Magnetotherapy Vet

Qs Magnetotherapy

ASA LASER VETERINARY

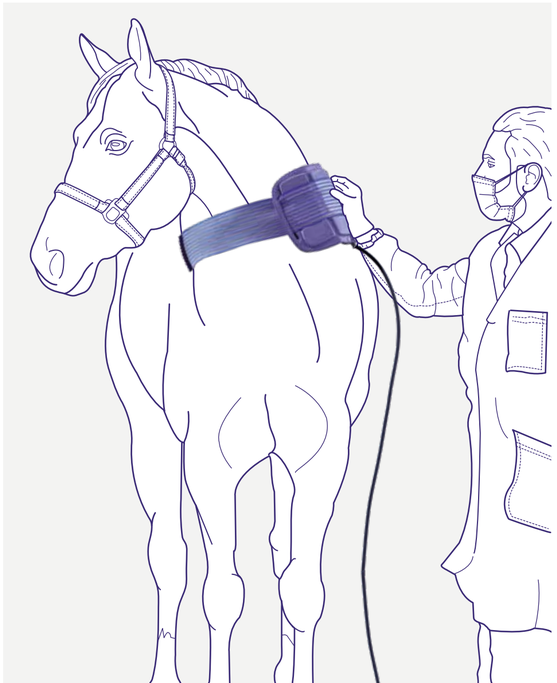
Research and Therapeutic Solutions

ASA Magnetotherapy for veterinary applications

The functioning of ASA Magnetotherapy devices, based on the scientific principles of ELF (Extremely Low Frequency 1–100 Hz) pulsed magnetic fields, is characterized by low frequency and low intensity.

The mode of action by which the pulsed electromagnetic fields promote biological effects in the fields of bone union delays and defects is mediated by intracellular Calcium (Ca2+) concentration, in relation to the plasmatic membrane potential and the corresponding ionic currents.

ASA MAGNETOTHERAPY CAN BE APPLIED IN THE VETERINARY FIELD TO TREAT ORTHOPAEDIC AND NEUROLOGICAL DISORDERS, EDEMAS AND TISSUE LESIONS.



Magnetic fields are commonly present in nature.
For instance, in living subjects everything is moving, and changes in magnetic fields are associated to changes in electric fields. Electromagnetic fields can have a significant impact on matter, related to:

MAGNETO-ELECTRIC effect, induces ion movement, creating ion currents. Specifically, the modulation of ionic currents through cell membranes is biologically important, promoting:

- Variations in intracellular calcium concentrations
- Changes in Na+ and K+ intracellular levels
- Mitochondrial metabolism

MAGNETO-MECHANIC effect, which is related to molecule orientation and translation. The application of mechanical stress induces magnetization changes.
Biologically, it affects biological reactions where specific spatial orientations are needed.

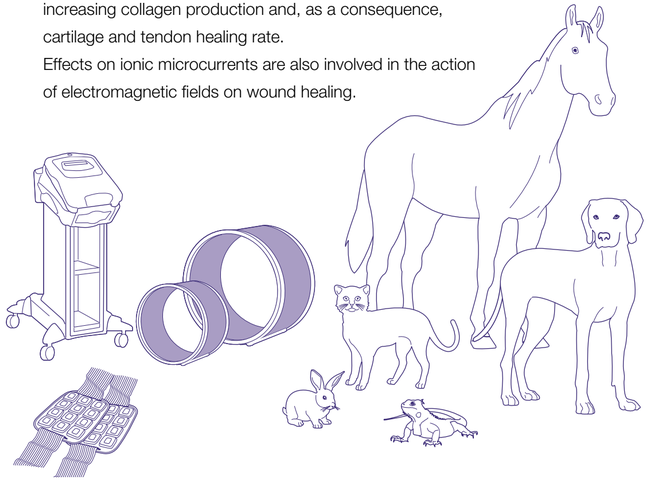
Biological effects of magnetic fields

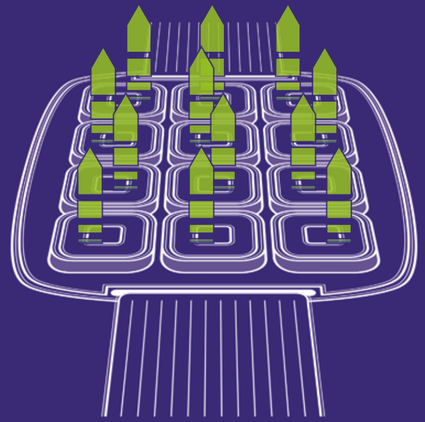
Extremely low-frequency electromagnetic fields:

