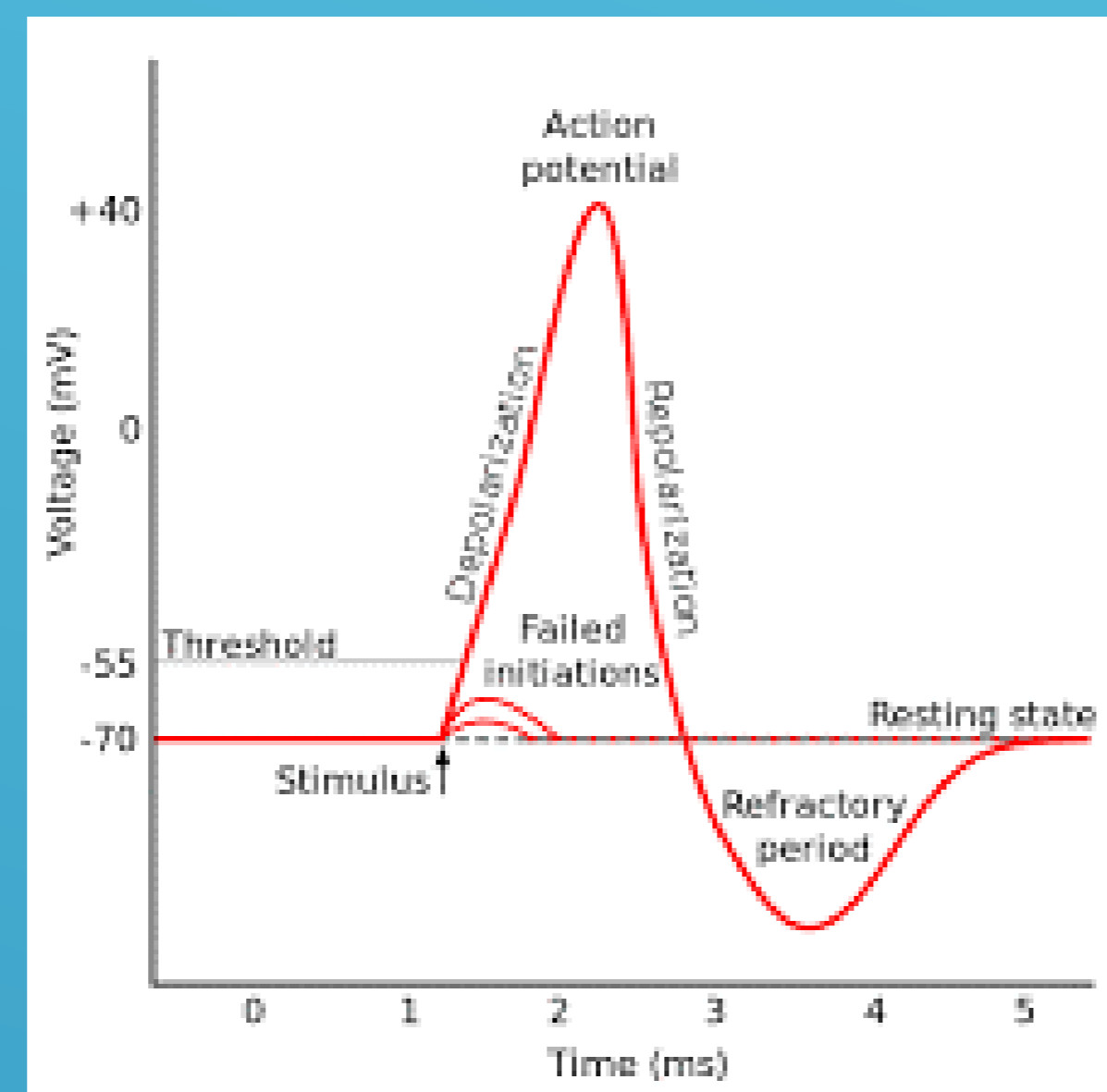


MAGNETOTRANSDUCTION

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Introduction

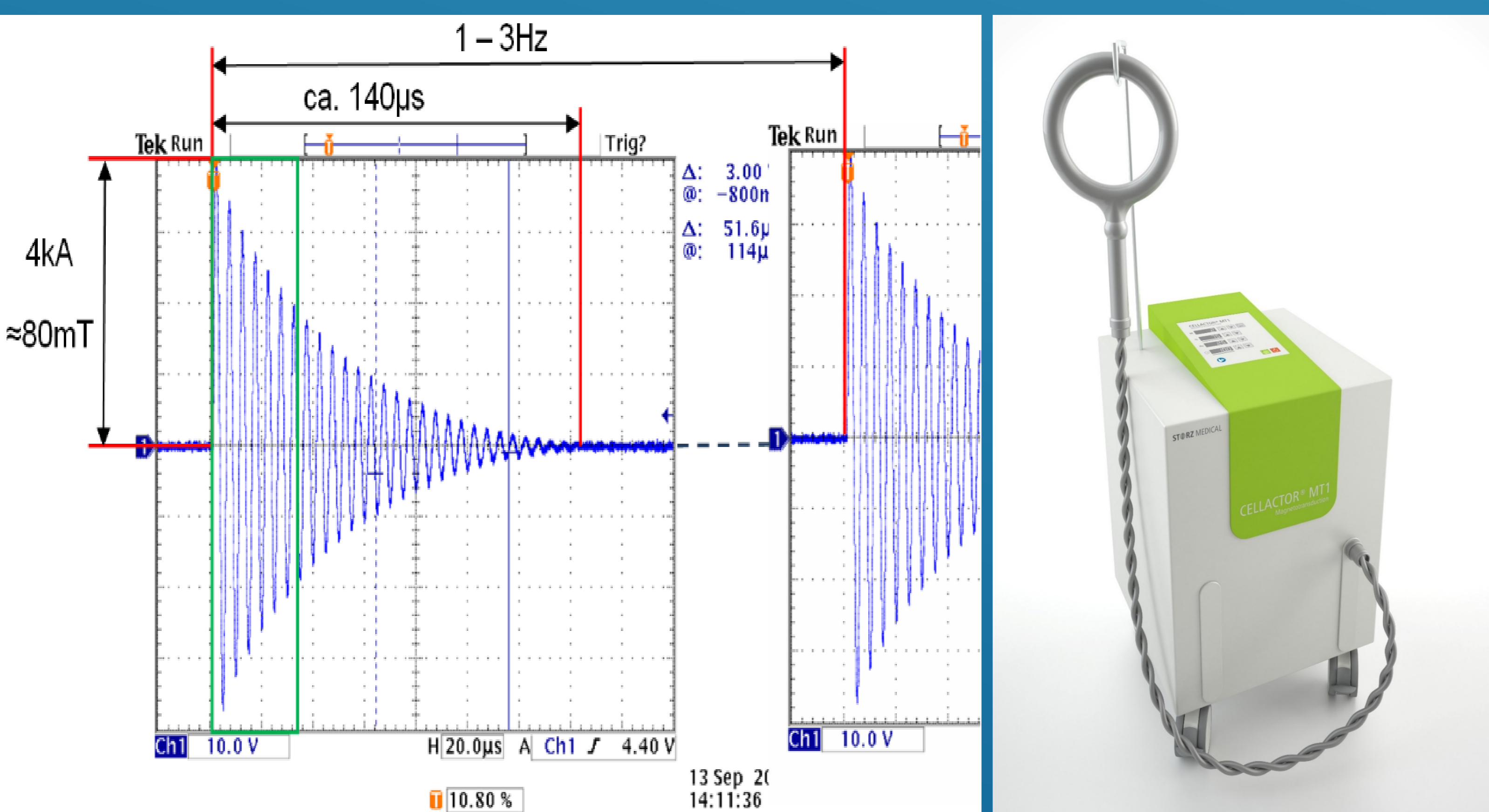
- Neural activity depends on electromagnetic fields
- Action potentials propagate along the nerve fibres
- Proteins, molecules and atoms in the body react to the electromagnetic field
 - Vision (eye)
 - Photosynthesis (plants)
 - Navigation (animals)



- Stimulation of nerves and muscles with electric current
 - Pain treatment
 - Muscle training
 - Heart defibrillation and triggering
- (Electro)Magnetic stimulation without electrodes
 - Electromagnetic field generate currents in the body by induction
 - Pelvic muscle stimulation
 - Molecular stimulation (radical pairs effects)

Method

- High frequency magnetic stimulation with CELLACTOR MT one
- High Resonance frequency compared to other devices
- Stimulation at cell and molecular level
- Treatment with 8 weekly sessions, each 15 minutes with 80mT magnetic field intensity and repetition rate of 3Hz
- This corresponds to 110'000 high frequency pulses within the therapeutical window per session



