



BikeFit Program

Providing Children with the Opportunity for Cycling Independence

The **BikeFit Program** at *Shriners Children's Northern California* is focused on providing caregiver-identified hospital patients with the opportunity to receive a custom-fit AMBUCS tricycle (tryke), following participation in multi-week strengthening, balance, safety and skills-building program. Graduates of the BikeFit Program self-report that they continue to cycle on their own at home, and enjoy the confidence, freedom and exercise that is the outcome of the program – and a foundation for continuing fitness activity into adulthood. Additional benefits for graduates include:

- The ability to explore neighborhoods and parks with family and friends
- To participate in recreational or sports activities
- Meeting and interacting during the program with peer participants
- Engagement with their families and for families to meet others in the program

Inspiration for and background of the Program

The BikeFit Program was inspired by a Power-based Exercise Program developed at Shriners Children's New England, formerly Shriners Hospitals for Children - Springfield. Based on research indicating that exercise could promote architectural changes in muscle and thus improve function for children with cerebral palsy, a team of specialists developed a multi-stage exercise program called BFit.

The specialists in the Motion Analysis Center (MAC) at *Shriners Children's Northern California* collaborate in outcomes-focused research across the system of Shriners Children's locations and were introduced to the BFit program through their New England colleagues. Excited about the possibility of developing a program for patients at *Shriners Children's Northern California*, the specialists in the MAC gathered a collaborative team that included staff from the MAC, physical therapy, recreation therapy and child life, under the sponsorship of the Assistant Chief of Orthopedics, Dr. Jon Davids. With the support of the Reno Chapter of AMBUCS for custom trykes, physical therapy students from California State University, Sacramento as volunteers, and donors for funding the purchase of trykes and other program necessities, the BikeFit Program at *Shriners Children's Northern California* debuted in 2016.

Since its first year – and even during COVID, when the program transitioned to a home-based program with virtual coaching and engagement – BikeFit has benefited close to 140 children, and their families. AMBUCS has underwritten more than \$140,000 in custom tryke costs and individual and foundation donors have contributed \$180,000 to cover the remaining cost of the custom trykes, bike helmets and program expenses.

Description of the BikeFit Program

Participants for the BikeFit Program are recruited from active patients at *Shriners Children's Northern California*, between the ages of 4 and 18. Children from any hospital service line

(orthopedics, burns, acute inpatient rehabilitation, and pediatric surgery) are eligible to participate based on an assessment of their potential to ride an adaptive bike independently, without another person providing direct support. Children who use orthoses (braces) and those who require assistive devices, such as crutches, walkers or wheelchairs, or seat belts, are welcomed into BikeFit. Participants are referred by physicians, physical therapists, social workers and other specialists who are part of their care at *Shriners Children's Northern California*. Past participants have been patients receiving treatment for acute burns, colorectal disorders cerebral palsy, spina bifida, scoliosis, spinal cord injury, arthrogryposis, muscular dystrophy and limb disorders or absence of limbs.

Shriners Children's Northern California benefits from a partnership with AMBUCS, a nonprofit organization that supplies tricycles (trykes) that are designed to be adaptable to meet the needs of children with varying abilities for powering their movement, and sitting safely. Unique tryke components include supportive padding, seat belts and foot straps as needed. Trykes can also be adapted with bars extending from the back of the bike permitting another individual – such as a parent or guardian – to assist with steering and push starts.

