PHOTO: JEREMY TOTH

VITAL SCIENCE

BY DEIRDRE COLEMAN

Professor Valery Feigin is a busy man. But he knows that his work in the fields of stroke and traumatic brain injury is making a huge difference. As director of AUT's new National Institute for Stroke and Applied Neurosciences (NISAN), Feigin heads a team of 50 researchers at AUT's Akoranga campus and a team in Hamilton. The institute also collaborates with other New Zealand and overseas universities, and their work includes helping healthcare providers plan and allocate resources, identifying stroke risk factors in our population, reducing the stroke burden, and informing primary stroke prevention strategies both here and internationally.

Preventable trauma

A devastating, life-changing disorder, stroke affects more than 20 New Zealanders a day. But it is both largely preventable and highly treatable (with a drug called Alteplase, used in hospitals within four hours of the onset of symptoms). Injury to the brain during stroke is the result of a blood clot or arterial rupture and, depending on where in the brain the damage occurs, impairment may include symptoms such as blindness, memory loss, paralysis and speech problems.

High blood pressure, smoking, poor diet, obesity and sedentary lifestyle are the five major modifiable, environmental factors that contribute to the majority of strokes, says Professor Feigin. "If you control those you'll reduce your chance of having a stroke by 80 percent. And just high blood pressure alone increases your risk by 60 percent."

Kiwi problem

While the overall incidence of stroke here is decreasing, it's on the rise among Maori and Pacific populations. And, alarmingly, 25 percent of stroke sufferers go on to have another, often more serious stroke, especially within a year of their first.

"This is one of NISAN's key areas of focus," says Feigin. "Our work gives healthcare providers the most accurate estimates of the burden of stroke in the New Zealand population."

Along with co-directors Professor Kathryn McPherson of AUT and Dr Suzanne Barker-Collo of the University of Auckland, Professor Feigin leads the insititute's ARCOS (Auckland regional stroke community study) research. Funded by the Health Research Council, it will include a randomised control trial to reduce stroke recurrence.

"Recurrent stroke leads to re-admissions, and higher disability and mortality. Overall in New Zealand, 25 percent of people suffer a secondary stroke. The global average is 15 to 20 percent."

The reason is simple: the majority of stroke suffers don't follow the medical advice given to them when they're discharged from hospital.

"Our trial is specifically aimed at improving adherence to the medication and lifestyle changes recommended at discharge. We hope to reduce the rate of recurrent strokes substantially."

Global awareness

It's not just here that Professor Feigin's research is making an important impact. He's also highly respected internationally and has been invited to lead a panel of stroke experts from around the globe as part of the Global Burden of Disease Project led by the Institute for Health Metrics and Evaluation in Seattle, Washington.

"We're creating the world repository of all good-quality epidemiological studies on stroke: incidence, prevalence, outcomes. We'll publish the main results of that project later this year—it's going to be significant."

NISAN will host New Zealand's first national conference on stroke and applied neurosciences in November this year. Over a dozen top international speakers are attending and the conference has the backing of the Ministry of Health and all of the country's neurology-associated organisations.

New supplement

The results of NISAN's randomised control trial on the supplement Enzogenol are expected to be announced at the conference. Made from an extract from New Zealand-grown pine bark, the medication is being trialled for its ability to improve cognitive function in mild traumatic brain injury (TBI) sufferers.

While similar to stroke, TBI is a distinct condition with different risk factors and outcomes. It affects an estimated 60,000 Kiwis each year (70 percent as the result of a car accident)—that's about ten times the national stroke rate.

"It's a far greater problem than we expected. Our previous estimates of TBI incidence in New Zealand are likely to be very inaccurate," says Feigin, who is overseeing the Health Research Council-funded TBI incidence and outcome study being carried out in the Waikato. The data comes from a population study called BIONIC (for brain injury outcome NZ community) and main results will be available at the end of 2012.