References

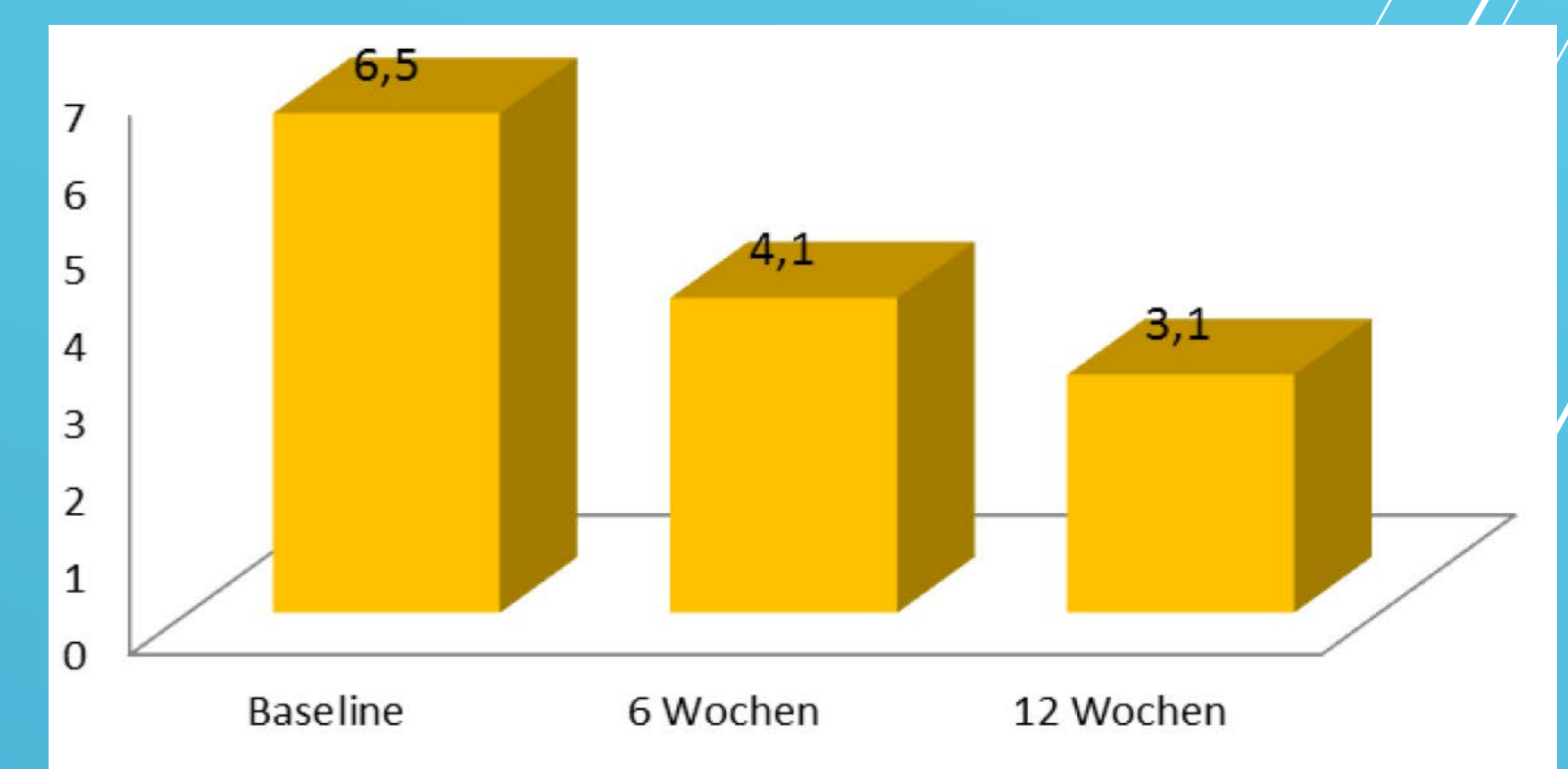
- Woodward JR et al: Time-resolved studies of radical pairs. Biochem Soc Trans 2009(37)
- Sun LY et al: Effect of Pulsed Electromagnetic fields on the proliferation and differentiation Potential of Human Bone Marrow Mesenchymal Stem Cells. Bioelectromagnetics 2009 (30)

Results

Pilot study results at University of Kiel by Prof. Gerdesmeyer. Selected indications:

