



# Cardiac MRI experience, through a child's eyes

## A family's journey with congenital heart disease

For many, an MRI scan is an unfamiliar and often intimidating experience. For families of children with congenital heart disease, it becomes part of life — a recurring appointment that carries not just logistical challenges, but profound emotional weight. At TUM University Hospital German Heart Centre in Munich, a young patient named Paul and his mother have lived this reality for years.

Their story — of diagnosis, fear, adaptation, and growing confidence — reflects the experience of the nearly 8 in 1,000 children born worldwide with a congenital heart condition.<sup>1</sup> At the centre of their journey is a team that understands that excellent imaging is not only a clinical requirement: it is a promise to a child that the time spent in the scanner will be as short, as comfortable, and as purposeful as possible.



## The diagnosis

The day a parent learns their child has a heart condition is one they do not forget. "It is 50% hereditary," Paul's mother recalls. "The chances were just fifty-fifty. And unfortunately, he actually inherited it." The news, when it came, arrived with an immediate cascade of questions — the most urgent of which was whether an operation would be needed, and when. "I was afraid of the result — afraid of what would come out of it, whether an operation was pending."

For children with congenital heart disease, the diagnostic journey begins early and does not end. MRI is central to it — not as a one-time test, but as a recurring window into the heart's structure and function that must be opened and examined repeatedly, every two years, sometimes for life.

## The technologist at the heart of the experience

Pedro Oliveira, head of medical imaging technology at TUM University Hospital German Heart Centre, has spent his career preparing children for exactly this moment. His team works without relying on breathing commands, allowing

children to lie comfortably while the system captures images. This workflow is made possible by running faster acquisition sequences on the Philips Elition X 3.0T, using SmartSpeed Precise to reduce the time each child spends inside the bore.



*"The longer children lie in the scanner, the more difficult it is for them to stay calm. That is why we aim to acquire as quickly as possible."*

**Pedro Oliveira, Head of Medical Imaging Technology at TUM University Hospital German Heart Centre, Munich**

## Paul's experience

Paul's first memory of the scanner was of noise. "I thought it was loud, and I was also a bit excited. I had never seen anything like it." His second memory tells a different story: "This one is quieter than the old one. And it's also faster." When asked how long the scan felt, he pauses. "I came here — and then it was gone. Thirty minutes. I thought: that wasn't long at all."





## A mother's perspective

For Paul's mother, the experience of waiting outside the scanner room carries its own particular texture. "The days before, I'm very tense — because you don't know what the result will be, whether an operation is due or not." But the environment at TUM University Hospital German Heart Centre has gradually changed what that waiting feels like. "Everyone is friendly. Everyone explains what is being done, what may be expected of them. And especially — he can choose the film himself."

That small detail — a child selecting a movie that they can watch during the scan — speaks to something the team has built deliberately into their approach: an environment where the clinical encounter is designed around the child, not just the condition.

With SmartSpeed Precise, Pedro Oliveira explains, the team can now achieve in a shorter time<sup>2</sup> what previously required longer sequences.

*"With SmartSpeed Precise, we can take these pictures quickly. What used to take longer can now be done much faster — and that makes a real difference for the child."*

**Pedro Oliveira, Head of Medical Imaging Technology at TUM University Hospital German Heart Centre in Munich**

What has changed over years of visits is not the anxiety — that persists, she says, for any parent in her position. What has changed is the confidence. Confidence in the team.

Confidence in the images. And confidence that the next scan, whenever it comes, will be just as clear, just as comparable, and just as short.



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1. van der Linde D et al. Global birth prevalence of congenital heart defects 1970–2010: a systematic review and meta-analysis. J Am Coll Cardiol. 2011;58(21):2241–7.
2. Compared to SENSE imaging

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