



AXOLOTLS

FOR BEGINNERS UK

• since 2021 •





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An Introduction to Axolotls

Axolotls are actually part of the amphibian family despite their popular name 'the Mexican walking fish'. A legend has it that they retrieved their name from the God of fire and lightning, Xolotl, who disguised himself as a salamander to avoid being sacrificed.

Axolotls are a huge fascination around the world due to their ability to regenerate lost limbs and even parts of their heart and brain. Unlike other salamanders that undergo metamorphosis, Axolotls never outgrow their juvenile stage and get to stay young for their whole lives! I like to say they are the aquatic version of Peter Pan. This is called Paedomorphic (retaining juvenile features as an adult).



Despite Axolotls having poor eyesight and being generally clumsy, they can definitely recognise a human face, especially if you are the worm feeder!

Axolotls can become fairly large in size and can grow to an average of 1ft, this means you will need a fairly large tank to accommodate for their size. We advise a minimum of 2.5ft and 90+ litres for one axolotl. You can find pictograms on tank sizing and how many axolotls each size can accommodate.

Axolotls have a large bioload, basically meaning they can be quite dirty! When setting up your tank it is vital to have double the filtration for your tank size, this way it ensures your filter can adequately remove their toxic waste effectively. Axolotls are bottom dwellers and are nocturnal, meaning they rest all day and are lively at night. Having a low flow filter or alternatively using sponges to baffle your flow is great way to keep the water calm – as some are not the strongest of swimmers! For this reason, a tank in length is also better than a tank in height.

Cycling your tank is absolutely necessary for a long and happy life. Contrary to popular belief that in fish cycling is effective – it is not. Axolotls are not fish and will become very poorly if they are in a tank that isn't fully cycled. Not having a fully cycled tank means that there is not beneficial bacteria to 'eat' the bad bacteria. Using Dr Timms ammonia or Knockout household ammonia to complete the cycle is highly recommended. It is also recommended to find out whether you have hard or soft water before beginning your cycle as soft water will stall without the correct minerals and high nitrates in water will stall your cycle also. It is all about getting the happy balance using either extra minerals or a pozanni nitrate filter.



Axolotls thrive in water which has the PH of 7.4PPM-7.6PPM but anything between 7.0PPM and 8.0PPM is also fine. Ammonia and Nitrite must be 0PPM in a cycled tank as these can really harm an axolotl making them very poorly. Axolotls are happy between 5PPM and 20PPM nitrate, however it is recommended not to let the nitrates get as high as 20.

Axolotls are strictly cold water, they are most comfortable between 16-18C anything above 19C for long periods of time can put them at risk of illnesses and fungus, and anything over 21C is deadly and therefore will require immediate attention. If keeping the tank cool is a problem, there are methods you can use to keep the water sitting at a cool temperature for them such as; chillers, frozen water bottles and aquarium fans.



Axolotls are same sex and same size only. Male axolotls can become very excited – very frequently, and therefore will push a female around until she is exhausted. This is how they instigate mating (they will push the female around to their sperm cones for her to collect). Regarding the size, Axolotls have poor eyesight and will snap at anything that goes by. This could be detrimental to smaller axolotls as they are much more delicate than larger ones.

Axolotls feed by using suction, they suck in all of their food like a Hoover. This means that if there is anything under the size of a fist in the tank, it could get sucked up causing internal blockages and a lot of health complications for axolotls. Therefore, we recommend absolutely no gravel for, and sand must be as fine as possible approximately 1mm grain size. If choosing sand as a substrate, due to their small size as babies, it is not recommended that they live on sand if they are under 5/6inch.

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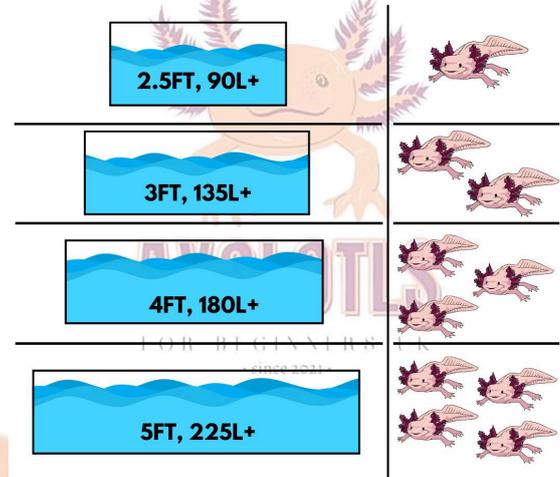


Axolotls feed mainly on dendrobaena worms, they can have other food as well which is outlined further down the page. Wax worms, blood worm and shrimp can be a good and tasty treat for axolotls, however they are treat only as they do not provide as much protein and calcium richness as a dendrobaena worm does.

Axolotls take in nutrients from the environment through their skin, this means that if you decide to have a planted aquarium you must absolutely not use any fertilisers or CO2.

Another point that much be mentions is that it is absolutely vital that the water they go into is dechlorinated, chlorine can be really harmful for axolotls and post a risk to them. It is important to read the ingredients of the dechlorinator used to insure it doesn't contain any iodine or aloe vera – iodine was in fact used in laboratories to force metamorphosis onto axolotls as experiments, it is vital to avoid this as it can be a painful process for them.

Minimum Tank Sizes



Is an Axolotl the right pet for me?

Axolotls are amazing creatures which have gained a lot of popularity over recent years with the introduction of them in games such as, Roblox and Minecraft. They are often described as easy to take care of and portrayed as an ideal low maintenance first pet. Sadly, this is a common misconception. If you are thinking of getting an axolotl there is a lot to consider; money, space, time, and preparation which is a very time consuming process if you want a healthy and happy animal.

If you are considering getting an axolotl for your child (usually due to games) please be aware that the axolotl will become your responsibility, although it is great to get a child involved in the care of their animals. There is a lot of more complicated things involved such as calculating dosage and testing the water.



Things to consider;

Space - do you have enough space to house an axolotl or keep multiple tanks? Even though the general rule is 75litre and 2ft long tank – they will outgrow this in no time and require a larger tank. Well cared for axolotls with the right genetics can reach adult size in as little as 6-7months. Healthy axolotls size can vary from 7-15inch on average. Axolotls are same sex and species only in their environment which means they absolutely must not be kept with fish under any circumstances, fish can



pose risks for axolotls such as gill nipping, slime coat damage, impaction, parasites and choking hazards. For each additional axolotl you will need an extra 45L and 1ft in size. Male axolotls present quite quickly as they will develop a bulging cloaca behind their rear legs, however female axolotls cannot be confirmed until 18mo, so this means you will need to be prepared for a second tank.

Money – can you afford the upkeep and starter costs? Axolotl set ups are not cheap - even if all the equipment is bought second hand! They are an expensive hobby and not for the faint hearted. You will need to get an aquarium, thermometer, décor (must be smooth, have no gravel, and stones bigger than the palm of your hand, fine sand below 1mm grit is allowed for axolotls larger than 5-6inch, A strong filter (or multiple filters as you need double the tank volume filtration), an aquarium chiller, a wormery (worms must be bought from shops as garden worms can carry diseases and poison, we recommend you get your worms from Axolotl and Reptile Rescue UK, Willys worms or Yorkshire worms), feeding tongs, tubs for emergencies, Seachem prime (or alternative safe dechlorinator), a liquid test kit such as API freshwater master test kit, liquid ammonia, bicarbonate of soda (for PH drops during cycling) and possibly a Pozanni nitrate filter. You will need to check your tap PH and Nitrates, if you have PH lower than 7.0PPM you will need additional tests to test the KH and GH of your water which shows the hardness. If you have high PH above 8.2 and high nitrates you will need to invest in ways to lower it (sometimes it's as simple as getting some Indian almond leaves or driftwood). However, other times it can be more expensive as you may require a Pozanni Nitrate Filter and replace inserts on a regular basis. All of the above can become very costly (£400-1500) as well as the electricity costs, minerals, pozanni inserts. This can add up to a monthly sum of up to £100. This is excluding the cost of the pet itself, vet trips and other areas like medication. Please note: Axolotls can live up to 15 years with the correct care so they are a long commitment.



Preparation – This takes time and will test your patience to its limits. All aquariums have to be cycled before introducing axolotls to it. Tanks without grown and established good bacteria will turn toxic and deadly, very quickly! This process cannot be skipped or rushed. Every cycle is different and can take anywhere between 4 weeks to a couple of months to complete. Whilst cycling, it is paramount to test your tank daily and dose with liquid ammonia accordingly. Axolotls are not fish,



they do not have scales to protect them from toxins that will build up in an uncycled tank. Product that claim to cycle a tank in 3-7 days simply won't do as beneficial bacteria in there is very sparse and unstable (not to mention many of these are toxic to axolotls and just a marketing ploy for custom). If you are planning on having a natural looking tank with live plants, they will first have to be treated weekly and quarantined for a minimum of 2 weeks (this will kill any parasites and harmful hitchhikers).

