



## Aesthetic Dermatology

# Fish pedicures

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**F**ish pedicures have recently received attention in the media because of a case report potentially linking a fish pedicure to onychomadesis. A letter published in *JAMA Dermatology* describes an otherwise healthy woman in her 20s who experienced nail abnormalities some months after having a fish pedicure. Onychomadesis, or transverse splitting of the nail plate, occurs when the nail matrix has arrested in producing the nail plate. It can be thought of as more severe form of Beau's lines, in which the nail itself actually breaks and separates from the proximal nail plate and eventually sheds.

Fish pedicures have a long-standing history in both Mediterranean and Middle Eastern cultures for aiding such skin conditions as psoriasis and helping to remove scaly skin. The *Garra rufa* fish are nonmigratory freshwater fish native to the Persian Gulf and Eastern Mediterranean. Suction allows them to attach to rocks and eat plankton. These "doctor fish," as they are nicknamed, when placed in a warm bath of 25°C to 30°C, will also eat human skin when starved of their natural food source. As the *JAMA Dermatology* letter mentions, this was demonstrated in a study

in Kangal, Turkey, where *Garra rufa* fish were used to improve psoriasis by feeding on psoriasis plaques but not on normal skin. After 3 weeks of therapy with *Garra rufa* in 67 patients, there was a 72% reduction in the Psoriasis Area and Severity Index (PASI) score from baseline (Evid Based Complement Alternat

Med. 2006 Dec;3[4]:483-8).

Popular in the United States and Europe about a decade ago, fish pedicures have now been banned in 10 U.S. states and in some parts of Europe. While the trend in the United States has waned, fish pedicures have recently become more popular in vacation destinations, such as the Caribbean. The inherent concern of fish pedicures is risk of infection as the same fish are used successively and cannot be adequately sanitized between people.

Two cases of staphylococcus infections and one of *Mycobacterium marinum*



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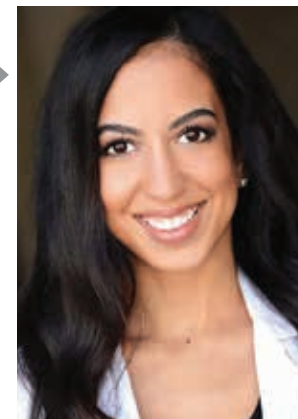
have been reported after fish pedicures. Whether these infections were caused by the fish or by the water source, however, remains to be determined. If the fish were transmitting infections, it seems that more infections would likely have been reported, considering the widespread popularity in the past. I, like

Antonella Tosti, MD, who commented in a CNN report on the *JAMA Dermatology* case, also doubt that the fish pedicure alone caused onychomadesis in this woman. In order for onychomadesis to occur, there would have had to have been significant trauma to all 10 nails at the matrix. Would the fish have been able to cause the same amount of trauma to all 10 nails in one setting? While it is possible, I believe a more likely explanation would be an alternate endogenous or exogenous source.

Traditional medicine has been used to enhance beauty and cure ailments for thousands of years before the advent of modern medicine as demonstrated by the Kangal study. Before discounting fish pedicures completely, perhaps some thought should also be given to how this practice affects wildlife and the fish. The CNN report refers to a 2011 investigation by the U.K.'s Fish Health Inspectorate, which "found a bacterial outbreak among thousands of these fish, which had been transported from Indonesia to the United Kingdom pedicure spas. Fish were found with bulging eyes, many hemorrhaging around the gills and mouth. The culprit was found to be a streptococcal bacteria, a strain that is associated with fish like tilapia, according to David Verner-Jeffreys, a senior microbiologist at the Centre for Environment, Fisheries and Aquaculture Science in the U.K."

Whether or not these fish would pose any risk to humans is unknown, but certainly, this practice adversely affects the welfare of the fish and their environment. The overharvesting of these fish has led the Turkish government to introduce legal protections for the country's *Garra rufa* in an attempt to combat overfishing and exploitation.

Perhaps fish pedicures solely for aesthetic reasons should not be practiced because of the potential infection risk – as well as the harm (to both humans and fish) and overharvesting of the fish. If used properly, these fish, however, could be an aid in treating certain skin pathologies. ■



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