CYCLABILITIES

Getting started: Mastering the Fundamentals

Cyclabilities, cycling and children with additional needs

According to the Road Safety Trust, the ACT has the highest cycling participation rate in Australia, however, anecdotally we know children with additional needs (and by extension their families) often miss out.

While there is very little published around the cycling participation of children with additional needs in Australia we have found many factors can negatively impact their involvement. One of the most significant is the inability of existing mainstream teaching methods and resources to address the cycling and road safety needs of these children.

Despite these barriers, cycling can provide many benefits for children with additional needs. This can include increased physical activity, improved gross motor skills, balance and coordination. In addition to these tangible skills, participants in the Cyclabilities pilot program have shown increased confidence, independence and social skills, as well as cognitive development and increased visual perception. The ability to cycle independently allows for a new means of transport and a lifelong skill.

Cyclabilites has developed to address this gap, as a *road safety* and *learn to ride* program for children with additional needs. The program draws on a multidisciplinary therapy team to provide a holistic approach to learning. Recognizing that each student is different, the program works to provide a personalised, student centred model of learning responsive to the needs in individual participants.

This manual has been developed to help you get started. It goes through some of the basic skills your child will need to start their riding journey.

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Balancing on a bike

Perhaps the most fundamental skill of riding a bike is balance. So how do you actually balance on a bike? Balancing on a bike is all about staying upright. Essentially, it's about moving the handlebars to the left or right in response the movement of the bike. If the cyclist leans too far to the right, then they must turn the handlebars to the left to compensate. If they lean too far to the left, then the handlebars must turn to the to the right. These movements act to bring the front wheel directly underneath the rider and maintain that upright position.

However, while this sounds straightforward enough, in order to maintain balance, you must be able to recognize when your body is off-balance and identify the degree to which you need to correct. Physically, this requires a coordination of the visual (eyes), proprioceptive (sense of where the body is) and vestibular (ears). For many children with addition al needs this can prove a serious challenge.

At Cyclabilities, we have found the best way to teach a bike balance is on a balance bike. Simply put, a balance bike is a bike with no pedals, chain and crank, or training wheels, that is propelled by the rider's feet on the ground. Doing away with the pedals allows the rider to concentrate solely on balance and steering without having to worry about pedaling. In our experience, particularly for kids that may struggle with change or face some existing challenges with co-ordination or proprioception, this singular focus makes it much easier to grasp the concept of balance and gain confidence in riding.

Scooting and Coasting

Getting them started on a balance bike is easy! First, make sure the bike is properly adjusted. Check the seat height. When sitting on the seat, both feet should be flat on the ground with knees slightly bent. Second, check the height of the handlebars. These are generally set relative to the seat height (if the seat is at its lowest setting then the handlebars should be too) however, it is also about comfort. Make sure your child can comfortably reach the handlebars.

Find somewhere safe and open. We suggest a grassed area, like a back yard or a park. A soft surface is likely to make the child feel more comfortable about possible falls. Don't forget your helmet. Making the association between riding and wearing a helmet early will make it easier to keep them wearing it!

Get your child to climb onto the bike with both feet firmly on the ground. At first, simply encourage them to walk around. Initially they may or may not feel comfortable sitting on the seat, either sitting or standing is fine.

As they become more comfortable walking and using the handlebars, encourage them to sit. They will often naturally begin to take longer steps and propel the bike greater distances by themselves. If not, you may need to encourage them to do this. It is really important give them plenty of time to feel safe and confident.

Initially, the child may feel like they need a little extra support. It is perfectly fine for you to walk or run along next to the child as they ride. However, touch the child not the bike. Touching the bike will hinder them learning how to balance the bike themselves. If they start to tilt to one side, apply gentle pressure to that side to alert them to adjust their steering.

Steering and Turning

Once your child comfortable scooting and coasting it's time master steering and turning. Again, this is all about practice. We suggest finding a large, flat, empty space (like a netball court or empty carpark). This will give your child plenty of room to move around without fear of running into anything.

