

## Short-term solution suggested for Bangladesh's arsenic crisis

Encouraging residents of Bangladesh to switch to safe wells could save millions of lives by preventing the cancer and cardiovascular disease caused by long-term exposure to arsenic, a new study says. About 33 million inhabitants are currently exposed to high levels of naturally occurring arsenic in what the World Health Organization calls the "largest mass poisoning of a population in history" (*CMAJ* 2002;166[12]:1578).

The exposure is occurring through 9 million shallow tube wells that were dug to prevent water-borne diseases caused by contaminated surface water.

A recent study involving 4997 of these wells in the Araihasar district (population 55 000) found that 48% of them were safe (*Bull World Health Organ* 2002;80[9]:732-7). Although only half of these residents had access to safe water from their own well, 88% lived

within 100 m of a safe one, and 95% within 200 m. "Well-switching should be more systematically encouraged," conclude US researcher Alexander van Geen and colleagues.

But switching wells may not be as simple as it sounds, because most wells are privately owned and women, who usually fetch the water, can't leave their family cluster of households unaccompanied. — *CMAJ*

### HEART & SOUL

## Mr. Dragon Boat

Dr. Don McKenzie had his sights set on a research career, but after completing a doctorate in exercise physiology at Ohio State University he realized that he needed human subjects because he required blood and muscle samples. So he moved back to Canada to earn a medical degree from UBC and, 2 years later — in 1980 — he joined Drs. Jack Taunton and Doug Clement in founding the university's Allan McGavin Sports Medicine Centre. And that is how dragon boats entered his life.

McKenzie became involved with breast cancer survivors in 1995 while working with physiotherapist Sherri Niesen on her doctoral research. A spin-off of that work was McKenzie's launch of *Abreast in a Boat* ([www.abreastinaboat.com](http://www.abreastinaboat.com); *CMAJ* 1998;159:376-8), a dragon-boating team that has since spawned a worldwide movement involving the sport among women with breast cancer or breast cancer survivors. It was a natural choice for McKenzie, 56, a longtime kayaker who still paddles 4 times a week, competes in masters' events and has served as a coach and physician to the Canadian kayaking team at 5 Olympic Games.

Today, he is trying to determine how arm lymphedema affects women with breast cancer when they exercise. The goal is "to identify what role exercise plays in lymphatic function. I think

that will help us if we decide to intervene with other modes of therapy for people with lymphedema, whether it's exercise or whether it's a compression sleeve." All of the dragon-boating women who underwent arm-circumference measurements during his early research experienced "zero or very low" levels of lymphedema, McKenzie says. He would also like to assess lymphatic function with MRI testing. "It's interesting physiology, and there are a large number of people who would benefit."

The research has also "been embraced by the dragon-boat population, and they are carrying it forward."

McKenzie believes that the use of exercise in breast cancer rehabilitation will become mainstream treatment faster than it did for cardiac rehabilitation because these patients are taking on more responsibility for their care. The medical profession has been slower to embrace the role of exercise rehabilitation but "is gradually catching on," he says.

McKenzie says breast cancer patients have enriched his life. "It has been a marvellous experience. The first 24 women who volunteered [for the initial study] were exceptionally trusting — they had no idea what we were up to."

The paddling part has also remained a rewarding adjunct to his research. Seven years after it began, he wouldn't miss his Wednesday nights coaching the original *Abreast in a Boat*



Courtesy Don McKenzie

**"The lymphedema was the start."**

team on Vancouver's False Creek. "I have been able to see what *Abreast in a Boat* has done for so many women — the effect has been so profound on their emotions and so positive globally. The people I've met, the camaraderie, the support they get from other cancer patients, that has been the miracle of the whole project. The lymphedema was the start. Now it's a small part of it." — *Heather Kent, Vancouver*