Maintenance – Axolotl aquariums like any other pet habitat requires regular cleaning. This includes daily spot cleaning (siphoning faeces and uneaten food). Weekly water changes (frequency is dependent on how quickly the nitrates built up). Weekly water testing to ensure nothing has changed within the cycle and everything is running as it should. Once your tank has been established for over 3 months you can test every other week. Ensuring your axolotl has a stable temperature, alternating frozen water bottles, aquarium fans if you don't have a chiller can be a time consuming job. Feeding regime, axolotls under 9 months old will require feeding twice a day, and one daily feed for adults.

Please consider getting an axolotl with great caution. They are extremely interesting and rewarding animals but they do require a lot of preparation, money and hard work.

By: Natalia Nowaczyk

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Safe Substrate / Décor

Safe Substrate



SAND IS SAFE FOR AXOLOTLS, HOWEVER - THE SAND MUST BE 1MM GRAIN OR BELOW. A GOOD OPTION FOR SAND IS CHILDREN'S PLAY SAND AS IT'S VERY FINE AND NON TOXIC. BEFORE ADDING THE SAND TO THE TANK, IT MUST BE WASHED THOROUGHLY - SEVERAL TIMES! USING A PILLOW CASE CAN MAKE IT EASIER. AXOLOTLS MUST BE OVER 5" TO GO ONTO SAND.



AQUARIUM GRASS OR ARTIFICIAL AQUARIUM GRASS CAN LOOK REALLY EFFECTIVE. YOU CAN ALSO USE A 'GRASS' EFFECT TABLE RUNNER AS LONG AS IT'S FOOD GRADE (NORMALLY SOLD IN SHOPS SUCH AS HOME BARGAINS, THE RANGE ETC. AT EASTER TIME) THIS PROVIDES A NICE, NATURAL LOOKING ENVIRONMENT WITHOUT THE UPKEEP.



TILES ARE ANOTHER GOOD OPTION TO USE FOR AXOLOTLS AS AGAIN THEY CAN PROVIDE GOOD GRIP FOR THEM TO WALK ACROSS, HOWEVER IF TILES ARE GLAZED (AS MOST OF THEM ARE) IT'S PARAMOUNT THAT THE GLAZE IS DEEMED FOOD GRADE SAFE - SO NO TOXINS ARE ABLE TO LEACH INTO THE WATER.



SLATE IS A GOOD OPTION AS A SUBSTRATE FOR AXOLOTLS, NOT ONLY DOES IT LOOK NEAT AND IS EASY TO KEEP CLEAN, BUT IT PROVIDES A 'GRIPPY' SURFACE FOR THEM TO WALK ACROSS. SLATE PLACEMATS CAN BE USED BY REMOVING THE RUBBER FEET ON THE UNDERSIDE. BE SURE TO WASH THE PLACEMATS IN JUST HOT WATER.

UNDER NO CIRCUMSTANCES MUST GRAVEL BE USED IN A TANK HOUSING AXOLOTLS. NOT ONLY WILL THEY TRY AND EAT EVERYTHING IN SIGHT BUT THEY EAT USING A STRONG SUCTION, AND GRAVEL CAN ACCIDENTALLY GET SUCKED IN WITH THEIR FOOD - CAUSING IMPACTION. IMPACTION CAN LEAD TO SERIOUS COMPLICATIONS AND EVEN DEATH IF THEY ARE NOT ABLE TO PASS IT NATURALLY. SEE THE X-RAY ➡



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Choosing Decor

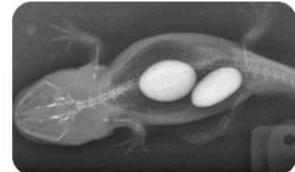
WHEN CHOOSING YOUR TANK DECORATIONS, IT'S IMPORTANT TO REMEMBER THAT AXOLOTLS HAVE SKIN WHICH CAN BE EASILY DAMAGED. THEREFORE, IT IS ESSENTIAL TO PICK YOUR DECORATIONS WISELY.

IT MUST:

- NOT HAVE ANY SHARP EDGES. AXOLOTLS HAVE VERY DELICATE SKIN WHICH THEY USE TO TAKE IN NUTRIENTS FROM THE ENVIRONMENT, WITH SLIME COAT BECOMING DAMAGED, IT CAN STOP THEM TAKING IN NUTRIENTS THAT THEY NEED.
- BE ABOUT THE SIZE OF AN ADULT'S FIST SO THEY CANNOT FIT IT IN THEIR MOUTH. FOR EXAMPLE - LARGE MOSS BALLS, LARGE ROCKS, NO SMALL ORNAMENTS..
- BE AQUARIUM SAFE OR AT LEAST FOOD GRADE SAFE AND SAFE FOR SUBMERGING IN WATER. SOME ORNAMENTS ARE KNOWN TO CONTAMINATE THE WATER, SUCH AS 'THE DREADED PINEAPPLE'.
- IF YOU REALLY WISH TO HAVE SOMETHING IN YOUR TANK WHICH YOU ARE NOT SURE ABOUT BEING DEEMED SAFE - IT'S ALWAYS BEST TO SEAL IT WITH AQUARIUM SEALANT TO ENSURE NO TOXINS CAN LEACH INTO THE WATER.



IT IS ABSOLUTELY VITAL THAT THE DECOR IS CAREFULLY CHOSEN SO THAT IT IS TOO BIG TO FIT IN AN AXOLOTL'S MOUTH AND DOESN'T RISK HURTING THEIR SKIN, IF THESE REQUIREMENTS ARE NOT MET, AGAIN; THIS CAN CAUSE SERIOUS COMPLICATIONS AND EVEN WORSE - DEATH.



Plants for Axolotls

When It comes to choosing live plants to have in your aquarium, it is often difficult to find some that thrive in low light settings. Plants love to feed off nitrates and therefore are a good addition to have in your tank to keep some of the nitrates down. Please note, this does not mean that you will not need to do water changes.

Plants can make your tanks look very aesthetically pleasing and provide lots of hiding places for your axolotl. However, this doesn't come without risks. Plants can carry pest snails (or snail eggs), harmful bacteria, pesticides and/or parasites For this reason alone, all plants should be quarantined for 2-3 weeks before introducing.



Preparing your Plants

You will need:

- A Tub large enough for plants
- Seachem Prime
- Seachem Flourish (or similar)
- Air stone
- Air pump

With this set up you add a little of the Flourish once to the fresh primed water and change the water once a week. Repeat this for a second and third week to remove pests, bacteria and parasites.

Note: Snail eggs can take up to 3 weeks to hatch, therefore doing a 3 week course of treatment will ensure the removal of any possible hatches in the future.

Plants can be treated using one of four methods:

Hydrogen Peroxide, Bleach, Potassium Permanganate or Aluminum Sulphate (this is the weakest of the four methods and therefore may not work effectively).

Hydrogen Peroxide

Make a peroxide bath with 10% (3vol) in pure form. This works out at approximately 1ml of peroxide per 1 litre of water. Submerge plants in your tub solution for 5 minutes (never submerge for longer than 10 minutes). Rinse the plants thoroughly with tap water.

Bleach

Add a very small amount of pure bleach (without any additives) to the water. Submerge plants for 1-2 minutes and make sure they stay submerged. Rinse the plants thoroughly in fresh tap water.

Potassium Permanganate

Purchase this in pure form and be sure to keep it stored away in the dark. Use a few drops per 1 litre of water. Submerges the plants for 10=15 minutes. Rinse the plants thoroughly in fresh tap water.

Aluminum Sulphate



Dissolve 1 tablespoon per 1 litre of water. Submerge the plants and leave them in the solution for 2-3 hours. Rinse the plants in fresh tap water.

Please note: after treating and rinsing your plants put them back into their fresh flourish/prime solution

Best plants for Axolotls

HERE ARE SOME IDEAS OF WHAT PLANTS THRIVE BEST IN AN AXOLOTL'S ENVIRONMENT;

- **JAVA FERN - TALL LEAVES PROVIDE A GREAT SHADED HIDING PLACE FOR AXOLOTLS. THEY ALSO THRIVE IN COOLER WATERS WITH DIM LIGHTING.**
- **JAVA MOSS - CAN BE USED AS CARPETING FOR THE AXOLOTL'S LITTLE FEET.**
- **VALLISNERIA JUNGLE - FAST GROWING, TALL GRASSY PLANT. WILL NEED TRIMMING WHEN REQUIRED.**
- **DWARF HAIRGRASS - STAYS RELATIVELY SHORT AND PROVIDES GOOD HIDING SPOTS.**
- **ANUBIAS - THEY HAVE RELATIVELY LARGE LEAVES WHICH AGAIN CAN PROVIDE GREAT HIDING SPOTS.**
- **HORNWART - FAST GROWING AND TALL, IT HAS A SOFT TEXTURE AND HELPS WITH FILTRATION.**
- **ELODEA Densa - TALL, FAST GROWING AND GROWS REALLY WELL IN COLD WATER.**





