Biological Media: Balance and Detoxification

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Biological filtration is the action of bacteria breaking down dangerous ammonia, converting it to nitrite, and then converting nitrite to less toxic nitrate.

Biological media is any inert material that houses the beneficial bacteria colonies that break down ammonia to a less toxic form. Biological media is normally placed in your filtration system where water is forced through, bringing nutrients and oxygen required by the bacteria to complete the nitrogen cycle.

A variety of media is available for bacteria cultivation. Small biological media, such as Cobalt Aquatics Ceramic Rings, Azoo Bio-Glass, or Eheim Ehfisubstrat are an excellent option if you have a small aquarium. They are extremely porous and boast incredible surface areas. Plastic media, such as BioMate or Coralife Bio-Balls do not have the extensive surface area, but they are unlikely to clog and never need replacing. Bio balls also work to degas ammonia before bacteria break it down, lessening the load on the filter.

When starting a new aquarium, a great source of bacteria is a scoop of surface gravel from an established healthy aquarium or some bio media from a healthy filter, as long as the aquarium hasn't been treated with medications or other chemicals. Other good choices include porous biological media, or a bacteria additive like Drs. Foster and Smith Live Nitrifying Bacteria or Special Blend.

Check your filter regularly to ensure particles are not clogging the biological filter and decreasing efficiency. For bacteria to thrive, they need oxygen and ammonia or nitrite. Biological media should not be replaced unless it has become too clogged to function, and many times can be simply rinsed with aquarium water to unclog. In most cases, it is recommended the filtration system include mechanical media to filter particulate from the water before it reaches the bio media. This will slow the build-up and help prevent clogging.

Once beneficial bacteria are established in your biological media, they are difficult to destroy, except by over-cleaning, using chlorinated water, or using certain medications, such as antibiotics.