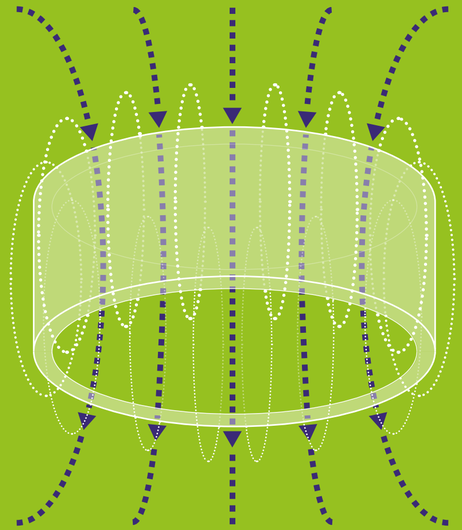
- Cause various biological effects by altering intracellular ion homeostasis (notably, that of calcium) that can affect many biological processes such as the release of neurotransmitters. More specifically, electromagnetic fields have an anti-inflammatory effect on tissue repair, acting on the release of mediators that drive the transition from a chronic pro-inflammatory to an anti-inflammatory state of the healing process.

- Produce charge displacement, moving ions between cells, therefore inducing the piezoelectric effect, which is fundamental in bone regeneration processes. Based on this effect on bone, magnetotherapy can be applied for accelerating the healing of delayed union /non-union fractures and to relieve pain and limit bone loss in osteoporosis.

- Are able to stimulate microcurrents in cartilage and tendons, increasing collagen production and, as a consequence, cartilage and tendon healing rate. Effects on ionic microcurrents are also involved in the action of electromagnetic fields on wound healing.







Magnetotherapy

Examples of Application

Fractures and delays in consolidation

Muscle tears

Edemas

Wounds and Ulcers

Contusions

Osteoarthritis and Arthritis

Peripheral nerves lesions

Sprains

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Tissue-specific Actions

OSTEOARTICULAR LEVEL

Magnetotherapy has a chondroprotective effect on articular cartilage by:

- Increasing TGFβ level
- Decreasing osteoarthritis immunoreactivity

Magnetotherapy promotes bone fracture union by:

- Modulating intracellular calcium and bone matrix mineralization
- Enhancing osteoblastic differentiation and activity
- Increasing some enzymes, such as Alkaline Phosphatase, and growth factors

VASCULAR & TISSUE REPAIR LEVEL

Magnetotherapy induces hemodynamic effects by:

- Increasing microcirculation
- Increasing pro-angiogenic factor release

Magnetotherapy modulates inflammatory processes by:

- Modulating chemokines production

NEUROMUSCULAR LEVEL

Magnetotherapy favours nerves regeneration by:

- Increasing neurotrophic factors
- Modulating apoptosis of nerve cells

Magnetotherapy favours muscle healing by:

- Remodelling the cytoskeleton of muscle cells
- Contributing to myogenesis process regulation

Magnetotherapy mitigates chronic generalized pain by:

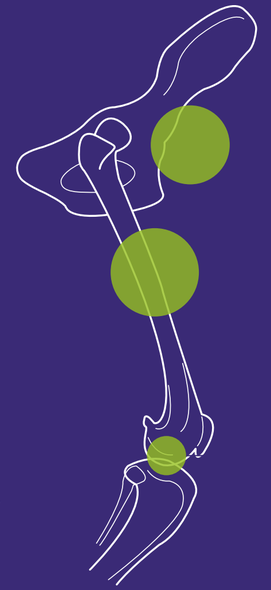
- Having a positive effect on fatigue and function

