Spokes Man for a The scientific evidence suggests that Hard Problem

o paraphrase the old song by Queen, "I want to ride my bicycle, I want to ride my bike. I want to ride my bicycle, but Irwin Goldstein doesn't like." Perhaps that's too strong. Goldstein, co-director of the Urology Research Laboratory at the Boston University School of Medicine, really has nothing against biking, although when I called him the first thing he said was, "I hope you're not biking." In fact, it is not the act of riding itself but the standard bike seat he has something against. He thinks that most men also have something against the seat—their perineum, the delicate area between the scrotum and the anus that contains the nerves and blood vessels that make erections possible.

Goldstein believes that conventional bicycle seats, with that narrow nose up front, may be making large numbers of men impotent by causing constant minor trauma to the perineum. He is on a crusade to arouse, if you will, what he calls "perineal phobia."

Most men have given plenty of thought, probably much too much in fact, to their penises and testicles. But few pay much attention to the perineum. Well, here's a flash: if you want running water and electricity, you had best make sure the plumbing and wiring are in order. "We pay very little attention to 'perineal health,' which is the other phrase I use," Goldstein says. "We play a sport and wear helmets and shoulder pads and elbow pads and gloves and kneepads and whatever else you think of, but there's absolutely no concept given to protecting the perineum from injury. It's high time we change that." When I used to play baseball as a teenager, for example, I wore a cup that protected the goods, or so I thought. Little did I know that my perineum, protected from impact by only a thin layer or two of cotton clothing, was a sitting duck. One bad hop all those years ago and I might still be walking funny. And now what a shock to learn that when I became a serious cyclist 11 years ago at the age of 30, I may have endangered my perineum even more than when I hopped fences between houses to deliver papers as a kid.

Although Goldstein has been warning people about bicycles since the 1980s, the big impotence scare went through the riding community in 1997, when *Bicycling* magazine published an article about Goldstein's ideas. Alongside it was a report by Ed Pavelka, a former executive editor of the magazine, who owned up to the fact that he was not quite the man he used to be following a year in which he logged some 21,000 miles on the bike, about 7,000 more than his usual annual output and more odometer ticks than a lot of cars see in a year.

Pavelka went to Goldstein for tests that revealed a specific kind of blood vessel damage that Goldstein had seen in other cyclists. Obviously, there exists potential for serious injury if the perineum traumatically encounters the top tube, the horizontal metal bar that connects the front and back halves of the bike, another part of the bike's anatomy that Goldstein despises. It is the piece, ironically enough, that is missing in traditional women's bikes.

Goldstein and his colleagues did a study that found that a 150-pound man who suddenly lands on that top tube only inches below him might experience 500 pounds of force, a thought that should make you sleep in a fetal position for a few nights. Smacking hard into the seat nose after plunging



into a pothole is another frightening possibility. But in examining numerous impotent cyclists, Goldstein concluded that the same kinds of blood vessel insults he saw in traumatic injury were plaguing his cyclist patients who merely rode a lot, people like Pavelka. "The recurring minor traumatic episodes from bumps, from minor falls to the perineum, can lead to the same dysfunctions," Goldstein expostulates.

In a recent study, he found some provocative differences

in 1989, after my first century—the 100-mile ride of passage among serious riders—I had a bit of numbness for more than 24 hours. It definitely got my attention. So I make a point of riding out of the saddle much more, especially when I see an obvious rough spot ahead. I have also made some minor adjustments in seat angle and in sitting position to put more weight on the bones of the backside. Numbness became a rarity, even during four subsequent century rides, and I'm

too much time in a bike saddle may leave your sex life in ruins

among cyclists and runners, the latter serving as a control group of active, athletic types who flatten their arches instead of their perineal arteries. Cyclists had about four times the impotence rate of runners, although both groups experienced a low incidence, about 4 percent versus about 1 percent. (Note to female readers or their male friends: the study also found more "clitoral numbness, difficulty urinating and diminished ability to achieve orgasm" among women cyclists as compared with runners.)

Here's a secret among cyclists that may explain part of the difference: some riders, even long-distance ones, are fat, which can be a risk factor for impotence. Actually, with the skintight Lycra outfits cyclists wear, the occasional potbellies really aren't a secret. And there was twice the rate of high cholesterol among the cyclists in the study compared with the runners. Nevertheless, Goldstein's numbers did further raise my eyebrows, if not any other parts of my anatomy.

I then dove into the medical literature, looking for other accounts linking cycling and impotence. To my surprise, such reports date back to at least 1975. A 1989 case study published in the British Medical Journal, for example, documents impotence in a 27-year-old who continued riding even after "severe perineal pain" that forced him to stop briefly only to find that "his penis was completely shriveled and had lost all sensation." Advice: pain, numbness and shriveling are nature's ways of telling you to take a ride in the sag wagon, the vehicle that collects fallen bikers. A 1985 study in the American Journal of Sports Medicine followed 132 riders over a 500-mile, eight-day ride. Some 45 percent experienced palm numbness, and 32 percent felt groin numbness. The authors noted that the hand discomfort was "relatively unimportant" but that groin numbness was "more important" and had driven 2 percent of riders off their bikes. After all, you have two hands.

When I first heard about the impotence issue, I was skeptical. I was averaging about 2,000 cycling miles a year, and I could produce witnesses to my perineal health. But I *had* experienced some numbness during rides. Naturally, the subject gets little discussion among biking buddies. "Hey, Peter, is your penis numb?" is a real conversation stopper. In fact, out of the saddle at the first tingle. Because Goldstein found that arterial compression caused by jamming a bike seat into the perineum can block blood flow by as much as two thirds, not to mention the potential for damaging those delicate nerves, it turns out that I have been unwittingly practicing good preventive medicine. I now believe that cycling, which most likely prevents a lot of impotence by improving cardiovascular fitness, is nonetheless probably causing some cases, too.

The bottom line, if you will, is to ride smart. Although Pavelka loved cycling, the possibility of an erection-free future got his attention. "My first reaction was that I had to quit riding until I get this thing straightened out," he said, being both figurative and literal. He eschewed riding totally for a short while, experimented with different saddles and then rode a recumbent bicycle for much of 1997. The recumbent puts the rider in a full seat and puts the perineum completely out of harm's way. That change was a smart one: although nerve damage seems harder to treat, blood vessel problems appear to respond well to various treatments, including natural healing. The time off seems to have let nature do some damage control, and Pavelka is now back in the saddle. He also rides his bike.

STANDARD BICYCLE SEAT (far left) may contribute to some impotence among bicyclists. New alternative seats, such as a noseless model (center left), offer an alternative to recreational riders. Racers and other performance cyclists need the nose, as they press against it with their inner thigh when leaning into turns, and so may opt for a model with a cutout designed to remove the pressure from their perineum (center right). The optimal design, according to phy-

sician Irwin Goldstein, would be like a toilet seat, with support on the perimeter and no contact at all with the perineum. Racers, however, would still be faced with steering considerations.



Copyright 1999 Scientific American, Inc.