Preparing Plants

(WHEN PREPARING A HYDROGEN PEROXIDE PLANT DIP, BE SURE TO USE 3% HYDROGEN PEROXIDE. IT IS EFFECTIVE AGAINST ALGAE, PARASITES, FUNGUS, AND BACTERIA)

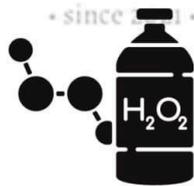
• **STEP 1: MIX 2-3ML OF 3% HYDROGEN PEROXIDE IN 4.5L OF WATER. DIP YOUR PLANT IN THE HYDROGEN PEROXIDE PLANT DIP SOLUTION FOR NO LONGER THAN 10 MINUTES.**

• **STEP 2: THOROUGHLY RINSE THE PLANT IN CLEAN WATER.**

• **STEP 3: ADD YOUR PLANT INTO A TUB OF WATER, ADD SOME SEACHEM PRIME AND A FERTILISER SUCH AS SEACHEM FLOURISH. YOU CAN ADD AN AIRSTONE TO HELP WITH OXYGEN INTAKE.**

• **STEP 4: REPEAT THE PEROXIDE DIP WEEKLY.**

(KEEP YOUR PLANT QUARANTINED FOR AT LEAST 3 WEEKS TO ENSURE NO INTRUDERS ARE LIVING IN THE LEAVES)



Minimum Starter Costs

- Tank 20gal (£125)
- Filter HOB (£35)
- Recommend: chiller + pipes & pump (£250)
- Hide/cave and some decor/plants (£20-£50)
- Dr Timms Ammonium (£12)
- Seachem Prime (£10)
- Api Liquid Freshwater Master Test Kit (£35)
- 500g dendro + wormery (£30)
- Animal (£15-£40)
- Tub (£5)
- Feeding tongs (£5)
- Turkey baster (£5)



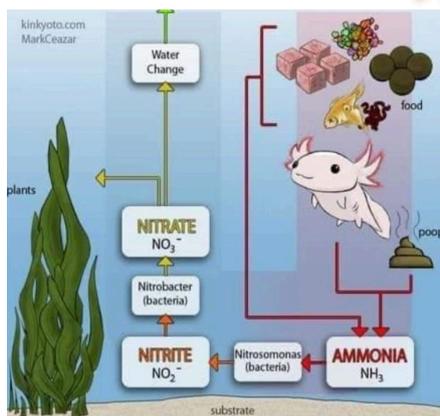


What is the purpose of cycling?

So, you may see the word 'cycling' being thrown around a lot. Many say, "the tank needs to be cycled first to be safe". No, this doesn't mean taking your tank on a bike ride; it is much more scientific than that. Unfortunately, people put a lot of trust into pet shops; however, most of them are not very familiar with Axolotls, as their main focus is fish; therefore, the advice can be very conflicting - leading to great confusion for new owners. Also, note that when you get your water tested at a pet shop - they do not use accurate testing kits, and if your tank is empty of inhabitants, the water tests they do won't show up with anything being wrong - this can be misleading to new aquarium hobbyists into accepting that their tank is ready to go, when in fact it isn't and can be highly toxic to the animal. This document will help to explain what a cycle is and why it's vital.

Let's start with what a cycle actually is;

Essentially, cycling is the process of growing beneficial bacteria that can convert your axolotls' harmful waste (faeces, urine, food leftovers or rotting plants) by feeding off the it. Anything that is a waste product will start to give off Ammonia in the water, which needs to be converted into Nitrate by the beneficial bacteria you're growing from your cycle. Axolotls can tolerate Nitrate levels of up to 20PPM, but it's better to keep them between 5-10PPM.



Every natural water habitat IS cycled. Water is flowing and constantly filtering through the ground, plants, rocks, wood - which works as bio media (in an aquarium - located in your filter), all of which have plenty of good bacteria which keep water free of Ammonia and Nitrites as well as Nitrates (recreating Nitrate filtration in an aquarium is much more challenging as you work as the Nitrate filter by doing weekly water changes).

Once Ammonia is introduced into the tank, good bacteria will grow. Firstly, a bacteria called Nitrosomonas will grow - this bacteria will convert your harmful Ammonia into Nitrite, which is highly toxic to any aquatic life. Secondly, Nitrobacter will start growing (once there is Nitrite in an aquarium) - these bacteria convert it into the least harmful bacteria, Nitrate (a by-product of a cycle).



The consequences of an uncycled tank

Axolotls live in very close contact with their environment. This means that, they rely on the qualities of water for respiration, nutrition, hydration, excretion and so on! Which is why we always stress to keep on top of water changes and testing your parameters! It can be so stressful not just for the axolotl – but the owner too!

If anything is worrying you about your axolotl it is advisable to test the water quality as the first course of action. 9 times out of 10 the behaviour / illness that the axolotl is portraying is due to water quality. By testing the water it can quickly help to identify issues with the water and allows you to decide the best course of action to take regarding treatment (tubbing, IAL, vets etc..).

The critical water quality parameters that directly affect the axolotl's health include water temperature, ammonia (NH_3), nitrite (NO_2^-), nitrate (NO_3^-), pH, carbonate hardness (KH) and general hardness (GH).

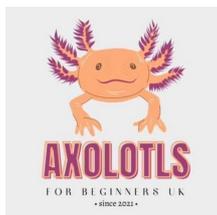
It is VITAL to cycle your tank before allowing your Axolotls in as it allows good bacteria to grow in the tank, which themselves act as a sort of biological filter for any waste Axolotls produce.. Their waste has high levels of deadly ammonia in it which, in a properly cycled tank, will be converted into nitrites and then into nitrates.

Nitrates are the end result of the nitrogen cycle (processing of ammonia and nitrites) so without nitrates your filter is showing that it has no established nitrogen cycle and therefore no way of processing your Axolotls waste. This means waste will build up and your water will become toxic to your axolotl.



Unfortunately this young man was a victim of an uncycled tank, it's easy for people to have the view of "it will be ok, my sister didn't cycle hers" etc, but no one really sits down and actually thinks of the consequences of what can potentially happen. Having an uncycled tank may seem great at first but as time goes on it will slowly start to harm your Axolotls and cause them a considerable amount of pain. He is now on a 15 day course of antibiotics due to being so badly blistered and infected and (believe it or not) the photo is 5 days into antibiotics and the improvement is immense so you can only imagine what the before picture was like. Please, please read the files attached in the group which explains cycling in more

detail, and why it's so important to ensure it's all done correctly before adding your new slimy addition! He has since had to be PTS.



Water Hardness

Before starting your cycle, it is a good idea to check the water hardness in your area. If you have very hard or very soft water you will come across some issues that will hinder your cycling process.

Managing Soft Water

Supply Zone:	Ewden 2019
Areas Covered:	Hillsborough, Wadsley Bridge, Normandale, Studfield, Wadsley
Report Period:	1st January 2020 - 31st December 2020
Water hardness type:	Moderately soft
Water hardness average:	34.7 mg/l calcium

Water hardness is the measure of the mineral content within the water. Water hardness is another important water parameter in axolotl care. Hard water is water that is high in calcium and magnesium whilst soft water is low in dissolved minerals. Axolotls prefer water that is slightly hard, which means they require a good concentration of dissolved minerals in their water. Hard water has a beneficial effect on gill function and the production of slime coating as well as other health benefits that your axolotl can enjoy if their water is in the right hardness range. Bottled spring

water is suitable for use with axolotls because of the natural minerals added after treatment. Distilled water should NOT be used with axolotls, it is acidic and it lacks the vital minerals they require for health. It is useful to run a Google search to check on the hardness of your water. If you add 'water hardness in my area' to your search bar you should see your local water company. Add your postcode in and you will see a breakdown of your water type. Once you have established that your water is soft or moderately soft you'll need to get a better breakdown in order to re-mineralise correctly.

To do this you'll need to check your tap water KH and GH for this information. API do a separate kit and KH and GH tests are included within the NT labs test kits.

Carbonate Hardness (KH)

This is the measurement of the capacity for water to neutralise an acid (ie: the buffering capacity against pH crashes) KH is essential to stabilise the pH of the water, it is an important source of energy for nitrifying bacteria and it is used by plants for photosynthesis when carbon dioxide is absent.

General Hardness (GH)

This is a measurement of the calcium and magnesium within the water and is directly related to the geology of the water source.





Ideal Levels for an axolotl.

KH – 3-8 drops

GH – 8-14 drops

When it comes to choosing how to re-mineralise your water, much depends on your tap water KH and GH levels. If you are just below the ideal ranges crushed coral may be an option.

How does crushed coral work?

The acids present in water react with the crushed coral causing it to release calcium carbonate into your water, raising both the KH and GH. You need to add the crushed coral in a net bag to the inside of your filter. You will need to replace it if you notice a reduction in your KH and GH levels when doing your routine testing. From what I have found water in this country seems to be soft or hard, we don't seem to have much middle ground and crushed coral doesn't work particularly well for moderately soft to soft water. Also if you use sponge filtration you can't add coral to that.

What products are used to increase GH and KH?

