

# Momentum

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If you would like to submit an article for a future issue of Momentum, please contact Amy Hwang at 416-597-3422 ext. 5271 or [hwang.amy@torontorehab.on.ca](mailto:hwang.amy@torontorehab.on.ca). We thank you for your contribution and will do our best to incorporate your submission. Please note, Toronto Rehab reserves the right to edit all submitted articles.

## The benefits of exercise beyond the healthy heart

by Michael Sarin (M.D, FRCPC, M.Ed, CDE), Program Physician and Diabetes Educator

### Staying active could help you prevent and fight diabetes, cancer and other chronic diseases

Chronic diseases such as heart disease, chronic obstructive pulmonary disease, type 2 diabetes and various cancers are all examples of chronic conditions. They are illnesses that tend to progress slowly, last a long time, and are rarely curable. They are responsible for a staggering 60% of all deaths globally.

One can be predisposed to develop heart disease or cancer on genetic basis but it is the interaction between one's genetic profile and lifestyle that determines the extent and severity of the disease's manifestation.

It is a well known fact that physical activity patterns play a significant role in numerous chronic diseases. Studies show that sedentary living is responsible for about one third of deaths caused by coronary heart disease, colon cancer and type 2 diabetes (three diseases for which physical inactivity is an established causal factor).

The scientific study of exercise blossomed in the 1960s and 1970s. Its principal research tool was the maximum oxygen uptake test, which measures the amount of oxygen taken up by the lungs, pumped by the heart, and delivered to the muscles during maximal exertion on a treadmill or exercise bicycle. Improvements in the maximum oxygen uptake, or VO<sub>2</sub> max, quickly became

the gold standard for judging the efficacy of exercise.

Researchers in California had more than 6,000 middle-aged men take a treadmill test and then followed them for up to ten years. They found that among the men studied, the least fit in the group with a VO<sub>2</sub> of less than 10 ml/Kg/min were 4.5 times more likely to die within six years than the most fit (VO<sub>2</sub> greater than 35ml/Kg/min). What was surprising was that this held true even if the men were overweight, had high cholesterol or high blood pressure, or smoked.

Steven Blair and colleagues at the Cooper Institute for Aerobics Research in Texas studied the risk of all-cause and cause-specific mortality in 10,224 men and 3,120 women who were given an exercise test during their preventive medical examination. After an average follow-up of eight years, all-cause mortality rates were four times greater in men and five times greater in women in the least fit in comparison to most fit. In sum, higher levels of physical fitness appear to delay all-cause mortality primarily due to lowered rates of cardiovascular disease and cancer.

Another 12-year study of 1263 men with type 2 diabetes found that the least fit were four times more likely to die than the most fit.

Jonathan Myers and associates of Palo Alto Health Care System studied 6213 consecutive men referred for treadmill exercise testing for clinical reasons during a period of nine years. After adjustment for age, the peak exercise capacity was found to be the strongest predictor of the risk of death among both normal subjects and those with cardiovascular disease. 1-MET (3.5ml/kg/min of VO<sub>2</sub>) increase in exercise capacity conferred a 12% improvement in survival.

Patients with chronic disease are now living much longer than before thanks to advances in surgical procedures and medical therapies. Unfortunately however, they are faced with impaired cardiac and vascular function, reduced muscle mass, strength/power, and exercise capacity. This results in fatigue and poor quality of life as many are forced to become sedentary. Along with physical limitations, there are emotional and mental challenges which one faces with the possibility of further relapses and recurrence of disease.

Rehabilitation in chronic disease management is intended to enable people to continue to live full lives while having chronic disease. Multidisciplinary programs for patients with a variety of heart diseases, Type 2 diabetes, and chronic obstructive pulmonary disease focus on aerobic exercise and resistance training. These programs have been shown to reduce not only cardiovascular mortality but all-cause mortality as well.

Traditionally, the doctor's role has been to diagnose and prescribe, while the patient's role has been to comply with the doctor's orders. This approach may still work for acute problems, but is far less effective in dealing with a chronic disease. Effective management of a chronic disease requires a partnership between patient and the health care professionals. "Self-management" is a term used to describe the decisions and actions individuals take to cope with or improve their health. It includes managing aspects of their condition, such as pain, fatigue and medication, while practising health promotion strategies, such as aerobic exercise and resistance training, maintaining a healthy diet and managing stress.

