Marathons: Beyond the finish line

BY LAURA DICKIE

Marathon running requires a strong dedication to achieve that ultimate goal of crossing the finish line. Similarly, Davinder Jassal’s goal of finding the key to heart failure using imaging technologies like cardiac magnetic resonance imaging (CMR), requires a strong dedication and innovative thinking.

Jassal, an associate professor of cardiology, radiology, and physiology, recently released findings of his study conducted at St. Boniface Hospital, showing marathon running causes short-term cardiac damage in athletes who are healthy and considered premature coronary artery disease. All participants were healthy, considered amateur runners and underwent moderate training prior to the Manitoba Marathon.

Previous studies on the cardiac effects of running marathons have looked at biomarkers along with echocardiograms (ultrasound of the heart) to determine cardiac injury. This is the first study to also use CMR to show the extent of damage.

Participants underwent blood tests and CMR, prior to, immediately following, and one week after the marathon. Biomarkers used to identify cardiac stress were evaluated and found to be elevated in all athletes post-race. The echocardiograms and CMR post-marathon demonstrated both right and left ventricles of the heart showed changes in diastolic filling and a decrease in the pumping function of the right ventricle. However, the abnormal pumping function of the right ventricle completely resolved one week following the marathon.

“While it was previously thought that marathon runners were likely to experience elevated cardiac biomarkers, this study showed that even well-trained athletes demonstrate significant abnormal biochemical profiles.” says Jassal. “The good news is the CMRs showed that there was no true, long-term cardiac damage. Despite the elevated biomarkers – after a week of rest, the heart’s pumping function returns to pre-marathon levels.”

Jassal says that while this is a major breakthrough in the use of CMR in understanding why cardiac biomarkers are elevated following a marathon, more research is needed to determine how much the heart can endure before long-term damage takes place. A second research study is planned for the 2009 Manitoba Marathon, in which Dr. Jassal will look at half-marathon runners. Future studies will look at multiple marathon runners.

Jassal advises, “If you are a novice planning to run a marathon, you should consider talking to your doctor first and training appropriately. A marathon isn’t something you can just show up to, it puts considerable stress on your heart, and you should make sure you are in good shape before doing it.”

The full study was published in the May 15, 2009 edition of the American Journal of Cardiology.

Community voices being heard

In Jassal’s study, she found that lifestyle risks such as the use of drugs, tobacco, alcohol, and poor nutrition could be brought forward by participants. Other concerns included contamination of land and drinking water. She plans future research to answer the question of why these unhealthy behaviours are occurring, taking into consideration ethical concerns associated with risk communication.

Photovoice is being used by the Centre on Aging’s Community-University Research Alliance, Age-Friendly Communities project, headed by the centre’s director Verena Menec (community health sciences). Former postdoctoral fellow Toni Morris-Oswald used the technique in six communities in Manitoba, to investigate older persons’ perceptions of what is age-friendly.

Seniors in the focus groups go out in their communities (Carman, Dauphin, Thompson, Winnipeg) and take pictures of things that they feel impact their quality of life. Roads and sidewalks that aren’t cleared in winter and present a safety hazard for seniors, walk don’t walk lights at intersections with short intervals that make it difficult to cross the street before the light changes, are just a few of the findings so far. After taking the photos, the seniors discuss their findings and work to improve age-friendly conditions in their local communities.

Participatory research is a powerful tool in a researcher’s toolbox. Beginning on Thursday, June 11, 2009 Verena Menec is asking Winnipeggers to participate by answering the question: Is Winnipeg age-friendly? What do you think? You don’t need to be a senior to have your say. Think about what makes an age-friendly community and post a comment. Go to one of the following websites and have your say: http://www.speakupwinnipeg.com/blog/ or http://speakupwinnipeg.com/blog/archives/cfml/category/communities.