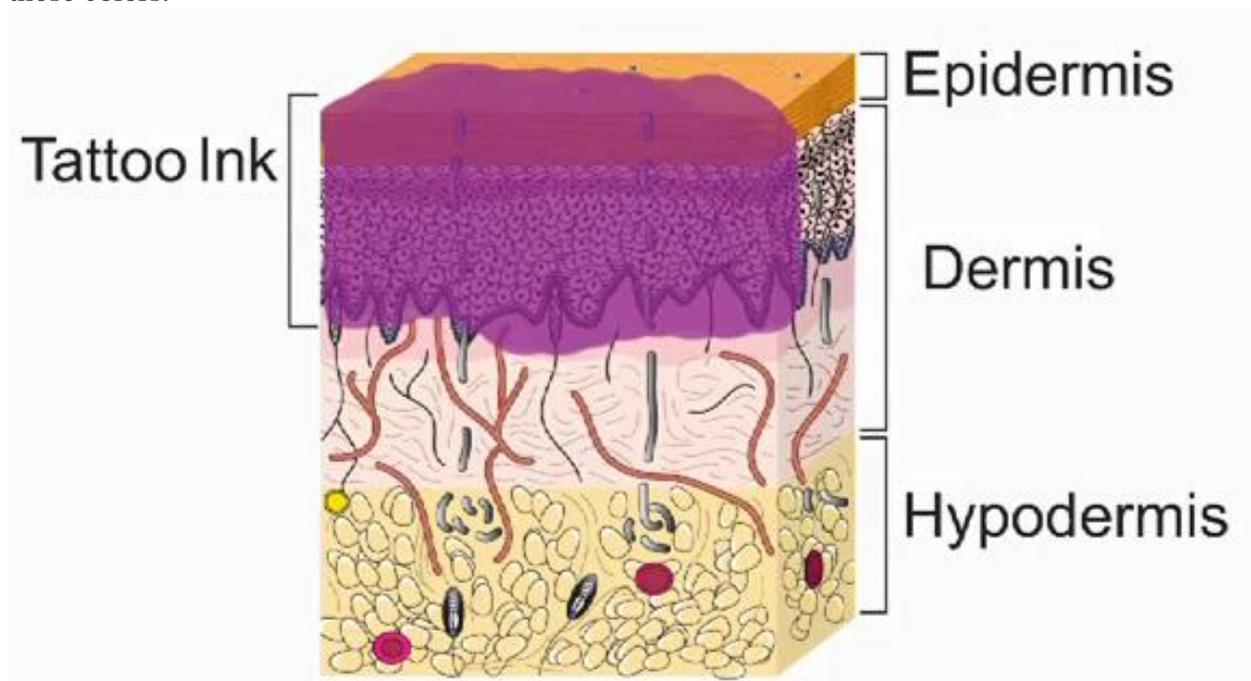


## HOW DOES LASER TATTOO REMOVAL WORK?

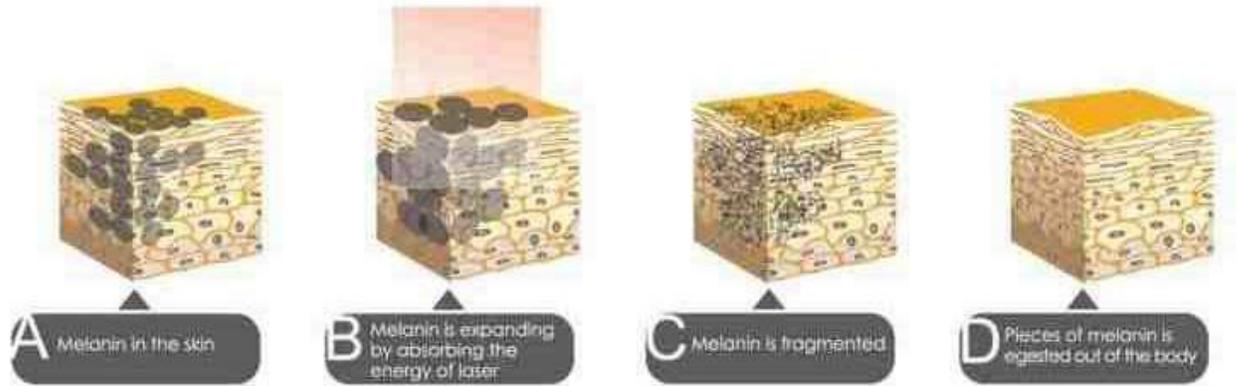
Unlike what some people imagine with laser tattoo removals and the myth of the skin being burned, it is actually a simple process of the laser making short pulses of intense light which passes through the top layers of the skin. This passing is basically absorbed by the tattoo pigments. The energy fragments the pigments into small pieces, which are later, naturally removed by the body's immune system. Intense research in laser tattoo removing has been done to find the ideal frequency to remove the skin's pigments, so that the original pigment of the skin will remain unaffected.

Usually the black pigments within the tattoo are removed first because black is a color that tends to absorb all types of laser wavelengths. The other colors only absorb a certain type of wavelengths, and thus, specific types of wavelength must be input to get rid of those colors.