We see steering and turning as including three main steps:

- **Make the turn**. Begin by asking your child to gently turn the handlebars in one directions. This gentle turning action will result in the bike moving in a large circle. As your child gains confidence, they can turn the handlebars more tightly to achieve a tighter turn. Make sure they practice turning in both directions.
- **Focus on where they want to go**. If your child wants to turn their bicycle, they will need to focus on where they want to go. Ask them to slowly look in the direction they wish to turn. You may need to initially walk ahead of them acting as an anchor point. They can keep their eyes on you while executing the turn.
- **Balance**. Ask your child to gently lean in the direction they wish to turn. This will move their centre of gravity and help to maintain their balance. This is likely to be a new sensation for your child, and may be awkward to begin with. Executing the larger circles will require less of this inwards lean so allow plenty of time for your child to become familiar with the sensation before encouraging towards tighter turns.

Braking

Once your child is confidently balancing on their balance bike, coasting and turning independently it may be time to get them onto a bike with pedals. The amount of time this take will vary greatly between children, dependant on their capacity, their particular additional needs, how much practice they get and their personality. Up until now, if they have been using a balance bike, to stop they have simply had to put their feet down to stop. Making the transition to a pedal bike should begin with learning how to brake.

If you have opted for a bike with calliper brakes, try starting off with your child walking alongside the bike. Have them squeeze the brake levers so that they can see what happens when the brake is engaged. Initially they will squeeze quite hard, but with a bit of practice they will learn how much pressure they need to apply to effectively stop the bike.

If your child's bike has a back-pedal brake, then have them sit on the bike with their feet on the ground, slowly move the bike forward (you may have to hold the bike for them so that they don't fall over) and have them engage the brake.

Keep it simple and stay close when they first try out the brakes whilst riding their bikes. Remind your child to put their feet down when braking so that the bike doesn't tip to the side when they come to a stop. If your child responds well to visuals, it may be a good opportunity to introduce some of these around braking and stopping.

As your child gains their braking confidence, you can teach them the benefits of braking gradually (whenever possible) as opposed to braking suddenly (which might be required in the case of a sudden hazard).

It is also important to explain the different effect of front and rear brakes. Make sure they understand which lever is attached to the rear brake and which is attached to the front brake. Initially your child will probably use both brakes but in time it is important to teach them which brake is best to use at different times. Generally, the front brake is best for most situations, whilst the rear brake should really only be used if traction is poor or if your front tyre has blown. Sometimes a child may be nervous about using the front brake as they are concerned they will fly over the handlebars if they brake hard. This can happen, but if the child is taught to use their arms to brace against the deceleration, they are less likely to flip over the front.

Riding with pedals

Once your child is feeling comfortable with the preceding skills, it is time to look at developing a good pedalling technique. If you have removed your child's pedals, now is the time to put them back on, making sure that all the nuts and bolts are tightened. At this stage in learning to ride a bicycle, it is not necessary to have both feet touching the ground, so raise the seat up so that when your child is seated on their bike only one foot (on tippy toes) touches the ground.

When your child starts pedalling, encourage them to place the ball of the foot (not the middle of the foot or heel) over the pedal, as it requires less effort to push.

It is important to make sure that when viewed from the front, your child's hip, knee and ankle are all aligned. This will result in far more efficient and powerful pedalling and less strain placed on these parts of the body.

As obvious as it may sound, make sure that your child is pedalling in a circle. By maintaining a smooth circular motion, they will apply force equally throughout the entire pedal stroke. If you and your child decide to go for a longer ride, it will encourage a steady rhythm in pedalling, helping to maintain a good pace.

Finally, encourage them to keep their upper body quiet and relaxed. The bulk of the work is done by the legs, and much of the focus is on coordinating this part of your body. There is no need for their head or arms to be making lots of sudden movements, which will take away from the focus on their legs.

Riding in a straight line

Riding in a straight line is a really important skill to have, particularly from a safety perspective. Your child needs to be able to ride safely on a road or footpath without veering into traffic. If they go riding with a friend or parent, they should do so without causing their riding partner to serve to avoid them.

There are a couple of things your child can do which will help them to ride in a straight line. First, they should work on relaxing their upper body, which includes the neck, shoulders, arms and hands. A cyclist will often have trouble riding straight if these parts of the body are tense. Ask them to shrug their

shoulders and bend their elbows before and then again when they are riding to release some of this tension. You will know if they are too tense during your ride if they complain of upper body fatigue, or feeling sore from their neck to their hands.

Another method used by most cyclists is to stare ahead to where you wish to travel. The further ahead you look, the steadier you will be. You can test this by seeing how well you ride when you look ahead of you, as opposed to looking down at your front wheel – you will be surprised at the difference.

Just remember that a bicycle is designed to travel in a straight line. When doing your pre-ride check, always make sure that the handle bars are straight, and haven't been twisted, which can happen if a bike is in some sort of accident and gets bent.

