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# News

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\*\*\*\*\*Diabetes patients celebrate 2nd  
"anniversaries" on insulin pumps.

DALLAS--Two Dallas diabetes patients--32-year-old Andy Anderson and 21-year-old Patrice Snyder--are celebrating special "anniversaries" this month. Each was "married" to his or her insulin pump in June, 1979, and after two years, neither wants a divorce.

Both Anderson and Snyder are patients of Dr. Philip Raskin, associate professor of Internal Medicine at The University of Texas Health Science Center at Dallas. A specialist in diabetes, Raskin says he will have 14 long-term patients on insulin pumps by the end of July. (The physician defines "long-term" in this case as having been on the pump for a year or more.)

Besides the June anniversaries of the salesman and the college student, two more of the researcher's patients will be celebrating two years on the pump during the month of July. One of them is Snyder's little sister, Susie, who just graduated from high school. The other is 41-year-old Jim Bell, also of Dallas.

Currently Raskin has a dozen long-term patients receiving treatment for diabetes mellitus by continuous subcutaneous insulin infusion, as use of the small battery-operated insulin pump is called in "doctor talk." This number is a large patient load for physicians working with pump patients on an individual basis. In fact, the reason that Raskin is able to work with so many at once, since the experimental process takes so much time, is the team approach. Raskin's team includes other physician/researchers, a research nurse and a dietician. The team is currently seeing a total of 20 pump patients.

The small pumps, which are attached to the patients' belts or hidden in pockets of full skirts, are connected to slender nylon tubes attached to needles inserted under the patients' skin near the waistline. The insulin flows in individually programmed pulses throughout the day or night, mimicking the body's own distribution of the protein hormone, necessary for the regulation of carbohydrate, lipid and amino acid metabolism. In addition, there is a button to push for a needed "boost" of insulin, such as before a meal or when the patient realizes it is needed by the results of a self-administered blood test or by experiencing symptoms, such as weakness or dizziness. This type of insulin distribution is in contrast to the conventional treatment in which the patient receives the hormone by injection several times a day.

It is Raskin's hope that the normalization of the blood glucose level in the diabetic patient with the pump will halt the continuing damage these patients suffer from the disease--or even reverse some of the destruction. These problems, which can be most severe, include kidney problems; atherosclerosis, or hardening of the arteries in the arterial wall of the heart; thickening in the major capillaries in areas such as the legs and abdominal walls, pancreas and heart; and injury to nerves, also characterized by thickening of the tissue. This thickening may lead to severe sight problems--even blindness--or circulation problems which may result in amputation of the hands or feet. However, at present, says Raskin, we do not know if the vascular complications of diabetes are related to the elevated levels of blood sugar most patients with diabetes have.

"That's really why I'm doing this research--we hope our work with the pump will give us these answers."

Because this is such an important question, the National Institutes of Health is getting ready to start a nation-wide multi-center study of patients on the pump. The purpose will be to determine the relationship between blood glucose levels and diabetes.

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It is difficult in a small patient population over a short period of time to determine scientifically if the pump is making the patient gains that are hoped for. However, so far the researcher believes he can see signs for use of the pump over more traditional treatment of insulin by injection. All the work reported by Raskin; Angel Pietri, who works with him in patient care as well as research; Fredrick L. Dunn and Albert Ehle show the pump patients in far better metabolic control than patients on conventional treatment or a comparison of the same patients on both treatments. In addition, Dunn reported on the team's new research on the beneficial effect on plasma of lipid control with patients on the pump at the annual American Diabetes Association meeting in June, where Raskin and research nurse Marilyn Alford gave a "how to" session for physicians interested in working with pump patients.

Research by Raskin and his associates goes on as once each six months his patients on research protocols come into the health science center's General Clinical Research Center, one of 75 GCRCs established by the National Institutes of Health around the country. The pumps are quite expensive, costing over \$1,000 each. However, some insurance companies will pay part of the cost, and a recent gift from Dallas' Southwestern Medical Foundation just paid for nine new pumps. Pumps are loaned without cost to patients who are willing to participate in research studies in diabetes. And, Raskin says, many want to.

"They realize that anything that will help us find new information about the disease may help them."

With all the optimism with which Raskin views the pumps, the scientist in him forces him to view this new treatment regimen with some detachment.

"It's still an experimental tool as far as I'm concerned," he says. "I know there're a lot of doctors who are talking about it like it's the way to go, but what they really mean is that's their hope.

"But we've still got a lot of proving to do."

On the other hand, the researcher's patients all report feeling better since they have been on the pump than they ever did on conventional treatment.

"I think that's great," he says. "But you can't forget the placebo effect," which means that doing anything for the patient may make the patient feel better.

Anderson, who has had diabetes since he was 16, says that he feels "just terrific. My health has improved 100 percent (on the pump)."

He has been able to lose weight, and he reports that the discipline of the research protocol helps him stick to his diet. He also says that his total appearance has improved. Also, he believes that the pump is helping him because "my nerve conduction tests have improved and my triglycerides and cholesterol levels have gone down."

In fact, Raskin says that he has seen physiological signs of improvement, which have shown up in testing in all his patients other than Patrice Snyder. And she had suffered quite a bit of damage before she went on the pump.

This young woman, who has known she has had diabetes since she was eight, was Raskin's first patient to go home with the pump. A popular visitor to the GCRC, Snyder looks on her GCRC stay as a visit with friends, such as Raskin and Alford, who call the nutrition major "our favorite patient." Snyder also reports that the pump makes a great deal of difference in the way she feels.

"I wouldn't give it up for anything," she says.

However, it wasn't like that in the beginning. At first she didn't want to come to see Raskin. Her mother, a nurse, brought her to be fitted with the pump. But it didn't take. It was embarrassing for a teen-ager to go around with a strange device attached to her side. And it was embarrassing to have to explain what it was--and why she was "different."

"So I stopped wearing it all the time."

It didn't take long for the student to "go out of control."

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"I had to go back to see Dr. Raskin," she says. "He talked to me and really straightened me out. He made me see that I was really hurting myself. And he made me know he really cared about me as a person."

Anderson, too, says there are some drawbacks to the pump, but he agrees with Snyder that feeling better makes living with the disadvantages more than worthwhile. Sticking a needle in and out of yourself may be just as bad as having to give yourself shots. Also, the pump has to be removed for baths, showers and swimming.

"I just forget swimming parties and hot tubs," he says. "They're just too much of a hassle. It takes me twice as long as anybody else to get dressed after a simple thing like taking a shower."

Contact sports are out, too, although that doesn't bother Anderson whose hobbies are knitting and calligraphy. Although the researcher is the first to agree that "the pump certainly isn't for everyone," there isn't too much his patients can't do while wearing the device. In fact, a hospital chaplain raised eyebrows last year when he delivered a paper at a Dallas GCRC seminar on "Sex and the Pump."

"My goal is to see that my patients lead as normal a life as possible," says Raskin.

And he has a bunch of satisfied patients who are achieving this goal in their individual lives. They include:

- \* A medical student starting her sophomore year at the Dallas health science center.
- \* A skateboard aficionado who has blocked his parents driveway with a giant ramp for skateboarding.
- \* A diabetes research nurse who wears a fancy cover over her pump when she goes dancing so her battery light won't "flash" in the discos.
- \* A board member of the Juvenile Diabetes Foundation who is grateful because her young daughter no longer comes home from school to find her mother passed out on the floor.

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