

Safe Cycling Guide



LET'S
PLAY

Think Safe • Play Safe • Stay Safe



SINGAPORE
SPORTS COUNCIL

Contents

1. ACKNOWLEDGEMENTS	4
2. INTRODUCTION	7
3. ESSENTIALS FOR SAFE CYCLING	8
3.1 Helmet	8
3.2 Bell	10
3.3 Mirrors	10
3.4 Clothing	11
3.5 Lights	11
4. BASIC SAFETY TIPS	12
4.1 Seat height	12
4.2 Seat position	12
4.3 Handlebar angle	12
4.4 Handlebar height	12
5. CYCLING SAFELY AT NIGHT	13
5.1 Being alert	14
5.2 High visibility clothing	14
6. ROAD SAFETY & CHALLENGES ON THE ROAD	15
6.1 Handy List of Road Safety Tips	15
6.2 Surface hazards	17
6.3 Hot weather	18
6.4 Wet weather	19
6.5 Slopes and Hills	20
7. SAFETY GUIDELINES FOR YOUNG CHILDREN	21
7.1 What to buy	21
7.2 Helping young children learn to ride safely	22
7.3 Helmets	24
8. CHOOSING A BIKE	25
8.1 Mountain Bikes	25
8.2 Touring Bikes	25

8.3 Hybrid Bikes	25
8.4 Road Racing Bikes	26
8.5 Foldable Bikes	26
9. CHOOSING ACCESSORIES	27
9.1 Child carriers	27
9.2 Load Carriers	27
9.3 Bike carriers	29
9.4 Pumps	29
9.5 Water bottle cages	29
9.6 Tool kits	30
9.7 Computer	30
9.8 Overall roadworthiness	30
10. BASIC BICYCLE MAINTENANCE	31
10.1 Daily maintenance	32
10.2 Weekly maintenance	32
10.3 Monthly maintenance	32
11. CYCLING FOR HEALTH & FITNESS	35
11.1 Before start of exercise	35
11.2 Physical Activity Readiness Questionnaire (PAR-Q)	36
11.3 Warming up	38
11.4 Current recommendations for physical activity	38
12. CYCLING AND THE LAW	39
12.1 Cycling equipment	39
12.2 Carrying or towing loads	40
12.3 General road traffic (bicycle) rules	40
12.4 Dealing with traffic	42
13. SHARED PATHS & CYCLING TRACKS	43
13.1 Shared path courtesy	43
13.2 Cycling tracks in Parks	44
14. FOLDABLE BICYCLES ON BUSES AND TRAINS	45

1. ACKNOWLEDGEMENTS

The Singapore Sports Council (SSC) would like to thank and acknowledge the organizations and individuals who participated in the consultation process to produce the initial version of the Safe Cycling Guide. The feedback and suggestions greatly informed and improved the final delivery of this publication.

Government of Western Australia

Department for Planning and Infrastructure
<http://www.dpi.wa.gov.au/cycling/1515.asp>

Singapore Police Force - Traffic Police

- Feedback on Cycling on Footways
http://www.spf.gov.sg/feedback/safe_guidelines.htm
- Safe Cycling Guidelines
http://www.spf.gov.sg/feedback/safe_guidelines.htm
- Frequently Asked Questions (FAQ) on Cycling on Footways
http://www.spf.gov.sg/faqs/traffic_footways.htm



Health Promotion Board of Singapore

Overview on Exercise
http://www.hpb.gov.sg/hpb/default.asp?pg_id=923



Land Transport Authority (LTA)

Website: <http://www.lta.gov.sg>





National Parks Board (NParks)

Website: <http://www.nparks.gov.sg>



National Safety Council of Singapore (NSCS)

Website: <http://www.nscs.org.sg>



SMRT

Information on bringing your foldable bicycle on board trains and buses

http://www.smrt.com.sg/buses/documents/Bus_Poster.pdf



Singapore Amateur Cycling Association (SACA)

Website: <http://www.cycling.org.sg>



Safe Cycling Task Force

Website: <http://safecycling.org>



Australia and New Zealand Association (ANZA) Cycling

Website: <http://www.anza.org.sg>



Triathlon Association of Singapore (TAS)

Website: <http://www.cycling.org.sg>

Sports Safety Working Committee (2008):

- Health Promotion Board
- KK Women's and Children's Hospital
- Ministry Of Education
- Nanyang Technological University
- National Parks Board
- Peoples' Association
- Public Utilities Board
- SAFRA National Service Association
- Singapore Heart Foundation
- Singapore Police Force
- Singapore Sailing Federation
- Singapore Sports Council
- Triathlon Association of Singapore

For further information or feedback, please contact the Sports Safety Division/SSC at 6500 5431 or email us at ssc_ssy_temp@ssc.gov.sg or visit our website at <http://sportssafety.ssc.gov.sg>

Please note that the advice in this safe cycling guide is not exhaustive. All cyclists must exercise their own caution and everyone is nevertheless responsible for their own wellbeing. SSC totally excludes any liability whatsoever for any death, personal injury or mishap that may occur. Exercise and cycle safely and where necessary, seek professional and medical advice.

SAFETY IS EVERYONE'S RESPONSIBILITY.

Another initiative by the Sports Safety Division, Singapore Sports Council.



2. INTRODUCTION

The key to safe cycling is as easy as S.A.F.E.



► S - Standardization

Set the standards for safe cycling and cycle defensively. Never assume that a motorist has seen you and always stay visible, predictable and follow the safety rules.

► A - Alert

Remaining alert is another important factor to a safe cycling trip. Always look out for hazards and other road users, making sure that they too are aware of your presence.

► F – Fitting Helmet and Safety Gear

Wear protective & safety gear to reduce the risk of injury and harm.

► E – Etiquette

Be courteous and treat other road and path-users with the same consideration that you would expect from them.

3. ESSENTIALS FOR SAFE CYCLING

Essential items and accessories for the bike can improve the quality and safety of your riding experience. Here is a list of some of the most essential items:

- ▶ helmet
- ▶ good-working brakes
- ▶ bell
- ▶ mirrors
- ▶ bright clothing
- ▶ lights

3.1 Helmet

Never compromise when choosing a helmet. Fit and comfort should always be placed ahead of price.



