

EXAMPLES OF ADAPTED WHEELCHAIRS

designed and produced for disabled children in PROJIMO Duranguito, Sinaloa, Mexico

The PROJIMO Duranguito Children's Wheelchair Workshop is located in the small town of Duranguito, San Ignacio, Sinaloa, Mexico. Here a team of people with disabilities designs and builds wheelchairs adapted to each child's individual needs, as well as to their home situation and local environment.

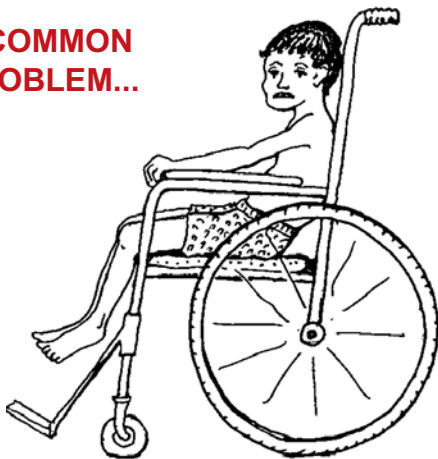
Since most of the leaders and workers of the workshop are disabled and use wheelchairs, they understand the importance of designing a chair that meets the specific needs of each user.

There is a big problem in Mexico and many other countries. Children with disabilities frequently receive wheelchairs—often donated—that do not serve them well. Either they are too big, or maintain the child in a bad position, or limit the child more than increasing their development and their capabilities.



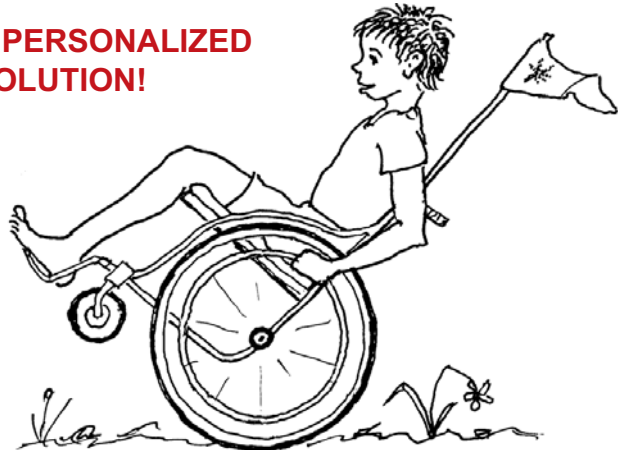
Raymundo Hernandez, coordinator of the workshop, makes final adjustments to the wheelchair designed for Jesus, a child with cerebral palsy.

A COMMON PROBLEM...



This chair is too big. The child cannot move it on his own, and the chair deforms his body and further incapacitates him.

A PERSONALIZED SOLUTION!



This other chair suits the child well. He is positioned well and the chair increases his ability and independence.



This chair, donated to this child in Angola, increases his deformity and limits his mobility.



The wheelchairs made in the Duranguito shop often have special features added to help improve the child's position, development or abilities.

The team from Duranguito carefully evaluates each child, involving the child and family in the search for solutions. They make an effort to design a chair that works optimally for the child—not only for improved mobility, but also taking into account features that may help improve aspects of the child's development and control.

The creation of an individualized wheelchair consists of the following steps:

1



First, the child is assessed. She and her family, along with the PROJIMO team, discuss her needs and possibilities. Then they take the necessary measurements.

2



Second, the chair is designed to match the child's needs, and built in the Duranguito workshop.

3



Third, when the chair is delivered, final adjustments are made to make sure everything works as planned, and the child and family are happy with it.



The workshop in Duranguito has been constructed so that wheelchair users can work there comfortably.

Chairs are adjusted not only for the individual child, but for the environment in which he or she lives.

