



# Meet the forefather of vascular surgery in Canada

Over an illustrious 40-year career at the PMCC, Dr. Wayne Johnston has elevated his profession, mentored multiple generations and saved countless lives

By Shelley White

**ASK A VASCULAR SURGEON** a question about the impact of Dr. Wayne Johnston, and you're likely to be answered with a string of superlatives, peppered with phrases like "internationally revered," "a master technical surgeon" and "the forefather of vascular surgery in Canada."

During his 40-year career, Dr. Johnston, currently the Medical Director of the Vascular Lab at the Peter Munk Cardiac Centre (PMCC), has left an indelible imprint on all aspects of his profession, from establishing the specialty's training requirements in Canada to conducting invaluable research to performing the most complex of operations.

"Wayne sets the standard for what an academic vascular surgeon should be," says Dr. Barry Rubin, Medical Director of the PMCC. "There is no one in vascular surgery worldwide, let alone in Canada, who has made more important contributions."

Dr. Johnston's career might have been wildly different, however, if he had followed his first interest. In the late 1960s, while still a general surgery trainee at the Toronto General Hospital, Dr. Johnston says he very nearly

decided to go to Los Angeles to do a PhD in pancreatic physiology. But before he could leave for L.A., Dr. Johnston developed an interest in vascular problems.

Vascular disease – a leading cause of preventable death and disability in Canada – results in damage to the interlinked network of blood vessels in the body. Because the vascular system provides nutrients and oxygen to all the organs and tissues of the body and connects to the heart and lungs, damage to the vascular system (for example from atherosclerosis or aneurysms) can lead to severe complications like strokes, limb loss and aneurysm rupture. While cardiac surgeons repair heart disease, vascular surgeons deal with diseases that involve the rest of the circulatory system (excluding the brain).

Dr. Johnston says he was attracted to this area of medicine because vascular disease affects all parts of the body. "Also, it was technically challenging, and I enjoyed that," he says.

In 1977, Dr. Johnston established the Canadian Society for Vascular Surgery with Winnipeg vascular surgeon Dr. Allan Downs, and was the driving force in

**01** Dr. Wayne Johnston almost didn't pursue a career in vascular disease.

**02** Dr. Barry Rubin, left, a vascular surgeon, was mentored by Dr. Wayne Johnston, early during his surgical career and still today.

approaching the Royal College of Physicians and Surgeons of Canada to make vascular surgery a subspecialty requiring an advanced level of certification.

"When I started, vascular cases were done by general surgeons and cardiac surgery trainees," says Dr. Johnston. "Although they were technically excellent, it was at a time when cardiac surgery was blossoming and so vascular took second place, frankly. I saw a need for somebody to take a major interest in it."

Having helped establish the specialty, Dr. Johnston created the training guidelines and exams for vascular surgery certification in Canada though the Royal College of Physicians and Surgeons. He also joined the prestigious Society for Vascular Surgery in the United States, later becoming the organization's second Canadian president, since its inception in 1947. He dove into basic research, including a groundbreaking investigation into ultrasound as a diagnostic tool to assess the location and severity of peripheral arterial disease. Millions of patients worldwide have an annual ultrasound assessment of the vascular system based on Dr. Johnston's research in this area.

"The reason patients can come to the hospital and have a non-invasive test of their arteries and veins, is because of his contributions in basic ultrasound," says Dr. Rubin.

Another major study during Dr. Johnston's 30-plus years of clinical research concerned balloon angioplasty, a procedure where a balloon catheter is used to stretch open narrowed arteries.

"I recognized that this was a technique that was going to have an impact and change how we managed patients, but there was no good documentation for it," says Dr. Johnston. It was in the 1980s, and although "people were doing it, it wasn't common practice, and the results weren't known."

During their seminal study,



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Chief Vascular Surgery, Peter Munk Cardiac Centre

Dr. Johnston and his team followed 997 recipients of balloon angioplasties for between five and 10 years, and the positive results led to the acceptance of balloon angioplasty as a standard component of vascular care.

"In the early days, the choices of treating a patient who had pain from walking or gangrene of the leg due to vascular disease was either doing nothing or doing a major operation," he says. "This provided something in between that was a game-changer, because nowadays balloon angioplasty stenting is the most common approach for most patients with leg arterial disease."

Dr. Johnston's research and expertise led him to a six-year stint as Editor-in-Chief of the *Journal of Vascular Surgery*, the most prestigious vascular surgery journal in the world, where he took the journal from print to on-line. He's taught and

overseen hundreds of students as a professor at the University of Toronto, and he was the Co-Editor of the textbook *Rutherford's Vascular Surgery*, "the textbook that every vascular trainee in the world reads before they take their exams," says Dr. Rubin.

Dr. Thomas Lindsay, Chief of the Division of Vascular Surgery at the PMCC, says he was fortunate to train under Dr. Johnston's leadership.

"I and many others have benefited from his foresight, thought and his mentoring," says Dr. Lindsay. "He's had an impact at the University of Toronto, but he's had an individual impact not only on patients' lives, but also on many residents' and trainees' lives. He's trained a whole generation of academic vascular surgeons who have disseminated across North America and in Europe and other places."

Adds Dr. Rubin: "Wayne taught me how to operate on vascular surgery patients. Throughout his career, if there were very difficult problems that vascular surgeons in Ontario encountered, there was only one thing to do: Call Wayne. "The amazing thing is, whenever I would call him in the middle of the night with cases, he was instantly awake, so happy to be engaged in the patient's care."

When asked what it takes to be a good surgeon, Dr. Johnston replies, "I think you need to listen to patients. When they come for a consultation, their true concerns may not be apparent if you don't listen to what their needs are."

In 2009, Dr. Johnston became the only Canadian to receive a Lifetime Achievement Award from the Society for Vascular Surgery.

"That was a total shock because it's not given every year, and that was sort of good fun because it recognized this body of work that I had done," he says.

"He has been the one who charted the course for the speciality of vascular surgery in Canada and set the standard for academic achievement in our speciality," Dr. Lindsay notes.

"We are lucky to have Wayne here," says Dr. Rubin of his longtime friend and colleague. "He stayed his whole career at one hospital, and he is without parallel, so it's a huge asset to us and the patients we serve." ▽