Direct therapeutic plasma applications as the central element of plasma medicine will bring physical plasmas directly on or in the human (or animal) body. The basis for these treatments are plasma sources: plasma generating devices, developed to be applied in medical practices and hospitals.

Plasma is a (partially) ionized gas, which shows, as a gas with electroconductibility, a variety of interesting attributes. Next to very hot plasma in the sun or stars, a cold, low- or atmospheric pressure plasma can be generated artificially. This kind of plasma is used in plasma medicine.

Multidisciplinary research cooperation among plasma scientists and engineers on the one side, and life scientists and clinicians on the other is one of the main characteristics of the Plasma-Med. Standardized criteria according to which atmospheric-pressure plasma sources can be assessed as to their suitability for medical applications are needed to transfer interdisciplinatory results from plasma medical research into rules and standards to guarantee the successful and safe practical application including its economic exploitation.

The general aim of plasma medicine is to introduce plasma physics into clinical practice. Plasma medicine can be subdivided into three main fields: plasma-based bio-decontamination/sterilization, plasma-assisted modification of bio-relevant surfaces, and direct therapeutic plasma application.

Modern plasma sources are artificially generated and at room temperature and pressure, which is indispensable for applications on living tissue. Central to all medical applications are the antimicrobial as well as surface altering effects of plasma. These characteristics make it very attractive for medical purposes. In addition to wound healing, dentistry and dermatology, researchers also examine now the effects of plasma in implant medicine and oncology.

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Plasma in action

- Therapeutic application
- Plasma medicine
- Surface modification
- Biodecontamination