

# The Biology of Glass Sponges

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## Structure

The skeleton of a glass sponge, or Hexactinellid (hex-act-in-ell-id-a), is made up of tiny needle-like structures formed from silica (glass), called *spicules*. The spicules fuse together and create a stable skeleton. Special cells called *collar cells* line the inside of the sponge's porous body. Hair-like structures called *flagella*, attached to the collar cells, work to pump water in and out of the sponge. The collar cells also filter food particles out of the incoming water. The filtered water is pumped out of the main channels of the sponge body, called the *oscula* (one is an *osculum*). Sponges can filter large quantities of sea water in a fairly short period of time.

## Reproduction

When an adult sponge reproduces, it sends its fertilized larvae into the water, where they float until they settle onto a suitable surface. Usually this surface is a rock or the skeleton of a dead sponge. Once they attach, they become sessile, meaning they will stay in that location for the rest of their lives.

## Food

Glass sponges are filter feeders. The collar cells filter bacteria and plankton out of the water for ingestion.

## Waste Removal

When a sponge filters water for food, it also releases its waste into the water through the oscula. The waste is nitrogen and carbon rich, which allows other forms of life to grow around sponges.



Glass sponge specimen, *Aphrocallistes vastus*. The larger openings visible on the specimen are the oscula, where the sponge pumps out its waste and filtered water.