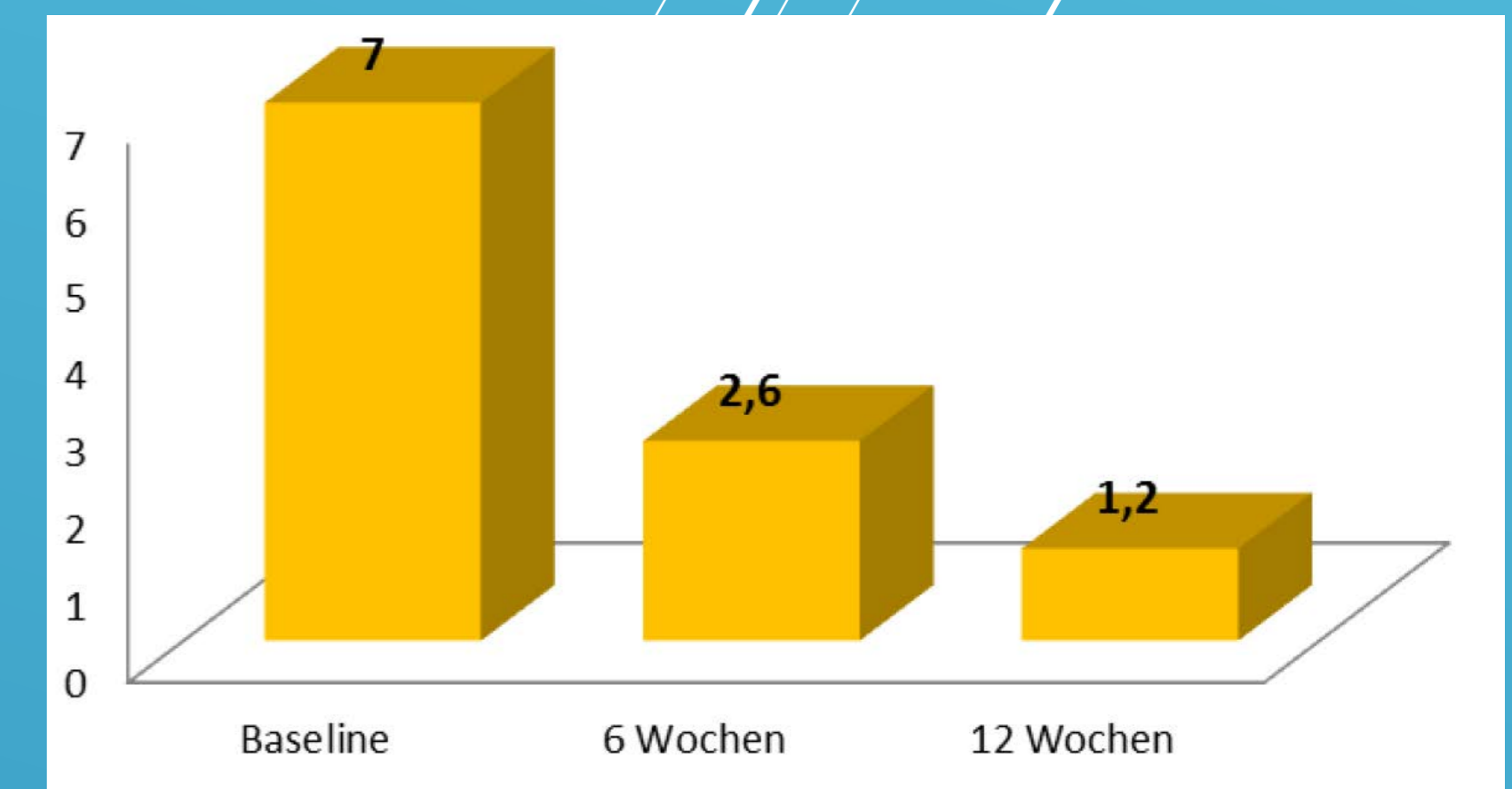
VAS score result – Gonarthrosis

The pain sensation, measured on the Visual Analogue Scale, improved from initially 6.5 points to 4.1 points after 6 weeks and to 3.1 points after 12 weeks. This corresponds to an improvement of 52.3%.



VAS score result – Shoulder impingement

The pain sensation, measured on the Visual Analogue Scale, improved from initially 7 points to 2.6 points after 6 weeks and to 1.2 points after 12 weeks. This corresponds to an improvement of 82%.



Randomized clinical trials successfully completed to be published soon.

Discussion

Mechanotransduction

Tissue stimulation with mechanical waves

- Radial pressure (shock) waves: low frequency
- Focused shock waves: high frequency

Magnetotransduction

Tissue stimulation with (electro)magnetic waves

- Low frequency
- High frequency

Extracorporeal magneto-transduction treatment effects

- Release of action potentials
- Effect on the cell membranes
- Positive cell modulation
- Normalisation of the membrane potential
- Cell membrane permeability
- Increased metabolism
- Effect on paramagnetic proteins, radical pairs