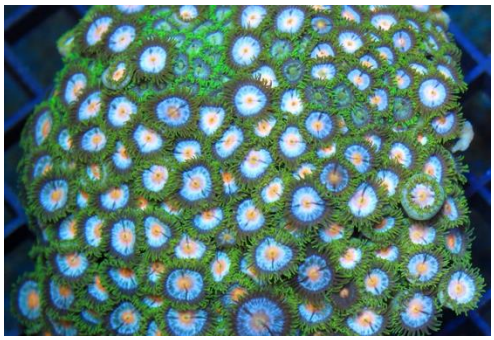
Corals

How to care for coral polyps



Although every coral will have polyps, there are some coral species commonly referred to as 'polyps'. Coral polyps are popular with aquarists due to their diverse colours and relatively undemanding care requirements. As polyps are so diverse, they have many different needs. Always consult your OATA retailer before purchasing any coral polyp to ensure you can meet its individual requirements.

Water requirements

The water chemistry requirements to keep coral polyps are shown below. These parameters are a general guide for this group of corals, so it is important to check with your OATA retailer for any species-specific requirements before purchasing. Please also note that if keeping these corals with other coral species, some parameters may need to be altered to accommodate more sensitive species.

Salinity:	Between 1.023-1.026
Temperature:	Between 24-26°C
pH:	7.9-8.3
Ammonia:	Zero mg per litre
Nitrite:	Zero mg per litre
Nitrate:	Not to exceed 30 mg per litre
Carbonate hardness:	Hard (8-12°dkH)
Calcium:	Between 380-450 ppm
Magnesium:	Between 1250-1350 ppm
Phosphate:	Not to exceed 0.05 mg per litre

Biology

Polyps are the individual animals that make up a coral. They have a mouth in the middle and are surrounded by tentacles. Most individual corals have many polyps in one colony. In the group of corals known as polyps, each colony can exist as one singular polyp, but many colonies may grow alongside or attached to one another on a mat of connective tissue called a stolon. There are many different species of polyps. Popular polyp species include xenia (*Xenia* species) yellow (*Parazoanthus* species), button (*Zoanthus* and *Protopalythoa* species), star (*Pachyclavularia* species) and mushroom (*Discosoma* species) polyps. Polyps will vary in size, but most individuals will rarely grow larger than 2-3cm.

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As polyps are corals, they generate most of their nutrition through photosynthesis. This is achieved through algae called zooxanthellae which live inside the coral. Most species will also consume food items in the water column, which will increase their growth rate. Polyps mainly reproduce asexually and a few individual polyps will eventually become a large mat. As they are easy to grow, many polyps are cultured commercially and there are many specific colour morphs available. Since polyps are invertebrates, copper is toxic to them and care should be taken when using treatments in the aquarium or introducing fish from retailers that use copper in their systems.

Polyp species do not have stinging cells like many other corals. Instead, they have developed toxins to protect themselves from being eaten. In addition, button polyps (*Zoanthus* and *Protopalythoa* species) can excrete palytoxin when they are stressed. This is very dangerous to humans and so appropriate care should be taken when handling these species. See our guidance document *How to prevent palytoxin poisoning* for more details.

Aquarium requirements

Polyps are sessile and do not move, therefore they do not have a minimum tank size requirement to allow for activity. As a general rule, you should within reason, buy an aquarium as large as possible. It is recommended that an aquarium of at least 20 litres is used for keeping polyps, as sizes smaller than this may experience rapid changes in water chemistry. Whatever the size, **a filter is essential**. For marine set-ups this can be in the form of live rock with sufficient water flow, an internal or external filter, or a sump-based filter. A protein skimmer can also be beneficial for maintaining water quality as it will help to remove dissolved organic waste before it can break down into more harmful substances.

Polyps do not have décor requirements. However, artificial or live rock will need to be present so that they can be placed in a suitable location (see "Feeding" below). Most corals come on a frag plug or a small piece of rock and are easy to position. In some instances, putty can be useful to secure the plug or rock in place.

A heater is required to maintain a suitable temperature all year round. To minimise fluctuations in water temperature, the aquarium should not be situated near any draughts or heat sources. It should also be out of direct sunlight and away from loud noises, vibrations and sudden movements.

Overhead tank lighting is required to provide nutrition. Different polyp species will have different light requirements (see "Feeding" below), but it is important to ensure there is sufficient light in the aquarium. Ask your OATA retailer for advice on suitable lighting for polyps. These corals will also require adequate water flow (see "Feeding" below), and so extra circulation pumps may be required to create appropriate flow patterns.

Water testing kits are essential so that water quality can be checked on a regular basis (once a week) to ensure it does not slip below the water requirements stated above.