An editorial in New England Journal of Medicine (2002) wrote, "In 1859, Charles Darwin published his theory of evolution as an incessant struggle among individuals with different degrees of fitness within a species. Now, nearly 150 years later, in the era of evidence-based medicine and rigorous scientific method, when fitness is measured and study subjects are followed for years, the data supporting the concept of survival of the fittest are strong and compelling."





# Philip Duchen

*Inspiring others to use “science” to manage diabetes and health*

By: Amy Hwang

To Philip Duchen, 54, long and busy days have been the norm for over a decade. As a father of two and a busy construction executive, commuting an hour each way between Thornhill and Stoney Creek, maintaining a healthy lifestyle seemed inconvenient and impossible. However, in April 2008, an annual physical changed his life. To Philip's shock, he was diagnosed with borderline type II diabetes.

At 248 lbs., Philip was determined to “beat this”. He cut out sweets, dusted off an old treadmill and started walking each evening. He was referred to a diabetes education program at North York General's Branson site. Despite adding another stop to his daily commute, he was committed to the six session program run over 6 weeks. “I'm not going to be able to do work if I'm not healthy.” The Branson program taught him how to read food labels, use a glucometer, understand the fluctuations and relationship between his intake and his blood sugar levels, and make healthy food choices. After just 12 weeks, he had lost nearly 30 lbs and was eager to learn more.

Branson and Philip's doctor referred him to his next stop – Toronto Rehab's 6-month Diabetes, Exercise and Healthy Lifestyle program. When he started Daryl's class in September 2008, Philip was “introduced to a whole new world”. To his first exercise prescription, he recalls reporting: “This isn't pushing me. I'm not even sweating!” However, trusting in the “scientific way” and patiently sticking to Daryl's careful build-up, the science revealed itself months later: “I never thought I would ever run again...During my first night jogging, I felt like I was a bird flying free!” Eager for more, he asked for resistance training (RT) and was accepted into Pearl's weekly RT class, scheduled one hour before his regular class. Once again, despite starting with “featherweights”, he stayed the course and gradually increased the intensity. While continuing to exercise at Rumsey once a week he exercised at home a further 5 times a week.

As he progressed, Philip found it “tougher and tougher to lose weight”. However, now in better control of his well-being with healthy food choices and lots of exercise, he knew he would get to there; he was just not sure how to achieve a “soft landing” into his ideal weight. Maria, Rumsey's registered dietitian, asked him to log his food intake so she could analyze his diet. “This made a big difference” as she helped him refine his approach to food control. The experience of gaining control of his life taught him “how to

really taste food. Now, I am more than satisfied with one square of chocolate. Two tops. I even taste the lettuce and other vegetables in salad without any dressing.”

In February 2009, Philip's end of program stress test showed off-the-chart results. “They said they had never seen someone my age achieve the fitness level of a 20-something year-old.” Humbly accepting the pat on the back, he maintained that the real formulae to his achievement were his log book, digital scale and glucometer: “I recorded my weight and exercise every day. I also recorded if I did not exercise. This way I could ensure enough exercise each week. Self-monitoring is everything...I never knew what my end goal was. I would just look at the next 5 lbs. at a time... sort of like the carrot and stick thing.” By July 2009, Philip had lost 73 lbs. since his diagnosis and his body mass index (BMI) was at the top end of normal for his height.

A year after graduating, Philip shares the challenges to keeping up his exercise: his father's illness, recent hip pain, life and household activities, all on top of 12-hours out of the house each work day . While he has controlled his diet, he has seen that relaxing food choice discipline and his exercise frequency has resulted in his blood sugars creeping back up. Nevertheless, he remains positive and adamant to control his diabetes without medication. “The best way to bring your blood sugar down is to bring your weight down and exercise. [It is all about] cause and effect.”

Philip's mantra, “exercise no matter what” was inspired by his grandmother's remarkable recovery from a broken shoulder at 80 years old. To fellow graduates, he might suggest using self-monitoring techniques that helped him understand cause and effect. “My log book and bathroom scale are tools. If I've stepped out of line, they will visibly indicate it to me.” He also reminds peers to celebrate and build on their successes: “You work so hard to lose the weight, it's not worth going back. Try setting yourself achievable goals...don't worry about the end goal. If you try hard enough you can succeed. I did it, so can you!”