Fit

A snug fit is the key to buying an appropriate helmet. Choose a helmet with an internal shape that closely matches your head shape and size. Don't rely on the size pads to 'take up the slack' - they should only be used to achieve a fractional fit. Try the helmet first without the pads. Use your index finger to check the gap between your head and the polystyrene inner. If it fits easily, the gap is probably too great. If the gap varies from front to side, it indicates a mismatch between the helmet and your head shape.

Once the sizing pads are in, the helmet must be stable on your head before the straps are fastened, there should be practically no movement - sideways, backwards or forwards. It should fit level on your head and not tilted back at an angle.

Before leaving the shop, ensure you have adjusted and tightened the straps so that the helmet sits firmly on your head. Don't assume it can be done later.



Visibility

Choose a helmet with bright or fluorescent colours for higher visibility. Avoid choosing dark colours like black because they're harder for motorists to see.

Air Vents

Air vents allow air to flow over your head, helping to keep you cool and aiding sweat control. Although comfort is one of the key aspects in choosing a helmet, selecting one with too many vents, or excessively large vents means less foam protecting your head.

Helmet Safety Standards

There are a number of recognized safety standards for bicycle helmets. Check for stickers located inside every helmet stating these standards. A list of some of the helmet performance standards to look out for include:

- ▶ Snell Memorial Foundation
- ▶ CPSC
- ▶ EN1078
- ▶ American National Standard Institute (ANSI Z-90.4)
- ▶ ASTM



Do note that visors are not tested for shattering under helmet standards. They can snag or shatter and cut you during a fall.

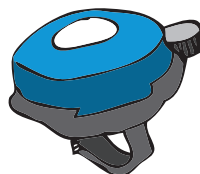
Helmet Safety Tips:

1. Wear Standards approved helmets.
2. Wear a helmet at all times on roads and paths which are accessible to the public.
3. The retention straps on the helmet must be correctly fastened at all times.
4. A child in a child carrier seat must also wear a Standards approved helmet.
5. Check on the lifespan of the helmet, and if unspecified, change your helmet every 2-3 years even if it looks to be in good condition.
6. Always read any attached warning or instructions from the manufacturer pertaining to usage of helmets, especially after a crash.
7. Replace your helmet immediately after a crash, or if it bangs into an object, even if the helmet still looks okay visibly.



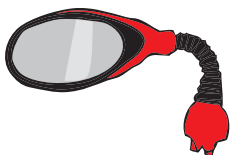
3.2 Bell

A bell serves as a warning device to warn nearby pedestrians of your presence. Always ring your bell when approaching pedestrians or slower moving cyclists from behind. Use the bell about 30 metres before reaching them. If they are aware of your presence with plenty of time to spare, they are less likely to be alarmed and make sudden sideways movements.



3.3 Mirrors

Mirrors enable you to be more aware of your surroundings without having to turn your head around too much. The most popular are small circular mirrors on stems that clip to the handlebars. There is another smaller version which is attached to the rider's helmet.



3.4 Clothing

Wear bright and/or fluorescent colours to ensure you are seen, especially when cycling during times of darkness and/or times of low visibility. While not essential for cycling, items such as Lycra knicks and gloves can increase your riding comfort.

Do not wear bell-bottom pants or baggy pants as these may get entangled with the bicycle gear.¹ Wear proper footwear like shoes or closed/strapped sandals and avoid open flip-flops or slippers that provide little or no grip at all, and which have the tendency to fall off while cycling.



3.5 Lights

During times of darkness and/or times of low visibility, it is mandatory that you must have a lamp showing white light to the front and another lamp or red reflector showing a red light or a red reflector towards the rear, both of which must be visible from a reasonable distance. No bicycle in Singapore is permitted to show a red light to the front, and any light other than a red light to the rear.²



¹Source: Singapore Police Force - Feedback on Cycling on Footways as of 15th April 2009

²Source: Road Traffic Act (CHAPTER 276, SECTION 140) as of 15th April 2009

4. BASIC SAFETY TIPS

Whichever type of bike chosen, the frame size must be right for you to ensure you can get on and off your bike safely. When you straddle a racing, touring or hybrid bike, the clearance distance between your crotch and the top tube of the main bicycle frame should be at least 3cm. For a mountain bike, this distance should be about 8cm.

4.1 Seat Height

Your knees should be slightly bent (no more than 30 degree angle) when you're in the proper pedaling position - with the balls of your feet on the pedal. If your hips/pelvis sways from side-to-side the seat is too high.

4.2 Seat Position

Adjust the seat so that your feet are placed naturally above the pedals. Some riders prefer their seats tilted slightly forward or backward. However, if the seat is tilted too much upward it can lead to pressure points. Injuries can occur when your seat is tilted too far downwards, causing you to slide downwards while cycling and applying extra pressure on your arms, hands and knees.

4.3 Handlebar Angle

Handlebars that are too close/far may result in you experiencing neck, shoulder, back and hand pains. Riding with the wrong handlebar angle can also lead to numbness in the palms of your hands.

4.4 Handlebar Height

Set the height of your handlebars higher than the seat if you prefer a more upright riding position. Setting them at the same height as the seat will give a slightly forward riding position and some people prefer this. One of the reasons for the handlebar being too low is when you buy a bicycle frame that is too small for you. Handlebars can be bought in different widths and are sized according to the type of bike. For racing or touring bikes, they should be about the same width as your shoulders. For mountain bikes, they need to be a little wider.



5. CYCLING SAFELY AT NIGHT

Riding at night can be as enjoyable as riding during the daylight - it just takes a little more awareness. Stay alert, recognize the dangers and dress accordingly. Remember that rider visibility is vital at all times, not just at night.

If you ride at night you must, by law, use lights - a continuous white light at the front and a red light at the rear. Types and prices of lights vary enormously - don't make your decision on price alone. For the front, look for a bright quartz halogen light that produces an unbroken white beam.

For the rear, flashing red Light-emitting diode (LED) types are acceptable, but beware of the cheaper variety as their performance can be questionable. Ensure that both the front and rear lights are visible from a reasonable distance.



No bicycle in Singapore is permitted to show a red light to the front, and any light other than a red light to the rear.

A tip for cycling at night in traffic is to aim the front light at the eye level of car drivers to maximise your chance of being seen. If you are not in traffic, aim the light beam lower to illuminate the ground ahead of your bike.

5.1 Being Alert

The number one rule is to cycle defensively. Watch out for joggers, walkers, other cyclists and cars - and make sure they know you're there.