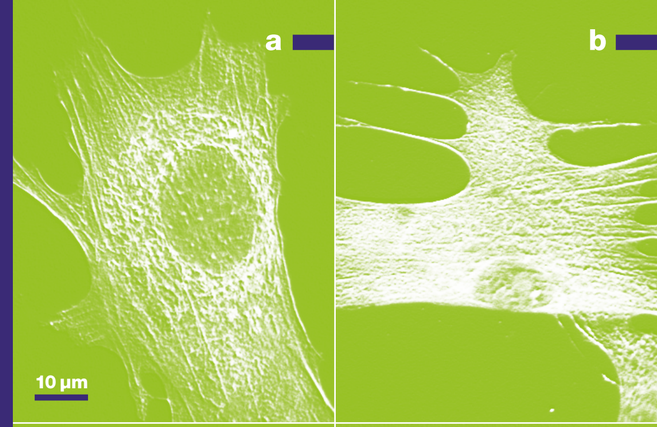
P 9 ▶ a-b-c-d

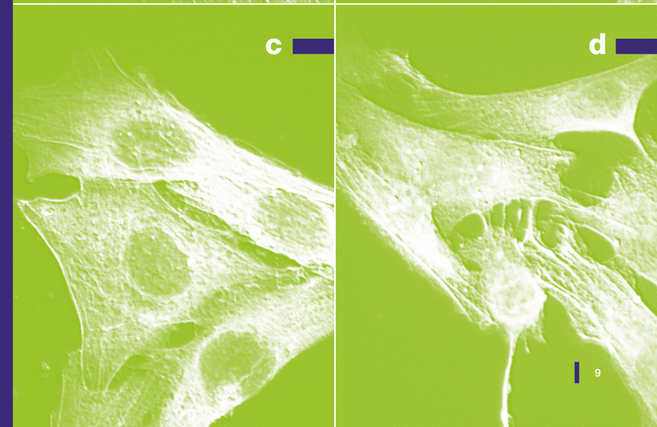
Immunofluorescence microscopy images of nerve cells exposed to EMFs.
A higher tendency to form branching fibres is observed in treated samples (b,d) compared to controls (a, c).

Advantages

- Action even on deep tissues
- Well-tolerated
- Non-invasive
- Painless
- Direct action on the whole body
- Can be used as stand-alone therapy or in combination with other therapies







Easy Qs Vet
The portable solution

Easy Qs Vet is ideal for the specific treatment of localized areas thanks to the Flexa Vet applicators. Easy Qs Vet offers pre-set treatment programs, giving the operator the possibility to customize the emission parameters based on the type of animal, the pathology and the clinical phase.

Flexa Vet applicators can be applied over the area that needs to be treated, like over the fracture.
The animal can also be seated over a cover and the applicators can be located below it.

TECHNICAL CHARACTERISTICS
- 1 channel with 2 outputs for connecting the Flexa Vet applicators
- Frequency from 0.5 to 100 Hz
- Magnetic field intensity variable from 5 to 100%
- Treatment time from 1 to 99 min or continuous
- Pre-set, adjustable, saveable programs
- Backlit LCD
- Membrane keyboard

ALARMS AND SAFETY
- Therapy start and therapy end acoustic signal
- Language option
- Machine status signals and alarms

INCLUDED ACCESSORIES
- 2 Flexa Vet applicators
- Carry case

SIZE AND WEIGHT
- Generator
  28 x 38 x 13 (W x D x H) cm - 3 kg
- Flexa Vet Applicator
  36 x 21 x 2 cm (W x D x H) cm - 1,2 kg

POWER SUPPLY
- 100/240V±10% 50/60Hz 45-175VA

OPTIONAL ACCESSORIES
- Unit carrying trolley
  Dimensions and weight:
  63 x 54 x 85 (W x D x H) cm - 17 kg

PMT Qs Vet
The most complete and customizable version

PMT Qs Vet inherits the features of Easy Qs Vet and broadens its applications: thanks to independent channels it allows the use of portable solenoids to treat the patients.

The device relies on the PMT generator and the customer decides what's the most suitable applicator to pick.

TECHNICAL CHARACTERISTICS
- 3 completely independent channels
- 4 outputs
- Frequency from 0.5 to 100 Hz
- Magnetic field intensity variable from 5 to 100%
- Treatment time from 1 to 99 min or continuous
- Pre-set, adjustable, saveable programmes
- Backlit LCD
- Membrane keyboard

ALARMS AND SAFETY FEATURES
- Therapy start and therapy end acoustic signal
- Language option
- Machine status signals and alarms

INCLUDED ACCESSORIES
- Carry case

SIZE AND WEIGHT
- Generator
  Dimensions and weight:
  28 x 38 x 13 cm (W x D x H) - 3 kg

POWER SUPPLY
- 100/240V±10% 50/60Hz 60-270VA

OPTIONAL ACCESSORIES
- Flexa Vet Applicator (# *C9113*)
  Dimensions and weight:
  36 x 21 x 2 cm (W x D x H) cm - 1,2 kg
- Portable solenoid Ø 30 cm (# *C9114*)
  Dimensions and weight:
  depth 21 cm (W x D x H) 6,5 Kg
- Portable solenoid Ø 50 cm (# *C9115*)
  Dimensions and weight:
  depth 34 cm (W x D x H) 11,5 Kg
- Unit carrying trolley (# *C7B00*)
  Dimension and weight:
  63 x 54 x 85 cm (W x D x H) 17 kg

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