

A young girl with dark hair, wearing a light blue patterned shirt, is shown in profile, looking intently at a digital display. The display features a cartoon astronaut with a brown helmet and a white suit with orange and green accents, standing on a blue, rocky surface. In the background, there are colorful, stylized structures resembling a space station or alien landscape. The overall scene is dimly lit, with the primary light source being the digital display itself.

PHILIPS

Ambient Experience

Philips Pediatric Coaching solution

Tools to help prepare your youngest patients for an effective MRI exam

Successfully scanning children aged 4+ requires a thoughtful approach

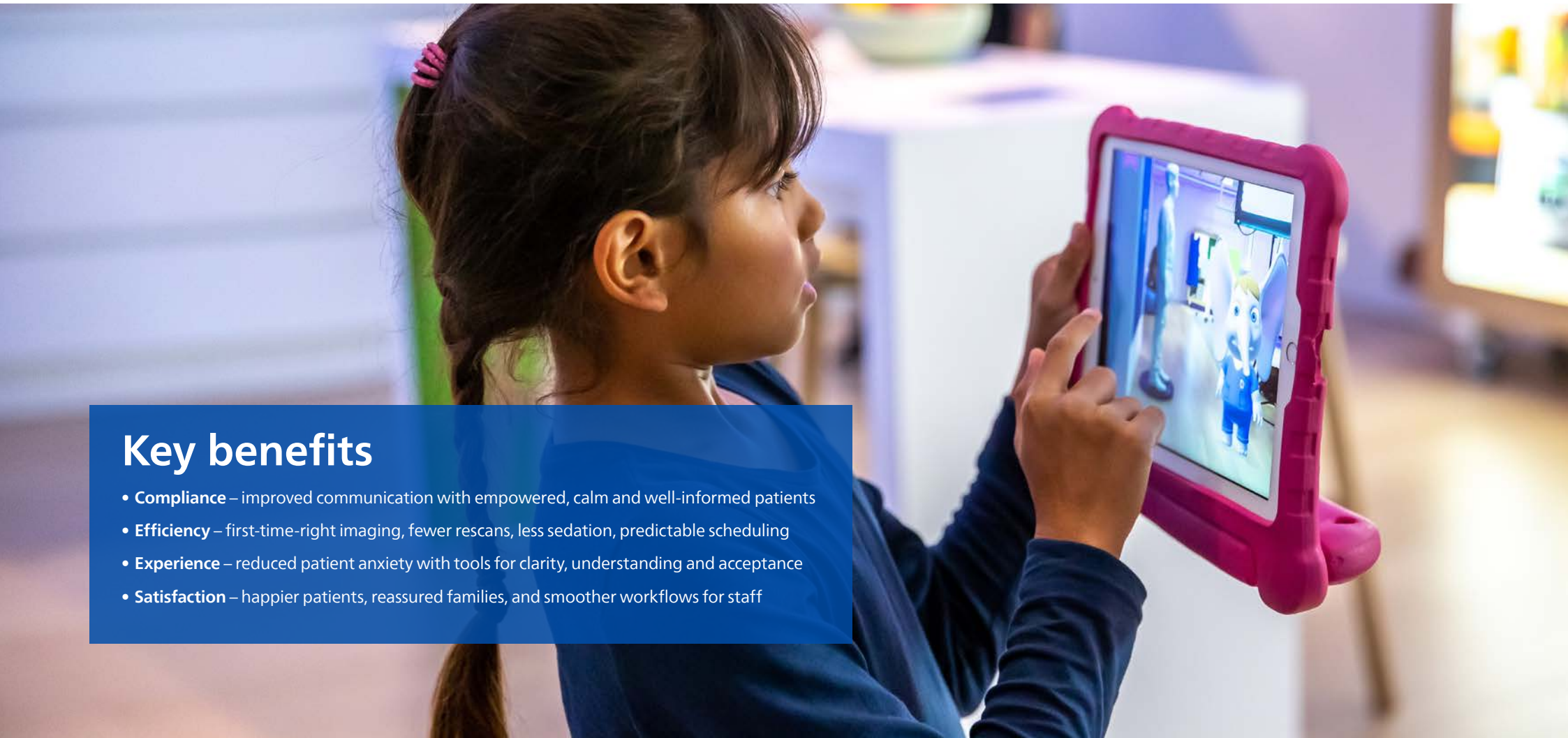
Although the exam may offer physicians conclusive diagnostic results, acquiring the images can be a challenge

To help alleviate issues associated with fear and anxiety, and provide children with a calming environment, Philips offers Pediatric Coaching as part of a broader portfolio of Ambient Experience solutions. Through play-based activities, Pediatric Coaching encourages reduction in the use of general anesthesia, lowers the risk of healthcare-induced trauma, and provides a positive experience to the child and parents.