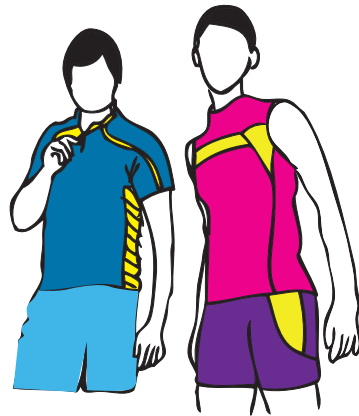
At night, cars approaching with their headlights on high beam can dazzle a rider, so be prepared. Watch your shadow if you are approached by a car from behind. If your shadow does not start to move to the left as the car approaches, move your bike to the left.



5.2 High Visibility Clothing

Just as bright fluoro clothes are best for daylight riding, white clothes are necessary for rider visibility at night. Best of all are garments with reflective panels. Bike shops sell jackets, shirts and lightweight vests that slip over your ordinary cycling clothing.

Highly recommended also, are reflective anklets, cloth or plastic reflective tape and stickers. These are cheap, weigh virtually nothing, are available in red or white for the rear or front of the bike respectively, and can be attached anywhere on the bike, helmet or rider.



6. ROAD SAFETY & CHALLENGES ON THE ROADS

6.1 Handy List of Road Safety Tips

Regardless of whether you're new to cycling, or if you've been cycling for years, road safety is crucial to ensuring your safety, and others. This handy reference list presents you with the essential tips to ensuring a safe and enjoyable ride for you.

Starting off

1. Look behind you and to both sides before moving off.

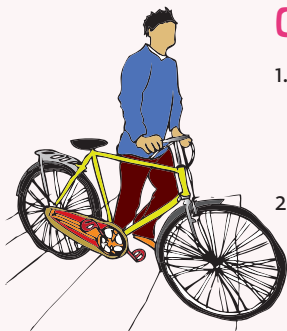


Controlling road position

1. Keep left unless turning right and ride in a straight line with the traffic flow.
2. Ride at least one metre away from parked cars. Someone could open their door unexpectedly!
3. Keep a safe distance away from the kerb.
4. Don't follow cars or other vehicles too closely.
5. Always check for traffic behind you. It helps to listen for approaching cars too.
6. Keep control of your bike. Ride safely to control your speed and braking.
7. Don't swerve or make sudden turns as drivers may not be able to react fast enough to avoid colliding with you.
8. Watch out for potential hazards - potholes, gravel and drainage holes.
9. Look out for vehicles coming in and out of driveways. Be particularly alert near driveways, gateways and intersections.

Braking smoothly

1. Use your front and back brakes.
2. Stop in a straight line with complete control over your bike.



Crossing and signaling

1. Remember simple road rules such as stop at the kerb, look right, look left, then right again, listen for cars approaching and think before crossing.
2. Give hand signals clearly and in good time.

Turning left

1. Always check behind you and coming from the right.
2. Signal clearly if you intend to stop and give way or turn into the new road.
3. Turn at a speed that allows you to keep full control over the bike.

Turning right

1. Check behind you before signalling and only move to the right when the road is clear.
2. Move as close as possible to the left of the centre of the road.
3. Signal to stop if the intersection isn't clear or signal to turn if the intersection is clear.
4. Keep both hands on the handle bars while you are turning.
5. Move through the intersection and ride to the left of the centre of the new road.

Keeping control on hills

1. When riding uphill, keep a straight line without wobbling or swerving.
2. When riding downhill, keep a constant road position.
3. Always keep your bike under control with front and back brakes.
4. Make sure you have both hands on the handlebars except when signalling.

For your own safety, it is important to first be aware of the hazards when cycling so you may exercise the necessary precautions. You must always be mindful of your surroundings and to dismount your bicycle if it is too dangerous.

6.2 Surface Hazards

You must watch out for:

Irregular surfaces like holes, raised and depressed surfaces

You may either ride over these obstacles slowly or carefully cycle around to avoid them. Also keep a look out for roadside hazards near the kerb like litter, drains and drainage gratings.

Slippery and/or loose surfaces like sand, gravel and puddles

Ride over them slowly and corner slowly without tilting the bicycle too much. Where possible, avoid cycling over oil patches, which can be identified by rainbow coloured sheen on the patch surface. If there's a need to ride over them, take the straightest path, keep the bicycle as vertical as possible and be prepared to put one foot down to keep balance. Also, avoid applying the brakes suddenly when riding over these slippery and loose surfaces, otherwise, be prepared for an attempt to maintain balance should the bicycle skid.

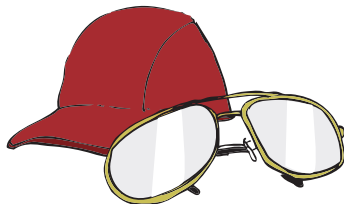
Sharp objects

Avoid cycling over sharp objects such as glass, nails and sharp metal pieces. Should your tire go flat, do not continue pedaling and carefully reduce your speed to a stop. Dismount your bicycle and walk with it.

6.3 Hot Weather

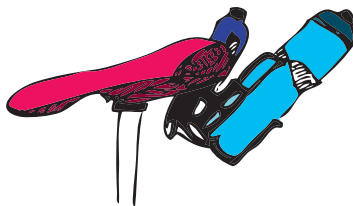
Singapore is generally a hot and humid country with the exception of occasional rainfalls. It is important to check the weather before embarking on a cycling trip so you may prepare yourself accordingly.

- ▶ When the sun is bright and glaring, wear additional protective clothing like caps and sunglasses to help make it easier to keep your eyes on the road and around you.
- ▶ Plan your route so that it includes paths with lots of shade.



Constantly hydrate yourself by keeping water easily accessible to you without having to open your backpack.

- ▶ Water bottle cages are designed so you can reach for your bottle with ease, and there are many push-pull cap bottles available to enable you to drink water with one hand (i.e. there is no need to unscrew the bottle).

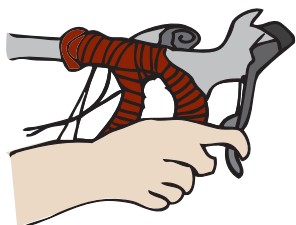


6.4 Wet Weather

Rain makes the roads slippery, so you should exercise more caution on wet roads:

Visibility

It is harder to see in wet weather. Wear bright clothing, and if necessary use your lights so other motorists are aware of your presence. Avoid cycling in the rain where possible.



