



Marine Stinger Management Newsletter

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The life of the beach.



Marine Stinger Management Newsletter

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Looks like a good year!

... for jellyfish, that is. Before Christmas, there were already 41 Irukandji stings for the season, compared to an average of zero or one by that time. The typical late December peak never eventuated, which is excellent, but cannot be explained yet. It is possible that we may see an increase in stinger activity in January or February.

It is important for people not to get complacent. Stinger safety isn't difficult, it just takes a few moments to take the extra steps (see page 4), but those moments may make all the difference between an enjoyable holiday and a ruined one. Surf Life Saving and Queensland Ambulance Service are teaming up in the new year, together with IGA Supermarkets and local Councils, to launch a stinger awareness campaign with free vinegar and special prevention / treatment labels.

I think of stinger safety as similar to sun safety: not all that long ago, we used to bask in the sun without a care. Then we were alerted that UV exposure causes skin cancer. Now we routinely 'slip, slop, slap' – we haven't let the risk stop us from having fun, we just manage the risk in a sensible way. There is no reason we cannot manage the risk of stinging in a similar way. We just need some clever person to come up with a memorable slogan for stinger safety! Therefore, let me put the challenge out there: let's come up with an adoptable stinger safety campaign.

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Mark the Date: Calendar

24 January: Irukandji Task Force Prevention & Response Working Group meeting: To make a submission for this or future, contact Marine Stinger Coordinator 0438 105 358 or lisa.gershwin@jcu.edu.au

Seminars and Workshops are being planned for all locations and all management sectors; if you or your organization would like to arrange a specific public or private session, please contact the Marine Stinger Coordinator, Dr. Lisa-ann Gershwin 0438 105 358

Did you know...

Four new species of Irukandjis have recently been **formally named and classified**, for a total now of 5 – just 4 more to go!

... Alas, so many jellyfish, so little time!



Resources for coastal concerns

Two primary stinger management strategies are currently used coastally:

Box jellyfish: The stinger resistant enclosures provide effective protection against box jellyfish. The 2.5cm mesh is sufficient to keep out *Chironex* box jellyfish of a dangerous size (i.e., 8cm and above).

It is important for people to not drape limbs over or climb on the pontoons, as their limbs may be stung by box jellyfish outside the net, or allowing water over the pontoons may bring box jellyfish into the enclosure.

Irukandji: Due to the small body size of coastal Irukandji species (about 1cm), they are able to get through the nets. Therefore, when Irukandjis are detected through routine monitoring, the beaches are closed to protect human safety. Coastal Irukandjis typically swarm for a day or two, and then disappear.

It is important for people to not enter coastal waters on days when swarms of Irukandjis are present. Doing so, even with protective clothing, heightens the risk of stinging, due to the large number of Irukandjis in the water.

Resources for reef or island concerns

Box jellyfish are not common on the reefs and islands; Irukandji is the primary stinging risk. The stinger management strategies currently used offshore:

Box jellyfish: There is a resident summertime population of box jellyfish at Magnetic Island, and they may occasionally be found at Fitzroy or Dunk; pay attention to lifeguard instructions regarding their presence.

Irukandji: Reef and outer Island Irukandji species do not typically swarm, but scientists do not yet know what factors govern their presence and absence in different locations or times of year. Different Irukandji species may be found throughout the year. Nearshore island Irukandjis are, for the most part, the same species as on the coast.

It is important for divers and snorkelers to wear protective clothing, since reef and island Irukandjis are not presently monitored. While occasional stings occur to the face or hands, these are highly unusual; it is also possible to be stung by crushing the tentacles through lycra, but in practice, this rarely occurs. Wearing garments with 1/4mm or larger mesh is ill-advised, because the fine Irukandji tentacles may penetrate the mesh.



Focus on Research

A large number of marine stinger researchers are currently working on effective techniques for prediction, prevention, and treatment of marine stings. Each month, we will showcase a particular researcher, research group, or research innovation, in order to keep stakeholders informed of some of the exciting things being done behind the scenes.

Current State of Knowledge on Vinegar

There exists a lot of confusion over whether to use vinegar or not, or whether it works on not, or how it works. This segment is dedicated to better understanding why and when to use vinegar. The bottom line: Use vinegar early and liberally.

IF STUNG, APPLY VINEGAR AS EARLY AS POSSIBLE; DO NOT RUB

Vinegar will “kill” any undischarged microscopic stinging cells that remain on the skin, and thus prevent more venom from entering the body. When a jellyfish sting occurs, many undischarged stinging cells (nematocysts) are left on the skin, ready to inject venom. They are too small to see – they are about 25 thousandths of a millimetre long! It is important to kill these cells before they inject more venom into the victim. After the vinegar has been used, then it is safe to use ice or other remedies for the pain.