Introducing your coral

Before adding any coral, seek advice from your OATA retailer to make sure that your aquarium is appropriate for the polyp you would like to keep. Check that the water quality in your aquarium is suitable i.e. levels of ammonia and nitrite are zero. Only increase the number of livestock you have in your aquarium slowly as the population of beneficial bacteria established when maturing your aquarium filter need to increase every time more livestock is added and feeding increases. Overstocking or stocking your aquarium too quickly can result in 'new tank syndrome'. This occurs when there are not enough nitrifying bacteria to cope with the increased waste from the livestock, leading to unhealthy levels of ammonia and nitrite, which may cause corals to become ill or die.

Your OATA retailer will usually sell your coral to you in a plastic bag, try not to keep them in this for too long. Once purchased, take your new coral home as quickly as possible because they are easily stressed by changes in water chemistry, extreme temperatures, and rough handling.

Once home, your coral will need to acclimatise to their new environment and a common method of doing this is known as the 'floating bag' method. Switch off the aquarium lights and take the bag containing your new coral out of its outer wrappings carefully, avoiding exposure to bright light. Float the bag in the water of your tank to ensure the temperature in the bag is the same as the aquarium water. After 10 minutes, slowly introduce small amounts of aquarium water into the bag containing the coral for up to an hour. Corals will struggle with changes in water chemistry more than fish and so good care should be taken during the acclimation process. Once complete, carefully place the coral into the aquarium whilst introducing as little bag water into the aquarium as possible. After this, dispose of the bag and any excess water appropriately.

For very sensitive species, a better method might be the use of drip acclimation. This could be achieved by keeping the coral in the container in which it is sold and a small airline siphon started to drip water into the container, slowly changing the water parameters to that of the aquarium. Ensure that the temperature does not fall too low during this procedure. Once conditions match, carefully remove the coral from the container and place it in the aquarium. Dispose of the water in the transport container appropriately. Some aquarists may use coral dips to remove any pests which can be found on corals. This should be performed according to the manufacturer's instructions before the coral is placed into the display aquarium. Monitor your new coral carefully for the first week, paying particular attention to water quality. If in doubt, contact your OATA retailer for advice.

If possible, quarantining new livestock in a separate aquarium for at least a week before they enter the main tank can help reduce any risk of disease spread from new inhabitants. Ask your OATA retailer for advice on this topic.

Maintenance

At least once every week, a partial water change of 25% is strongly recommended (a siphon device is useful to remove solid waste from the gravel). Filters should be well maintained, with regular checking and cleaning to prevent blockages. If the filter needs cleaning, do not run it under the tap because any chlorine or chloramine present may kill the beneficial bacterial population that has established in the media. Instead, it should be rinsed lightly in the tank water which is removed during a partial water change as this reduces the amount of bacteria which are lost. Protein skimmers should be regularly cleaned to maintain their performance

Good husbandry is essential as corals can be stressed by even the smallest amounts of ammonia and nitrite which may then cause them to develop various diseases or die. Test the water to monitor the ammonia, nitrite and nitrate levels, together with pH and carbonate hardness every week, especially during initial set-up and after adding extra livestock. It is also important to regularly monitor salinity and use reverse osmosis water to replace any water lost through evaporation. Polyps are sensitive to phosphate as it will reduce their growth rate and increase undesirable algal growth. Phosphate should be monitored regularly and removed using specialist resins or a refugium, so ask your OATA retailer for guidance.

What to watch out for

All animals will have slight variations in their behaviour or appearance, but keeping an eye on any changes in the following will help to identify any potential problems before they become a real health issue:

- behaviour – reduced polyp extension or not opening at all
- colour – darkening of colour, bleaching or presence of brown dead tissue
- tissue recession – reduction of size
- feeding – reduced intake or regular expulsion of stomach contents
- pests – presence of algae or pests such as flatworms or nudibranchs

There are some pests specific to coral polyp species. For example, there are some nudibranchs which will consume star polyps. If you suspect your coral has a pest, it is best to observe the coral at night when the polyps are retracted but the pest may still be visible. For specific treatment options, consult your OATA retailer. If you are concerned about the health of any of your livestock, then test your water quality and contact your OATA retailer for further guidance.

Feeding

Polyps generate most of their nutrition through photosynthesis. Therefore, it is important that lighting levels are correct in the aquarium. Some polyps will require relatively dim light, such as mushroom polyps, whereas others will grow faster under brighter light, like star polyps. It is important to ask your OATA retailer for guidance on placing corals in the correct light.

Polyps will also consume food items from the water column and feeding can lead to increased growth rates. It is important that appropriately-sized food is selected for the size of the species being fed. Generally, polyps have small mouths and so commercially produced dry coral feeds are recommended, alongside frozen rotifers, cyclops or copepods. When food items are given, take care not to overfeed as this can lead to a build-up of uneaten food which breaks down releasing toxic waste into the water. If in doubt, ask your OATA retailer for advice on appropriate feeding levels.