# Family Corner

## Supporting your loved one through the stages of change

By: Hannah Esmaili Tavella (MSW, RSW, PhD(c))



All of us have had the experience of trying to make positive changes in our lives. For your family member who has gone through a rehab program, these changes may involve altering long-time habits or behaviour patterns. However, change involves both the mind and body and does not happen in one step. Rather, your loved one is progressing through different stages of change at his or her own pace and may sometimes experience relapses. Before you can begin to support your loved one in making and maintaining any changes in life, it may be helpful for you to understand which of the six stages of change they are experiencing.

### The Stages of Change Model (SCM)

This model was developed by **James Prochaska & Carlo DiClemente, University of Rhode Island,**

- 1. Precontemplation:** In this stage, individuals are not thinking seriously about altering their behaviours. If your loved one is in this stage, they might be defensive make statements like: "I don't have a problem" or "There is nothing wrong with me". If your loved one is in this stage, it is not the best time to suggest strategies for change. Rather, you can attempt to provide them with brochures, pamphlets or other resources to try to inform them of their options.
- 2. Contemplation:** During this stage, individuals are aware of the consequences of their negative habits and they are thinking about the problem. While your loved one is acknowledging a problem, he or she is not yet ready to make a change. If your family member is in this stage, you might be able to help by increasing his or her awareness of the negative behaviour. Try open-ended questions like, "What do you think will happen if you continue this negative habit?"
- 3. Preparation/Determination:** This is the stage when individuals have made a commitment to change. They are gathering information about the strategies and resources needed to change their behaviour. Your loved one might express motivation by saying things like: "I need to do something about this", or "Something has to change. What can I do?"
- 4. Action/Willpower:** In this stage, individuals believe they have the ability to change their behaviour. They actively take steps to change negative behaviours by using different techniques but are now at the greatest risk of relapse. In this phase, support and encouragement is extremely important. You can also ask your loved one, "How are you going to deal with situations of temptation or pressure?" (E.g. keeping up your exercise when busy at work)
- 5. Maintenance:** Maintenance involves being able to successfully avoid the temptation to return to the negative pattern. During this phase, it is vital that individuals develop new strategies to maintain the changes in their lives. Yet, keep in mind it is normal to regress; that is, fall back to an earlier stage. Try encouraging your loved one to stay on track by positively commenting on his or her progress and asking, "How can you continue to stay on track?"
- 6. Relapse:** During the change process, individuals may return to old behaviours and abandon the new changes they have initiated in their lives. Commonly, relapses will leave individuals with feelings of discouragement and a sense of failure. If your loved one experiences a relapse, you can help by reminding him or her that relapses are normal. You can also offer support by talking them through how the relapse happened. Try asking questions like, "Why do you think this happened?" and "What can you do differently next time?"

### LOCAL EDUCATION & SUPPORT

#### Heart Disease

Cardiac Peer Support Group  
Harbourfront Community Centre  
627 Queen's Quay West  
(Bathurst & Queen's Quay)  
Toronto, ON M5V 3G3  
416-597-4165 (Mark Surchin)  
[hcc@harbourfrontcc.ca](mailto:hcc@harbourfrontcc.ca)  
[www.harbourfrontcc.ca](http://www.harbourfrontcc.ca)

#### Diabetes

Diabetes Education Centre  
North York General Hospital-  
Branson Site  
555 Finch Avenue West  
Toronto, ON M2R 1N5  
416-635-2575  
[www.nygh.on.ca](http://www.nygh.on.ca)  
(Click Programs & Services à Diabetes  
Education Centre)

#### Stroke

Stroke Recovery Group  
Presented by Neighbourhood Link  
Support Services  
11 Coatsworth Avenue  
(Coxwell & Danforth)  
Every Wednesday 12-2PM  
(416) 691-7407 (Ask for "Intake")

#### Family & Support Services

Family Service Toronto  
Outreach, Counselling and  
Social Services  
416-595-9230  
<http://www.fsatoronto.com/>



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