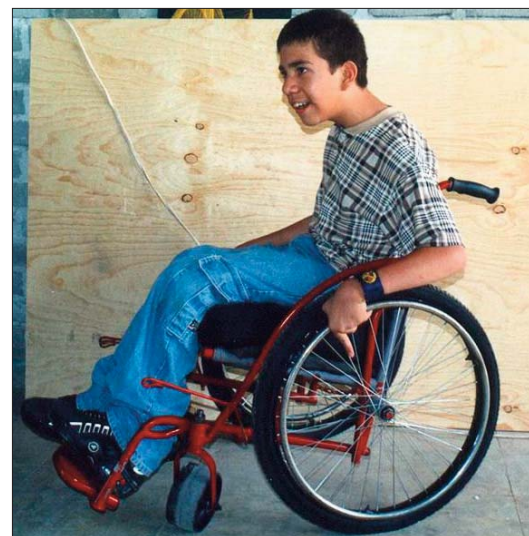


Many children live in rural areas or neighborhoods with very uneven or sandy streets, where a standard wheelchair gets stuck or is hard to use. For such conditions the team often builds the "Whirlwind Wheelchair," which has wide (mountain bike) tires and good traction.



For the front wheels, the "Zimbabwe Wheel" is frequently used. Made of vulcanized rubber, it is strong yet as flexible as a pneumatic tire—with the advantage that it won't go flat from thorns or sharp stones.

For children with cerebral palsy, a well-fitting, specially designed chair can make a big difference.



Eric, for example, who has a lot of spasticity, had a very large standard chair that did not allow him to move on his own. With this new chair made to his measurements, for the first time he can roll it by himself. He now enjoys more independence.



As for many children who lack adequate body control, this chair is fitted with a removable table, allowing the child support himself better and learn to use his hands.



Sometimes a small removable wooden arch is fitted to the table, from which can be hung rattles and toys. This provides early stimulation, encouraging the child to raise his head and begin to use his hands.

Some children with flaccid cerebral palsy have muscle tone so low that their head hangs forward, even when they are tied firmly in a chair. Unable to raise his head, this boy could not see the world around him, and the lack of stimulation further delayed his psychomotor development.



This flaccid child's head drooped forward, even with the chair inclined far back. After experimenting different options, the team made this chair with a very adjustable table. In its highest position, the table raised the boy's arms enough to hold up his head. For the first time he could see what was going on around him. With this visual stimulation, he began to move his head—and began to gain more strength. As his head control increased, his mother was able to gradually lower the table. Thus, this innovatively adapted chair helped the physical and mental development of the child.



Martha, who has spastic cerebral palsy, cannot use her hands and has great difficulty speaking. Yet she is very intelligent. So she could write in school, the Duranguito team built her a wheelchair with a highly adjustable table. On this she was able to experiment with a typewriter until she found the best position to strike the keys, using a stick attached to a headband, which they made to meet her wishes. Martha has gone a long way with her studies and now teaches in a program for disabled children.



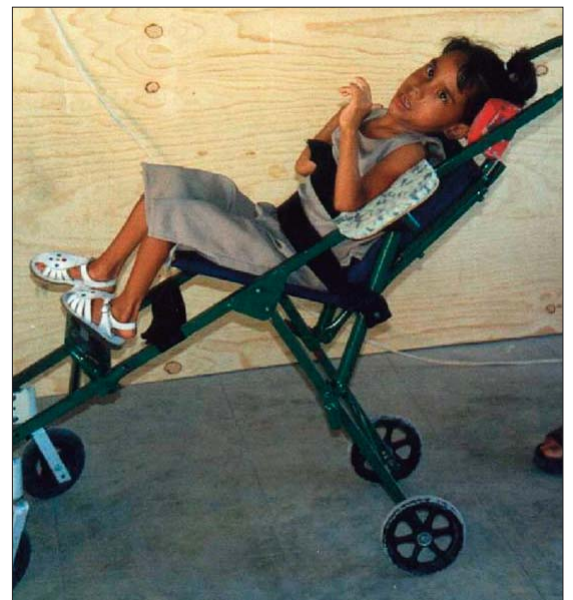
This boy with spina bifida, Juan de Jesus, has a large angular lump on his lower back. The standard wheelchair he was using caused a huge pressure sore over the lump. After curing the sore with a paste of bee's honey, the team made him a wheelchair with a well-padded back support, with a deep hole in it to accommodate and protect his back-lump. They also devised a special vest to help him sit more upright with less spinal deformity.



Some very spastic children need special headrests or body wedges to help them sit upright.