The solution employs gamification, a buddy system, and augmented reality educational techniques to engage, guide, and empower the child through their MRI scan journey. The experience begins at home, continues to the hospital waiting room, and leads right into the scanner itself.

Key benefits

- **Compliance** – improved communication with empowered, calm and well-informed patients
- **Efficiency** – first-time-right imaging, fewer rescans, less sedation, predictable scheduling
- **Experience** – reduced patient anxiety with tools for clarity, understanding and acceptance
- **Satisfaction** – happier patients, reassured families, and smoother workflows for staff



Appealing to a child's sense of wonder

As young children grow, they process the world around them with a sense of innocence and vulnerability. They are eager to learn and can absorb new concepts quite openly. Yet as with any learning process, it is the way in which the subject is presented that can leave a favorable impression.

That's the idea behind our Pediatric Coaching solution – a carefully considered approach developed using the Familiarize, Inform, and Train (FIT) framework to address relevant learning goals. If we appeal to a child's sense of wonder in the proper way, understanding and acceptance can be gained. By guiding and empowering children, Philips aims to improve the experience

of patients and staff while enhancing workflow efficiency, lowering costs, and increasing patient satisfaction.

Scanning children who remain awake

Scanning children without the use of sedation or general anesthesia has helped hospitals reduce visit duration and costs.^{1,2} While the risks of sedation and general anesthesia are considered to be very low, some studies suggest that there may be small long-term and short-term risks when using anesthesia.¹ The patient and family centered approach provides a way for children to undergo outpatient diagnostic MRI without the need for anesthesia, thus reducing risk, costs, and procedure time.³

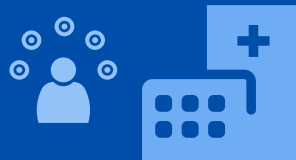
Growing demand for pediatric MRI⁴



MRI is seen as most unnerving and is most searched for exam within imaging⁵



Workflow support and improving patient experience are very important for hospitals^{4,6}



66%

of pediatric patients feel anxious during an MRI scan⁷



Healthcare induced trauma is still an issue in pediatric care⁸



More emphasis on finding alternative to sedation¹



Parents see benefits in non-sedated MRI⁹



1. Artunduaga, et al. (2021). Safety challenges related to the use of sedation and general anesthesia in pediatric patients undergoing magnetic resonance imaging examinations.
2. Vanderby, et al., (2010) Effect of Anesthesia and Sedation on Pediatric MR Imaging Patient Flow.
3. Mastro, et al. (2019), Reducing Anesthesia Use for Pediatric Magnetic resonance Imaging.
4. IMV (2018/2020). 2018/2020 MR Market Outlook Report
5. American College of Radiology, 2016.

6. Wolf et al.(2021). Reexamining "Defining Patient Experience".
7. De Amorim e Silva et al. (2006) Practice MRI: Reducing the need for sedation and general anaesthesia in children undergoing MRI.
8. Lerwick, J. L. (2016). Minimizing pediatric healthcare-induced anxiety and trauma.
9. Walker, et al. (2018). Parent perspectives and preferences for strategies regarding non-sedated MRI scans in a pediatric oncology population.

Engaging children along their MRI journey

Tapping into the cartoon world of Ollie and friends, the Pediatric Coaching program engages children with the easy-to-enjoy cartoon world of Scan Buddies. These loveable characters playfully guide the child along the journey of their MRI scan.



At home – Ollie and friends are introduced in a gamified mobile app, helping the child and parents/caregivers become familiar with the MRI procedure in a playful way.



At the hospital – The child meets up with Ollie and friends, and the child life specialist at the educational Kitten Scanner in the waiting room.



In the bore – And when it is time to have their scan, the child is again accompanied by Ollie, whose familiar voice leads them through the scan procedure.

The Scan Buddy app

The first element of the Pediatric Coaching solution is the Scan Buddy app – compatible with both Apple and Android mobile devices. This ‘gamified’ app contains an educational video and games that help the child familiarize themselves with the MRI scanner. It is here, with the Scan Buddy app, that the child is first introduced to Ollie and friends. The hospital can point out the availability of this app to the parent/care giver (prior to the exam). Also, the hospital can then provide a code that is needed to play the app.

