

# Diadynamic currents

Diadynamic currents (DD, two-component) are pulsed sinusoidal currents composed of two components - direct current and alternating current. We classify them among low-frequency currents (up to 1000 Hz). We call the DC component the basis (basis), the alternating dose (dosis). This combination combines the effects of individual current types.

DD currents were discovered in 1929 by the French dentist Bernard, who was looking for the most suitable way to relieve pain.

## Origin and application

Diadynamic currents are created by rectifying alternating current with a rectifier.

DDs have two components. The base ensures a deeper penetration of the current into the tissue and should be applied at a sensitively above-threshold intensity. The dose is a single-phase current with a pulse length of 10 ms.

They apply by applying two surface electrodes. Due to the galvanic component of DD, a possible corrosive effect must be taken into account (mostly during application lasting longer than 6 min). In this case, it is necessary to change the polarity of the electrodes - reverse them. To prevent burns, a special pad soaked in a protective solution is inserted between the electrode itself and the patient's skin.

## Types

**MF** (from French monophasé fixe) - one-way rectified network frequency

- frequency 50 Hz
- the rectifier passes only one half-wave of the input voltage

**DF** (from French diphasé fixe) - two-way rectified network frequency

- frequency 100 Hz
- the rectifier passes both half-waves of the input voltage

**CP** (from French courant modulé en courtes périodes) - alternating MF and DF in a short period

- rhythmic alternation of MF and DF at regular second intervals

**LP** (from French courant modulé en longues périodes) - alternating MF and DF in a long period

- slow rhythmic alternation of MF and DF with a slow gradual rise of one wave and its subsequent retreat

## Effects

The effects of diadynamic currents depend primarily on the set intensity, which is adjusted according to the patient's feelings, then on the duration, frequency, and tissue properties. Collectively, DDs have analgesic (pain dampening) effects. Individual treatment results then depend on the type of DD used.

Diadynamic currents are used to relieve pain, increase blood circulation and relax muscles. This method is therefore often used in the treatment of post-traumatic conditions, disorders of the locomotor system swelling, blood sprains, degenerative joint diseases and impaired blood supply to the limbs (ischemic disease of the lower limbs).

## Links

### Related articles

- Electrotherapy
- Electrostimulation
- Electrostimulation methods

### Used literature

- NAVRÁTIL, Leoš a Jozef ROSINA. *Medicínská biofyzika*. Praha: Grada, 2005. ISBN 80-247-1152-4.
- BENEŠ, Jiří, et al. *Základy lékařské biofyziky*. 3. edition. Praha : Karolinum, 2011. 0 pp. ISBN 978-80-246-2034-3.
- Návod na praktickou úlohu - Elektrodiagnostika a elektroléčba (<http://biof.lf1.cuni.cz/vyuka.html>)

