

The cyclist's tight spot

By Bill Becher
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WHEN urologist Dr. Irwin Goldstein declared in 1997: "There are only two kinds of male cyclists — those who are impotent and those who will be impotent," many bike riders scoffed. Saying the equipment housed in their spandex shorts worked just fine, they optimistically kept riding. Several prominent urologists dismissed Goldstein's claims, saying that they were based on a small sample of riders and that the cardiovascular benefits of cycling outweighed any risk of impotence.

Ten years later, more than two dozen published studies, including several by Goldstein, have confirmed the connection between cycling and sexual dysfunction. Problems can range from impotence — the complete inability to penetrate — to an erection that doesn't last as long as desired.

Bike companies have responded by developing new saddle designs, and riders have bought millions of these ergonomic seats in the last 10 years. But whether they will help a rider's sex life is a matter of contention.

Some medical and occupational health researchers say they don't prevent erectile dysfunction, that the modifications don't necessarily ensure adequate blood flow to the penis. They advocate a more radical seat design that some cyclists say is dangerous.

One man in Northern California, looking for more comfort, began using an ergonomic bike saddle last fall. The seat, with a protruding nose, was advertised as "helpful in reducing the risk of cycling-associated genital numbness and sexual dysfunction." But after using the saddle for a few months, the 52-year-old began having trouble maintaining an erection. His doctor advised him to give up the bike. He didn't — and suffered the consequences. "After a time it didn't work at all," says the man who requested anonymity.

Comfort can be a misleading guide. Some cyclists opt for a big, soft-gel seat. But that can be the worst choice for circulation, some experts say. Riders on large gel seats sink in, and the gel tends to bunch up under the tender bits, cutting off blood flow.

Women can also be affected. A study of 48 young women competitive cyclists and 22 women runners published last year in the Journal of Sexual Medicine found that the cyclists had decreased genital sensation compared with the runners, but that this didn't have any negative effects on their sexual function. Another study found that female competitive cyclists who spent a lot of time on their bicycles had swelling and damage to the lymphatic vessels in the vulva.

"This whole saddle thing is very tricky for the bike industry," says Matt Phillips, test director for Bicycling and Mountain Bike magazines. "We want people to be healthy and comfortable while riding, but we don't want to scare people away from riding."

A small percentage

Not all male riders, or even the majority of male bicyclists, are likely to experience erectile dysfunction, as Goldstein seemed to suggest in 1997. Then a professor at the Boston University School of Medicine, where he headed the Institute for Sexual Medicine, he notably commented: "Riding should be banned and outlawed."

A study presented to the American Urological Assn. in 1997 found that 4.2% of cyclists had moderate to complete ED, compared with 1.1% of runners. That study compared 738 male riders from a Boston cycling club with an age-matched control group of runners.

A second study, presented to the association the following year comparing cyclists and swimmers, found that 4% of cyclists had ED compared with 2% of swimmers. Older bicyclists and those riding long distances tend to have an increased risk.

And yet another study, published in the International Journal of Impotence Research in 2001, found that men who rode for less than three hours a week decreased their risk of ED, compared with noncyclists, possibly because of the benefits to the cardiovascular system. But the same research found that cycling more than three hours a week nearly doubled the risk of ED, compared with noncyclists. To this day, Goldstein says bicycles should come with a warning label, similar to those on cigarette packs, that cycling may cause impotence.

Recreational cyclists aren't the only riders to experience problems.

In 2000, a group of bicycle patrol officers in Long Beach, suspecting that bike-riding was causing sexual problems, contacted Steven Schrader, a reproductive health expert at the National Institute for Occupational Safety and Health in Cincinnati. Schrader studied the bike cops and reported in the Journal of Andrology in 2002 that although none of the men were impotent, they had decreased erectile quality and genital numbness compared with nonbiking officers.

As with many other cyclists' seats, the nose of the officers' bike saddles exerted excessive pressure on the perineum, the region between the anus and the external genitals, "a place that was never designed to support a person's weight," Schrader wrote. Such pressure is widely believed to be the source of some cyclists' erectile problems, damaging the arteries that supply blood to the penis and the nerves that connect to the penis.

Although erectile dysfunction can go away if cyclists stop riding, it can also be permanent. Treatments include sex therapy, hormones, drug injections in the penis, vacuum devices and drugs such as Viagra and Levitra. Goldstein, as a last resort, will recommend bypass surgery to restore blood flow, but the procedure is considered experimental by some urologists.

Doctors agree that prevention is better than any of the treatment options. Schrader, for example, suggested that the officers use a bike saddle that did not have a protruding nose.

That advice has since become common in medical journal articles — but it's not welcomed by many cyclists.

Some modifications

Over the years, a number of bicycle seat manufacturers have sought to develop saddles that would minimize erectile problems by adding holes and grooves — one company calls its design "the Love Channel" — that are meant to minimize pressure on arteries and nerves. But whether these designs will actually help prevent problems is debatable. Dr. Roger Minkow, a specialist in ergonomics, says that a properly designed and fitted bike seat with a nose can work as well as noseless saddles in avoiding erectile problems without sacrificing control and safety on the bike.

