

## O20. BASIC PRINCIPLES OF LASER TATTOO REMOVAL

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In the western world millions of people have many and large tattoos. Social stigmatization is still a major reason for removing tattoos from skin. A nation-wide survey in German speaking countries showed that about 5 % of tattooed people seek for tattoo removal, which is equivalent to half a million people in Germany.

When following the rules of selective photothermolysis, the laser treatment should not induce persistent side effects for the skin. The treatment of tattoos containing black ink often gives excellent results, whereas the results are not predictable and usually worse for coloured tattoos. The efficacy of that treatment seems to be correlated to both the chemical structure of the tattooed compounds and the laser wavelength used. Another important laser parameter is the pulse duration. Since the size of pigment particles in skin is rather small, it is mandatory to apply laser pulses with high intensities and pulse duration in the nanosecond or picosecond range. It is still controversially discussed whether picoseconds are really superior to nanoseconds regarding efficacy and application for different tattoo colours.

The use of millisecond pulses of lasers or intense pulsed light sources (IPL) provides low efficacy and a high risk of scarring. Another risk might occur due to chemical alterations of the tattoo pigments, which consist either of carbon black or azo pigments.

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