



MULTIPAD Research Kit

The optimal positioning- and immobilisation kit for your studies using MR-Imaging

The variety of topics and questions that are being evaluated using MRI-studies is huge and requires specifically defined research methods. A particular selection of patient profiles and additional research equipment often lead to enormous challenges with regards to the positioning and fixation of patients. The MULTIPAD Research Kit allows to adapt the patient positioning and fixation to the particular research setup and the comfortable but yet stable immobilization leads to high-quality and comparable study results.

Always the best fit for your Research-Setup



Components

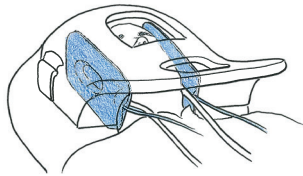
MULTIPAD Bendy
MULTIPAD Ear
MULTIPAD Slim
Cover MULTIPAD
Handpump with gauge
Connectors, tubes and hose clamps

The Benefits

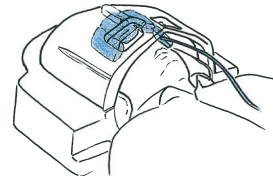
- Almost full suppression of predominant movement in all three planes.
- Adapt the patient positioning and fixation to the particular research setup.
- Compatible with all common research-coils (32/64ch).
- Compatible with tools for functional imaging often used in research, like specialized audiosystems or fMRI-Equipment.
- Easy and intuitive to use

Partner

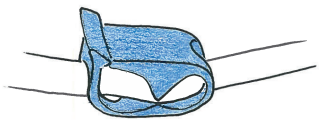
Usage examples



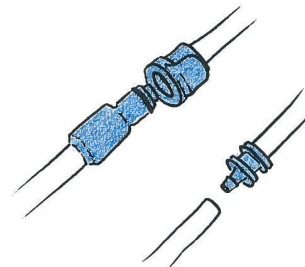
Place MULTIPAD Slim or Ear lateral over the Ears for a comfortable immobilization in x/y-plane.



Place MULTIPAD Bendy across the forehead or under the neck for a comfortable immobilization in y/z-plane.



Close the hose clamp to control and fill the air chambers separately.



Use connectors to extend the tubes length or to combine different MULTIPADs.

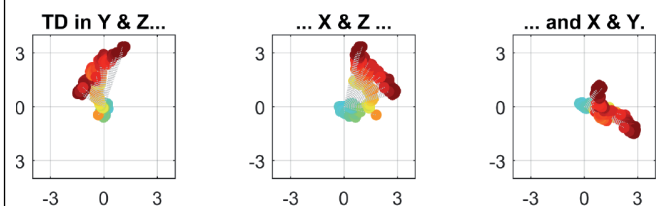
Head immobilization during vestibular fMRI

Prof. Peter zu Eulenburg at the Ludwig Maximilian University in Munich, studied the impact of two different positioning aids on the potential to minimize motion artifacts during fMRI examinations. For this the Pearltec positioning system was compared with conventional foam cushioning to immobilize the head during fMRI with galvanic vestibular stimulation.

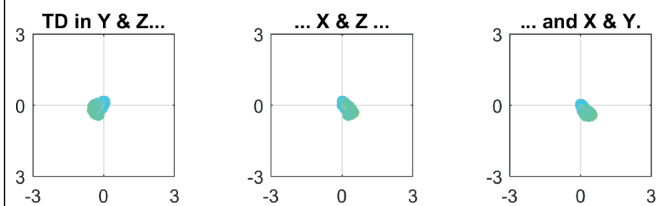
It was found that immobilization using the Pearltec positioning system resulted in significantly better image quality and improved signal exploitation.

The dominant movement could be almost fully suppressed in the three planes, which led to a better resolution in the measurement of brain activity. In particular, artifacts induced by movement responses to artificial stimulation could be suppressed, which significantly improved the fMRI signal.

Movement profile for conventional foam



Movement profile for Pearltec positioning system



Spatial resolution improved from 5.6 mm to 4.9 mm and the average positional shift from one image to the next decreased by almost 40% from 0.17 to 0.105 mm.