Again, this will depend on what your source water reading are, if both are below the ideal range you can use JBL Aquadur, or Seachem Alkaline Buffer this increases both KH and GH. It's a powder that is premixed in a bucket and added alongside your source water during a water change.



If your KH is within range but your GH is below, there are 2 Seachem products to choose from, equilibrium and replenish, both of these raise GH only. Equilibrium is a powder premixed in a bucket and added during water changes.

Replenish is a liquid which should be premixed to dilute and added during water changes. Your source water KH and GH will dictate which products you will need to use. Some people may find they need a combination of Aquadur and either



Equilibrium or Replenish to top up their GH. My source water is KH 1 GH 5 and I run my tank at KH 5 GH 12.



I check my KH and GH prior to my weekly water change and add back in accordingly to maintain the levels. About an hour after my change I re-check them to ensure they've remained steady. It is also worth noting that KH and GH levels change seasonally so it's worth keeping a regular (I do monthly) check on your source water levels.

Managing Hard Water

As well as soft water hindering your cycling process, hard water can also do the same. Hard water usually has a higher PH and high nitrates directly from source. If you have experienced this as driftwood / Indian almond leaves didn't solve the problem for you then a nitrate removal system may be needed.

Nitrate reduction from tap Water

To reduce Nitrates from tap water you need to invest in a filtration system. Some people will buy RO water or invest in a RO system. This is the expensive route though. Also, RO water needs to be remineralised. The most recommended and the most cost effective is a Pozzani Nitrate Filter which you can get directly from the Pozzani page:

<https://www.pozzani.co.uk/Pozzani/pozzani-no10-aquarium-nitrate-reduction-filter.html>

You will also need to buy a garden hose as well as tap hose connector (if you use your kitchen tap). Depending on the amount of Nitrates in your tap water, how many tanks you have and how big of water change you make etc. each insert may last longer or shorter. For example, if your tap water has 40ppm Nitrates, a single insert will only last about 300L of filtering to 0ppm, another 300L of filtering to between 5-20ppm. The less Nitrates in your tap water the longer it will last. New inserts can also be bought from Pozzani directly:

<https://www.pozzani.co.uk/Pozzani/nr600-nitrate-reduction-pre-filter.html>



How to use Pozzani:



Connect your garden hose to your tap and your 'in' side of your Pozzani. You can pour water in to tank directly from 'out' of your filter, some will choose to use a 2nd hose connected to 'out' that they will put into the tank. Either way is ok. When you first use a new fresh insert let the water run through the filter to the sink for 2-3min to make sure all the resin inside the filter is properly wet. Once that's done it is ready to use in your tank. Pozzani filters best with very slow water flow, it

will not filter sufficiently if you have your tap on full. Once you have finished the water change make sure to leave water in the Pozzani Filter as resin has to stay wet, if allowed to dry it will not filter Nitrates anymore. Make sure to keep an eye on how much water is filtered with every water change. It's a good idea to test water from Pozzani after 300-400L to get a rough idea if it's time to order replacement insert.

Cycling Guide

What you will need:

- Dr Timms Liquid Ammonia (or alternatively Knockout Ammonia)
- Seachem Prime (see separate file on safe dechlorinator)
- Liquid Freshwater Test Kit (such as API Freshwater Master Test Kit)
- Bottled Bacteria such as Seachem Stability - **optional**
- Heater - **optional**
- Sodium Bicarbonate (the baking one).

BEFORE STARTING THE CYCLING PROCESS IT IS ADVISABLE TO CHECK THE WATER HARDNESS IN YOUR AREA, IF YOU HAVE HARD WATER – YOU ARE LUCKY! IF YOU HAVE SOFT WATER - YOU WILL EXPERIENCE PROBLEMS ALONG THE WAY. PLEASE CHECK YOUR POSTCODE HERE AND REFER TO THE SOFT WATER GUIDE IF YOU NEED TO;

(<https://www.aquacure.co.uk/knowledge-base/uk-hard-water-map/>).

Let's get started...

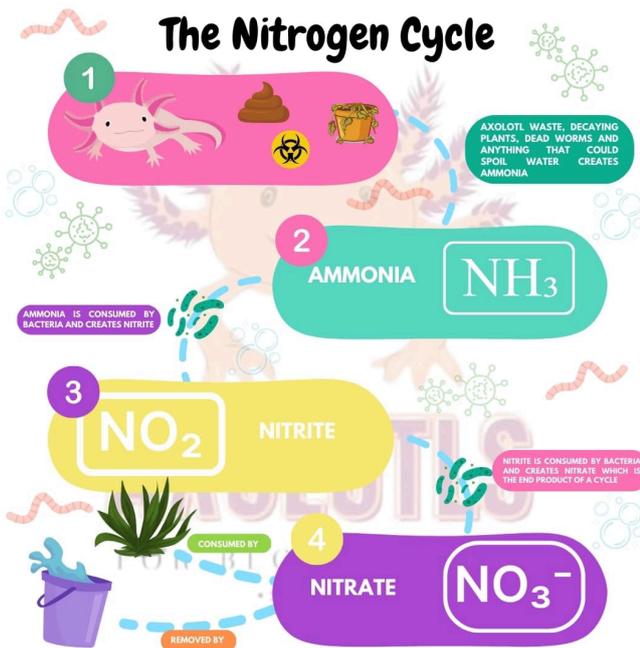
1. If you have heater set it at 28C. Bacteria grows much faster in warmer climates. However this step is completely **optional** for this process.



2. Firstly, fill your tank and dechlorinate the water using the instructions on the bottle. (If you are using Seachem Prime there is a dosing guide in the files section which is a great help).
3. Next step is to add Dr Timms Ammonia accordingly (there is an ammonia calculator at the bottom of the page to get a general understanding of how much Ammonia is needed to reach 4PPM). General rule of thumb is 1ml of Dr Timms per 20L of tank water, for example a 100L tank would require 5ml. Ammonia **MUST** be dosed to 4PPM as this is the nearest equivalent to the waste an Axolotl produces, and therefore your filter must be strong enough to eliminate this. This ensures that your filter is efficient enough to keep safe levels in the water, and to keep the Axolotl healthy and happy at all times. Once you have dosed Ammonia, check back in an hour to make sure the Ammonia is sitting at 4PPM. After a few goes of trial and error with measurements you will get the hang of it - trust the process.
4. If you decide to use bacteria in bottle, you can add it accordingly. However, add it straight into the filter rather than the tank water itself. It may or may not speed things up, **but it's up to you whether you want skip this part.**
5. You are going to need to test PH and Ammonia **DAILY**. Please aim for your PH to be 7.6 during this, and make sure it doesn't fall below 7PPM at any point (if it does - add a small spoon of bicarbonate soda and test PH in 30-60min to make sure it has risen to 7.6 (or over) - if not, add another spoon and repeat). It may take as long as 2-5weeks before you start to see Ammonia coming down – it is a long tedious process but needs to be done and you will be thankful at the end, cycling is a vital part of an Axolotls wellbeing (and any other aquatic animals, without a cycled filter there is no beneficial bacteria in the tank which feeds off Ammonia. Persevere with it because you will get there eventually! I promise! It may seem like the end is never near but it will be.
6. Once your Ammonia starts falling you will need to start testing DAILY for PH, Ammonia AND Nitrite. You will need to add Ammonia **DAILY** or (almost) daily to get it back up to 4PPM any time it falls below. Once you get into the routine of dosing Ammonia, it becomes easier to calculate the amount needed as you will get into the habit of knowing your tank.
7. **Keep a close check on your Nitrites. Once they spike at 5PPM, reduce the Ammonia dose to 2PPM.** It is too easy to get Nitrites off the chart once they reach 5PPM which in turn will stall your cycle. Even if Ammonia is dropping to 0PPM - keep dosing to 2PPM as this will ensure the good bacteria is still getting the nutrients they need to feed off. For example, if the Ammonia drops to 0PPM, you must add half of the amount of the original dose you began the cycle with to get to 2PPM.
8. Once you see the Nitrites coming down, dose Ammonia back to 4PPM until both Ammonia and Nitrites have dropped to 0PPM in a 24hr period from last Ammonia dosing.
9. Reduce the temperature if you used a heater and let the water cool down slowly, if there is too much of a rapid change in temperature this can put the bacteria into shock and stall the cycle. Once cooled to room temperature you want to keep it at a steady 15-18C. If it gets too hot in your room, turn on your chiller if you have one or add some frozen bottles of water. Make sure Ammonia is sitting at 4PPM and test in 24hrs.



24 HOURS LATER



TEST DAY 1.

Did both Ammonia and Nitrite come down to 0PPM?

- Yes? dose Ammonia back to 4PPM.
- No? Go back to step 8 (do not put heater back in if you were using one and keep your tank at 15-18C).

TEST DAY 2.

Did both Ammonia and Nitrite come down to 0PPM?

- Yes? dose Ammonia back to 4PPM. .
- No? Go back to step 8.

TEST DAY 3.

Did both Ammonia and Nitrite come down to 0PPM?