BikeFit Program Budget

Every year, *Shriners Children's Northern California* needs to raise \$35,000 to cover the expenses associated with the BikeFit Program. Details of the annual budget are provided in the table below:

Budget Item Description	Qty	Amount	Subtotal
Staffing – each session	20	Hospital underwriting / Volunteer	\$0
Fitting and program session meals and refreshments	9	\$200	\$1,800
Program information and outreach (Design, Printing, Postage)	All	\$1,000	\$1,000
AMBUCS trykes (50% of cost, balance provided by AMBUCS)	24	\$1,200	\$28,800
City permit for road closure training day	All	\$1,000	\$1,000
Participant tee-shirts and bike helmets (24 each item)	48	\$45	\$1,080
Training Equipment (replacement cones, weights, bands, mats)	All	\$500	\$500
Videographer / Photography services	All	\$820	\$820
Total Budget			\$35,000

As noted in the table, *Shriners Children's Northern California* underwrites the hourly pay of professional staff who lead and manage the program. Additionally, the program is fortunate to benefit from the service of dedicated volunteers, including students in the physical therapy program at California State University, Sacramento, and tryke assembly by volunteers from AMBUCS – Reno Chapter, and NorCal Trykers from Davis, California.

Children are required to attend a fitting session in June prior to the start of the BikeFit program. Measurements are taken and participants are able to test riding to identify the specific custom components that are needed and the tryke type. Volunteers customize the trykes that day, on-

site, and the finished vehicle is tagged with the child's name, and held at the hospital for the multi-week program.

Beginning in July, the BikeFit program occurs in two sessions every Thursday for eight weeks. The morning session is dedicated to preschool and primary school age children; the afternoon session focuses on tweens and teens. Each session incorporates education about fitness, nutrition, confidence-building exercises, stretching and rules of road safety. Participants are also hands-on with their trykes, putting on helmets, mounting their trykes and taking laps around the front driving of the hospital – which is secured from automobile traffic

One session of BikeFit is dedicated to street riding. With the permission of the City of Davis, and support from the Sacramento Police Department, participants ride on Y Street, along the hospital, gaining experience navigating various street surfaces, potential hazards such as curbs and storm drains, and learning how to ride up driveways and other street entrances and exits.

During their first BikeFit session, many participants struggle to complete one lap around the front driving circle, accompanied on foot by their volunteer chaperone and coach. Progress occurs fairly quickly, then peaks midway through the program and sometimes briefly declines as participants falter in their confidence. By the end of BikeFit, most participants are lapping the front driving circle in double digits and their volunteer chaperones and coaches are unable to keep up on foot.

Graduation from the BikeFit Program

On the day of the final BikeFit session, the educational and riding activities are shortened, permitting the participants' and their families to attend a graduation ceremony. The program leaders begin by thanking everyone for participating in the program, including the coach volunteers, hospital staff, sponsors and donors. The heart of the program is individual acknowledgement of each participant that includes a personalized projected slide show, performance metrics and statistics, and a presentation by the coach and chaperone on the unique characteristics and achievements of the participant – including what they contributed to the overall program for everyone. Each participant receives a graduation certificate at the end of their presentation and all are rewarded with their tryke to take home that day.

Post-graduation program reviews are collected from families to gather insights on the program and to evaluate successes and areas for improvement. Six months later, surveys are conducted to determine whether participants continue to cycle and have found the benefits sustainable and beneficial. With the exception of mechanical breakdown, growth of the child, or theft of the tryke, all participants have reported ongoing cycling. For those requiring repair services, replacement or substitution trykes, remedies are available. However, the hospital's BikeFit Program is working on formalizing a relationship with NorCal Trykers and other local cycling organizations to ensure graduates retain support, maintenance and adjustments on their current trykes, with the added benefit of substituting up for a bigger tryke as needed as they grow or their abilities change with strengthening and maturity.

Request for Support

Shriners Children's Northern California is grateful for the generous support that sustains our BikeFit Program. Contributions from donors are designated for the purchase, maintenance and support of trykes for BikeFit participants. The BikeFit Program is at its core a collaborative program – all centered on the participants. Every purchase of a tryke – whether new for the first

time or new as a replacement or substitute upgrade for a program graduate – costs an average of \$1,200 per tryke (with the other \$1,200 underwritten or donated by AMBUCS).

We are grateful for the consideration you are giving to a contribution for the BikeFit Program and for all the joy your generosity will bring to patients benefiting from the program. Furthermore, we are honored to be among the organizations you are considering for your charitable support.

Thank you!