

# Is sushi safe? Health risks reported rising

BY MARIAN BURROS  
© 1987, The New York Times

**NEW YORK** — About 10 years ago, Americans began eating significant amounts of sushi. Ever since, there have been nagging doubts about the wisdom of consuming raw fish — doubts intensified by occasional reports of fish parasites. Yet America's love affair with sushi has continued unabated.

It is of more than passing interest, then, that according to a report in The International Herald Tribune on Sept. 29, uncooked fish poses a health hazard. The article focused on a West German television program, "Monitor," which reported widespread parasite infestation in North Sea fish. According to the program, which was broadcast this summer, the infestation extended even to pickled herring purchased in a supermarket.

In the wake of the report, consumption of fish in West Germany dropped 50 to 80 percent. Prices plummeted by half. Now, a month and a half later, prices are almost back to normal; consumption, however, is not.

The bad news for consumers both in the United States and abroad is that parasitic infestation of fish is not confined to the North Sea. Fish worldwide are infected, and the number of parasites is increasing. Industry experts said the increase can be traced to a growing pop-

*Parasitic infestation of fish means that it shouldn't be eaten raw.*



STAFF ILLUSTRATION: KENNETH HARRISON

ulation of such sea mammals as seals, which act as the parasites' hosts.

"Parasites have always been there," said Thomas L. Deardorff, a parasitologist with the Fishery Research Branch of the U.S. Food and Drug Administration. "But we changed our dietary habits in this country, eating raw fish and less-cooked fish, which allowed us to be infected by parasites."

Symptoms of parasite infection mimic

those of ulcers and usually begin 1 to 12 hours after eating raw fish. Although there have been only 50 reported cases of human parasite infection in the United States, Deardorff said this is "just the tip of the iceberg." He noted that 70 percent of the cases have occurred since 1980.

The most recent incident came to light in August. A woman was infected by eating raw fish in a San Francisco sushi bar; the parasite had to be removed surgically.

Around the world "maybe as many as 30 million people are infected with the parasite," said Thomas Schwarz, assistant director for program development at the Center for Food Safety of the Food and Drug Administration.

The center became concerned enough about the parasites to issue an advisory to state regulatory agencies in August. It suggested that states require any public establishment that serves fish raw, marinated or partly cooked to blast-freeze the fish for 15 hours at 31 degrees below zero Fahrenheit or freeze it for 7 days at 10 below. The issue of cold-smoked fish was not addressed.

Experts disagree on whether cold-smoking will kill parasite larvae, but Schwarz said that 99 percent of all cold-smoked fish is frozen first anyway.

See **SUSHI**, next page

## Sushi

From preceding page

Experts also disagree on whether pickling kills larvae. According to Lee Weddig, executive vice president of the National Fisheries Institute, a trade association, the fish pickling methods used in this country (as contrasted with those in West Germany, for example) do kill larvae.

Aficionados might be appalled at the idea of freezing fish, insisting that it makes the flesh watery and mushy. Kenelm W. Coons, executive director of the New England Fisheries Development Foundation Inc., a trade association, said that "properly frozen fish retains most of its textural qualities." He admitted, however, that there is "always a lively debate in the industry over fresh or frozen."

Three fish popular in the United States are among those most heavily infested with para-

sites, according to Deardorff: cod, Pacific salmon and Pacific rockfish.

Schwarz said that in Japan, Pacific salmon are frozen before being used in sushi and that the Japanese avoid cod altogether. In the Netherlands, the government requires that fish served raw be frozen first.

Federal health authorities in this country said they do not know of any state that has a similar requirement.

The American fishing industry, however, is aware of the parasite problem and is taking steps to control it. "Any responsible fish processor removes nematodes," Coons said, referring to one of the most common parasites.

A technique called candling — also used to examine eggs in front of a strong light — is used to spot the parasites, whose larvae look like tiny coiled worms. The larvae are removed with tweezers.

"Anybody can see a nema-

tode," said Robert L. Rausch, a professor of helminthology (the study of worms) at the University of Washington Medical School in Seattle.

"No," Deardorff said. "Candling is helpful and effective, but not 100 percent effective, especially not for dark-flesh fish."

Short of freezing fish, there are other ways that consumers can protect themselves. For example, they can ask for fish that have been "aquacultured," or raised in a controlled environment to make them unlikely to pick up parasites.

An even simpler solution is to cook fish to 140 degrees, which destroys parasites. But that puts an end to sushi, gravlax, ceviche and even to fish cooked medium-rare.

Then there is Schwarz's philosophy. While he will not eat raw oysters or raw eggs, he thinks sushi is different. "I'm an informed consumer," he said, "and I'm willing to take my chances."