Braking

This also enables the brakes to dry off and increases their effectiveness. Where possible, try braking your bicycle on wet roads in a quiet street with no traffic to familiarize yourself with the feel.

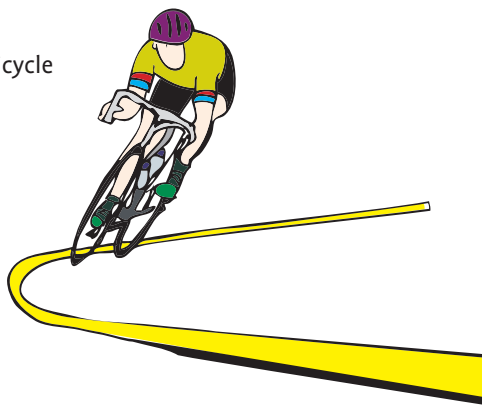
Cycle slowly on wet roads and allow for a longer braking distance so you may apply your brakes gently.

Cornering

Turn around corners slowly while keeping your bicycle as upright as possible.

Puddles

Avoid wet puddles whenever possible. They not only provide less traction, there may also be potholes, sharp objects and other obstacles hidden under them.



6.5 Slopes and Hills

It is good to get a bicycle that provides for gear changing if you always have to cycle up and down slopes. It is also important to practice and familiarize yourself with gear changing. Here are some tips to help you select the right gear:

- ▶ Always pedal forward and pedal with less force when changing gears.
- ▶ Change into a low, easy gear before stopping. This will make it easier for you to start off again.
- ▶ When cycling on a level terrain, choose a gear that you're comfortable with, which is a balance between a gear where you have to spin the pedals too quickly (low gear) and one where it is too difficult pedal. Low, easy gears will cause you to bounce on your seat from pedaling too quickly. High, hard gears that require you to push hard may cause knee problems.
- ▶ Change to low and easy gears when going uphill. Change gears a little distance before reaching the hill to preserve your momentum.



7. SAFETY GUIDELINES FOR YOUNG CHILDREN

Learning to ride a bike is a rewarding experience for all children. It gives a great sense of achievement, helps develop balance and coordination and encourages social contact.

7.1 What to Buy

The best bike for your child is one that is easy to handle and has a frame suitable for your child's body shape.



When buying a bike for a child, it is important to consider:

- ▶ **Handlebars**
(BMX or flat style is better)
- ▶ **Wheels** (size and type)
- ▶ **Brakes**
- ▶ **Bottom bracket**

Here's a simple checklist to go through to ensure the bicycle is the right size for your child:

- ☐ Is there at least a 3cm height clearance between the main top tube of the bicycle frame and the lowest point of your child's body when they are standing with feet flat on the ground?
- ☐ If the bike is a BMX or mountain bike, is there a clearance of 10cm?
- ☐ Are the handlebars and handbrakes within reach? When your child is seated their arms should be slightly bent when holding the handle grips and their knees should not hit the handlebar.
- ☐ Is the seat level when your child sits down?

7.2 Helping Young Children Learn To Ride Safely

It is important to let your child learn at his or her own pace. Training wheels are an effective way to help your child gain confidence and stability. When your child starts riding without training wheels, support the bike at the back of the saddle and run behind as they learn to balance. Once your child is more confident, teach them to ride unsupported on a grass park or tennis court.

Remember that children under 12 have difficulty maintaining concentration, gauging distances and judging speed.

The next stage should be on light traffic and, later, on the road with a parent. In this latter stage, a parent can teach road rules and how to exercise necessary care. Here are a few tips to get young children to start cycling:-



Cycle with other people

- ▶ Children under 12 are still developing their peripheral vision and hearing, so should be supervised around traffic.
- ▶ If your child is over 12 years, cycle with them until you are confident they have a well-developed road sense.

Get to know your local area

Help your child map out a safe route to school. It is usually the way with the least amount of traffic and fewest roads to cross.



Equipment

- ▶ Ensure your child is wearing a helmet, has a water bottle and wears highly visible clothing and shoes.
- ▶ Make sure their bike is maintained, their helmet fits properly and is always done up.
- ▶ Give gifts or toys that promote physical activity (eg bikes, sneakers, hats).



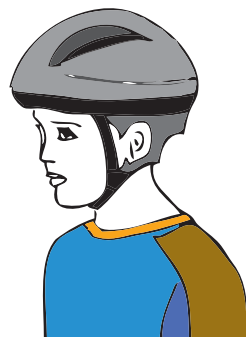
Weather

- ▶ Avoid cycling in extreme weather.
- ▶ Encourage your child to wear a hat, slap on some sun screen lotion and wrap on sunglasses, even on cloudy days.

7.3 Helmets

Head injuries happen when riders hit nearby objects or can't break their fall.

Make sure your child wears a helmet that fits their head, is lightweight, has good ventilation and is a colour that is easily seen in the traffic environment.



Child helmets are vital for children up to age five or six. After that, their head is almost adult size and they should be able to wear adult helmets.



Checking the helmet fit

- Place the helmet on your child's head checking that it fits snugly.
- Adjust the straps and do up the buckle.
- Place your palm under the front of the helmet and push up and back. It shouldn't move.
- Place your palm on the top of the helmet and try to move it side to side. It shouldn't move.



For maximum protection the helmet must fit well.

If a helmet is loose it will not give your child maximum protection.



8. CHOOSING A BIKE

It is very important that you buy a bicycle that fits your needs and plans. Determine if you want the bike for a specific purpose e.g. racing, commuting, off-road exploration, long distance touring etc. There are varying frame sizes to suit your body shape, accessories to tailor the bike to your specific needs, and differing levels of quality that, in general, match the cost of the bike.

There are many types of bikes, each with their own characteristics and uses. Here is a quick summary:

8.1 Mountain Bikes

Popular for both on and off the bitumen. They have wide, knobby tyres, flat handlebars and between 15 and 27 derailleurs gears.

Bikes fitted with standard tyres perform better off road than on bitumen. However, special slick tyres can be fitted that make road cycling easier.



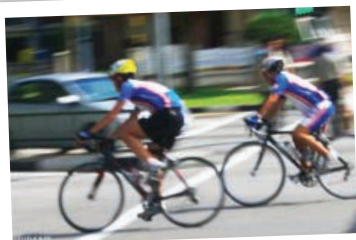
8.2 Touring Bikes

As the name implies, these are long-distance bikes capable of carrying cargo. They are strong with a big frame triangle, drop handlebars and 14-27 gears.