For more information, please visit: www.philips.com/scanbuddyapp

The app consists of 4 modules that address the learning goals of Familiarize, Inform, and Train:

Introductory movie

Ollie and friends are introduced to help explain and explore. The movie gives an overview (in a non-threatening way) of the procedures, steps, spaces, and people that the child will encounter.



Augmented Reality (AR) game

The child is encouraged to approach the MRI scanner and walk around it in augmented reality. While doing so, the scanner becomes see-through, and they find out what it looks like when there is someone inside. A sticker hunt also encourages the child to explore further.



MRI game

To help with the MRI scan, the child removes metal items from the patient, identifies the right equipment for the scan, and keeps the phone or tablet very still so the Scan Buddy lies still during the scan. At this point the child can hear the MRI sounds.



Parent information module

The educational section of this module provides general information about MRI scans to parents and caregivers, including what it is, why it is needed, and how it works.





In-bore Connect¹⁰ Pediatric License

Our final element of the Pediatric Coaching solution is the In-bore Connect Pediatric License. This is an addition to the Ambient Experience in-bore Connect solution, a tool which supports patients during the MRI scan by providing a soothing, immersive multi-media experience with personalized audio and video (sold separately).

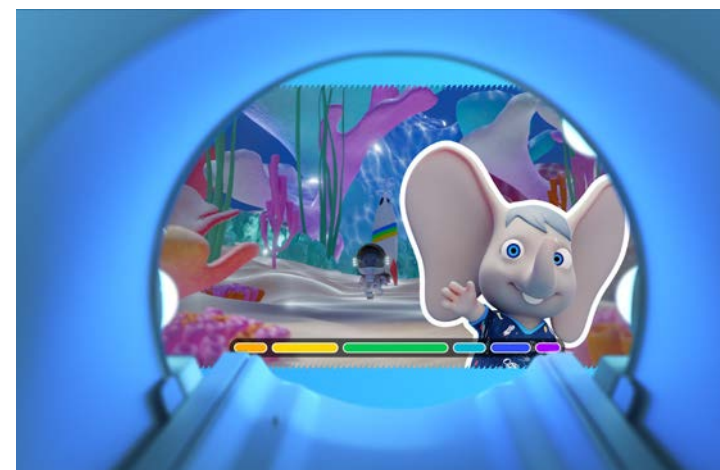
In the pediatric application, Ollie makes an appearance once again to coach the child through the actual scan by providing timing through a progress bar and breath-hold instructions in a child-friendly, reassuring way.

10. In-bore Connect Pediatric License requires Philips Ambient Experience, in-bore Connect solution (sold separately).

The Kitten Scanner

The 'Kitten Scanner', our second element, is a miniature educational toy scanner, a 32 inch TV screen and a board with the 3 characters Ollie, Chris the Crocodile and Doris the Chicken. Here the child meets up with their favorite Scan Buddy character, and the child life specialist.

By adding a favorite character in the slider, a fun, informative video starts playing. Different Scan Buddies tell different stories. The Kitten Scanner is designed to take into account how each child learns best. There are three types of learning styles that are thoughtfully addressed: the Visual Learner who learns through seeing; the Auditory Learner who learns through hearing; and the Kinesthetic Learner who learns through moving.





Pediatric Coaching is part of Ambient Experience for MRI

Ambient Experience is a solution that transforms the care environment into a comfortable, calming setting for patients and families and an efficient and motivating workspace for caregivers. The experience is supported through a purposefully designed environment, with careful and thoughtful integration of light, color, sound and video. The ultimate goal is to contribute to the well-being of the patient and the staff that deliver care.

Featured in Ambient Experience for MRI is in-bore Connect. This technology is linked in real-time with the Philips MR scanning software to provide information and guidance to the patient during scanning as well as information about scan progress. An immersive video distracts and entertains patients as they lie in the bore. Comfortable headphones allow patients to receive breath hold cues and a personalized progress bar indicating duration.

Building confidence

The Pediatric Coaching solution has been designed to help you more easily manage your youngest patients. When we communicate with a child on their level and thoughtfully appeal to their sense of wonder, what was once a formidable barrier becomes a viable experience.

Children who feel more confident and in control are more at ease, which improves the chances of a successful procedure and may reduce the need for sedation. In fact, a children-centered-care study in Denmark, where the Philips Kitten Scanner and Ambient Experience with in-bore Connect were employed, reported that the use of general anesthetics for MRI in children aged 4–6 was reduced from 57% to 5%.¹¹

11. Runge, et al. (2018). Children-centered care: Minimizing the need for anesthesia with a multi-faceted concept for MRI in children aged 4–6.

For more information, please visit:
www.philips.com/pediatric_coaching