



LET'S CHANGE LIVES!

ALYNnovation

A LIVING LABORATORY AT ALYN HOSPITAL THAT
CELEBRATES THE MARRIAGE OF TECHNOLOGY AND
REHABILITATION - CREATING PRACTICAL SOLUTIONS
TO SOLVE REAL LIFE PROBLEMS PHYSICALLY
DISABLED CHILDREN FACE DAILY

ALYN Hospital, one of the premier pediatric rehabilitation centers in the world, is now home to a state-of-the-art laboratory capable of finding new, affordable and practical solutions to the real-life challenges that impact physically disabled children. Children and/or their therapists come to us with their real-life **PROBLEMS** and our therapists as well as entrepreneurs, innovators and others come together in a shared sacred space to find real life **SOLUTIONS**.



PROBLEM

Wheelchairs are too expensive for much of the world's disabled population. Millions of disabled people lack minimal mobility and the third world has a shortfall of 20 million chairs to serve them. Children aged five and older sometimes need to crawl to get around, or can't attend school because of lack of accessibility. Many children who already have an electric wheelchair need a low-priced option so that an extra wheelchair can be kept at school, community centers or relatives' homes.

SOLUTION

Creating a low cost, socially acceptable chair became the wish for several entrepreneurs and philanthropists. Imagine a chair with a metal skeleton combined with plastic elements which would be the parts in contact with the child. The first chairs were geared for semi-active 5- to 9-year-olds, who can push themselves.

ALYN Hospital's occupational therapy seating specialists provided the much-needed insights for the design of the wheelchair. The chairs were distributed to Israelis and Palestinians and over 600 wheelchairs are being delivered to disabled children in Peru and Tajikistan. The ceremony to launch this amazing project was held at ALYN Hospital with representatives of the World Health Organization in Geneva, the Foreign Affairs Ministry, UNICEF, the Office of the Chief Scientist, the American aid organization USAID, and rehabilitation organizations from Israel and the Palestinian Authority

Just look at what the innovators created – a low cost, lightweight plastic wheelchair – priced at just under \$100 will change the lives of so many!



PROBLEM

How can a child with severely limited physical strength operate a motorized wheelchair? This problem is prevalent throughout the disabled world and at ALYN one special boy shined a spotlight on the issue. Or was born perfectly healthy. At 3 months old he developed a high fever that didn't respond to any treatments. Testing at a general hospital revealed Or had no calcium in his body. Then a heart defect was discovered. Or never developed normally and lives with a severely deformed skeleton. He will never walk. His arms and hands aren't strong enough to work. He is respirator dependent.

Or came to ALYN Hospital for a 2nd opinion. What his single Mother received was more – she had hope and help. Or has been at ALYN for over two years. Teaching Or how to use an electric wheelchair was a life changing step for him and his mother. The chair became his legs...his independence. But as Or's condition worsened even working the customized controls became too difficult. His very independence and mobility were recently threatened.

SOLUTION

Our team of therapists and innovators came together in the hopes of finding a simple, low-cost solution. So much technology currently exists for cell phones that the ALYN therapists were confident some connection or adaption could be made. Since Or's mind and voice are unaffected by his many physical weaknesses something voice activated made the most sense. An existing phone app was modified so that Or can simply speak his directions to his wheelchair. His cell phone is now totally voice-activated so he can tell the wheelchair to go forward or backward or stop; making it possible for him to still do what his hands were able to do before when he could work the controls.

This incredible adapted app costs less than \$10 to install and has already been adapted for computers and tablets. It's potential for the multitude who are wheelchair dependent is phenomenal. Combine that with a simple "cage" that fits over a wheelchair's joystick and you have 2 adaptations for the price of one! The clever innovations can also be used for those who want to voice control their chairs for reasons other than the lack of physical ability.



ALYNnovation is the way that ALYN's arms will reach way beyond Jerusalem to help not only Israel's children but disabled children and adults all over the world.

The ALYNnovation lab has the ability to build three-dimensional plastic prototypes with unprecedented speed, function, sophistication, and style in this high-tech workshop. Our rapid-prototyping capabilities make it possible to develop, fit and test parts and devices quickly, without the high costs of tooling and molding or to build complicated parts that cannot be made with traditional techniques. Rapid prototyping capability means it will be possible for therapists to immediately test, validate and measure the impact on children in all possible environments - living, working and learning environments.

Inventions and innovations will be conceived and conceptualized in this lab. Researchers and students with high-tech experience as well as those with engineering, industrial design, computer science, clinical, architecture and other backgrounds can collaborate with ALYN's expert therapists to totally redefine and recreate the way rehabilitation is done and the way in which ultimate mobility is achieved.

