INTRODUCTION
Diseases such as polio, muscular dystrophy, multiple sclerosis and many more affect a child’s ability to stand up and move around under one’s own power, which makes kids lose the ability to do many things that we took for granted as children. This project introduces a device that helps children with the above problems to stand up from a sitting position and walk around.

SUMMARY OF IMPACT
The standup walker we designed provides a valuable assistive device to children with difficulty in standing up and walking around. This device will make those children less dependent on caregivers. With little effort, they can stand up and move around on their own. This will have immense impact on these children’s development, in particular enabling them to interact more with their peers and participate in more activities.

TECHNICAL DESCRIPTION
The principal mechanism of the device is two sets of four-bar linkage. The length of each bar (coupler, crank and rocker) is carefully calculated to imitate a natural standing up or sitting down motion path. The motion of each four-bar linkage is provided by a linear actuator attached to the frame and to the rocker. The user controls the lifting or lowering motion by a switch connected to a 12-volt battery, activating the linear actuators.
The frame is made out T6061 aluminum alloy for light weight, strength and machinability. It is adjustable by sliding bars and pins in the horizontal direction for different widths and lengths. The lengths of the bars of the four-bar linkages are also adjustable. The motion of the four-bar linkages may also be stopped at any height, providing the adjustability in the vertical direction.

Four swivel wheels are attached at the bottom of the frame to provide the mobility. They are lockable for safety.

The support to the user is provided by a rock climbing harness, which is attached by S-hooks to the crank and fits for kids ranging from 35 to 110 pounds.

The cost of the parts and supplies for this project was $810.

Figure 23. Design of Standup Walker