- Yes? Congratulations!! Finally you are

cycled. What seemed like an eternity is nearly over. Test your Nitrates - most likely they will be extremely high. Dose a small amount of Ammonia just to make sure the beneficial bacteria have something to feed on and make a start on your daily 50% water changes (remember to use dechlorinator with each water change). Keep changing the water until your Nitrates are around 5-10PPM at which point your tank is safe to introduce for your axolotl.

- No? Go back to step 8.

If you used the seeding method (using media from a cycled filter) you still need to go through all steps but will need to test for Ammonia and Nitrite from the start.

If you have any questions do not hesitate to drop us a message, especially if you have soft water as it can get quite confusing! This process will take anywhere between 4 weeks to approx 10 weeks.

Ammonia calculator -

<https://spec-tanks.com/ammonia-calculator-aquariums/> (typically we use 10% as the concentration)



Water Parameters

Testing your water parameters is a vital part of good husbandry. Whether you are cycling your tank (separate document on this) or just checking your parameters in general. It is highly recommended that you use a liquid test kit, as these have been found to be the most accurate, although they can be expensive, you do get a lot more tests than strips so in the long run it does work out cheaper. 2 examples below:

NT Labs Fresh water test kit and API Freshwater Master Test Kit:



If you are struggling with low/high ph it's worth to get API KH & GH liquid tests, as these results can help explain why your water is getting low/high and how to correct it:



For those who have issue with testing Nitrates or need more specific results I would recommend getting Salifert Nitrate test (which mixes liquid and powder making it much more precise than crystal method used in regular 2 liquid tests):

Safe water parameters in a cycled axolotl tank:

PH	7.0-8.0 (Ideal is 7.4-7.6)
AMMONIA	0
NITRITE	0
NITRATE	5-20PPM (20 being on the higher side of their tolerance)

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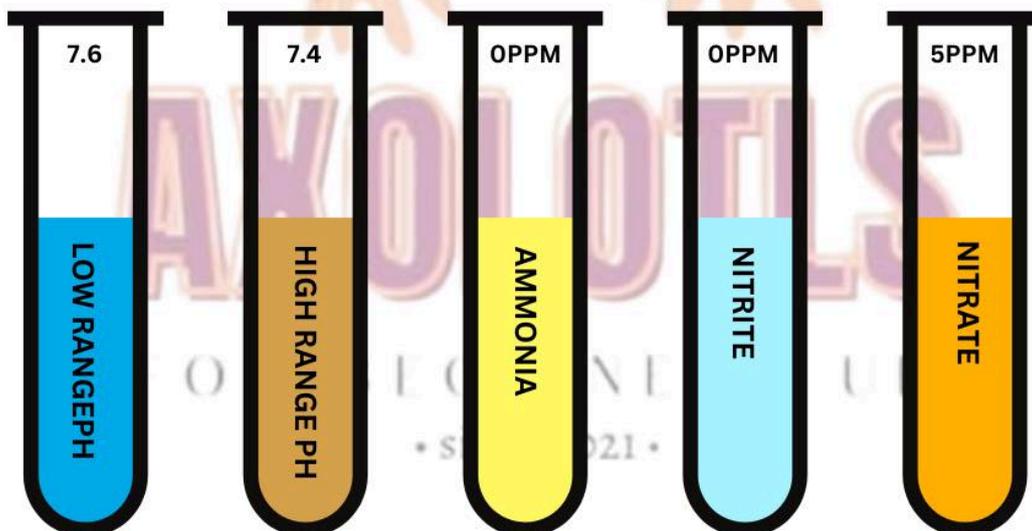


Perfect Temp and Parameters



AXOLOTL TANK WATER NEEDS TO BE KEPT AT A CONSISTENT 16-18 DEGREES C. FLUCTUATIONS IN TEMPERATURE CAN LEAD TO ILLNESSES. IN SOME EMERGENCY SITUATIONS TEMPERATURES MAY BE REDUCED TO AS LOW AS 10C BUT ONLY FOR A SHORT PERIOD OF TIME TO AID IN RECOVERY SITUATIONS. TEMPERATURES REACHING OR IN EXCESS OF 20°C ARE HIGHLY DANGEROUS AND MAY RESULT IN DEATH.

WHEN FULLY CYCLED, IT IS STRONGLY ADVISED TO TEST YOUR WATER WEEKLY. BELOW IS A VISUAL REPRESENTATION OF WHAT COLOURS TO LOOK FOR WHEN TESTING WITH THE API FRESHWATER MASTER LIQUID TEST KIT. WEEKLY TESTING/WATER CHANGES ENSURE THAT YOU CAN MONITOR YOUR WATER QUALITY CLOSELY AND BECOME AWARE OF AND/OR ADDRESS ANY CHANGES/PROBLEMS PROMPTLY.





Safe Dechlorinator

Safe to use dechlorinator – When picking a dechlorinator for your axolotl, you must ensure that it contains no iodine, aloe vera or is labelled ‘herbal extracts’.

- + Seachem Prime



- + Quantum water primer



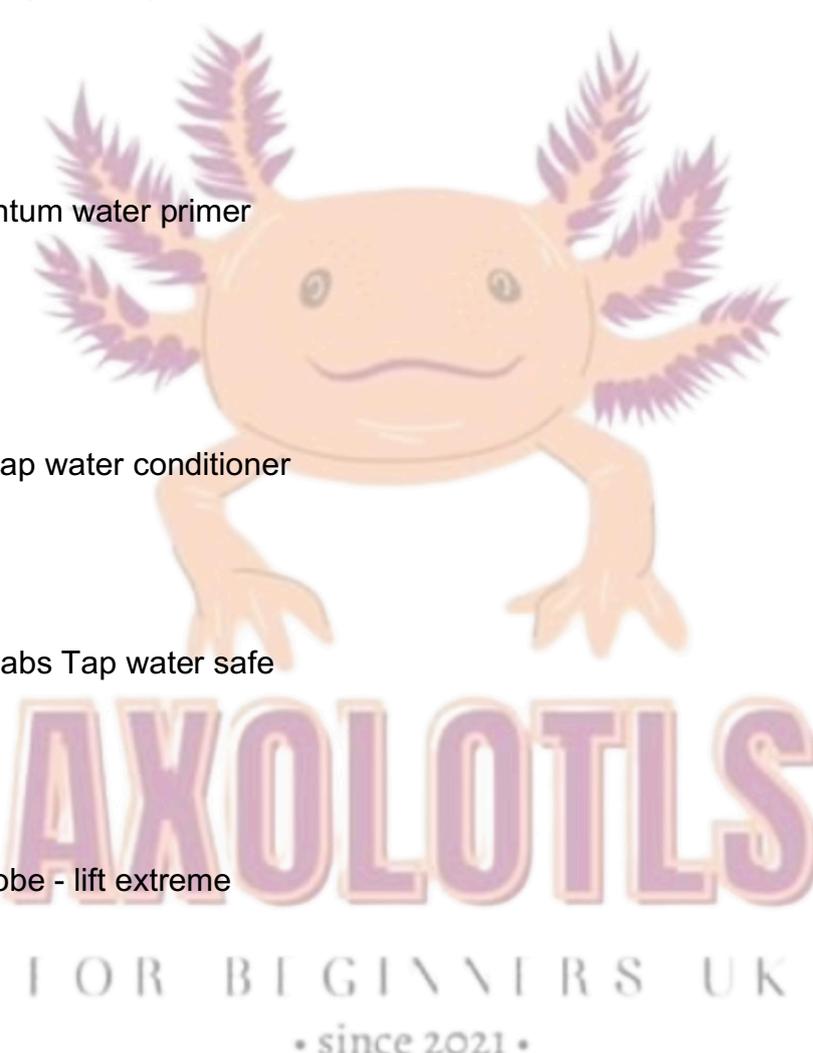
- + API tap water conditioner



- + NT Labs Tap water safe



- + Microbe - lift extreme





Seachem Prime Dosing Table

Please be aware the Dose in capfuls for the below table is based on bottles with a 5mL cap. Bottles of prime 1L, 2L and 4 L all have a bigger cap (10 mL) so the dose in capfuls would need to be halved

	Dose in ML	Dose in Capfuls	Dose in Drops
1L (1 quart)	0.025ML	1/200	0.5
4L (1 gal)	0.1ML	1/50	2
20L (5 gal)	0.5ML	1/10	10
40L (10 gal)	1ML	1/5	20
80L (20 gal)	2ML	2/5	40
200L (50 gal)	5ML	1	100
400L (100 gal)	10ML	2	200

An Introduction to Pond Keeping

If you want to do something out of the ordinary and question yourself whether Axolotls can survive outdoors, the answer is yes! Keeping an Axolotl pond is very much similar to keeping them in an aquarium, it still requires double the filtration and needs to be cycled accordingly. Please refer to our cycling guide as this is the same concept applies for cycling a pond just a much larger scale. Please note, some chemicals used in aquariums can differ slightly to those used in a pond (below are what I use). Envii Pond Equalizer and Seachem Pond Prime.

