Sushi Guide

How safe is your sushi? Part Two: Parasites!

by Ross Christensen

Being an avid sushi enthusiast, it's strange to me to think there are some people who dislike sushi. Many of the people who say they dislike it have never even tried it. Often their reason for condemning it without tasting it first comes from fear. They ask, "What of the risk of parasites?"

The short answer for the average person is...There is nothing to worry about. Parasites at the sushi bar are essentially non-existent. Continue on happily with your life and save your energy for worrying about terrorists, mutual nuclear annihilation, and if Paula Abdul is on drugs or just clinically insane; y'know, the important stuff. For the paranoid and hypochondriacs, read on...

Nematodes (a.k.a. Roundworms, hookworms, whipworms,) infect the body and become clinically known as anisakiasis. This is the infection of the body by the anisakis worm larva, a type of nematode. They only grow to about an inch in length, and within 12 hours of contracting one you would have terrible stomach pain, nausea, and diarrhea. It eventually moves to the intestine and sets up house. Survival in the human digestive tract is "iffy." Most nematodes will die within 24 hours, but resistant ones can last longer and actually burrow into the digestive tract before they are finally overcome by the digestive process. In countries where eating raw, untreated fish is common, this malady is easily diagnosed and treated. In the U.S. where it is a rare occurrence, contracting anisakiasis is often misdiagnosed as appendicitis or an ulcer. Since the body of the
larva has a chemically resistant exterior, treatment basically consists of going in, with a tiny camera, with a tiny flashlight attached, and a really long tweezers... if you get my drift. Unfortunately, there is no medicinal way to get rid of them.

Flatworms (Flukes and tapeworms) are a group of parasites that infest marine mammals and fish. They're more “primitive” than nematodes, having only one hole as the only way in and out for their digestive system. Flukes don't even have a circulatory system. Flukes do have the ability, after being ingested, to use the bloodstream to travel throughout the host’s body and to travel to other organs. They range in size from 1mm to 70mm but for the most part are considered as being microscopic. With over 6000 different types, flukes are everywhere in our ecosystem; avoiding them is impossible. E.g., you've heard of “Swimmers Itch”... it's flukes burrowing into a swimmer's skin. Tapeworms are a common parasite in freshwater fish and so any type of raw freshwater fish should be avoided. The good news with flukes and tapeworms is that most can be treated with simple medication.

Don't let anybody fool you: you cannot freeze fish at home to kill parasites, not even if you freeze it for months. This process simply puts the parasite to sleep until it is thawed. This cryogenic suspension was graphically demonstrated to me personally when some whole frozen bluegill (a freshwater type of fish) were thawed in my sink, and they proceeded to snap back to life and flop around the sink until they were humanely dispatched. These bluegills had been in my freezer for several months before this shocking event occurred. Needless to say, the even lower brain-stemmed parasites they might have had would be equally surprised at their new awakening. Another problem with home freezing is the freezing process takes too long and microscopic cell walls are damaged in this slow method making the fish taste fishy and have a poor texture.

Younger fish are less likely to have contracted parasites just due to the fact that they haven’t been around a long time to catch them. Fish coming from the Pacific Ocean are more likely to have parasites than fish from the Atlantic Ocean because the Pacific has a higher population of marine mammals and so they spread parasites that they contract. The Atlantic has fewer marine mammals and therefore fewer parasites. Wild caught salmon are almost always found with parasites while their farmed cousins rarely are found with parasites. Most incidences involving a person contracting a parasite from sushi are from people preparing it at home and eating raw, wild caught salmon.

In all of my years of preparing fish, raw, cooked, marinated, you name it, we're talking about thousands of fish in my lifetime, I have only found two parasites in my fish, one was dead in a frozen snapper the other was alive in a fresh wild salmon filet.

Once again it looks like I have drawn a sad picture for the sushi eater striving to enjoy his meal but let me add this.

Let's start with the fact that fish are inspected by the initial processor to
find the best specimens right at the start. You can translate that into
“Let’s find the fish we can charge the most for first, and get them out of
the masses and treat them better.” When this batch of fish is set aside a
couple of these fish will be sampled for parasites. If they are deemed as
having low to no noticeable parasites they are then sent to be processed
and frozen with a nitrogen blast freezer.

The FDA has required all fish (with the exception of tuna) destined to be
served raw in the U.S. to be frozen at a minimum of minus four degrees
Fahrenheit for seven days or minus thirty-one degrees Fahrenheit for
fifteen hours. Either process will kill any and all parasites inside of a fish.
Freezing in this method happens so quickly that the ice crystals that form
are very short and don’t pierce through cell walls, and so the fish can
legally be sold as “Fresh.” Home freezers cannot freeze this quickly and
so not only do parasites survive the process but the long time lapse of
freezing creates long ice crystals that pierce cell wall after cell wall as
they grow. Freeze a strawberry or onion in your home freezer and let it
thaw and you will get a very dramatic example of what damage can
occur.

You might ask why tuna are mostly free of parasites while something like
catfish are not safe to eat raw. It’s simple if you think of it this way. Tuna
are like F-16 fighter jets, and catfish are like New York City subway cars.
F-16s are rarely in the area that spray-painting graffiti vandals are found
and even if a tagger saw an F-16 flying by he wouldn't have a good
chance of catching it and spraying it. A New York Subway car on the
other hand, is found in the relative vicinity of vandals and doesn’t
actually put up much of a fight getting away. Larger species of tuna are
considered so low in parasitic incidence that the FDA does not require
them to be frozen to kill parasites, however most are voluntarily frozen
anyway just for shipping, freshness, and safety's sake. Also, most
parasites are found close to the skin’s surface, so sushi that comes from
deep inside a fish like “maguro” is almost guaranteed to be parasite free.

If you want to make sushi at home and want to be confident that your
fish is free from the danger of parasites, ask your fishmonger for
“Sashimi Grade” fish. These are fish that go through all of these FDA
measures to guarantee your safety. Not only are they inspected and
found to be at least very low in parasites, but then they are frozen to a
point where no hidden parasites could survive.

Your chances of becoming infected with a parasite in a U.S. sushi bar are
so low that it could reasonably be dismissed as an issue in our modern
times. Sushi in other countries is still at risk, but many of these other
countries are picking up our “Freeze the parasites to death” program.
Even sushi bars in Japan, with their obsession of the freshest seafood
possible, are becoming safer to eat at.

So for all of the paranoid, hypochondriac, and doom saying folks who are
scared to eat sushi in fear that their body will become the next great rave
party for the squirmly wiggly critters, I’m sorry to tell you that America’s
professional sushi bars are secured by some of the best bouncers since
Patrick Swayze watched over “Roadhouse.”