We showed you just two of the many examples of what is happening in this sacred space. Whether the problem begs for a simple plastic prototype or the design and delivery of a complex, integrated device, ALYNnovation will be able to do it all. The lab will make it possible to continue to transform disabilities into abilities by moving from an idea to a tested, functional prototype.

Advanced technology is now at the core of all major medical advancements which is exactly why it is at the core of ALYN's newest project. ALYN will be at the forefront of the technology age with the work done at **ALYNnovation**. The project is the brainchild of the Hospital's Director General, Dr. Maurit Beeri, and is the result of a collaboration between ALYN Hospital's diverse staff of therapists, nurses, doctors, social workers and patients.

Dr. Beeri says this exciting project *"Gives us the chance to transform potential ability into actual reality. We live in a time of constant change and one in which progress often comes in leaps rather than baby steps. Establishing ALYNnovation enables us to combine our experience with state of the art technology and innovations to make an even more dramatic impact on children's lives."*

ALYNnovation is part laboratory, part incubator and part discovery zone. This project makes unparalleled rehabilitation research a reality. A generous grant from the Israeli government made it possible to totally renovate ALYN's 50-year-old Biomechanical Laboratory and bring it into the 21st century. It is now outfitted with state-of-the-art equipment ranging from 3-D printers to apps to the finest engineering devices made today. The **ALYNnovation** Space is the hub for creating practical, low-cost life style solutions that help families living with physical handicaps meet the day-to-day challenges of living. The implications of what this new Biomechanical Lab will be able to do are far reaching; global in fact.

ALYN intends to change the way the world sees disabilities and the way in which it conquers the obstacles they present. ALYNnovation is the vehicle of change. Our mission is guided by our strong belief that it is every child's right - including children suffering from physical challenges - to have the best quality of life possible and therefore ALYN provides the tools to every patient and their family so that they can learn how to cope with their condition and be empowered to reach their full potential, helped by their family and the ALYN staff.

What drives us in the vision of excellency without compromise, professionalism, the search for knowledge, combining understanding with empathy and holding out a helping hand to the many families who are faced with the numerous difficulties in coping with and bringing up a child with special needs. We have the potential to be *the world's* finest start-up rehab research lab and add to the long list of medical and technological firsts that were born in Israel

Children have an amazing ability to face and overcome difficulties and challenges, to learn and to use technological know-how, to find solutions to function in society and in fact to "fly high". Our role in ALYN is to safeguard the health of every child, to identify problems, find solutions, evaluate every patient and provide them with a personalized rehabilitation program so that every child in our care can reach their full potential.

The children at ALYN come from every walk of life.
Every religion.
Every income level.
Every ethnicity.

Some suffer daily from developmental delays.
Some have incredibly severe disabilities with serious medical issues; requiring 24/7 care.

Some are victims of terror and have survived bombings and attacks but are left with disabilities.
Some were perfectly healthy until a car accident or a fire or a horrific cancer treatment struck them down.

The why of how a child comes to ALYN doesn't matter.

There is always someone who is ready to listen and problem solve.

In December 2017, ALYN hosted its first Make-a-Thon which included 100 designers, industrialists and high tech workers who collaborated with ALYN's medical and rehabilitation specialists. The purpose was to spend just 12 hours and develop products for physically challenged children. Participants included designers from Bezalel, The Lev Institute, engineers from Cisco and the Israeli Aerospace industry as well as students from Hadassah College. The goal was to create products to improve children's lives and ease their integration into society.

ALYN was turned into a hub of laptops, tools and 3D printers. The day resulted in the creation of a device to make it possible for a little girl with only 1 functioning hand to make her only ponytail as well as making a pair of folding crutches, a head support for a child with severe muscle weakness and a mobile phone holder that connects to the thigh of a child sitting in a wheelchair. The event was a huge success and included kudos from the Israeli health Minister Mr. Yakov Litzman and members of the Israeli Knesset.



ALYN is no stranger to excellence. We were awarded the MIDOT Non- Profit Organization Award of Excellence. Midot carries out in-depth research into non-profit organizations in accordance with numerous criteria and only a few such organizations receive this recognition. Receiving this award for excellence reflects an objective picture of excellence in management and the effective utilization of the donations which ALYN Hospital receives for the benefit of the children who are being rehabilitated here.

The even more meaningful praise comes from the parents whose children's lives are changed at ALYN:

“Some may call you doctors, nurses, therapists, administrators, secretaries, clowns, dietitians, public relations staff, social workers and maintenance. But we see you as living angels helping to make the holistic healing process take place – mending and shaping limbs, bodies and the mind. We will never forget this experience. How could we? You poured your hearts and souls into this healing process, never once showing difference because of race, religion or color. We had a chance to engage some of you personally, but all whom we saw exemplified the warmth and radiance which we felt every day. THANK YOU ALYN!”

