Spirulina-based fish food.
• Parasite Problem	• Aquascape Parasite & Ich Treatment • Aquascape Praziquantel Treatment • Aquascape Pond Salt

For more information about koi and other pond fish, visit our library of fish articles.

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Greg Wittstock, The Pond Guy

I'm Greg Wittstock, The Pond Guy. A passionate pond hobbyist for most of my life, I established Aquascape, Inc. in 1991. Follow along as I meet incredible people, view beautiful water features, and share what it means to be Living the Aquascape Lifestyle®!

Ed Beaulieu The Pond Professor

Friends refer to me as "The Pond Professor" because I love to talk about the science behind ponds, waterfalls, and the environment. Subscribe to my channel to learn step-by-step instructions on how and why I build ecosystem ponds and water features the Aquascape way.

TEAM Aquascape

TEAM Aquascape features a first-hand look at Aquascape water feature installations as told by members of the Aquascape Construction team, Join us for informative vlogs that share a behind-the-scenes look at life as pond and waterfall builders in the Chicagoland area.

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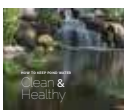
Pondside Monthly

Sign up for Pondside Monthly, our free e-newsletter that's filled with great information and tips to help you along your water gardening journey.



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