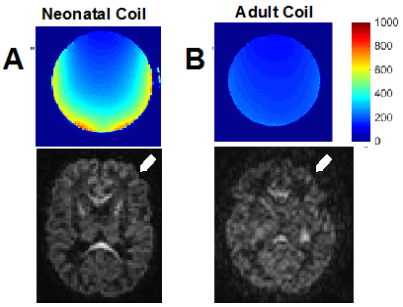
RAPID Biomedical

MR Coils - Made to Measure

Connectome Neonatal System *

MR Coils Made-to-Measure

Neonatal brain MRI is increasingly undertaken both for clinical care and research with the main focus on enhanced care for fragile babies during scanning and optimized imaging performance.
The Connectome Neonatal System was developed as a joint project by Jo Hajnal, Centre for the Developing Brain & Department of Biomedical Engineering, St. Thomas Hospital, KCL London, U.K. and RAPID Biomedical to consistently gain high image quality when examining babies. This system is being used for the European Research Council funded "Developing Human Connectome Project" (319456).



SNR phantom maps of a coronal slice (upper row) and transverse in vivo images
Image Courtesy: Emer Hughes, KCL London, U.K.

- dedicated for examining babies up to 44 weeks gestational age at time of scan
- rigid but light shell with positioning holes to prepare the baby
- support frame to slide the head coil over the baby and shell
- close fitting 32-channel multi-coil receiver array
- three immobilisation cushions (Pearltec AG) that conform to the shape of the baby's head
- baby transport trolley
- accoustic hood to protect baby from noise

1 frame with coil
2 transport trolley with shell
3 shell outside coil
4 shell with mounted coil
5 acoustic hood
Pictures 1 – 5 with courtesy of Jo Hajnal Centre for the Developing Brain & Department of Biomedical Engineering, St. Thomas Hospital, KCL London, U.K.

Specifications

approvals	Medical Device Class IIa, CE according to Council Directive 93/42/EEC
B_0-field strength	3 T
housing dimensions of the coil	outer diameter coil 200 mm, inner diameter shell 130/152 mm housing length coil ca. 250 mm (shell ca. 690 mm, frame ca. 1154 mm)
weight	coil ca. 5.2 kg + shell ca. 2.7 kg

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