

MEDIA RELEASE

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**A national health approach and increased research is advised
to raise awareness about seafood-borne parasitic diseases**

Charles Sturt University (CSU) Associate Professor Shokoofeh Shamsi, a speaker at the [Royal College of Pathologists of Australasia's](#) (RCPA) annual conference, 'Pathology Update 2019 – The Power of Personalised Pathology', which will take place at the Melbourne Convention and Exhibition Centre (MCEC) this weekend, will discuss her new research¹, published this month, on seafood-borne parasitic diseases.

Professor Shamsi explained that it's important for medical doctors to be aware that seafood-borne parasites exist and for diagnostic tests to become available in Australia. She said that significant changes in parasitology teaching in Australian universities have adversely impacted the ability to detect, collect and identify these parasites in patients. Professor Shamsi said that seafood can contribute to a healthy diet and is safe when it is sourced, prepared and stored correctly but there needs to be more consumer awareness of these practices.

Professor Shamsi who holds a Master's degree in Medical Parasitology and a PhD in Veterinary Parasitology, explains her passion in research into transmissible parasites between animals and humans and food safety. She has discovered more than 40 new parasite species and developed new protocols for detecting parasites in seafood. Professor Shamsi, is a Senior Research Fellow at CSU and a member of the Graham Centre for Agricultural Innovation.

"Consumers are advised by many sources that seafood supports a healthy lifestyle, and rightly so. Not only is seafood recommended as a possible preventative measure against cardiovascular disease, but also for other conditions, such as Alzheimer's disease, diabetes or obesity. As a result, we are seeing more people consuming seafood, more often. It's also becoming increasingly popular to eat raw, exotic or under cooked seafood. With this high demand for seafood comes the potential for diseases that have not previously been seen in humans. This could be due to our increased consumption of seafood or a combination of other factors, including climate change and other changes in our oceans," said Professor Shamsi.

"Although there are few reported cases of seafood-borne zoonosis in Australia, such as anisakidosis, this could be due to misdiagnosis. Other parasites that can affect patients are tapeworms, which can grow up to ten metres, and roundworms which can be problematic and could cause a mild, severe or even deadly allergic reaction. Crucially, there is currently no standardised diagnostic test in Australia for seafood-borne parasites. This means the patient needs to wait until their results come back from overseas which can be very time consuming.

"We have recently seen cases where parasitic diseases found in fish (which have been reported in other parts of the world), actually presented in the patient differently in Australia, which is very interesting³. For example, in one case, in an Australian patient the parasite caused several weeks of vomiting and diarrhoea with increased severity that was unresponsive to medicine. Three weeks later she passed the worm alive through a bowel motion. In other parts of the world the parasite has been reported to penetrate the gastro-intestinal wall and eventually dies.

“We believe in and support research that seafood is a very healthy source of protein. We should remember that other food such as vegetable, red meat or poultry can also cause several severe diseases if they are not prepared properly or sourced from reliable resources. The difference is that we know and educate everyone about those diseases and we have several reliable diagnostic techniques for them in this country. When it comes to seafood-borne parasitic diseases, we need to bring all stakeholders onto the same page to make sure they are aware of the seafood parasites that can affect humans. The point is to make people understand that, like other food types, vegetables or red meat, seafood also needs to go through certain levels of inspection and quality control before it is sold. It also needs to be cooked properly.”

“As a result, investment is required into research and we need to have a national approach on the diseases caused by seafood-borne parasites, along with education to ensure a healthier community. We also need educational campaigns to train all other parties involved with seafood and public health about these parasites. Ultimately, we want to be safe whilst still enjoying the benefits of one of the healthiest food sources known to humans,” said Professor Shamsi.

Human infections with marine parasites are generally the result of ingesting uncooked seafood products. It is therefore important to ensure that, as with any other meat or vegetable, fish is cooked thoroughly before consumption or have been kept frozen if they are to be consumed raw. This simple and practical advice can make a big difference.

Literature suggests that some popular fish, sold in fish markets, may be infected with parasites transmissible to humans, however the number of reported human cases are low. Professor Shamsi believes that this low rate of human infection is due to a lack of expertise in Australia in order to accurately identify and diagnose seafood-borne parasitic infections.

“Recent Government risk assessments of the consumption of seafood have assessed the risk as low. But we believe the risk posed by seafood-borne parasites is underestimated. If you look at the history of human infection of seafood-borne parasites in Australia, you will see that between 1900 and 1950, a number of cases were reported. However, after 1950, there were no human cases published until 2011². We think this gap is partly because people working in this field retired or passed away and we lost their expertise. They were not replaced by anyone else and we believe this is partly responsible for the lack of information available on recent cases.

University lecturers and educators teaching medical doctors, veterinarians and staff involved in food industry such as chefs, need to include a section on seafood safety, and in particular on seafood parasites. At the moment if you look at all the seafood safety guidelines that are taught in universities and other educational institutions, there is no or few mention of seafood parasites,” said Professor Shamsi.

The extent of the ‘hidden cases’ is unknown, partly due to this lack of education and subsequent misdiagnosis. Professor Shamsi advises establishing practical strategies to minimise the risk posed by these highly pathogenic, potentially deadly parasites.

“With all human cases of seafood parasites in Australia, they were ill after the consumption of raw seafood. It’s important to know that if it’s cooked properly, any parasites will be killed and they won’t cause any risk to humans.”

“Our research also suggests that the population of parasites in Australian waters has changed significantly during last decade due to climate change and other factors. Understanding the extent of this change and its impact on our aquatic animals are other highly important areas that require research support.”

Professor Shamsi is speaking at 11.00am - 12.30pm on Saturday 23rd February at the RCPA's Pathology Update, which is held at the Melbourne Convention Centre from 22-24 February 2019

For further information on the RCPA, visit www.rcpa.edu.au or see our updates on [Facebook](#) or [Twitter](#) - [@PathologyRCPA](#) or [Instagram](#) - [@the_rcpa](#).

References:

1. Shamsi, S., *Seafood-Borne Parasitic Diseases: A "One-Health" Approach Is Needed*. *Fishes*, 2019. **4**(1): p. 9.
2. Shamsi, S. and H. Sheorey, *Seafood-borne parasitic diseases in Australia: are they rare or underdiagnosed?* *Internal Medicine Journal*, 2018. **48**(5): p. 591-596.
3. Shamsi, S., *Seafood-borne parasitic diseases in Australia: how much do we know about them?* *Microbiology Australia*, 2016. **37**(1): p. 27-29.

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About the Royal College of Pathologists of Australasia:

The RCPA is the leading professional organisation representing pathologists, medical specialists and scientists who provide pathology testing in Australasia. Its mission is to train and support pathologists and to improve the use of pathology testing to achieve better healthcare.

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