

# Safety Is Imperative for Mackinac Island Bicycle Riders

Bicycling for recreation and exercise is becoming increasingly popular in the United States. To a lesser extent, it's also increasing as a means of personal transportation and, in many cities, the sight of the courier on a bicycle, weaving through dense traffic, is quite familiar. And then, of course, on Mackinac Island, the bicycle remains ubiquitous and reigns supreme, with the horse and carriage.

According to the Nationwide Personal Transportation Survey published in 1995, the latest figures currently available, the average number of bicycle trips per capita increased by 238 percent between 1977 and 1995. Each year, more than 20,000 are admitted to hospitals for bicycling injuries and more than 500,000 people are treated in emergency departments.

The role of alcohol in bicycle injuries incurred by adolescents and adults has been well studied. For example, elevated blood alcohol levels were found in about eight percent of those treated in emergency departments, 16 percent of adults admitted to hospitals, and 32 percent of those who died from bicycle injuries.

Drinking is popular on Mackinac, and as the summer moves along, drinking and bicycle riding becomes an increasing problem.

It is well known by trauma experts that riding a bicycle requires a higher level of psychomotor skills than driving a car. Indeed, in laboratory experiments, it has been shown that optimal performance in operating a bicycle declines progressively as blood alcohol concentration increases.

A careful study, published in February 2003, reported the role of alcohol as a risk factor in the deaths of 133 bicyclists, 15 years and older, riding during the day and for whom valid data was available. Another 253 injured bicyclists were similarly studied to derive an odds ratio of bicycling injury vis-a-vis blood alcohol concentration. The conclusion: Alcohol use by bicycle riders is associated with a substantially increased risk of serious or fatal injuries. The conclusion was supported particularly by the evidence that alcohol levels of 0.08 percent and higher may subject bicyclists to a 20-fold increased risk of serious or fatal injury. For reference, a blood alcohol concentration of 0.08 percent or more is illegal in Michigan for drivers operating a motor vehicle.

There are two components to this issue of linking alcohol to injury. First, the effects of alcohol on the brain lower the ability to maintain balance, negotiate terrain and traffic, and respond to situational hazards. Second, risk increases with excessive speeds, riding on highways or in high-speed traffic, or even in rural areas, especially at night without appropriate lighting or in adverse weather conditions.

Finally, there was a dismal rate of helmet use by bicyclists in this study. Only five percent of injured cyclists with positive blood alcohol levels wore

helmets, while 35 of non-drinking injured cyclists wore helmets. Another recent study found that 30 percent of injured bicyclists with positive blood alcohol levels had a history of alcohol-impaired driving.

For bicyclists, there is overwhelming evidence that the use of helmets can significantly lower the risk of death from head injury or paralysis from cervical spine injury.

Sure, the conditions in the national studies differ from those on Mackinac Island. For one thing, motorists are involved in 90 percent of all fatal bicycling injuries.

But on Mackinac, congestion, inexperienced riders, and pedestrians who don't pay attention to the road can add up to some serious safety issues. Bicycle accidents are frequent and they do cause serious injuries. They also can be fatal. We need to talk about safety for riders and safety for pedestrians. There is very little question that safety begins with the bicycle itself.

People reclaim their bicycles from the doldrums of winter and more often than not give them a cursory once over or a spring cleaning before getting on and riding, maybe after checking the tires. The bicycle is a personal vehicle and the rider should be familiar with the way it works.

In addition to the huge variety of bicycles we see on the Island, riders vary significantly in age and experience. The expression, "it's just like riding a bicycle," to express the ease of doing something one hasn't done for a long time, doesn't apply under these circumstances.

What are the guidelines for safety? You must know your bike. If it has been awhile, the vehicle should be thoroughly inspected. Start with the seat. It must be adjusted for your height. If your hips sway side to side, the seat is too high. When you ride, your knee should be slightly flexed at the bottom of your pedal stroke. The tilt of the seat, front to back, should feel comfortable



## Maintaining Your Health on Mackinac

By Yvan Silva, M.D.

and may need minor adjustment. Wheels must be inspected for loose spokes. Abnormal noise in the hub is indicative of a problem that requires overhaul. Braking on a spinning wheel, off the ground, should stop the wheel without noise. The bike you're riding should stop quickly without evidence of grabbing. Pulling the brake lever a quarter of an inch should do the job. Brake pads should point inwards, the front inwards to the rim, a millimeter or two compared to the back. Brake pads should be replaced if they're worn. Sometimes, cleaning dirty or shiny pads with alcohol can improve brake function. Tires should be carefully inspected for wear and pressure.

Shifting gears is a skill that can make the most of the bicycle ride. This is perhaps the least understood of all the mechanisms of the vehicle. To check the workings of the gears, lift the back of the bike and crank with your hand while you shift the front gears. The chain should move smoothly up and down. When this is done with the multiple rear gears, the chain should

engage to another gear with each click. An expert examination by a good mechanic is a good way to go, especially if you need to understand and use gear shifting to your best advantage. The chain should not be overstretched; 12 links should measure 12 inches. A sagging chain should be replaced. Stiff links should be loosened by cleaning or relaxed with a chain tool. Handlebars should turn easily with appropriate movement of the front wheel. The headset - where the handlebars attach to the steering tube and turn on bearings - can be tightened if it's loose. Cables should be cleaned and lubricated with a Teflon product. Cables must be tightened if they're stretched to a point where they don't function for good control of the brakes and gears. Like all vehicles, safety begins with maintenance and repair to a point where function is the very best.

As always, the responsibility for safety rests with the rider.

There is no doubt that wearing a helmet can significantly reduce your risk of losing your

life owing to head injury or becoming paralyzed from the neck down owing to cervical fracture. Pick a helmet with safety certification - look for a sticker from the Snell Foundation, the American Society for Testing and Materials (ASTM) of the US Consumer Products Safety Commission (CPSC). It is now expected that all helmets will be required to meet standards of the CPSC.

The fit of the helmet should be snug and comfortable, with proper ventilation through the front vents and brow pads to prevent sweat getting into the eyes. A visor is helpful to control glare from sunlight. The strap system should be readily adjustable. Helmets involved in a crash should be discarded and replaced because, while there may not be any visible damage, the protective foam liner may be destroyed.

The results of studies, thus far, have not shown any relationship between cost of the helmet and impact absorption. But the cosmetic aspects of a helmet are well worth spending extra on, if you're more likely to wear it consistently. This is especially true for children.

Mackinac Island is, indeed, a bicycle heaven. More folks get around on bicycles than they do on horses. But a pleasant experience can turn deadly if the rider is not alert. Know your bike, know the safety rules, and follow them.

*Dr. Silva is a professor of surgery at Wayne State University and a resident of Woodbluff on Mackinac Island.*

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Ken Neyer  
Associate Broker  
(906) 643-1538