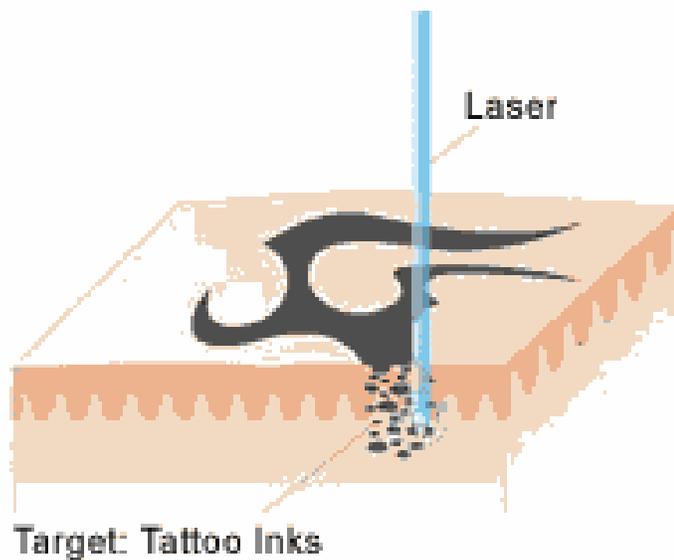
## HOW DO LASERS REMOVE TATTOOS?

Lasers work by producing short pulses of intense light that pass harmlessly through the top layers of the skin to be selectively absorbed by the tattoo pigment. This laser energy causes the tattoo pigment to fragment into smaller particles that are then removed by the body's immune system.



#### How does laser tattoo removal work

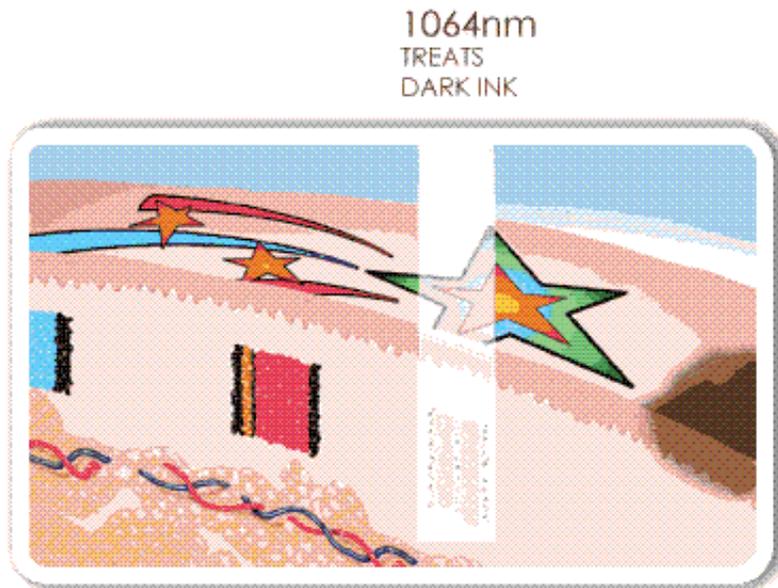
Researchers have determined which wavelengths of light to use and how to deliver the laser's output to best remove tattoo ink. (If you're wondering if the laser might also remove normal skin pigment, don't worry. The laser selectively targets the pigment of the tattoo without damaging the surrounding skin.)



## EFFECTS OF LASER TATTOO REMOVING

The downside with tattoos is that it hurts when you're getting them and when you're removing them. According to numerous testimonials, using the laser to remove tattoos feels similar to getting hot drops of bacon grease on your skin or getting a snap by a thin rubber band.

Also, as with all laser surgeries, a laser tattoo removal can also result in hyper pigmentation, which is when the skin gets darker. On the other hand, equally, hypo pigmentation, when the skin gets whiter, can also occur. Not to forget, infections, an incomplete removal of the pigments, and even possibly permanent scars are always possible.



## WHAT METHODS ARE USED FOR TATTOO REMOVAL?

Before lasers became popular for tattoo removal starting in the late 1980s, removal involved the use of one or more of these often-painful, often scar-inducing surgeries:

- **Dermabrasion**, where skin is "sanded" to remove the surface and middle layers;
- **Cryosurgery**, where the area is frozen prior to its removal;
- **Excision**, where the dermatologic surgeon removes the tattoo with a scalpel and closes the wound with stitches (In some cases involving large tattoos, a skin graft from another part of the body may be necessary.).

Although the procedures above are still used in certain cases today, **lasers (Light Amplification by the Stimulated Emission of Radiation)** have become the standard treatment for tattoo removal because they offer a bloodless, low risk, effective alternative with minimal side effects. Each procedure is done on an outpatient basis in a single or series of visits. Patients may or may not require topical or local anesthesia.

As early as the 1960s, lasers had been developed for industrial uses. When researchers developed lasers that emitted wavelengths of light in short flashes called pulses, medical use became viable. These lasers can effectively remove tattoos with a low risk of

scarring, according to the American Academy of Dermatology . The type of laser used to remove a tattoo depends on the tattoo's pigment colors. (Yellow and green are the hardest colors to remove; blue and black are the easiest.)The three lasers developed specifically for use in tattoo removal use a technique known as **Q-switching**, which refers to the laser's short, high-energy pulses:

- **the Q-switched Ruby,**
- **the Q-switched Alexandrite,**
- **the Q-switched Nd: YAG,** the newest system in this class of lasers and particularly advanced in the removal of red, blue and black inks

## FACTORS THAT CONTRIBUTE TO A SUCCESSFUL REMOVAL

- Skin type
- Colors in the tattoo
- Age of the tattoo
- Type of ink used
- Depth of the ink (heavy or light handed)
- Location on the body
- How well body heals/immune system
- Professional or homemade tattoo
- Cover up/ touch up/ or a blow out



## BEFORE AND AFTER PICTURES



REMOVED IN **3** LASER  
TREATMENTS



REMOVED IN **4**  
LASER  
TREATMENTS



## BEFORE AND AFTER PICTURES



3 LASER  
TREATMENTS



1 TREATMENT

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