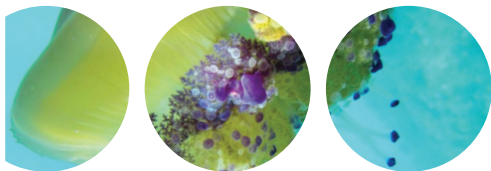


# MED-JELLYRISK FACTSHEET

...providing answers to the many questions about jellyfish

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**QUESTION: Since when have jellyfish been around?**

**ANSWER:** Jellyfish are among the oldest creatures on Earth oceans, and they have been around for at least 650 million years. This means they appeared about 400 million years before the dinosaurs did!

**QUESTION: How many different species of jellyfish exist world-wide?**

**ANSWER:** There are about 1000-1500 known species (or types) of jellyfish in oceans worldwide.

**QUESTION: What is the composition of a jellyfish?**

**ANSWER:** Jellyfish, as their popular name implies, are mainly (90-95%) water in composition, with salts and proteins accounting for just 3-5% and 2-5% of their body mass, respectively.

**QUESTION: How long do jellyfish live?**

**ANSWER:** Most species of jellyfish live for a maximum of a number of months to a few (2-3) years, but some are known to possess a wide potential for regeneration and rejuvenation, supporting a much longer life span as different life stages (resting cysts, polyps).

**QUESTION: Which are the largest jellyfish species in the world?**

**ANSWER:** Among the largest species of jellyfish, the lion's mane (*Cyanea capillata*) can reach a diameter of ~2 meters (~7 feet), with tentacles extending ~15 meters (50 feet); the Nomura's jellyfish (*Nemopilema nomurai*) can grow up to ~2 m in diameter and weigh over 220 Kg (450 pounds), ranking as one of the heaviest invertebrate species worldwide.

**QUESTION: Do jellyfish have a role to play in marine ecosystems?**

**ANSWER:** Jellyfish are top predators in the oceans. They prey on planktonic organisms like crustaceans, copepods, and fish larvae and eggs. Thus, jellyfish are both predators of fish and their competitors for food.

**QUESTION: Why and how do jellyfish sting?**

**ANSWER:** Jellyfish use stinging cells (cnidocytes) to capture prey and discourage predators. Stinging cells fire a spiny filament and inject venom into prey or predator tissues. A bather is mistaken as a potential prey or predator, so stinging cells eventually discharge their venom into the bather's skin. Some jellyfish have minor effects on human skin, but a few others may inflict painful stings or are even lethal (e.g. the Australian sea wasp, *Chironex fleckerii*) to humans.

**QUESTION: Can you treat all jellyfish stings in the same way?**

**ANSWER:** No, there are different venom categories. Some are disarmed by heat, some are not. Stings of some species may require the application of cooling packs to affected body parts to reduce local effects of envenomation (pain, dermatitis, erythema).

**QUESTION: Do any marine species consume jellyfish?**

**ANSWER:** Jellyfish are a resource for many marine species: some pelagic molluscs (e.g. the blue angel – *Glaucus atlanticum* - feeds on *Velella velella*) fish, sea turtles, and sea birds feed on jellyfish. Juvenile fish can seek refuge from predators, using jellyfish tentacles as a shield, such as the juveniles of mackerel which use the tentacles of the fried egg jellyfish (*Cotylorhiza tuberculata*).

**QUESTION: What is a jellyfish bloom?**

**ANSWER:** Jellyfish populations may exhibit sudden outbreaks, resulting in huge numbers of individuals within restricted areas. These are usually referred to as blooms. Although different jellyfish species might bloom at the same time, blooms normally consist of a single jellyfish species.



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**QUESTION: Which are the major causes of jellyfish blooms?**

**ANSWER:** There might be different causes for different jellyfish species blooms. Increased jellyfish populations may represent a warning signal for the health of marine ecosystems because they might be indicative of multiple pressures, including:

- a) climate change with increased sea surface temperatures (SST's) that favour jellyfish reproduction;
- b) overfishing, which may reduce jellyfish predators and competitors;
- c) habitat modification, with coastal constructions, marinas, harbours, and other artificial submerged structures that provide an increased substrate for jellyfish polyp attachment;
- d) eutrophication, which may lead to environmental conditions (such as increased levels of primary productivity, turbidity and hypoxia) that favour jellyfish over fish and e) introduction of alien species in marine habitats which are different from those in their native regions. The opening and recent widening of the Suez Canal has greatly favored the introduction of Red Sea immigrants in the Mediterranean Sea, like the large nomadic jellyfish *Rhopilema nomadica*, already detected in Maltese waters.

**QUESTION: What are the impacts of jellyfish blooms?**

**ANSWER:** The main human concerns revolve around socio-economic impacts, with the loss of the touristic amenities being amongst the most obvious impacts, with thousands of bathers being stung annually and requiring medical attention. Jellyfish also negatively impact the fishing industry, as jellyfish can clog fishing nets, reducing and damaging the catch. Also, jellyfish consume fish larvae and eggs of important commercial species, from anchovies to tunas. Jellyfish also clog the sea water intakes of power and desalination plants, which adds financial costs expenses and lead to occasional closures.

Impacts of jellyfish can be positive as well. They also are a food resource for some fish species and for humans. They also provide bioactive molecules for medical and pharmaceutical applications.

**QUESTION: How can we reduce the proliferation of jellyfish blooms?**

**ANSWER:** There are some attempts to reduce their impacts by large-scale removal of the adults (Mar Menor in Spain), jellyfish 'mowers' to chop up adults (Korea), modified fishing nets (Japan), and prevention of the settlement of the polyps (Norway, Korea, Japan). The best way to reduce jellyfish blooms is prevention – i.e. to minimize the human-induced causes boosting their proliferations.

**QUESTION: Can you rear jellyfish in an aquarium?**

**ANSWER:** Yes, especially short-tentacled jellyfish (e.g. the moon jellyfish *Aurelia*). However, special aquaria with rounded corners and circular water motion through the installation of a kreisel (German for spinning top), are required.

**QUESTION: Are jellyfish eaten anywhere in the world?**

**ANSWER:** Jellyfish have been a valued seafood in China for thousands of years, where they now represent important fisheries, aquaculture, and processing industries there, with valuable local and foreign markets for derived products. Rapidly expanding market demands are also propelling the explosive development of jellyfish fisheries and aquaculture in the USA, Mexico, UK, Namibia, and Australia. Mediterranean jellyfish (e.g. the fried egg jellyfish, *Cotylorhiza tuberculata*) are currently being investigated for their potential exploitation as a food resource.



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