Our staff's experience is so broad and coupled with the world renowned Israeli innovation spirit, the establishment of **ALYNnovation** would empower us to become a valuable source of knowledge – benefitting not only all the ALYN children but children all over the world. We are uniquely positioned to develop solutions to practical problems because we interact daily in a multi-disciplinary approach. At ALYN it is all about the team. Physiotherapists assist Occupational Therapists and Psychologists work with Speech Therapists. Physicians, nurses and educators all work together to solve problems as part of the vision of the hospital.

ALYN's professionals have drawers full of potential innovations - from aids that will help children participate in sports to solutions for better communications. These innovations have the potential to change the lives of children with special needs. And for every idea sitting in a drawer are a dozen more that have not been developed because we have not had a structured framework and dedicated resources to make this happen. **ALYNnovation** is the natural next frontier for ALYN to explore.

The goals of the project include:

- Encouraging and guiding ALYN professionals to research and develop ideas, aides, devices and other solutions which provide solutions to specific needs of children with disability
- Create the space and means for inter-disciplinary teams to think, build and experiment
- Build prototypes and provide a beta site research center for feasibility assessments
- Provide a repository for intellectual property, including possible patenting and copywriting
- Maintain a Technology Transfer and Liaison Office
- Provide an open-source library for those developments which will be provided free of charge for the benefit of children world-wide

The requirements of the project are:

- A state-of-the art Bio-Mechanical Development Lab including 3D laser printer, laser cutter, computers and software
- A complete update of the 20+ year old equipment currently used
- A top notch Research and Development Coordinator who can be the team captain for this exciting endeavor
- Funds so that all trials and testing for new ideas are underwritten without delay
- A segregated and restricted Endowment Fund to insure the resources are available to research and develop products

“Out of Zion shall go forth the law . . .”

כִּי מִצִּיּוֹן תֵּצֵא תוֹרָה . . .

Isaiah, 2:3

ALYNnovation

A sacred space at ALYN Hospital where technology and rehabilitation converge. A living laboratory with the potential to transform the world of pediatric rehabilitation; benefitting children around the world.

**“ . . . From Jerusalem shall come the Lord and
assistive technology”**

וּדְבַר-יְהוָה מִירוּשָׁלַם וּטְכְנוֹלוֹגְיָה מְסִיעֵת . . .

Dr. Maurit Beer, Director General, ALYN Hospital



***The only missing piece of the project are the generous friends
who will open their hearts to insure the future of ALYNnovation.***

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It is our hope that some of the resulting innovations that are byproducts of the research will be picked up by commercial developers, potentially providing the hospital with returns. There is the possibility that once established we may attract future supporters in the field who will make it possible to expand our capabilities. We hope that **ALYNnovation** will also make it possible for the research to become an open source; providing service over the internet and at development fairs.

This project has the potential of making the ALYN name synonymous with extraordinary care, technological innovation and practical, smart and affordable solutions.

THERE IS A DONATION LEVEL FOR EVERYONE:

The naming opportunity for the seed gift of the **ALYNnovation Endowment Fund**:
A donation of \$1,500,000

The naming opportunity for the state-of-the-art **ALYNnovation Lab**:
A donation of \$1,000,000

It is our goal to build the **ALYNnovation Endowment Fund** and gifts are being sought at many levels:

KING DAVID INVESTORS Gifts of \$500,000 and more

KING SOLOMON INVESTORS Gifts of \$250,000 and more

MOSES INVESTORS Gifts of \$180,000 and more

JOSHUA INVESTORS Gifts of \$100,000 and more

NEHEMIAH INVESTORS Gifts of \$50,000 and more

DANIEL INVESTORS Gifts of \$25,000 and more

Your investment in the children of ALYN will be transformative. The gift you make to support **ALYNnovation** may well be the best investment you make this year or any year. You will be helping insure the most mobile and independent future possible for the disabled children treated at ALYN as well as those all over the world.

It will be ALYN's honor to install meaningful and very visible plaques and to express our gratitude to our donors to **ALYNnovation** with the appropriate press and social media in accordance with the donors' wishes.

It is our strong belief that **ALYNnovation** will quickly become a cutting-edge center that will change the lives of children with disabilities. Endowing any part of this project will make it possible for every donor's love of children and Israel to flourish and will serve to strengthen the tiny start-up nation's enormous potential to make a difference in the world.

*For more information, please contact Cathy Lanyard,
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