

UT News

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****"Ski Texas" in UTHSCD Human
Performance Lab

DALLAS -- Dr. James Stray-Gundersen, instructor in Orthopedic Surgery and Physiology at The University of Texas Health Science Center at Dallas, is a strange sight year-round as he takes to the jogging trail at White Rock Lake on roller skis. The sight is even stranger in the summer when the Texas temperature is soaring and he is accompanied by half a dozen young cross-country skiers who also have wheels on the bottoms of their skis.

The physician/athlete and his associates are involved in studies that they hope will help them gain a better understanding of what makes an athlete a world-class contender. Stray-Gundersen, himself a former runner and now a competitive cross-country skier, is co-director of the program with Dr. Peter Snell, New Zealand three-time Olympic Gold Medalist runner who still competes in running events and triathlons. Volunteers are young competitive cross-country skiers, mostly from the Great Lakes area, who have agreed to participate in research studies for as many as ten different summers, beginning in their teens and continuing into their twenties.

"Cross-country skiing is an excellent form of conditioning," says Stray-Gundersen. "These youngsters develop outstanding aerobic capabilities, coordination and power, especially in the upper body. They compete at a top level nationally for their age groups, and we have the opportunity to follow their development as they train at different levels of national competition."

The studies are being done jointly by UTHSCD and St. Paul Medical Center through its Human Performance Center. Most of the studies are done in the HPC laboratories with athletes running and skiing on treadmills. The special ski treadmill is four feet wide and also serves for testing volunteers in wheelchairs.

The treadmill studies look at oxygen consumption and carbon dioxide release, as well as blood flow. The athletes are also given blood tests to see how the body uses fats, glucose and glycogen as fuel sources, and they receive periodic muscle biopsies. Actual time trials on the jogging trail around White Rock Lake are made on roller skis in the evenings to study heart rate and lactate response.

The young people participating in this study are particularly dedicated, says Stray-Gundersen. Not only could they be training in a part of the country where it's much cooler, but they also have to abandon summer jobs or give up vacation time. However, there are pay-offs.

"We try to pick skiers who are really interested in improving their performance--which we believe we can help them with--and we look for youngsters who are interested in research themselves. In fact, it's not unusual for them to be studying pre-med, and one of the skiers is entering medical school this fall."

The researcher says it is difficult to get parents to let the young skiers come so far away from home. However, adds Stray-Gunderson, "Since I'm sports medicine coordinator for the national Nordic ski team, and I've been involved with the cross-country community for quite a while, most parents know me already and feel comfortable sending their kids to Dallas."

Stray-Gundersen says that he has a personal interest in following the development of young athletes and likes to see how they are brought along to reach their peak performance. (Cross-country skiers, like most endurance athletes, usually reach peak performance levels in their late 20s, he says.) As a freshman runner at the University of Wisconsin, he says he "overtrained" and burned out early on the sport. Much later he got interested in cross-country skiing.

(more)

He much prefers the European system of sports clubs, where the goal is to maximize an individual's performance, to the American school-based competition, in which the coach's job may depend on his record each year and the coach may work the athletes too hard.

"Also, at the time I was running, I felt I had to choose between medicine and sports," he says. "Today it's more flexible for an athlete. Then I thought you had to go through college in four years. Now a number of guys on the U.S. ski team take winter semesters off to train. That makes a lot more sense."

Stray-Gundersen says that when he was a surgery resident in 1969 he was running "to keep in shape and clear my mind." Then he discovered roller skiing and went on to cross-country competition. He completed his first competitive cross-country event in the "Boston Marathon of ski racing" in about four hours and 20 minutes. These days his time is closer to two hours and 40 minutes.

The board-certified surgeon, who has done a two-year fellowship in cardopulmonary physiology at the health science center, trains regularly at White Rock Lake, a far cry from the training regimens of most cross-country competitors.

Not only is Stray-Gundersen a believer in cross-country skiing for fun, but he believes it's better than running for conditioning. It combines working out with both the legs and the arms. It's great for the cardiovascular system and there's no pounding on the body.

Besides the ongoing studies with the young skiers, co-directors Snell and Stray-Gundersen are interested in exploring other sports-medicine questions. They already have done a study for the Dallas Sidekicks in attempting to determine if the use of oxygen on the sidelines helps exhausted players recover any sooner. Another question currently being investigated with their associates is whether a regular exercise training program utilizing the arms will help improve the fitness of paraplegics. Other areas that the researchers are currently looking at are "overtraining" and its effects on performance and new information about how the cardiovascular system works.

Stray-Gundersen says that he and Snell are interested in expanding the program at the Human Performance Center. "We have an outstanding research laboratory in which to explore how exercise applies to a person's health and performance," he says. "It makes sense that academic centers and community hospitals should become the leaders in answering these questions.

"Actually, the health science center is one of the few places in the world where researchers can do this kind of testing and have such outstanding consultants on campus. These include special advisors Dr. Jere Mitchell, director of the Moss Heart Center and Cardiopulmonary Lab, and Dr. Vert Mooney, chairman of the Division of Orthopedic Surgery."

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Editors note: Photos available

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