Pedaling Toward a Faster Recovery

Blaze Farnan is off to the races. It doesn't matter that the five-year-old congenital heart patient is in a hospital bed. To keep him moving, part of his rehab includes an innovative new offering for some patients at OSF HealthCare Children's Hospital of Illinois: the RT300 Supine in-bed cycle ergometer.

"We call them the bikes just for short because it's much easier to say than in-bed cycle ergometer," laughs Megan Kupferschmid.

Kupferschmid was part of Blaze's care team as a clinical nurse educator in the pediatric intensive care unit (PICU) at OSF Children's Hospital of Illinois in Peoria. She says the use of these in-bed bikes is in the trial stage; the team there is gathering data to investigate the benefits of the technology. According to Kupferschmid, the idea behind the bikes is early movement through activity-based therapy, which can lead to faster recovery and shortened hospital stays for kids who need it.

"It allows kids that are stuck in bed to have some increased mobility," she explains. "So it provides active and passive range of motion for the lower extremities and the act and the upper extremities. So our kids that are a little bit harder to get out of bed, we can still provide that mobility, which is found to have lots of good benefits for our patient population."

Angela Farnan is Blaze's mom. She believes Blaze's time with the in-bed bike is making a positive difference in his recovery from his most recent heart surgery.

"He's stronger and he's walking a lot farther in the hallways, and he's not getting tired and he's not asking to get into the wheelchair as frequently," says Farnan.

So far the team at OSF Children's Hospital has included the RT300 Supine in the recovery plan of 28 pediatric patients, and Kupferschmid says so far results – and the reception to the bikes – have been positive. While the bikes themselves serve as a useful reprieve for the children and their families, they have also positively impacted how care teams view activity-based therapy.

"That culture of early mobility and getting those kids up and moving and just letting them be kids has really caught on here in the ICU," says Kupferschmid.

"It allows these kids do something different, and it allows us to do something that's fun, too. I mean, it's not a hard sell to say, 'hey, do you want to ride a bike in bed?' as opposed to, 'hey, do you want to get up and sit in a chair?' It's a much easier sell than that. And it's been so rewarding just to see these kids kind of go from the beginning to the end as well."

Eligible patients are four years old and above and are expected to need an inpatient stay lasting more than 48 hours. After an eligible patient is identified by OSF Children's Hospital researchers, he or she is randomly assigned to one of two groups: a control group, or the experimental group.

Both groups receive care through a standard early mobilization program, which includes physical, occupational, and speech therapy, but the experimental group also has access to the in-bed cycle ergometer 30 minutes a day for up to a week. Both groups have measurements done at the conclusion of their time with the study.

"We're actually the only pediatric facility in Illinois to use the bike. So we're excited to be in part of that groundbreaking research and to really see if it's best practice for our kids," Kupferschmid says.

"We've had kids really flourish by doing this. They do it for about seven days, and we check their muscle strength at the beginning and at the end. We also do what's called a functional status scale measurement to kind of give us a general idea of how well they're functioning at the beginning and the end. It's a little early to tell on the data, but everything is pointing to that the bikes are helping."

The RT300 Supine trial will continue at OSF Children's Hospital of Illinois through April of 2023. To learn more about therapy options available or to download a referral form visit osfhealthcare.org/childrens.