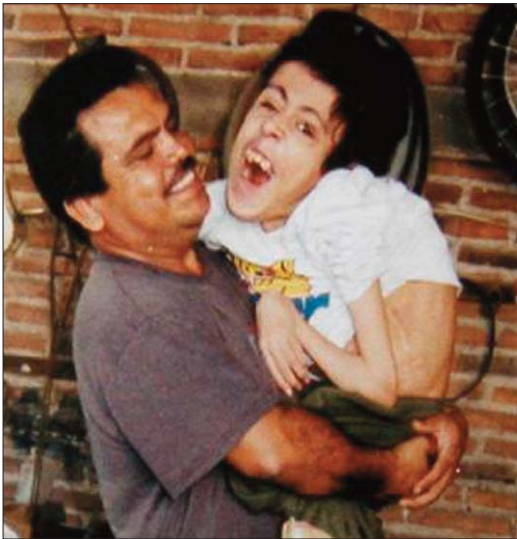
The headrest of this chair is fully adjustable in terms of height, angle of recline, lateral pivot, and up-or-down tilt.



For this girl, who doesn't have enough trunk control to sit well, the team designed a stroller. The back of the stroller is adjustable, so that little by little she can be seated more upright, thus helping her gain more control of her trunk and head.



A backrest with an easily adjustable pitch can help some children gain greater control of their head and trunk. For short periods, the mother can sit the girl more upright, helping her gain greater body control. When the child tires, she can be tilted back, in order to rest.



This child's body is so twisted that the wheelchair seat and back must be molded to accommodate the deformities. This requires very precise work. Therefore the team asks that the child stay three days at the workshop to make sure the chair works well.



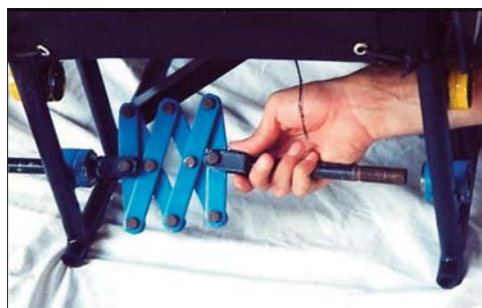
A child sits in his molded chair. The tilt of the entire chair can be adjusted with ease.



For those paralyzed on one side of the body, a "hemiplegic wheelchair" can facilitate independent mobility. Both hand rims (for propelling the chair) are mounted next to each other, on one side of the chair.



One of the hand rims is attached by an axle to the opposite wheel. This way the rider can propel the wheelchair with his good hand by pushing one hand-rim to turn left, and the other to turn right—and by pushing both rims together to move straight ahead.



The axle that powers the opposite wheel folds like an accordion, so the chair can be folded for carrying.



Vania became paraplegic from a bullet wound when she was one year old, and then abandoned. At age 9, when concerned social workers took her to PROJIMO, she had deep pressure sores on her buttocks. For her first months there, Vania had to spend most of her time lying face down, so the sores could heal. The team made for her a gurney (an inclined stretcher mounted on a wheelchair) so that she could move about and go to school.



The inclined gurney is mounted on a wheelchair.



When Vania's sores healed, she removed the gurney and began using the wheelchair. A basket was attached to the chair-back to carry her schoolbooks.



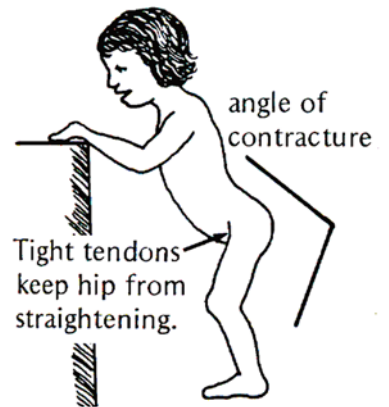
This child was born with hydrocephalus (swollen head) and his knees were stuck in an over-extended position. There was no way he could sit in a standard wheelchair. So the team designed a special table with wheels, with an easily adjustable tilt. In this way his mother can put him briefly in a more upright position, so he can see his surroundings better. When he gets tired, she can lower the stretcher to a more horizontal position.





