

Safety Evidence for Bicycling

Bicycling is a healthy mode of travel

Bicycling is fun, inexpensive & healthy.

Research consistently shows the health benefits of cycling.

This leaflet summarizes research evidence so you can maximize your safety when cycling.

Driving near bicyclists

When driving, you have a responsibility to

- drive slowly enough to see cyclists given the driving conditions
- look for cyclists – key problems: turning left & right, opening car doors, driving behind cyclists
- provide wide space margins behind & beside cyclists (cyclists are allowed to ride in the middle of a travel lane)
- not drive or stop in bike lanes

Route selection is a great way to maximize safety

Safest route types	Safety evidence	Tips & BC laws
<p>Separated bike lanes alongside major streets Also called “cycle tracks” or “protected bike lanes”</p>	<p>Possible reasons they are safer:</p> <ul style="list-style-type: none"> • They physically separate bicyclists from motor vehicles on busy streets – beneficial because interactions with motor vehicles involve higher crash risk & more serious injuries. • They protect cyclists from being hit by opening doors of parked vehicles. 	<p>Tip</p> <ul style="list-style-type: none"> • Drivers may not expect cyclists arriving at intersections from separated bike lanes
<p>Quiet residential streets</p>	<p>Streets with low motor vehicle traffic & low traffic speeds have lower crash risk & less serious injuries if there is a crash.</p>	<p>Tip</p> <ul style="list-style-type: none"> • Ride at least a meter away from parked cars • Ride in a straight line, i.e., don’t move closer to the curb between parked cars
<p>Off-street bike-only paths</p>	<p>Bike paths are away from motor vehicles & separate cyclists from pedestrians. Risks may increase with obstacles such as bollards, curbs, barriers & benches, or on curvy paths that reduce sight lines.</p>	<p>Tip</p> <ul style="list-style-type: none"> • Most bike paths are 2-way, so ride to the right
<p>Bike lanes on major streets especially on streets without parked cars</p>	<p>Bike lanes marked by paint provide designated space for cyclists. Wider bike lanes provide more passing distance from cars & that reduces crash risk. Bike lanes on streets <u>without</u> parked cars protect cyclists from being hit by opening doors of parked vehicles.</p>	<p>Tips</p> <ul style="list-style-type: none"> • Motor vehicles can cross painted bike lanes • If there are parked cars, ride at least a meter away from them

Route selection is a great way to maximize safety

Less safe route types	Safety evidence	Tips & BC laws
Highways	<p>Possible reasons they are less safe:</p> <ul style="list-style-type: none"> • Interactions with high motor vehicle traffic, high traffic speeds, and trucks & buses involve higher crash risk & more serious injuries. • Passing distances are lower where there is lots of traffic, where speeds are high, & when trucks & buses pass. 	<p>BC law</p> <ul style="list-style-type: none"> • Restricts bicyclists from using certain highways: www.th.gov.bc.ca/BikeBC/restrictions.html
<p>Major streets without designated space for cyclists, & especially with parked cars</p>	<p>Possible reasons they are less safe:</p> <ul style="list-style-type: none"> • Interactions with high motor vehicle traffic, high traffic speeds, and trucks & buses involve higher crash risk & more serious injuries. • Passing distances are lower where there is lots of traffic, where speeds are high, & when trucks & buses pass. • Cyclists may be hit by opening doors of parked vehicles. 	<p>Tips</p> <ul style="list-style-type: none"> • Ride at least a meter away from parked cars • Ride in a straight line, i.e., don't move closer to the curb between parked cars
Sidewalks	<p>They are designed for pedestrians & include features such as street furniture, posts & uneven paving – all are obstacles that can be hit by cyclists.</p>	<p>BC law</p> <ul style="list-style-type: none"> • Prohibits sidewalk cycling, except where allowed by a sign or municipal bylaw
Multi-use paths	<p>Multi-use paths mix cyclists & pedestrians (& pets). Risks may increase with obstacles such as bollards, curbs, barriers, benches & plants, on curvy paths that reduce sight lines, or unpaved & uneven surfaces.</p>	

Certain bicycling conditions deserve caution

Condition	Safety evidence	Tips & BC laws
Major street intersections	<p>These increase risk of collisions. Possible reasons:</p> <ul style="list-style-type: none"> • High motor vehicle traffic volumes & speeds increase collision risk & injury severity. • Motorists may “look but fail to see” cyclists. • Trucks & buses increase crash risk & injury severity. 	<p>Tips</p> <ul style="list-style-type: none"> • Drivers (especially in large vehicles) may not see cyclists beside them • Motor vehicles (especially trucks & buses) may cross cyclists’ space when turning right
Roundabouts & traffic circles	<p>These increase crash risk.</p> <p>Some roundabouts have a separated lane for cyclists around the outside – these lanes are safer.</p>	<p>BC law</p> <ul style="list-style-type: none"> • Vehicles (including cyclists) in the traffic circle or roundabout have the right of way – otherwise these operate like an unmarked intersection
Cycling in the direction opposite to motor vehicle traffic	<p>Riding in the direction opposite to motor vehicle traffic increases crash risk & injury severity – both at intersections & between intersections.</p>	<p>BC law</p> <ul style="list-style-type: none"> • Cyclists are required to travel on the same side of the street & in the same direction as motor vehicles (except where indicated, e.g., on 2-way separated bike lanes)
Downhill grades	<p>Downhill grades increase crash risk & injury severity.</p>	
Train or streetcar tracks	<p>Crossing & riding beside train or streetcar tracks increase crash risk – via getting a tire caught in the track or slipping on the rails.</p>	<p>Tip</p> <ul style="list-style-type: none"> • Cross tracks at 90 degree angle (perpendicular to track)

Other safety evidence

Safety in numbers

Where there is more cycling, cycling is even safer.

Alcohol intoxication

Alcohol intoxication increases crash risk & injury severity in a crash.

Safety equipment

Lights reduce collision risk. Cyclist visibility is increased with lights, reflectors and, in daylight, bright clothing (yellow, orange, red, white). BC law requires front & rear bike lights and reflectors when cycling at night.

Helmets reduce the severity of head injuries in the event of a crash. BC law requires that cyclists wear helmets.

Other resources

Cycling skills & rules of the road: “Bike Sense Manual” – bikesense.bc.ca

Driving near cyclists: “ICBC Driving Guides” – icbc.com/driver-licensing/driving-guides

Source report

“Evidence from Safety Research to Update Cycling Training Materials in Canada” by:

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Separated bike lanes



Quiet residential streets



Off-street bike paths



Bike lanes, no car parking



The safest route types

Photos: Paul Krueger (Flickr), Cycling in Cities