Water flow is important to bring food to your coral and help remove waste from feeding and photosynthesising. As with light, different species will require different flow rates. Polyps are generally adaptable, but extreme flow should be avoided and species such as mushroom corals will require gentler flow. Ask your OATA retailer for guidance on placing corals in the correct water flow.

Compatibility

Due to the presence of toxins, many polyps are unlikely to be predated on. Some species, such as angelfish, may eat polyps and so it is important to check fish compatibility before mixing fish with polyps. Polyps may be stung by other coral species if they are too close, so it is important to place polyps away from LPS or SPS corals.

Breeding

Polyps are unlikely to spawn in captivity. In the wild, environmental cues prepare corals to spawn and members of the same species will take part in mass spawning events. Once egg and sperm meet, a larva (called a planula) is produced. This spends time in the plankton before it settles and produces a young coral which is very vulnerable until it has grown. The cues required for spawning are not present in the home aquarium, and if planula were to be produced, they would likely be damaged in pumps, filters and skimmers.

The most common method of reproduction in captivity is through asexual reproduction. This involves the direct replication of an individual coral. In polyps, these individuals are connected through a membrane like structure called a “mat”. Cutting this mat carefully will separate the colony and these individuals can be placed on another rock or plug. This process is known as fragging. Species such as mushroom corals will produce individuals without a mat and so the rock or plug can be split in half to form new colonies.

Checklist

Before purchase make sure:

1. You have the appropriate equipment and position for the aquarium.
2. You have researched all the species in which you are interested and your final choices are all compatible.
3. You are familiar with how to transport and release your fish.
4. You are aware of the daily, weekly and monthly maintenance your aquarium will require.
5. You are prepared to look after your fish properly for the duration of their life.

Shopping List

- Glass or acrylic aquarium
- Filter*
- Heater*
- Lighting*
- Gravel or sand
- Aquarium salt and a hydrometer or refractometer
- Access to reverse osmosis water or a reverse osmosis unit
- Water testing kits (ideally ammonia, nitrite, nitrate, pH and water hardness)
- Gravel cleaner/siphon cleaning device (recommended)
- Aquarium decorations
- Bucket for water changes
- Live or artificial rock
- Protein skimmer* (optional but recommended)
- Ultraviolet steriliser (optional but recommended)

*may be included in branded aquarium sets but can be purchased separately.

Before purchase make sure:

- The aquarium is of a suitable size that ideally can accommodate the fish once they are fully grown
- Water parameters are as advised in this leaflet.
- Aquarium is cycled and ready to receive your coral.

Always buy...

test kits and regularly check the water for ammonia, nitrite, nitrate and pH. This will allow you to make sure the water in your aquarium is not causing welfare problems for your coral.

Establish a routine...

for testing the water in your aquarium. Record your results to enable you to identify fluctuations quickly. Also check the temperature of the water.

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Maintain...
the water in the aquarium within the accepted parameters highlighted above. You may need to do regular water changes to achieve this.

Never siphon by mouth...
A fish tank can harbour bacteria which can be harmful if swallowed. Buy a specially designed aquarium gravel cleaner which can be started or primed without the need to place the siphon in your mouth

Always wash your hands...
making sure to rinse off all soap residues, before putting them into your aquarium, or use long sleeved rubber gloves. Wash your hands again afterwards and certainly before eating, drinking or smoking.

Five Welfare Needs Checklist:

The Animal Welfare Act 2006 states that all pet owners have a legal duty of care to their pets. Anyone who is cruel to an animal or is found not to be providing the five animal welfare needs, as listed below, can be prosecuted.

- A **suitable environment** e.g. appropriately sized tank (with water heater if tropical set up) within a suitable location in your home.
- A **suitable diet** which meets the needs of your chosen fish.
- **Behaviour** - Fish are able to exhibit their normal behaviour e.g. hiding places for timid fish, enough room for fish to swim freely.
- **Companionship** - Ensure you know whether your chosen fish need to be kept with, or apart from, other fish.
- **Health** - Protected from pain, injury, suffering & disease e.g. you are aware of the daily, weekly and monthly maintenance that your aquarium will need.

- **Water quality test kits are a necessity not an optional extra**
- **You must be prepared to look after your corals properly for the duration of their life and provide an aquarium which can accommodate all fish when fully grown**

*Never release your aquarium animals or plants into the wild
It is illegal and for most fish species this will lead to an untimely and possibly lingering death. Any animals or plants that do survive might be harmful to our native countryside. Take care to properly dispose of any soiled substrate (e.g. sand or gravel) or decorations so that non-native organisms do not enter natural watercourses.

Visit ornamentalfish.org to find a full range of how to guides and species-specific care sheets to help you look after your fish successfully.

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