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Personally, my pond has been up and running for over three years in which my Axolotls have thrived to their full potential. I don't have to do as many water changes as the rain water replenishes any lost water, however that being said because of the low PH in rain water – I do still have to test my water and remineralise regularly. I still spot clean frequently and siphon any loose debris at the bottom of the pond. During really cold months, I use a floating pond heater which keeps the pond from freezing over and regulates the temperature (the pond never drops below 14 degrees). The other point to mention is, that when buying a filter for your pond – make sure it has a UV light to combat algae growth due to the natural lighting and environment. My pond is covered with a sturdy mesh lid to stop any predators, and is sheltered by a partial pergola to minimize any harsh daylight.



Below I have listed some pros and cons to decide whether keeping a pond is for you.

Pros of pond keeping -

- Less maintenance (not as many water changes as the rain replenishes any lost water).
- Bigger area (more room for more lotls!).
- Easier to keep cool during summer months (due to the depth and outdoor environment the water rarely goes above 18).
- Cost effective, no need for multiple tanks as you can have more lotls in the pond
- Its adds a stunning feature to your garden and a real talking point.
- Frees up space inside your home.
-

Cons of pond keeping -

- Going out in all weathers to keep them well fed, it can be a cold and wet task.
- You don't have the closeness of seeing them front on, you can only really get a birds eye view of your axolotls and do not feel the interaction as you would with a tank.

Thank you for reading,

- Lisa Myland.



What Next?

Once you have everything set up and ready for your new pet, it is time to get to know them. Despite them being very cute pets, they are also high maintenance. In this next part, you will learn about feeding, water changes and why it is essential to have same sex axolotls only. Axolotls can become very ill – very quickly without the correct care. The illness guide will hopefully help you to determine if/what your axolotl is suffering from. However, if in doubt it is always best to consult with an Exotic Vet who are familiar with treating axolotls. You will find a vet list on the files section of the page, we update it as regularly as we can. Alternatively, if you know of any vets that do see axolotls please let us know so we can add them to the list.



Water changes

Water changes are a very important part of your axolotls' tank maintenance and keeping your little water puppy happy. How much, and how often water changes need to be done depends on your tank size, stock, and how many nitrates you have present in your tank water and your tap water (see separate file for Nitrate Reductions).

Axolotls absorb minerals through their skin, so even when nitrates are in the safe range, water changes still need to be done weekly to replenish the mineral levels for them to absorb and keep TDS (total dissolved solids) levels balanced.

For newly cycled aquariums, it's recommended to test the water daily for the first few weeks to see how many nitrates are present by the end of the week. Axolotls have a large bioload for a little animal, meaning that they produce a huge amount of ammonia for something so small. At the end of the week, the nitrates will be higher, especially as the animal gets bigger. Even after you are comfortable with knowing what the water parameters will most likely be, it is still advisable to check your parameters weekly.



Even though you may know your animal well and are religious with your water changes - a spike of ammonia / nitrites can happen at any time, so therefore it's better to know that your axolotl is safe and thriving than suffering in silence by testing regularly.

It is fundamental to know your source waters nitrate level. Test your tap water (if that's what you are using for your water changes). If you have anything above 5ppm nitrates, you will need a Pozzani filter or RO water for water changes (again, see separate file on Nitrate Reduction).

Axolotls can tolerate up to 20ppm nitrate before it can cause health issues; if the water in your tank reaches 20ppm, you will need to do a large water change. If you are finding that you need to make water changes as often as every 2-3 days, that usually suggests one (or a mix) of these issues: too small of a tank, inadequate filtration, too many nitrates in the tap water, or gas pockets (this often happens with sand; to avoid them, swish sand around well shortly BEFORE a water change). If your water doesn't reach 20ppm within a week, you still need to make a water change, but it can be much smaller.

5-10PPM Nitrate	25% water change
10-15PPM Nitrate	40% water change
20PPM Nitrate	50% water change
Anything over 20PPM Nitrate	80% water change

Keeping your tank cool

- Replace lid with Egg crate
- Add frozen dechlorinated bottles (bigger bottles are better as they take longer to defrost, depending on your tank size you may need 5/6 (20gal) or 10/12 (40gal) for them to work, you will also need at least double of it in the freezer to be able to rotate them at least twice a day)
- Clip on fans (By blowing a fan across the surface, evaporation is increased, and Temperature is decreased)
- Water changes can help, as you are taking warm water out and adding cold water (always remember to dechlorinate)
- Avoid any direct sunlight, close window shades
- If air outside feels hotter than inside close your windows to stop hot air getting in
- Wrap tank around with aluminium foil to keep heat out (shiny side outwards)



- Chillers (although expensive, they are the best and most reliable way to keep your tank cool) - An aquarium chiller works in a similar way to a refrigerator. Water is pumped through it and heat is removed via a heat exchanger. Recommended chillers are Hailea Series & Boyu Series as they can be set at required temp of 15-18C (a lot of cheaper chillers can only be set at 18C as lowest settings). Which one you need depends on the size of your tank, for example the Hailea 150a would be suitable for a tank up to 150 L, as well as connectors size and pump/external filter you plan to use it with.

Accidental eggs / breeding

If you get accidental eggs, allow your female to finish laying them undisturbed (if she is still doing so when you found them) and remove the male from the tank immediately; if you don't have a second cycled tank, tub him as soon as possible (see the separate file on tubbing). Once your female has finished laying eggs, collect all of them. Check every part of the decor, plants, underwater equipment etc.

Culling them all is the most responsible thing to do with accidental eggs. To do so, bag them and put them in the freezer for 48h, then dispose of them in your general waste bin. It is the most responsible thing to do as often the majority of babies from females first clutch, and those younger than 18 months old will have deformities and won't survive to adulthood.

If you wish to keep them, please consider a few things:

- Do you know if they are related at all? Even if you have axolotls from different breeders from different parts of the country, they still can be closely related as breeders often buy eggs from each other. Axolotls are already highly inbred, and having related babies risks further deformities and a shortened life span.
- Are you aware of their morphs and hets (lineage)? If not, you should assume all babies will be wilds which is the least desirable morph and most challenging to sell/re-home. Do you have good homes waiting for them?
- Are you able to buy multiple tubs for them? Each hatchling should be raised in a separate tub. Tubs need to be bigger as they grow. Each tub requires a daily 100% water change and proper water temperature.
- Can you have multiple hatcheries running to raise baby brine shrimp (their food)?
- Can you afford daily 24/7 live foods as they grow? Blackworms/ bloodworms/ daphnia? (Check feeding file)
- Are you ready for the workload day in and out for approximately the next three months? Can you look after them with daily water changes and feeding for much longer than that if you can't find new homes while they reach 3 inches, with all four legs grown and eating cut dendro/live foods?



If once considered all of the above and you still wish to raise babies, I would advise no more than 10 - 20, so you won't be overwhelmed. Move the eggs you want to keep into a small clean tub with clean primed water. Eggs and hatchlings need to be kept in temps of 18-20C. Once hatched, move them to separate tubs and collect & bin any empty eggs. Babies from 2.5-3 inches should be kept at usual axolotl temps of 15-18C.

Back to the adults, opposite sexes can't be housed together as the male will breed the female to exhaustion, which will result in her death as well as more and more deformed and ill offspring. Females shouldn't be bred more than once a year after they are over 18 months old. Now you have a couple of options depending on your circumstances:

- Have two cycled tanks with two separate setups and home your axolotls separately (if you don't have 2nd cycled tank tub, your axolotl until the new tank is safe and cycled)
- If your tank is at least 4ft long, you can tub both your male and female (separately) until you can sort a divide in the tank; you can use a solid divider that will need to be sealed on the sides so they won't share water at all, once dried you can set up one side with your old equipment and put one of them in. The second side will require different equipment that must be cycled the same way you would for a new tank. Once the second side is cycled, add your axolotl from the tub.
- Re-home one of them (if u choose to re-home and have a problem finding a good home for one you decided to part with, have a look at our rescues file)
- Swap for same-sex adults; you can find someone in a similar situation and swap your male for another female (or vice versa); rescues are also happy to exchange adults.

DO NOT use an egg crate or any other dividers with holes. They can still breed through standard dividers. They can't share the same filtration etc., systems either, and although they can't produce through it, the male will release hormones which will encourage the female to lay (infertile) eggs which again will lead to exhaustion and can lead to her death.

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Feeding guide

Hatched to 1.5inch - Require live moving food from 2-4 days after hatching. Live food should be available to them 24/7. Live foods should consist of:

- Live Baby Brine Shrimp (staple diet)
- Daphnia (from 1inch)
- White worms
- Live cut black-worms (from 1inch staple diet)

1.5 to 3inch – Require live moving food 24/7.