You will find, with practice, that your child will eventually develop some peripheral vision whereby they can be staring ahead, but at the same time be aware of any cracks or potholes in the road immediately in front of them.

Riding up and down hills

Riding up and down hills can be challenging and hard work, but it can also be exciting and help to improve your fitness and the fitness and strength of your child. Remember that it is important to practise regularly so that they can learn and adapt to this style of riding.

The Ascent

Riding up hills will require a lot of energy and it is important to prepare your child for what is ahead. It is important to be realistic about what to expect from your child, knowing that they won't be travelling fast and that they are going to probably find it fairly difficult, especially to start with. Try to avoid working them too hard, too early with too steep an incline. Stick to a pace which is comfortable for your child.

When first approaching a hill, encourage your child to remain seated with their weight back and hold the handle bars over the top and close to the centre. This position will open their chest and keep their shoulders back allowing for maximum breathing. Although it may be tempting to look down in order to concentrate, try to get them to look ahead at where you are going to avoid any obstacles.

Moving up the hill, talk to them about crouching down, keeping their body relaxed and their elbows low to aid with breathing. When going around a bend uphill, make sure they travel on the outer side of the road as they will lose less momentum. Ensure they a rest once you reach the top, especially if it has been a hard climb.

The Descent

The most important element of descending is care and control. It is particularly important for children to understand that they need to regulate their speed and not travel too fast when riding downhill. It can be very easy to lose control, especially on a steep descent or if there are bends in the road. This is particularly the case for some children with additional needs who may not be able to regulate sensory inputs as well as other children.

Encourage them to sit upright and use the brakes as required they needs to, but make sure they don't use them constantly as it can cause the rims to overheat resulting in a blowout of the tyre. Instead, talk to them about using their gears to control your speed or squeeze on both brake levers for two to three seconds at a time.

It is important that they also keep watchful for loose gravel or unexpected obstacles. It is imperative that they know to watch the road ahead so they can anticipate the need to slow down or steer to avoid an obstacle. Dependent on your child's particular needs they may struggle with separating their attention amongst all of these considerations, particularly until riding become comfortable for them. If this is the case provide as much support as you can, and ride along-side if possible.

- Cycling Safety
    - Maintaining bike control
    - Cycling hazards
    - Looking back when riding
    - Being spatially aware
    - Overtaking and filtering
    - Riding with a group
- Websites

- Braking

  It is important for a bike rider to be able to stop when needed. This includes situations where they need to stop suddenly and others where they may need to come to a gradual stop.

  Questions to ask:
  How will my child react if there is an obstacle in their way? Will they notice the obstacle or will they be too focused on other things? Will they use their bike safety skills? Will they panic or freeze? If my child is given the verbal instruction to stop, will they do it?

- Using the bell

  When riding a bike on a footpath it is important for the bike rider to be able to use their bell to warn other footpath users that they are coming.

  Questions to ask:
  Is my child able to focus on the things around them when they are riding? Will they notice someone walking or bike riding in front of them? Is my child able to ride without riding into another person and ring the bell at the same time?

- Keeping to the left side of the path

  It is Australian law that pedestrians have right of way on a footpath so bike users must stay left and give way.

  Questions to ask:
  Does my child know which side of the footpath that they need to ride on? Does my child have

enough control on their bike that they can stay to the left side of the footpath?

- Moderating speed and adapting to conditions
  Riding a bike in the community requires an ability to continue riding through varying environments. Hills, curves, dips, slopes are all environmental conditions that bike riders need to be able to confidently adapt to. Bike riders need to be constantly alert. Actively looking and listening to what is around them.

  Questions to ask:
  Does my child know to pedal hard to get up a hill and also how to cruise and brake to go down a hill or around a corner? Does my child know how to look ahead to see what conditions they are going to face? Does my child know how to interpret the information that is in front of them eg seeing a speed hump ahead means I need to slow down? Can my child ride their bike confidently enough to be able to focus on being a safe bike rider? Does my child keep their attention on being a safe bike rider or is my child distracted by things that will not help them to be a safe bike rider?

- Know the road rules
  Bike riding in the community often brings bike riders in contact with roads. Road safety and related questions is covered in more detail (here - link to other section of website).

http://www.kidsafensw.org/imagesDB/wysiwyg/A_Parents_Guide_to_Kidsafe_Roads_FINAL_WA.pdf