8.3 Hybrid Bikes

Sometimes called “cross” or “city” bikes, these look like slim-framed mountain bikes with narrower tyres and slightly raised handlebars. Despite their appearance, they perform better on bitumen than off. Gearing varies from 15 to 24 speed, with 21 speed being the most common. They are good for commuting or short leisure trips.



8.4 Road Racing Bikes

Similar in appearance to a quality touring bike, although having a finer frame, shorter wheelbase and drop handlebars. Being very light, these bikes are built for speed on the road. This means they are not as structurally strong as other types of bikes.

8.5 Foldable Bikes

There are a number of bikes on the market that can be reduced in size to allow easier carriage and storage. They usually involve a folding sequence where the wheels, handlebars and frame hinge together into a tight package. The advantage being that when fully folded, they take up less than half the space of a standard bicycle. However, compromises have to be made to accomplish this. Often the wheels are smaller than other bikes and not suited to long distance riding.

Foldable bikes are permitted on public buses and Mass Rapid Transit (MRT) trains in Singapore and there are several important criteria and regulations to take note of before a cyclist is allowed to do so. For more information on the requirements and general guidelines, please refer to page 45.



9. CHOOSING ACCESSORIES

9.1 Child Carriers

This is a great way to introduce your child to cycling. Some models of child carriers attach to



- ▶ the rear of a bike
- ▶ on top of a carrier
- ▶ to the centre of the bicycle frame ahead of the rider.

Always ensure your child is securely fastened in and wearing a protective helmet before you start cycling. It also helps to educate your child about safety and proper conduct when sitting in the child carrier.

These seats must be:

- ▶ securely attached to the frame.
- ▶ attached in a position that is not forward of or on the handlebars.
- ▶ fitted with a footrest that prevents the child's feet from dangling.
- ▶ fitted with a restraining device that cannot be accidentally released.

9.2 Load Carriers

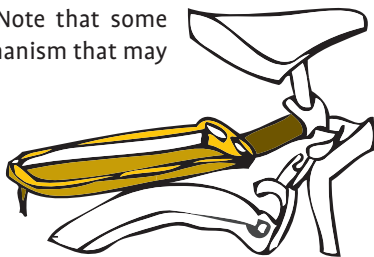
Avoid carrying heavy or bulky items on front load baskets as these can affect the ease with which you can turn your bicycle handle, making steering more difficult. It is easier to let the bike, rather than the rider carry the load so use a rear rack where possible instead of a front load basket.

It is important to note that whenever attaching a rack, basket or bags to your bike, be sure to check that it does not place pressure on brake cables, or obstruct the reflector, lights or your pedals and feet. Each bicycle should not carry a load that weighs more than 18kg in total. The load cannot overhang the body fitted thereto nor shall its height be more than one metre from the ground.⁴

⁴Source: Road Traffic Act (CHAPTER 276, SECTION 140) as of 15th April 2009

► Rear Racks

These create a flat carrying surface over the rear wheel. This can be used to strap or secure a load on top. They also act as a base for the attachment of panniers and baskets. Note that some racks have a strong spring-loaded gripping mechanism that may damage soft or fragile goods.

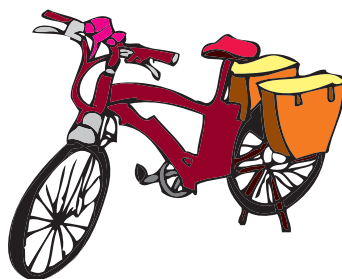


► Baskets

It is usually more efficient to place a larger basket on the back of the bicycle than on the front. Only place lighter items in a front basket. Rear baskets can usually accommodate more weight (up to 10 kg).

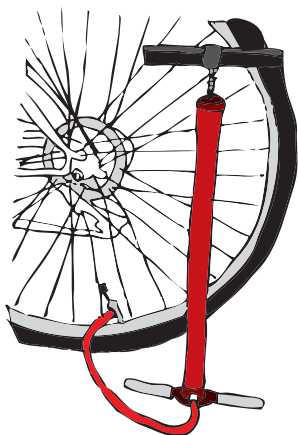
► Panniers

These have the appearance of saddlebags that hang down either side of the front and rear wheel. Most are waterproof but if not, you can buy waterproof covers. They have the benefit of low centre of gravity and are therefore very stable. When packing a pannier, try to avoid placing pointed items directly against the sides as they may tear the lining. Try to distribute the load evenly on both sides of the bike and if you have both sets, arrange items so that 60% of the weight is in the back pair and 40% in the front pair.



9.3 Bike Carriers

The two common ways to carry bikes on vehicles are on a roof rack or a tow bar carrier. Both designs make it easier to transit your bike. When making a decision on which suits you, consider both safety and security factors.



9.4 Pumps

Traditional models have a cloth covered extension tube that screws into the pump at one end and the tyre's valve at the other. Increasingly popular are high pressure pumps that fit directly to the valve without an extension tube. There are also floor pumps, as well as the local service station - but remember not to inflate the tyre too much. You will generally find bikes fitted with one of two types of valve - Presta (racing bikes) Schraeder (similar to a car valve). The two are not interchangeable, so you must ensure your pump fittings match the valve.

Valve adaptors are small and easily available from most bike shops and come packaged together with some bicycle pumps. It is good to always have an adaptor handy to facilitate pumping, especially if the air pumps at most petrol stations do not fit your bike's tyre valve.

9.5 Water Bottle Cages

The need for cyclists to maintain their water level makes a water carrier an important accessory for your bicycle.

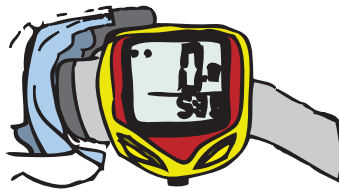


9.6 Tool Kits

Once again, these will generally need to be purchased separately. Leather or plastic tool bags are available which mount to the frame of the seat. A tool bag should contain a puncture kit, tyre levers, small adjustable spanner, screwdrivers and perhaps a spare tube.

9.7 Computer

Cycle computers provide information on speed, total time and trip distance. They are a great way to encourage regular cycling, or to set a training regime.