Minkow, who has developed pilot seats for United Airlines and training equipment for the U.S. Olympic gymnastics team, was hired in 1997 by Specialized Bicycle Components to design a new line of bicycle seats. After traveling to Germany to work at the laboratory of Dr. Frank Sommer, an internationally known urologist and now a professor of men's health at the University of Hamburg medical center, Minkow began by testing blood flows using different saddle designs. He then took a scalpel to existing seats, cutting away sections to improve the blood supply to the penis.

He tested his modifications using a device, originally developed to monitor premature babies, that detects blood oxygen flow through the skin. By attaching the device to riders' penises, Minkow was able to measure blood flows while the cyclists were pedaling.

Because road cyclists lean forward on their bikes for better aerodynamic efficiency, Minkow later added a cutout in the nose of the saddle to relieve pressure on the perineum in this position. He is currently working on a design to help male triathletes, who pedal in an extreme forward aerodynamic lean. In that position, "you're riding on your penis," Minkow says.

Testing at Sommer's lab showed that the modified saddles allowed blood flow up to about 70% of normal in an upright position, and 60% in a forward position. Some other saddles tested had flows less than 2% of normal. Minkow says that flows of more than 50% should be enough to prevent ED problems.

In the last 10 years, other bike companies have marketed versions of ergonomic saddles and several German cycling magazines have sponsored independent testing of more than 20 saddles. Their results showed a similar range of blood flows, from next to nothing to more than 80%.

But Joe Lindsey, a contributing writer for *Bicycling* magazine who has observed testing at Sommer's lab, says that the results were highly dependent on the individual riders. Some had good flows with most of the seats, some with only a few and some with none. And, Lindsey says, seats that were the most comfortable for a rider weren't necessarily the best for blood flow. Although all male riders have the same basic plumbing, differences in individual anatomy affect how the seats perform.

Regardless of personal variations, however, numbness is one of the few warning signs that something's amiss. Numbness is associated with reduced blood flows and ED, says Dr. Kenneth Taylor, director of the sports medicine program at UC San Diego who has helped design ergonomic saddles.

Some bike shops offer demo seats that riders can test before they buy and riders should try different saddles before settling on one, Lindsey says. "It's like finding a needle in a haystack. But the needle's there."

But that needle, in the shape of the traditional bike saddle's nose, is the problem, say medical researchers. Saddles with holes and grooves may actually cause more problems, according to Goldstein, who says some of the newer saddles reduce the surface area the rider rests on, thus increasing pressure on the arteries and nerves that supply blood and sensation to the penis.

Schrader and Goldstein, who are not involved in the design of bike seats, and other independent medical researchers say that the best design to prevent erectile dysfunction is a saddle without a nose. Instead, these saddles have only two separate pads for the rider's sit bones to rest on.

In a study of 17 riders published in 2005 in the *Journal of Sexual Medicine*, researchers at the Boston University School of Medicine found that straddling a bike seat with a nose significantly reduced blood velocity in the arteries to the penis by more than 95%, but that sitting on a "two cheek" noseless saddle had virtually no adverse effect.

Experienced cyclists say that riding noseless saddles is like pedaling perched on a soccer ball. Those seats make bicycles hard to control and, because of that, are dangerous. "I'd be afraid to ride next to someone on a noseless saddle," says Joshua Cohen, who researched bike seat blood flow problems for his master's degree at the University of North Carolina and published a book, *Finding the Perfect Bicycle Seat*. Others agree.

Georgena Terry, whose company Terry Precision Cycling makes products for women cyclists as well as a line of ergonomic seats for both men and women, says that saddles without a nose increase the odds that cyclists will slide forward and injure themselves on the bike's top tube in a sudden stop. "You use the nose pressing against your thighs to control the bike more than you'll ever know — until you get on a saddle that doesn't have a nose."

Taylor says that cycling involves a certain amount of machismo and most cyclists resist riding noseless saddles. "We've got to provide riders with the best possible product that they will use, even if it's not the safest thing for their perineum," he says. "It's a minority of riders that need noseless saddles."

Makers of noseless saddles say that riders need to spend some time getting used to the new designs — up to two weeks in some cases.

Kurt Sandiforth, a Nevada City, Calif., cyclist and professional bike mechanic, is a believer. After years of using a conventional saddle, the 31-year-old cyclist developed scar tissue on his urethra and had difficulty urinating. After he underwent surgery two years ago to remove the scar tissue, doctors told him to give up bike riding. Sandiforth couldn't do it. Instead, he tried a noseless saddle he found on the Internet called the Spiderflex. He says that the saddle was uncomfortable at first but after making adjustments and learning how to sit on the new seat, he found he could ride comfortably for long distances. He has competed in road cycling races on the noseless saddle and is now on a yearlong bike trip, pedaling on the saddle through Europe, North Africa and East Asia.

Bike fit experts recommend that cyclists experiment with different ergonomic saddles, making sure that they are properly fitted and adjusted. If they still experience pain and numbness from riding, or have any ED or sensitivity issues, regardless of comfort, then noseless may be the best option.

The 52-year-old Northern California cyclist with ED problems ultimately decided to try a noseless saddle. It took getting used to, he says. "You don't hop on it the first day and do exactly what you did with your old seat." But after some practice he found he could ride hard and steer aggressively by pressing his thighs against the bike's top tube. Best of all, he says:

"I can have a normal relationship with my beautiful wife and ride my bike."