VINEGAR IS NOT MEANT TO STOP PAIN

Vinegar will not stop the pain of the sting; ice can be applied for pain after the vinegar, but ice alone will enhance the discharge of additional stinging cells. Some people mistakenly think that vinegar doesn't work – they still feel the sting after they use it, and so they do not use it anymore – this will cause more venom to enter the body.

HOW DOES VINEGAR WORK?

Interestingly, scientists do not completely understand how vinegar works, but suspect it involves denaturing the proteins (like frying an egg). Stinging cells discharge by a hair-trigger mechanism, similar to a land-mine; thus, they can sting even if the animal is dead or the stinging cells are detached from the tentacles. The vinegar somehow blocks the firing process, leaving the stinging cells permanently “dead”.

DOES VINEGAR WORK FOR ALL SPECIES?

We know experimentally that it immediately and completely kills the stinging cells of box jellyfish and Irukandjis. One very rare species of blue bottle and the common hair jelly have been shown to be triggered by vinegar, but it remains an essential early first aid step for unknown stings as well as those known to be from Irukandjis or box jellyfish.

Drop us a line and tell us what you'd like to hear more about!



A unified public safety message

One of the primary goals of the newly-created Marine Stinger Coordinator position is to increase the flow of information among interest groups, and in doing so, to bring together different sectors to manage marine stingers in a mutually beneficial way and present a unified public safety message.

Marine stingers are an emotive issue in North Queensland, and yet they appear to be easily manageable. The key to successful stinger management is knowledge. Currently, many people feel that they lack sufficient knowledge to protect themselves from stingers, and so they stay away from the water. And consequent to lack of knowledge, variation in safety advice may lead to possible legal implications.

A better outcome would be for current and accurate information to be easily accessible, so that consistent, effective advice is given to all people.

We are currently working to develop a standardized brief stinger orientation for operators, and the web site 'www.marinestingers.com' is being renovated. Additional ideas are most welcome!

Stinger Myths

MYTH	FACT
There's no stingers at the reefs and islands	Some of the most dangerous (but rare) stingers occur at the reefs and islands
You're safe from stingers in the winter-time	Box jellyfish and Irukandjis may be present any time of year, less so in winter
Irukandjis are a new thing	Accurate medical records began in 1943; aboriginal knowledge predates that
Vinegar will make stings worse	Vinegar may enhance some types of harmless stings; vinegar will kill all box jellyfish and Irukandji stinging cells
Box jellyfish sleep between 3pm and 6am, and thus it is safe to swim unprotected during this period	37% of box jellyfish fatalities and 30% of stings occur within this time; new and old studies indicate night-time jellyfish activity
Wearing red will protect you from being stung	Wearing any colour clothing will protect the areas covered; there is no scientific evidence that jellyfish can see colour



What's coming in Future Issues?

In upcoming issues, we will look at topics including

- Ideas for improvements to the public safety message
- Renovations to the www.marinestingers.com website
- Where do jellyfish go in the winter?
- How does magnesium work for Irukandji syndrome?
- What effect will global warming have on jellyfish?

Did you know...

A recent publication documented a lethal box jellyfish sting to a young child with only 1.2m of tentacle! But that same publication also gave strong and encouraging evidence that the majority of box jellyfish stings are not life threatening. This is great news, coming at a time when many people believe that any jellyfish sting will result in a horrific painful death. For more information, read the paper by Bart Currie in the December issue of the Medical Journal of Australia, available free online at www.emja.com

In fact, the vast majority of Irukandji stings are also not life threatening. A small percentage of Irukandji stings give a very high blood pressure (hypertension) component, which can result in brain haemorrhage or heart failure if left untreated. These are more often associated with outer reef stings. The species that give them are rare. The great news is that these are preventable with efficient protective clothing, such as a full-body lycra suit.

Where to get more information

Emergency sting information	'000'
Reports of stings or specimens	24/7: 0438 105 358
General safety information	SLSQ (07) 3846 8000
General jellyfish information	SLSQ (07) 3846 8000
Media enquiries	SLSQ (07) 3846 8044
Signage enquiries	SLSQ (07) 3846 8020
Requests for brochures, posters, etc	SLSQ (07) 3846 8000
Requests for speaking engagements	Coord. 0438 105 358
Research info or project ideas	Coord. 0438 105 358
Contributions to newsletter	lisa.gershwin@jcu.edu.au
Add to mailing list	lisa.gershwin@jcu.edu.au

<http://www.reef.crc.org.au/publications/brochures/Moreinformation.htm>
<http://www.marinestingers.com.au/marinestingers/default.htm>

If stung:

- Call for help (dial '000' or send someone for a lifeguard)
- Treat the victim (Provide emergency care - CPR if necessary)
- Treat the sting (flood with vinegar)
- Seek medical assistance