9.8 Overall Roadworthiness

A bicycle must be properly maintained so that it does not present a danger to the rider or other road users. A bicycle can be judged to be not roadworthy if the:

- ▶ chain is too loose (more than 25mm of play);
- ▶ wheel nuts or wheel bearings are loose;
- ▶ tyres are in poor condition;
- ▶ wheel rims are buckled or spokes are missing;
- ▶ brake callipers are misaligned or brake shoes are excessively worn;
- ▶ steering assembly is loose; or
- ▶ seat is not securely fitted.



10. BASIC BICYCLE MAINTENANCE

A healthy bike works better, is safer and more fun to ride than one that has been neglected by its owner. Servicing and repairing a bike is inexpensive compared to a car.

Depending on how often you ride, you should maintain your bike on a daily, weekly or monthly basis. No matter how expensive or new the bike, it must be serviced at least once a year by an experienced and knowledgeable bicycle mechanic.



Doing It Yourself

The beauty of a bike is its simplicity. You can carry out many repair and maintenance jobs yourself. To make this task easier, have the right tools, allow yourself plenty of time and do the job methodically. The reward for your effort is the satisfaction of doing the job yourself (and perhaps saving a few dollars) while learning new skills and gaining the confidence to carry out more difficult repair tasks.

Tool Kit

The basics are a puncture repair kit, tyre levers, screwdriver, set of allen keys, set of spanners or a small shifting spanner, cleaning rags and an old toothbrush, and lubricants such as light oil and grease. More advanced work will require specialist tools.



10.1 Daily Maintenance

Whenever you intend to ride, first give the bike a quick lookover. Check the brakes and tyre pressure. Properly inflated tyres are easier to ride on, prevent damage to the wheel rims when hitting bumps, and reduce the chance of punctures.

10.2 Weekly Maintenance

If it is required, lubricate exposed moving parts of the bike with a light oil, such as sewing machine oil. Do not get oil on the tyres or rims, and do not use penetrating spray oil on bearings.

Oil the following areas:

- ▶ front and rear derailleur gears;
- ▶ front and rear brake pivots;
- ▶ brake and gear levers;
- ▶ and a small amount on each chain link.

10.3 Monthly Maintenance

Check the major items on your bike as follows:

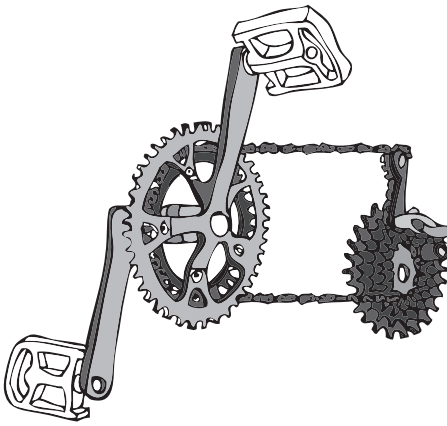
Wheels

- ▶ Check tyre pressure and condition. The tyres should be hard to squeeze. The valves should be upright and not leaking.
- ▶ The wheels should be straight and true, without dents or other damage, and can spin freely.
- ▶ Replace broken spokes and tighten loose ones.
- ▶ Check axle nuts and cones. Tighten if necessary.
- ▶ If the wheels have quick release mechanisms (especially the front wheel), make sure they are securely fastened, otherwise the wheels could fall out, causing a crash and severe injury to the rider.



Brakes

- ▶ Check brake blocks for wear, and make sure they contact squarely with the rim, not the tyre.
- ▶ Replace worn or frayed brake cables.
- ▶ Adjust brakes so that, even when braking hard, there is still some clearance between the brake levers and handlebars.



Gears

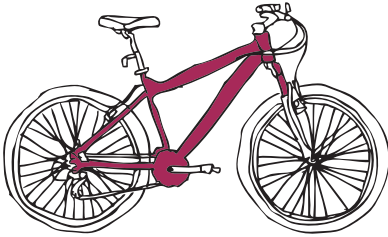
- ▶ Check derailleur gear action and cables (derailleur repairs are best left to a mechanic).
- ▶ Clean chain with a rag soaked in degreaser and re-oil.
- ▶ Clean rear sprockets.

Steering

- ▶ Check for looseness in the handlebar and stem.
- ▶ Ensure the handgrips are secure.

Pedals

- ▶ The axle must spin freely.
- ▶ Check pedal axles and bottom bracket axles for excessive looseness.



Frame

- ▶ Inspect for damage.
- ▶ Ensure seat post height is correct and that the seat post bolt is tight.

Accessories

- ▶ Check to ensure the bell is in working order.
- ▶ Ensure the bicycle has a reflector at the rear.
- ▶ Make sure the white headlight and red tail light are in working order.

11. CYCLING FOR HEALTH & FITNESS

Cycling is a relatively inexpensive way to achieve better health and fitness. Because it's a low-impact activity, cycling places very little strain on the body. This is especially good for people who are starting to get into exercise; pregnant women and people recovering from injury. Cycling also gives a great cardiovascular workout because it uses the biggest muscles in the body.

Cycling can save you money, improve your health and help you enjoy the outdoors. Regular cycling will:

- ▶ make you feel more energetic
- ▶ lessen the risk of many lifestyle diseases such as cardiovascular disease
- ▶ help you sleep better
- ▶ reduce stress
- ▶ strengthen your heart
- ▶ improve your blood pressure
- ▶ help you manage your weight
- ▶ Aid the release of 'feel good' body chemicals called 'endorphins'



11.1 Before Start of Exercise

1. Get the all clear from your doctor before starting an exercise program, especially if you are overweight, smoke, or have high blood pressure. Your doctor will advise you on your heartbeat rate and how high it can go safely when exercising.
2. Alternatively, you can run through the Physical Activity Readiness Questionnaire (PAR-Q) on the following page.

11.2 Physical Activity Readiness Questionnaire (PAR-Q)

Are You Ready for Sports?

PAR-Q is designed to help you assess your level of readiness for physical activity. It is simple and it only takes a fraction of your time to complete!

PAR-Q & You

(A Questionnaire for People Aged 15 to 69)

Regular physical activity is fun and healthy, and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are over 69 years of age, and you are not used to being very active, check with your doctor.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check YES or NO.

