Public release date: 21-Jan-2011

Contact: Valeriya Lyssenko

Valeriya.Lyssenko@med.lu.se

46-730-427-352

Lund University

Why do some diabetics escape complications?

"The majority of diabetics will over time develop severe or fatal complications, but 10□ per cent never do. They are the ones we are interested in in the PROLONG study", explains Valeriya Lyssenko, who along with Peter Nilsson, both from Lund University Diabetes Centre, leads the PROLONG study.

Stiff sugary arteries: Despite decades of intensive research on diabetes complications, the fundamental mechanisms are not yet fully known. Neither is it possible to prevent or treat the damage to the blood vessels that affects the majority of diabetics.

The risk of dying from cardiovascular disease is two to three times higher for diabetics than for non-diabetics. The small blood vessels are also damaged. After only ten years with diabetes, 70 per cent of patients will have some form of kidney damage that may progress to kidney failure. As many suffer from eye complications – some will develop severe visual impairment and two per cent will become blind.

"The blood vessels and other organs of the body become sugar coated and stiff. It is reminiscent of premature biological ageing", says Peter Nilsson.

Half of the veterans: Perhaps nature itself can answer the question of why some patients are protected. This is what the PROLONG study will investigate.

Today there are approximately 12 000 people in Sweden who have had diabetes for more than 30 years; of these, 1 600 have had it for over 50 years.

"About half of these diabetic veterans do not have major complications. Two thirds of those who have had diabetes for more than 50 years have escaped complications. Clearly they are different and we want to find out what it is that protects them", says Valeriya Lyssenko.

Greatest risk passed after 30 years: The PROLONG study is starting now in Skåne with a pilot study of patients with diabetes duration of more than 30 years. At a later stage patients will be recruited from all

hospitals and health care centres in Sweden. They will be compared with diabetics who have already developed severe complications despite having had diabetes for less than 15 years.

The 30-year limit has been chosen because a person who has had diabetes for such a long time without developing complications is unlikely to do so later in life.

Copying nature's protective mechanisms: Participants in the PROLONG study will answer questions about their lifestyle and about diseases they, or their closest relatives, may have. Various blood samples, including genetic tests, will be analysed, and close relatives of the participants will also be invited to take part in the study.

"If we can identify factors protecting these veterans from devastating complications, then it might be possible to develop drugs that can do the same thing", says Valeriya Lyssenko.

"I have dreamt of performing a study like this for a long time", adds Peter Nilsson.

PROLONG stands for PROtective genes in diabetes and LONGevity

Major diabetic complications include kidney disease (nephropathy), eye damage (retinopathy), heart attacks and stroke.

###