- Live blackworms (staple diet)
- Live bloodworms (staple diet when blackworms are not available)
- Adult brine shrimp
- Cut small dendro worms (from 2.5inch cut to size no bigger than space between their eyes offered twice a day)

3inch until 9inch (or 9 months old) - food should be offered 2-3 times per day, feed until not interested or spits food out (in case of cut dendro if axolotl spits it out try to cut smaller pieces before stop offering):

- Dendrobaena worms (cut to size of space between their eyes at first, as they grow and get better at eating it you can start giving bigger pieces to whole size from 7 or so inch, most nutritional staple diet)
- Red wiggler (cut to size of space between their eyes at first, as they grow and get better at eating it you can start giving bigger pieces to whole size from 7 or so inch, staple diet)
- Repashy Grub Pie (can be used as staple diet though it's advised to feed other types of food alongside)
- Adult pellets (1 to 2 per inch of axolotl, can be used as staple diet though it's advised to feed other types of food alongside)
- Bloodworms (treat only, not advised for axolotls that refuse staple diets)
- Thawed fresh frozen prawns (cut to size and as treat only)

From 9 inch or 9 months old – at this stage eating can slow down as their metabolism reduces. It is advised to at least offer food once a day, but they can go 2 to 3 days without eating.

- Dendrobaena worms (should be used as their main staple diet and can be offers whole)
- Red wiggler
- Repashy pie



- Axolotl pellets (1 to 2 per inch of axolotl)
- Bloodworms (treat only)
- Live Shrimp (treat only)
- Thawed fresh frozen prawns (treat only)

Axolotls can also have Waxworms and Maggots (not dyed) as a tasty treat! But be careful as they are very fatty so minimize these treats as much as possible.

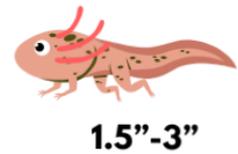
Feeding Time



NEWLY HATCHED BABIES WILL REQUIRE LIVE FOOD 24/7. IT'S EASY TO SET UP A HATCHERY FOR BABY BRINE SHRIMP WHICH WILL ENSURE THAT YOUR AXOLOTLS HAVE A CONSTANT SUPPLY OF FOOD. WHEN THEY ARE 1" YOU CAN START INTRODUCING CUT BLACK WORM, DAPHNIA AND CUT WHITE WORM.



WHEN YOUR BABIES GET ABOVE 1.5" YOU CAN INTRODUCE LIVE BLOOD WORM (MINIMAL CUTTING) AND ADULT BRINE SHRIMP. DENDROBAENA WORMS CAN NOW BE INTRODUCED BUT MUST BE CUT AROUND THE SAME LENGTH AS THE WIDTH BETWEEN THE AXOLOTL'S EYES.



AS YOUR LITTLE ONE BECOMES A JUVENILE (THEY MAY BECOME VERY PICKY - BUT HANG IN THERE AND PERSEVERE) YOU CAN NOW INTRODUCE A WIDER VARIETY OF FOOD. DENDRO WORMS (MAY STILL NEED CUTTING), REPASHY GRUB PIE AND PELLETS ARE NOW THEIR MAIN DIET. AS THEY GET OLDER AND MATURE, THEIR METABOLISM SLOWS DOWN WHICH MAKES THEIR ONCE LOVED FOODS - QUITE FATTENING FOR THEM! THEREFORE, BLOOD WORM, THAWED RAW PRAWN AND LIVE SHRIMPS SHOULD BE KEPT AS TREATS ONLY.



IF CONSTIPATION OCCURS, YOU MAY FIND IT USEFUL TO THAW SOME RAW SALMON AS THE OIL AIDS THE BOWELS IN PASSING





Axolotl Illness, Treatment and Prevention

1: Fungus

Fungus is a common illness for axolotls and is usually caused by incorrect parameters, high temps and sometimes can be down to poor genetics making the axolotl more prone to illness due to a compromised immune system.

Tea Baths – take 2-3 100% caffeinated tea bags and add to a mug with boiled water like you were making a cup of tea, do not add any other ingredients. Pop mug into the fridge to cool it down faster. While waiting, get a clean, food safe tub and fill with fresh cold water. Take the cooled down mug of tea and add it to the tub of water then add dechlorinator. Juveniles should be added to the tea bath for no more than 10 minutes. Sub adult and older are a maximum of 15 minutes. Once the timer is up, place back into a regular tub of fresh, dechlorinated water. You can repeat this once a day for a maximum of 7 days. It is recommended to keep your axolotl tubbed between tea baths to ensure they are in the most pristine conditions possible during treatment and therefore have the best chance of recovering.



Black tea bath

for the treatment of minor fungus

- STEP 1: PREPARE A TUB OF COLD WATER FOR YOUR AXOLOTL AND PUT IT TO THE SIDE. ADD A FEW DROPS OF SEACHEM PRIME TO THE TUB OF WATER.
- STEP 2: BREW A CUP OF BLACK CAFFEINATED TEA (TETLEY, PG TIPS, YORKSHIRE TEA ETC). ADD 1 DROP OF PRIME TO THE TEA, LEAVE THE TEA BAG IN AND ALLOW TO COOL.
- STEP 3: ONCE COOLED, ADD THE PRIMED BLACK TEA TO YOUR PRIMED TUB OF WATER.
- STEP 4: ADD YOUR AXOLOTL INTO THE TUB FOR APPROX 10MIN (JUVENILES 10MIN MAX, ADULTS 15MIN MAX).

(REPEAT STEPS DAILY IF NECESSARY. TREAT FOR NO LONGER THAN 7 DAYS. IF YOU SEE NO IMPROVEMENT - PLEASE CONSULT AN EXOTIC VET)



IAL 'tea' bath

for the treatment of minor fungus

- STEP 1: PREPARE A TUB OF COLD WATER FOR YOUR AXOLOTL AND PUT IT TO THE SIDE. ADD A FEW DROPS OF SEACHEM PRIME TO THE TUB OF WATER.
- STEP 2: POUR BOILING WATER ON A FEW INDIAN ALMOND LEAVES, ADD 1 DROP OF PRIME TO THE IAL TEA AND ALLOW TO COOL.
- STEP 3: ONCE COOLED, ADD THE PRIMED IAL TEA TO YOUR PRIMED TUB OF WATER.
- STEP 4: ADD YOUR AXOLOTL INTO THE TUB FOR X AMOUNT OF TIME OR ALTERNATIVELY ADD THE IAL TEA TO THEIR TUB/TANK UNTIL NEXT WATER CHANGE (BECAUSE ITS LESS HARSH ON THEM THAN A BLACK TEA BATH - THEY CAN STAY IN THE MIXTURE LONGER)

(REPEAT STEPS DAILY IF NECESSARY. TREAT FOR NO LONGER THAN 7 DAYS. IF YOU SEE NO IMPROVEMENT - PLEASE CONSULT AN EXOTIC VET)





Methylene Blue – same tubbing steps, food safe tub with fresh cold water and dechlorinator. Please keep in mind that meth blue is a strong treatment and can be overdosed, it will likely stain the tub you use as well so only use if tea baths do not treat the fungus by the 7th day. Add 1-2 drops MAXIMUM to the tub and add your lotl for 10 minutes for juvies and 15 minutes for sub adult and older. Return to a fresh tub of dechlorinated water between baths. Repeat this once a day for up to 7 days. If this does not treat the issue then veterinary treatment may be needed.

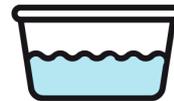
Methylene Blue Bath

for the treatment of a more stubborn fungus that hasn't responded to other interventions

- STEP 1: PREPARE A TUB OF COOL DECHLORINATED WATER FOR YOUR AXOLOTL
- STEP 2: ADD METHYLENE BLUE ONE DROP AT A TIME TO YOUR TUB UNTIL YOU REACH A LIGHT BLUE (THINK API OPDM NITRITE BLUE)
- STEP 3: ADD YOUR AXOLOTL TO THE TUB
- STEP 4: YOUR ADULT AXOLOTL MAY STAY IN THIS METHYLENE BLUE BATH FOR 12 HOURS MAX. THEN TAKEN OUT INTO CLEAN DECHLORINATED WATER FOR 12 HOURS. (12 IN / 12 OUT)

(YOU MAY WANT TO BUILD UP THE TIMING DEPENDING ON AGE FOR EXAMPLE A JUVENILE 15-30MIN A DAY AND SO ON)

(REPEAT STEPS DAILY UNTIL INFECTION IS GONE. IF YOU SEE NO IMPROVEMENT - PLEASE CONSULT AN EXOTIC VET)



2: Gill Deterioration

Same as fungus, this is usually caused by incorrect parameters (such as an uncycled tank) or high temperatures, also from incorrect and harmful tank mates such as fish. This can also be caused by poor breeding as they are genetically unwell and this cannot be fixed by any treatments. First point of call is to check your parameters to rule this out as an issue. If you do not have a liquid test kit then you will need to get one. Please note that damage to the same area over and over can affect their regeneration capabilities and eventually cause things to grow back wrong or not at all.

3: Constipation

Axolotl will have their head pointing down and tail/bum floating upwards. This position can be held for hours, even days. If they are physically struggling to stay balanced or swim to the bottom then they will need to be tubbed with just enough water to cover them over. Make sure the water is cold as this can help aid pooping, you can also offer small amounts of defrosted raw salmon that has been frozen for a minimum of 30 days as this acts as a laxative for axolotls due to the oily nature of salmon and help them push out a poo when they are struggling.

