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How are tattoos removed?

-T. Durkee, Berkeley, Calif.

Dermatologist Joshua L. Fox, director of Advanced Dermatology's Center for Laser and Cosmetic Surgery in New York City, explains:

Industry experts say that 50 percent of people with tattoos will someday consider getting rid of their body art. Doctors remove the markings using three types of lasers: alexandrite, YAG and ruby. Each works on different pigment colors and compounds, so the dermatologist will use one or a combination of lasers depending on the nature of a given tattoo. (It follows that you would want to select a dermatologist who has the specific laser necessary for removing your tattoo.) Tattoo pigment is inserted into the dermal layer of the skin through ruptures in the top layer, or epidermis. To remove that pigment, the laser emits very short pulses, which are selectively absorbed by the color of the tattoo ink. This high energy fragments the pigment into smaller particles that are then removed by the body's immune system. In most cases, a series of laser treatments can remove 90 to 95 percent of the original design.

Patients who want a tattoo removed should seek a dermatologist with experience and equipment specific for the procedure. Good questions to ask include how many such procedures the practitioner has done and whether he or she owns the lasers or leases them. Doctors who own their lasers typically do more tattoo removals and as such have more practical experience.

For a complete text of these and other answers from scientists in diverse fields, visit www.sciam.com/askexpert

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