This child with spina bifida had flexion contractures of the hip joints. Therefore the team designed for him a hinged stretcher, mounted over his chair. Lying face down on the stretcher with a firm hip-band, over a period of weeks the stretcher was gradually straightened. In this way his contractures lessened until his hips were straight.

Children with spina bifida—a congenital defect of the spinal cord—often develop hip contractures. If the child sits in a wheelchair, his hip joints may contract further.



With his hips fully straightened, the stretcher was removed, adjustments were made to the wheelchair, and the boy began to use it normally. But to prevent the hips from contracting again, the boy, with help from his family, had to do regular stretching exercises.





The mother of three children with muscular dystrophy carried all of them in a single, large wheelchair. But it was very uncomfortable and risky.



At the mother's request, the team made a pushcart with 4 seats, so that she could move her children about more easily. They included the fourth seat to accommodate yet another child, since the mother at the time was pregnant. (They also offered her advice on family planning.)



A manual tricycle was made for this child with spina bifida, who rides a long way to school on uneven roads. Tricycles are faster and safer than normal wheelchairs.



An alternative tricycle design is powered with a large hand lever. The rider pumps the lever with one hand while steering with the other. This design is especially useful for a hemiplegic person, or anyone with one hand that is weaker.

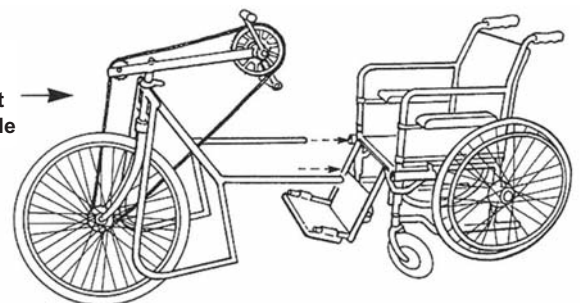


For people who have difficulty walking, or use crutches, a hand-powered tricycle is convenient for going long distances. But for someone who can't walk at all, the large size of the tricycle is a disadvantage, particularly inside of buildings.



For this reason, the Duranguito team has experimented with a collapsible tricycle, where the front part with the large wheel can be instantly removed—so that the rider can enter buildings with the back part, which is essentially a regular wheelchair.

Tricycle with the front part removable





PROJIMO Duranguito works with municipal government service programs called DIF (Integral Family Development)—as well as with other entities—to identify children from low-income families who need adapted wheelchairs.

IF YOU KNOW A CHILD—OR A YOUTH UNDER 25 YEARS OLD—WHO NEEDS AN ADAPTED WHEELCHAIR... CONTACT:

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FUNDING AND MANAGEMENT

Fortunately, through the Duranguito program, all children who need wheelchairs can get them, even those from families too poor to pay. For such children, Stichting Liliame Fonds, a foundation in the Netherlands, helps cover most costs. Typically, the Foundation pays 60% of the cost, DIF or another organization pays 20%, and the family—if it is able—pays the remaining 20%. If the family can't contribute, other sources are sought. No child is refused a chair for inability to pay.

To help more children in need get appropriate wheelchairs, the PROJIMO Duranguito team typically works with the DIF or other institution in the following way. The institution periodically brings together groups of children from different areas. Thus, on a single visit to the area, the Duranguito team both delivers the completed wheelchairs to the group of children previously evaluated, and at the same time evaluates a new batch of children. In this way more children are served, while transportation costs and time are minimized.

HELP NEEDED

The Duranguito PROJIMO team works with very limited resources, and has a hard time making ends meet. If the spirit moves you to help the group improve the shop or buy new tools—or if you would like to contribute to a reserve fund to help cover medical expenses of disabled workers—your donation would be very appreciated. You can send your support directly to the program, to Raymundo Hernandez.

Or, if you want your donation to be tax deductible in the U.S., you can send it to:

HealthWrights
 964 Hamilton Ave.
 Palo Alto, CA, 94301, USA

To use a credit card, contact HealthWrights.
 HealthWrights: healthwrights@igc.org
 Tel: 650-325-7500

For more information on the PROJIMO Duranguito Wheelchairs Workshop— visit the website: www.healthwrights.org.