4: Floating

Floating is something that axolotls do naturally when they are resting/ relaxing. It is not an immediate cause for concern unless they are physically struggling to get back down. This could be a sign of constipation so follow above steps as needed.

If they are floating stuck on their side or upside down then this could be due to an air bubble, tub your lotl in just enough water to cover them over so they can stay at the bottom without turning on their side or upside down and wait for trapped air to pass,



this can take a few days. It can sometimes help them to add a very soft/ smooth hide or plant for them to grip onto to help keep them more upright. If symptoms persist then you will need to contact a vet as balance issues can be from problems with their organs and will need further treatment.

5: Digestive Issues; Vomiting, Loss of Appetite, Protruding Lumps

Check your substrate is correct. Gravel or clumpy sand can cause impaction and is a common reason for all these issues and should never be used as substrate as well as any small rocks for the same reason. If you are using gravel, then tub your lotl immediately and remove all of it from your tank. Sand should be 1mm grain or less and your lotl should be at least 5 inches long for it to be safe on sand.

Lotls can over eat. They take time to digest their meals as they get older so vomiting with no other symptoms and correct substrate is usually nothing to be concerned about as a one off, they have likely not finished digesting their previous meal or they have ate too much in one sitting. If your lotl is vomiting all meals, losing any amount of weight or struggling to swallow food then seek veterinary care.

It can take a few days for them to pass the gravel out of their system, If they have not passed any in the first week, then consult with a vet immediately. Swallowing gravel can cause cuts and injuries inside their body which can lead to internal infections and septicemia.

6: Bacterial Infections

Can be caused by poor water quality and stress. Signs for bacterial infections are lethargy, loss of appetite, permanently open/ gaping mouth, swelling of random body parts, red leg syndrome and sometimes floating can be a warning of it. If left untreated, bacterial infections can eventually lead to neurological problems and cause death. Meth Blue and Kanaplex can be used for milder bacterial infections but more serious ones will need veterinary treatment or if the at home treatments do not help within a few days. It is not recommended to leave bacterial infections for too long even when treating at home as they can be quite aggressive and cause death quickly in some cases. Red leg can only be treated by vet strength antibiotics and is easily fatal, do not attempt to treat at home.

Internal bacterial infections may display through odd skin discoloration in bruising like fashion, this is common to start in the stomach area but can appear elsewhere. Septicemia can display this way so another symptom that should be immediately vet checked.

7: Stress Curls in Gills/ Tail

Stress curls in the gills are specifically when all the stalks are curled forward into the face in a candy cane style. Some axolotls have large gills and are heavy which can cause them to fall forward, this is not the same as a stress curl. The tail curl usually appears similarly in that the very tip of the tail will curve either left or right into a candy cane type manner. This is usually down to an environment issue, we recommend tubbing the axolotl while you check parameters, temps, diet and general husbandry to pinpoint any potential issues.



8: Slime Coat Peeling

This is not something they visibly do when healthy, it can be caused by incorrect parameters, high temps, unsafe products such as a dechlorinator with aloe vera, copper or iodine. The only time slime coat peeling isn't a concern is during tea bath treatments as this can make them start to peel and will quickly rectify itself.

9: Discoloration/ Pale

Anaemia is when your axolotl is completely drained of any colour, even the filaments themselves where there is usually blood flow can become ghostly white, not to be mistaken with decreased blood flow when they are inactive. This is caused by either dietary issues or due to lack of nutrients in the water such as too low a pH for prolonged periods. Tubbing in spring water, or using a remineralizer like seachem replenish if you are in a soft water area can help manage this.

10: Swelling

There are multiple reasons for swelling, this will depend on where the swelling is and how severe. Females get gravid, this is completely normal and sees their torso get wider than usual. It may put them off their food while gravid as they are full of eggs that are pushing against their stomach which can cause a certain level of discomfort.

Gravid is a natural occurrence for females and does not need any intervention from ourselves, they will reabsorb the eggs in time and their torso size will reduce to normal. If the swelling is in the head/ throat area then this can suggest a potential bacterial infection, abscess or something foreign has been swallowed and has lodged itself within the mouth/ throat. This will require veterinary care.

Swelling only affecting one side of the torso can indicate fluid retention, this is something that can only be treated by a vet. If the torso, throat/ face and legs are all swollen then this can be a sign of organ failure. Unfortunately, there is no known cure for this but it is still recommended to seek a vet.

11: Red/Sore Skin – Ammonia Burn

Ammonia burn is caused by an uncycled tank or an ammonia spike, it can cause appetite loss, lethargy, sore and red patches of skin or an all over redness of the body, legs tucked inwards, slime coat peeling, gill loss, stress curls and death. Axolotl should be immediately tubbed in either spring water or fresh dechlorinated tap water and tank parameters tested. A mini cycle may be needed to fix any issues with the tank but the axolotl should remain tubbed until it is 100% better regardless of whether the tank issue is fixed.

12: Foreign Lumps/ Cysts, Blisters and Tumours

Axolotls are prone to increased cell growth, tumours and lumps aren't necessarily uncommon for them but that doesn't mean they are always harmful to your lotl. Any new foreign skin lumps and lesions on your lotl should always be vet checked, there are no at home treatments for this. The lumps can be benign and have no ill effect on your axolotls health but for their safety and your peace of mind, always seek an exotic vet and make sure it is not something that requires any kind of treatment. Keep your axolotl tubbed until a vet has seen it as a safety precaution.



Tubbing

Tubbing is a way to keep your axolotl safe. Ideally, it would be best to have two shoebox-sized containers (example below). The tub should be large enough so your axolotl can freely move around. Adding holes to the lid or replacing it with an egg crate is advised. Adding a hide and plants is fine and will make your axolotl feel more comfortable. Bubbler/air stone is a personal choice. It is unnecessary as you add fresh oxygen with each daily water change. Some axolotls enjoy playing in gentle bubbles others may get stressed by it.

No filter is needed; you must do 100% dechlorinated water changes daily, acting as their filter.

Reason for two containers – it is easier to add water to an empty container and then transfer your axolotl across along with any hides or plants. You can then empty the old container and clean it to be ready for the next day.

Reasons for tubbing:

- Tank is cycling
- Spikes in water parameters (high ammonia, nitrites) or cycle crash
- Need to treat for any injuries or health reasons
- Easier to manage temps with frozen dechlorinated water bottles than in tank (if you don't own a chiller)



Container ideas:



When purchasing the tub(s) ensure the tub is food grade safe, this can be identified by the symbol shown below. Numbers 1 to 7 are deemed food grade safe. Other types of plastic are not always water safe and can slowly release toxins into the water**



Worm Keeping

Wormery

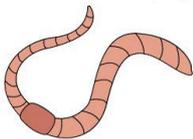
THERE ARE MANY DIFFERENT WAYS TO MAKE A WORMERY - YOU CAN PURCHASE A WORM KEEPER FROM WILLYS WORMS, OR A TIERED WORMERY ELSEWHERE.

STEP 1: DEPENDING ON HOW MANY WORMS YOU GO THROUGH, CHOOSE A CONTAINER WHICH HAS A SECURE LID TO PREVENT AS MANY ESCAPEES AS POSSIBLE.

STEP 2: USE A HOT PIN OR A SMALL DRILL BIT TO MAKE SMALL AIR HOLES IN THE LID (IF YOU ARE WORRIED ABOUT ANY ESCAPING YOU CAN ALSO USE A MUSLIN CLOTH UNDERNEATH THE LID FOR MORE SECURITY).

STEP 4: CHOOSE A TYPE OF BEDDING, YOU CAN ORDER WORM BEDDING ONLINE, OR YOU CAN BUY COIR BRICKS WHICH WORK REALLY WELL AS A SUBSTRATE FOR THEM.

STEP 5: PUT YOUR WORMS IN, FEED THEM WEEKLY AND WATCH THEM BREED AND THRIVE!



DIY Dry Worm Chow

(WHAT YOU WILL NEED; WEETABIX, OATS, SUGAR, WHOLE GRAIN FLOUR AND A FEW EGG SHELLS).

- **STEP 1:** GET YOURSELF A LARGE MIXING BOWL OR A BLENDER AT THE READY (DEPENDING ON HOW YOU'RE PLANNING ON MIXING).
- **STEP 2:** AIM FOR EQUAL PARTS OF EVERYTHING APART FROM THE SUGAR AND EGG SHELLS (YOU WILL NEED LESS OF THESE) THE GOOD THING ABOUT THIS - IS THAT YOU DON'T REALLY NEED TO MEASURE ANYTHING!
- **STEP 3:** BLEND/CRUSH YOUR MIXTURE UNTIL IT REACHES A COARSE TO FINE POWDER.
- **STEP 4:** YOU ARE DONE - EASY AS THAT! STORE IN AN AIRTIGHT FOOD CONTAINER AND SPARINGLY SPRINKLE INTO YOUR WORM FARM ONCE A WEEK.



What can I feed my worms?