YES NO

- ☐ ☐ 1. Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?
- ☐ ☐ 2. Do you feel pain in your chest when you do physical activity?
- ☐ ☐ 3. In the past month, have you had chest pain when you were not doing physical activity?
- ☐ ☐ 4. Do you lose your balance because of dizziness or do you ever lose consciousness?
- ☐ ☐ 5. Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?
- ☐ ☐ 6. Is your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart condition?
- ☐ ☐ 7. Do you know of any other reason why you should not do physical activity?

Par-Q can be downloaded from www.ssc.gov.sg and it is available in Chinese, English, Malay and Tamil.

If you answered YES to one or more questions:

Talk with your doctor by phone or in person **BEFORE** you start becoming much more physically active or **BEFORE** you have a fitness appraisal. Tell your doctor about the PAR-Q and which questions you answered **YES**.

- You may be able to do any activity you want — as long as you start slowly and build up gradually. Or, you may need to restrict your activities to those which are safe for you. Talk with your doctor about the kinds of activities you wish to participate in and follow his/her advice.
- Find out which community programs are safe and helpful for you.

If you answered NO honestly to all PAR-Q questions, you can be reasonably sure that you can:

- start becoming much more physically active – begin slowly and build up gradually. This is the safest and easiest way to go.
- take part in a fitness appraisal – this is an excellent way to determine your basic fitness so that you can plan the best way for you to live actively. It is also highly recommended that you have your blood pressure evaluated. If your reading is over 144/94, talk with your doctor before you start becoming much more physically active.

DELAY BECOMING MUCH MORE ACTIVE:

- if you are not feeling well because of a temporary illness such as a cold or a fever – wait until you feel better; or
- if you are or may be pregnant – talk to your doctor before you start becoming more active.

PLEASE NOTE:

If you answer YES to any of the above questions, tell your fitness or health professional. Ask whether you should change your physical activity plan.

11.3 Warming Up

As with any exercise, it is important to warm up before cycling. Cycling gently for ten minutes will warm your body up and prepare your muscles for more intense exercise.

Increase the speed and distance you cycle at a steady rate as you get fitter, remembering that you are exercising for good health and enjoyment. As a guide, a beginner with a moderate level of fitness should aim to cover 5 kilometres in 20 minutes.

Rest is also very important as it allows your body to recuperate. Cooling down after a ride is just as important as warming up beforehand. Ride at an easy pace for the last five minutes of your ride and you will finish refreshed and revitalised, rather than strained and tired.

11.4 Current Recommendation For Physical Activity

The Health Promotion Board of Singapore recommends 30 minutes of exercise 5 – 7 days per week.⁵ 30 minutes might sound like a lot of exercise in one go but the good news is you can break it up throughout the day. That is, you can exercise for ten minutes three times a day, or 15 minutes twice a day and still benefit.

To get the most out of cycling, try to go at a pace that makes you breathe a little faster, feel warmer and have a slightly raised heart beat.

Remember; take it easy to begin with. When you first start cycling you should aim to cover five kilometres in 20 minutes. As you become fitter and more comfortable on your bike, start to increase your speed and distance.



⁵Source: Health Promotion Board of Singapore as of 15th April 2009

12. CYCLING AND THE LAW⁶

This section covers the requirements and offenses as laid down by the Singapore Traffic Police and the Road Traffic Act. This guide hopes to advise users like you to use this as a guide to comply with the rules and regulations as well as to encourage everyone to cycle safely with caution so as not to endanger their own and others' lives.



12.1 Cycling Equipment

A bicycle must have the following:

- ▶ a bell (or other effective warning device) that functions correctly.
- ▶ effective hand operated wheel brakes.
- ▶ a red reflector fitted to the rear.

When riding during darkness (7pm-7am), a bicycle must also have:

- ▶ a front light showing a continuous white beam that is clearly visible from 200 metres.
- ▶ a rear light showing a continuous or flashing red beam that is clearly visible from 200 metres.
- ▶ a yellow side reflector (visible from both sides) on each wheel.
- ▶ yellow reflectors fitted to both side edges of each pedal.

⁶Source: Singapore Traffic Police & Road Traffic Act (Singapore) as of 15th April 2009

12.2 Carrying or Towing Loads

Any load or attachment on a bicycle must not be likely to cause injury to the rider or any other person. Each bicycle should not carry a load that weighs more than 18kg in total and the load cannot overhang the body fitted thereto nor shall its height be more than one metre from the ground.

12.3 General Road Traffic (Bicycle) Rules

When using a public road, all bicycle riders must obey the same rules as other vehicles such as cars and trucks. A cyclist may be punished under the Penal Code/Road Traffic Act should he/she act rashly or negligently so as to endanger human life or the personal safety of others.

The most common rules include those applying to traffic control lights, stop signs, careless/reckless riding, and keeping left. As a general rule, cyclists shall not unreasonably obstruct or prevent free passage of a vehicle or pedestrian upon a path or road. Similarly, vehicles and pedestrians shall not unreasonably obstruct cyclists.



1. Bicycles are not permitted to be towed by any other vehicle when on any road.
2. Restriction on number of persons carried.
 - ▶ All bicycles can only carry at one time, no more persons than the number for which it is designed and no pillion passenger shall be carried on a bicycle unless it is designed for one.
 - ▶ This is with the exception of a child under 12 years of age who may be carried on a properly constructed child seat affixed firmly to the pedal bicycle.

3. Travelling abreast is prohibited.

- ▶ Bicycles are not permitted to be ridden on the right of another vehicle proceeding in the same direction except when overtaking such other vehicle.
- ▶ Bicycles shall not be ridden on the right of any two other pedal bicycles proceeding abreast in the same direction except when overtaking such other pedal bicycles or on parts of roads or paths set aside for the exclusive use of bicycles.
- ▶ When a portion of a road or path has been set aside for the exclusive use of bicycles, bicycles cannot be ridden on any other part of the roadway.

4. Bicycles are not allowed to be ridden on expressways, road tunnels and areas which are demarcated with signs indicating that bicycle riding is prohibited.

5. Slow down when approaching road openings, bends, junctions, bus stops and pedestrian crossings.

6. Do not cycle across overhead pedestrian bridges or pedestrian crossings. Instead, dismount and push your bicycle and practice proper kerb drills before crossing the road. Look right, left and right as if you are a pedestrian.

