

# Tech teams at Alyn Hospital hack big health ideas for small patients

At medical center's annual make-a-thon, tech experts, entrepreneurs and medical professionals work to develop assistive technologies for children with disabilities

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Children working on a prototype with their team at the Alyn Hospital make-a-thon held on April 2, 2019 (Federico Maccioni)

Like many kids his age, Or, 12, enjoys musical instruments. He really wants to play the organ, but unfortunately it is not that simple. Ninety percent of his body is paralyzed, and he's forced to lie in bed as sitting in a wheelchair is too painful.

To help Or fulfill his dream, a team of dedicated volunteers at Alyn Hospital earlier this month in Jerusalem worked together to develop an alternative organ connected to a computer, allowing him to play the instrument independently.

At the hospital's fourth annual make-a-thon — where the medical center's staff along with experts from various sectors shared ideas and created prototypes for products to help children with disabilities — teams worked to find solutions for Or and his fellow patients.

Alyn is the only hospital in Israel dedicated to the rehabilitation of children with disabilities.



The team who worked on the project for Or as part of the the Alyn Hospital make-a-thon held on April 2, 2019 (Alyn Hospital)

The event, called a PELEthon – named for PELE, the hospital’s case-driven innovation program — took place at the Alyn Innovation Space with some 120 people, who were divided into different working groups, each specifically dedicated to the needs of a child with a physical disability.

The teams worked to come up with the best prototype of their product — a device that will eventually be further developed and internationally commercialized by the hospital’s ALYNnovation innovation track, which aims to draw entrepreneurs and investors to creating assistive technology solutions for children.

Before each team started to brainstorm ideas about how to create an ideal product, they watched a video that explained the problem that needed to be solved — the challenge facing each child. They then designed product prototypes on laptops, and ultimately produced them physically with 3D printers. Many of the children and their parents were part of the teams, pitching in to make the final product.



Little Ella trying out the prototype of the joystick for her wheelchair, under the supervision of her team at the ALYN Hospital make-a-thon held on April 2, 2019 (Federico Maccioni)

The prototypes were then presented, and evaluated by panels of judges. At least one prototype per team was selected as the winning project for one of the competition’s different five challenges, divided according to initiative, presentation, originality, usability and aesthetic beauty.

For Elia, a child who suffers from a motor disorder, the team developed a system to allow her to drive her powered wheelchair by just pressing a switch and navigating it with a joystick. The makers also developed a sling for her arm, to eliminate uncontrolled movements and allow Elia to draw and write.

Other products developed during the day included three computer games that the children could operate using just their eyes, and a sort of handle for Elishama, a short child who struggles to perform everyday tasks like opening a door or turning on a light. The handle allows him to undertake those tasks independently now.



A welcome poster at the entrance of ALYN Hospital in Jerusalem April 2, 2019 (Federico Maccioni)

Director-general of ALYN Hospital Dr. Mauri Beerli said that organizing this kind of event is important because they allow adults and healthy children to help improve the daily lives of children with disabilities.

Yeela Lahav Raz, vice president of Development and Projects at Machshava Tova, a nonprofit organization that was involved in organizing the make-a-thon, said that children who participate in activities that involve helping someone their own age will “develop compassion” and understand that they can make a positive impact on other lives.

ALYN opened its innovation space in May 2017 to develop technologies that can improve the life of children with disabilities.

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