

# **PREPARING CHILDREN FOR MAGNETIC RESONANCE IMAGING**

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## **Purpose**

A recent pilot program at the Royal Children's Hospital in Melbourne, Australia, has extended the practice of preparing children for procedures into the Magnetic Resonance Imaging (MRI) Unit. The requirements of an MRI scan are difficult for many young children who are unable to complete scans due to high levels of anxiety and as a result they would undergo a general anaesthetic (GA). Previously clinical practice at the Royal Children's Hospital meant that all children aged 6 years and below were given a GA for their MRI. The Educational Play Therapy Department in collaboration with the Children's MRI Centre implemented a practice MRI preparation program. Objectives of the intervention include helping the child and their family members understand the MRI environment, gain mastery of the skills required for a successful MRI and manage their medical intervention experience. These objectives are achieved by providing children with adequate information in a safe environment where they may physically experience an MRI without feeling threatened. The intervention is carried out with the child and key family members in the Practice MRI Unit. The intervention is conducted by an Educational Play Therapist (EPT) in liaison with the MRI technicians. Children are encouraged to engage in the session and attempt structured tasks for the purpose of developing new skills. They participate at their own level and are guided to attempt all tasks and achieve requirements as believed necessary to complete a successful MRI. Preliminary data has been collected and analyzed. The data indicates that the guiding philosophy of preparation for procedures results in productive outcomes. The intended outcome of the Practice MRI Program is to enable children to achieve an initially threatening task through understanding and mastery of skills. In addition the cost benefits (reduced number of GA requirements,) have also been significant and has resulted in open discussion regarding additional funding and an extension of the program.

## **Method**

All children aged 4 to 6 years of age and any older child who is referred for a practice MRI were able to be included in the study, which was completed as a clinical audit. Once referred, the EPT then contacted the family to discuss the practice MRI and to gain an insight into issues that the family feel the child may have about the MRI and how the parent feels the child will cope. An appointment was then made for a practice MRI session. The practice MRI intervention involved the child and family member viewing photographs of an MRI in a story book, an opportunity to see a MRI and to develop and / or practice required skills. Children were encouraged to ask questions and assisted in managing issues in a non threatening environment. The intervention was paced to suit the child and delivered at a developmentally appropriate level. When appropriate children were also given the opportunity to view the MRI used for their clinical scan and to meet MRI technicians. Children who were required to have contrast as part of their MRI scan were prepared for such by an EPT. Clinical data collected included date, time of practice and time of clinical scan, length of scan time, type of scan, delays in the scanning process, reason for delays and length of delays and reasons when scans were aborted. Data was entered into epidata and stata which is being used to analyse the data.

## **Results**

The research has over 326 patients on the data base. Age range 3 years 7 months - 27 years. Mean age 7 years 2 months. Complex patients are included in the study - patients who have multiple issues with MRI's, medical interventions, anxiety, or conditions such as ADD, autism, or language disorders. 33% of all MRI's required contrast.

Scans are between 10 – 75 minutes. Most are between 30 – 45 minutes in length. There are still a number of children who are delayed in getting onto the gantry, currently that is 18%, and 39% of those the MRI technician have documented that the reason for the delay is the child's anxiety. Of the children who pass a practice MRI which is 85% and go onto a clinical non GA MRI, 92% are diagnostic.

## **Conclusions**

It is hoped that the therapeutic outcomes of the Practice MRI Program encourage therapists to attempt similar interventions with the intent of impacting other departments within the hospital context to achieve the primary aim of improving the quality of care provided to children and their families.