magstim EGI

A trusted solution for infant and pediatric research

Whole head sensor nets for High Density EEG across all ages and populations

Higher channel counts
are essential for pediatric EEG[1,2]

It is well established that pediatric brain activity has more variation than that of adults'. Recently, numerous studies have shown that increasing the number and distribution of recording electrodes leads to systematic improvements in EEG-based measures. By achieving these higher standards in reliability and repeatability, Magstim EGI HD EEG opens the door for new opportunities to develop translational pediatric biomarkers.

Magstim EGI's HD EEG platform offers clear advantages across applications:

Language, cognition, and learning

Capture a more complete picture of language and cognition with increased sensitivity to changes over time.

Hyperscanning

Study neural synchronies between parents and children with simultaneous acquisition of multiple HD EEG systems.

Developmental disorders

Identify EEG signatures associated with typical and disordered development more accurately.[3]

Visual and auditory perception

Better characterize sensory integration and perception using high density, whole head coverage.

Pediatric neuromodulation

Modulate brain activity with a Geodesic Transcranial Electrical Neuromodulation (GTEN)* upgrade.

Neonatal HD EEG

Quickly and easily record neonatal brain activity with a system optimized for early-life care environments.

... and the list of applications continues to grow

*Geodesic Transcranial Electrical Neuromodulation (GTEN) System is not intended for use in diagnosis or treatment of any disease or condition. It is a scientific research instrument designed for performing measurements and acquiring data for neurophysiological research. Magstim EGI makes no representation of the suitability of the instrument for any particular research study.

Participants prefer
the Geodesic Sensor Net[3]

"An ingenious way to apply the large number of electrode in minutes.

The application is painless, reduces patient anxiety about the experience, and thereby increases compliance."

The Center for Neurological and Neurodevelopmental Health (CNNH)

Overcome data quality and compliance challenges

The unique design of the Geodesic Sensor Net provides whole-head HD EEG coverage in a flexible, soft interface that applies quickly and easily.

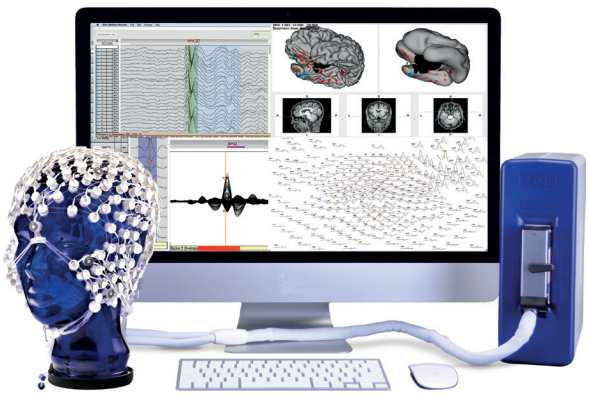
- Apply all sensors simultaneously in just a few minutes, delivering consistently high quality signals
- Net sizes to fit neonates through adults
- Saline nets allowing ease-of-use and comfort for even developmentally challenged and low-compliance populations
- No scalp abrasion, glue, or sedation required

Well tolerated with over:

96%

compliance on the first attempt with 2000 Autism Spectrum Disorder patients, ADHD and other developmental disorders[3,4]

Designed to empower pediatric research: Geodesic EEG System 400



Geodesic EEG System 400

Prominent researchers worldwide have published thousands of peer-reviewed articles using the Magstim EGI HD EEG platform across a broad range of disciplines.

- Multimodal integrations for presenting stimuli, co-registrations, and synchronous recordings
- Interoperability with multiple open-source platforms including EEGLAB, Fieldtrip, MNE-Python, and Brainstorm
- Support for lab/study design, data analysis, and grant-development available

Achieve new levels of confidence with better sensor coverage, comfort, and compliance

Select the Geodesic Sensor Nets that best suit your application and age range

Head circumference and net size	General age* or head size		Channel counts	Monitoring type
	Male	Female		
28 - 30 cm	Preterm infant small	Preterm infant small	32, 64, and 128	Routine
30 - 32 cm	Preterm infant medium	Preterm infant medium	32, 64, and 128	Routine
32 - 34 cm	Preterm infant large	Preterm infant large	32, 64, and 128	Routine
34 - 36 cm	Neonate	Neonate	32, 64, and 128	Routine
36 - 37 cm	Birth - 2 weeks	Birth - 1 month	32, 64, and 128	Routine
37 - 38 cm	2 weeks - 1 month	1 - 2 months	32, 64, and 128	Routine
38 - 40 cm	1 - 2 months	2 - 3 months	32, 64, and 128	Routine
40 - 42 cm	2 - 3 months	3 - 6 months	32, 64, and 128	Routine
42 - 43 cm	3 - 5 months	6 - 7 months	32, 64, and 128	Routine
43 - 44 cm	5 - 7 months	7 - 9 months	32, 64, and 128	Routine
44 - 47 cm	7 - 15 months	9 - 21 months	32, 64, and 128	Routine
47 - 51 cm	Pediatric small	Pediatric small	32, 64, and 128	Routine and LTM
51 - 54 cm	Pediatric large	Pediatric large	32, 64, 128 and 256	Routine and LTM
54 -64 cm	Adult small	Small, medium, large	32, 64, 128 and 256	Routine and LTM

*The approximate age ranges for U.S. infants are taken from the 50th percentile on the CDC Growth Charts published May 2001.

1. Odabaee M, Freeman WJ, Colditz PB, Ramon C, Vanhatalo S. 2013. Spatial patterning of the neonatal EEG suggests a need for a high number of electrodes. Neuroimage. 68:229–235.

2. Tokariev, Anton et al. "Analysis of infant cortical synchrony is constrained by the number of recording electrodes and the recording montage." Clinical Neurophysiology 127 (2016): 310-323.

3. Szklarski L., Mintz M., Catterall K. (2016, August). High Density Electroencephalography (HD-EEG) and Desensitization Techniques Improve Compliance Without Sedation or Restraint for Children and Adults with Behavioral Challenges. Poster session presented at the ASET Annual Conference, Pittsburgh, PA.

4. J. McPartland1, S. J. Webb2, F. Shic3, A. Naples1, (2018, May). The Autism Biomarkers Consortium for Clinical Trials: Study Design and Progress to Interim Analysis. presentation at the INSAR, the International Society for Autism Research Annual Conference, Rotterdam, Netherlands.

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