

Embrace® Neonatal MRI System*

A new approach to MRI in the NICU



Dedicated MRI system for head imaging of neonates, installed in the neonatal intensive care unit, at the point of care.

Aspect Imaging's Embrace® Neonatal MRI System provides axial, sagittal, coronal and oblique MR images of the internal structure and function of the infant's head. The system revolutionizes the way neonatologists perceive MRI technology for neonatal intensive care unit (NICU) use.

Main Features

- Simplified MRI Workflow:
 - The infant remains in the NICU, allowing medical staff presence during the scan
 - Prep and scan in less than one hour
 - Quick access to the infant in case of emergency
 - Enables continuous monitoring of the infant's vital parameters during scan in an incubator-like environment
- 5 Gauss line within the magnet covers, NICU equipment can be placed near the system
- Self-shielded, no special room required
- Non-cryogen technology, does not require any cooling system
- Small footprint
- Quiet operation
- Operates in a standard hospital room temperature
- Custom-designed patient bed for infants providing safe, temperature-controlled environment
- Continuous visual contact with the infant during scan via video display system
- PACS/HIS/RIS connectivity, DICOM compatibility

Embrace System Features:

Imaging

- Field of view is an ellipsoid:
120 mm (horizontal) x 130 mm (vertical) x 130 mm (depth)
- Minimum achievable slice thickness 2D: at least 1.5 mm
- In-plane sampling resolution 2D, 3D: 16-512
- The MRI system allows the use of the following sequences:
 - Gradient Echo
 - Spin Echo
 - Fast Spin Echo
 - MPRAGE
 - Diffusion Weighted imaging (DWI) and ADC Maps
 - IRsnap (T1 mapping)
- Minimal imaging voxel size: $0.3 \times 0.3 \times 0.3 \text{ mm}^3$

Magnet

- 1 Tesla permanent magnet, B0 is horizontal
- 5 gauss fringe field line is confined within the system covers
- Bore opening size: 180 mm wide x 260 mm high
- Magnet weight: approx. 5,500 kg
- Peak gradient strength: 150 mT/m
- Minimal gradient field rise time: 300 micro-seconds

Dimensions:

- H: 71.26 in (181 cm)
- W: 57.09 in (145 cm)
- L: 67.32 in (171 cm)

Patient Bed

The patient bed provides a temperature-controlled environment for the infant during preparation and scanning

- Accommodates infants weighing between 1kg to 4.5Kg (maximum head circumference: 38 cm)
- Temperature-controlled environment, heating from ambient temperature to 36.5°C
- Quick and convenient access to the infant during preparation and scanning
- User-friendly operating interface, including a safety-enhanced alert system
- Simple routing of non-metallic tubes from the infant to any medical equipment, including respiratory, monitoring and IV transfusions
- Backup power operation up to 15 minutes
- Dimensions:
H: 47.42 in (120.4 cm), W: 23.86 in (60.6 cm), L: 54.87 in (139.4 cm)



RF coil

- Transmit-Receive head coil designed for infants
- Solenoid design (most compatible with horizontal B0 field)
- RF coil inner diameter: 143 mm

Compatible Monitoring Systems

- MIPM Tesla M3 Patient Monitoring System
- InVivo Expression 3160P MRI Patient Vital Signs Monitor
- Philips Expression MR400 MR Patient Monitor

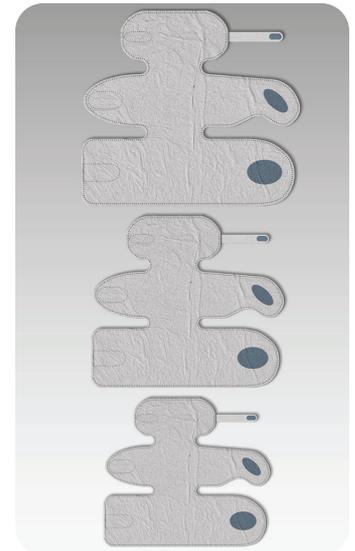
Swaddle

A customized swaddling accessory for:

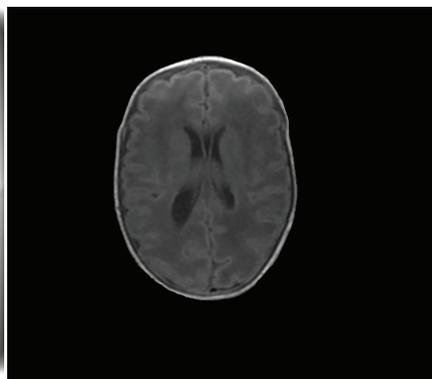
- Minimizing infant movement and maximizing comfort during scan
- Allowing routing of tubing and monitoring leads

Environment

- Operating conditions:
- Operating temperature: Maximum temperature variation of 3°C within the range of 20-30°C
- Humidity: 30-75%
- Minimum room size required is 5.3mX4.2m (22.26 m² / 240 sq. ft) and includes all system components
- Storage conditions: Temperature: 5-50°C, Humidity: 20-80%
- The acoustic noise generated by the Embrace is dramatically lower than that of a full body MRI system (71db(A) peak, 69db(A) rms)
- Acoustic noise level during MRI scan is dramatically lower than that of a full body MRI system (<87 db(A) peak 85 db(A) rms)
- Electrical power required: 200-220 or 220 -240 VAC, 12 A

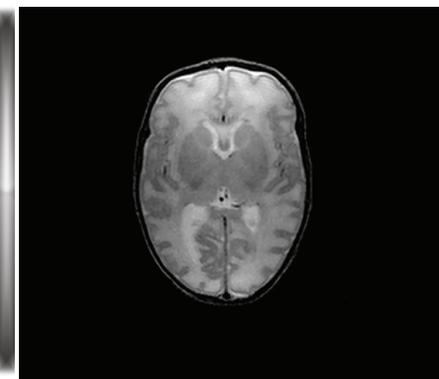


Images of a neonate brain acquired using the Embrace® Neonatal MRI system*



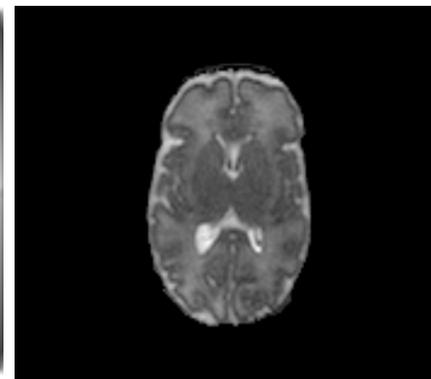
T1W SE

TR/TE = 700/10.2 ms
Slice thickness = 3 mm
Resolution = 0.86x0.86 mm²
Scan duration = 3 min 23 sec



T2W FSE

TR/TE = 5100/47 ms
Slice thickness = 3 mm
Resolution = 0.86x0.86 mm²
Scan duration = 2 min 28 sec



ADC Map

Slice thickness = 3.5 mm
Resolution = 1.5x1.5 mm²
Scan duration = 5 min

* Images courtesy of: Shaare Zedek Medical Center, Jerusalem, Israel

Standard compliance

- Safety:
 - ES/EN/IEC 60601-1
- EMC
 - EN/IEC 60601-1-2
- MR safety
 - EN/IEC 60601-2-33

*FDA 510(k) cleared and CE approved. Not commercially available in all regions.



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Specifications are subject to change without notice.

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