



Considerations When Fitting Individuals with Disabilities for Bikes

Thank you for assisting us to help numerous athletes with disabilities purchase an appropriate bike to participate in the iCan Bike camp. While we know you are experts in fitting and sizing customers on bikes, below are some important differences when fitting riders with disabilities.

The biggest fitting difference is that we want our riders, when sitting on the bike seat, to be able to place both feet flat on the ground (including the heel) with little to no bend in the knee.

We understand and appreciate that the standard practice for people without disabilities is to ensure the balls of their feet are touching the ground. This distinction of having their heels touching the ground is important for a person with a disability because it:

- is the fit they will be accustomed to having from riding bikes at our bike camp;
- gives them reassurance that they are able to put both feet on the ground to break a fall or stop, and providing them the confidence and sense of security;
- gives them more support and leverage when learning to start the bike independently.

Below are some basic ideas and bike characteristics of a bike we'd like our riders to have:

- Choose the largest wheeled bike that the rider can place both feet flat on the ground while sitting on the seat.

- Choose a low-slung, easy-step through framed bike. Individuals with disabilities frequently have motor planning challenges. This is for ease in getting on and off the bike.
- The handlebars should be noticeably higher than the seat, which promotes an upright riding posture. For 16" and 20" bikes, think taller bmx style handlebars. For 24" and 26" bikes, think cruiser style.
- The pedal, at its highest point, should be no more than 75% the height of the tire. Pedals higher than this cause the rider's feet and knees to come up too high with each rotation. This results in making it more difficult to maintain balance and is uncomfortable to ride.
- Keep it simple - we recommend a single speed bike. Bikes with gears or a freewheel can make the bike more complicated, distracting, and frustrating to ride. Due to the nature of many disabilities, learning when and how to change gears will often not occur.
- Ideally, choose a bike with **both** coaster brakes and handbrake(s), but a handbrake is highly recommended. The purpose for seeking a coaster brake is not for stopping, but rather it limits the rider from pedaling backwards. We teach our participants to utilize the handbrake for stopping because it is easier for our riders to digest that information and separate the two gross motor skills - "feet make me go" and "hands make me stop".
- As you know, not all bikes will accept handbrakes and it may be a challenge to find 24" and 26" single speed cruiser bikes with handbrakes already installed. We advise parents to check with the bike shop to see if a handbrake can be installed on a bike if it does not come with one. They will likely need to be beach cruiser caliper brakes with 90-99mm reach.
- 16" and 20" bikes should have a handbrake connected to only the rear wheel. A front wheel handbrake can be dangerous and may cause the rider to flip over the handlebars if they were to panic and squeeze the front handbrake too hard. It is our policy to disengage front wheel handbrakes at our camp.
- Due to the position of the rider on a cruiser bikes, 24" and 26" cruiser bikes can have a handbrake to either or both wheels.

- Consider changing the seat to be smaller or narrower to help the rider's feet completely reach the ground.
- Consider removing seat post reflectors, to allow the seat post to be positioned lower and help the rider's feet completely reach the ground.
- Also consider inverting the saddle clamp so that it is installed above the seat rails. This will allow the seat post to go down another ½" and help the rider reach the ground.
- If the rider, particularly larger riders, has no problems placing both feet flat on the ground but is uncomfortable on the seat, consider changing the seat to be wider and softer. If a rider is not comfortable on a bike, they are less likely to want to ride.
- For riders that appear to be leaning forward reaching for the handlebars, consider adding a stem riser which will provide a more upright posture, making it more comfortable and easier to balance.
- Avoid competition (BMX), freestyle and mountain bikes because:
 - they are difficult to ride and not suitable for learning
 - the frame is not low or compact so it is difficult for riders to get on and off
 - the length of the frame causes riders to lean forward to reach the handlebars.
 - the pedal cranks are often too long, making it difficult to balance.

Other Things to consider:

- Holding a few Bike Fit times at your shop
- Attending the parent orientation meeting iCan Shine holds with parents of riders the Sunday before camp begins
- Bringing a few recommended bikes to the Sunday orientation meeting and leaving such bikes with Shine staff to fit riders throughout the week
- Offering a discount to families attending the iCan Bike Camp