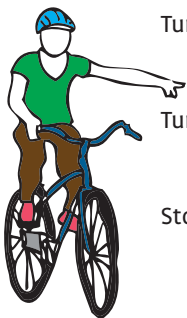
Common infringements by cyclists in Singapore include but are not limited to:

- ▶ **failing to have proper look out for others.**
- ▶ **changing lane without due care,**
- ▶ **failing to give way to traffic with right of way,**
- ▶ **riding on expressways,**
- ▶ **riding against the traffic flow,**
- ▶ **and failing to conform to red light signal.**

12.4 Dealing with Traffic

On-road cyclists need to ride defensively at all times.

- ▶ Try not to ride along a road directly into a rising or setting sun. These light conditions make it harder for motorists to see you.
- ▶ Show caution when nearing a motorist who is intending to turn left across your path. Always assume the motorist has not seen you.
- ▶ Always use the correct hand signals to indicate when you want to turn left or right and to stop and make them in sufficient time to enable traffic to take appropriate action for the avoidance of danger.



Turning left : Fully extend your left arm horizontally with the palm of the hand to the front.

Turning right : Fully extend your right arm horizontally with the palm of the hand to the front.

Stopping : Fully extend your right arm horizontally with the forearm vertical and with the palm of the hand to the front;

U-turning : Same rules apply as for a right hand turn.

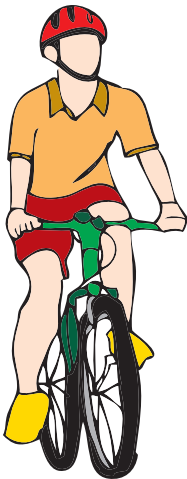


- ▶ Allow some space and slow down when passing parked cars. A door suddenly opening can be a hazard so stay about 1 metre away.
- ▶ Avoid riding within two metres of the rear of a motor vehicle, over a distance of more than 200 metres.
- ▶ Never overtake on the left side of a motor vehicle if that motor vehicle is moving and indicating to turn left.

13. SHARED PATHS & CYCLING TRACKS

Currently, under Rule 28 of the Road Traffic Rules, cycling on footways is prohibited. Like any other vehicles, bicycles are to be ridden on the roads and cyclists are required to abide by all relevant traffic rules and regulations.

However, the feasibility of allowing cyclists to share pedestrian footways in selected towns, depending on local conditions is being explored. To that end, a Tripartite Committee comprising Land Transport Authority (LTA), the Traffic Police (TP) and Tampines grassroots organisations conducted a trial in Tampines Town to study the extent to which local residents are prepared to share a common footway with cyclists safely and with mutual accommodation⁷.



13.1 Shared path courtesy⁸

- ▶ Always give way to pedestrians.
- ▶ Look out for pedestrians or other cyclists before moving off.
- ▶ When using a shared path, keep to the left at all times unless overtaking.
- ▶ Travel in a single file on shared paths unless overtaking.
- ▶ Cycle slowly, slowing down especially when passing pedestrians - remember they are slower and can be unpredictable.
- ▶ Always be aware and alert of the intentions of other footway users.
- ▶ When approaching pedestrians from behind, always ring your bell about 30 metres before reaching them. If they are aware of your presence with plenty of time to spare, they are less likely to be startled or make sudden sideways movements.
- ▶ Use hand signals to inform other footway users of your intentions.
- ▶ Prepare to slow down or stop if the human flow is heavy, especially in school zones. Dismount and push your bicycle if necessary.
- ▶ Slow down when approaching road openings, bends, junctions, bus stops and pedestrian crossings.

⁷Source: Land Transport Authority of Singapore as of 15 April 2009

⁸Singapore Police Force - Feedback on Cycling on Footways as of 15th April 2009

Be particularly careful where a shared path crosses a busy road. Look in all directions before proceeding across the road and onto the path on the other side. Cyclists also need to show caution where a shared path crosses residential and commercial driveways. In some instances, a reversing driver cannot see a person using the path.

13.2 Cycling Tracks in Parks

There are numerous parks in Singapore that provide lush greenery, cooling shade and provide a shield from the hustle and bustle of traffic noise and exhaust fumes. These parks provide a safer and relaxing location for people to carry out recreational activities like cycling. However, as with the shared paths, it is still important to be mindful of other users of the parks. Here are some extra tips to follow on top of the shared path courtesy located on the previous page:

- ▶ Stay on track – Stay within the cycling tracks where available and keep a look-out for pedestrians that may have walked onto the wrong designated track.
- ▶ Avoid speeding within parks.
- ▶ Show consideration to others by not hogging the tracks when cycling in groups.
- ▶ Ensure sufficient rest points for long distance cycling and ensure adequate hydration.



14. FOLDABLE BICYCLES ON BUSES AND TRAINS⁹

From 15 March 2009, foldable bicycles are permitted on buses and trains during weekday off-peak times (Mon - Fri : 9.30am - 4.00pm, 8.00pm to end of revenue service), and all day on Saturdays, Sundays and Public Holidays.



- ▶ Cyclists are responsible for the safe carriage of their foldable bicycles and must stay in the vicinity of their foldable bicycles at all times.
- ▶ Foldable bicycles should be FOLDED AT ALL TIMES in the MRT/LRT stations, bus interchanges/terminals and on trains and buses.
- ▶ Foldable bicycles should not exceed 114 cm by 64 cm by 36 cm when folded.
- ▶ The wheels of the foldable bicycles should be wrapped up if they are dirty or wet.
- ▶ Protruding parts likely to cause injury or dirty/damage property should be covered up.
- ▶ Foldable bicycles should not block the aisles and doors or impede commuters' movement at any time.
- ▶ Foldable bicycles should be carried in an upright position.
- ▶ When travelling by train, cyclists should use the first or last car, which is usually less crowded.
- ▶ Cyclists should use the lifts and wide far gates at MRT/LRT stations where these are available.
- ▶ Foldable bicycles are not allowed on the upper deck of a bus or on the staircase leading to the upper deck, Only one foldable bicycles is allowed on each bus at any one time.

SMRT/SBS Transit station staff and bus drivers may disallow foldable bicycles if the actual situation within an MRT/LRT station, bus interchange/terminal or on board a train/bus does not permit foldable bicycles to be admitted safely and without inconveniencing other commuters.

⁹ Source: SMRT as of 15th April 2009

**SAFETY
STARTS
WITH ME**



Safety is a big part of our sporting culture and should be the cornerstone of every individual's healthy lifestyle. Therefore, it is important for each of us to take responsibility for keeping ourselves safe and injury-free.



Think Safe • Play Safe • Stay Safe

