

Under the Microscope

With Prof Leonard Arnolda

RPH is collaborating with researchers from Murdoch University to study the role the kidney plays in increasing blood pressure.

The National Health and Medical Research Council has awarded \$287,000 to Dr Jacqueline Phillips of Murdoch University, RPH Head of Cardiology Prof Leonard Arnolda and Dr Douglas McKittrick of UWA's School of Medicine and Pharmacology to undertake this research.

This study will look at the way the brain and kidney communicate with each other in order to establish how high blood pressure is caused in people who have kidney disease.

Prof Arnolda said that in the healthy body, the kidney and the sympathetic nervous system worked together to keep our blood pressure in the normal range, both in the short and long term.

“When people have kidney disease, this system fails and people can develop high blood pressure which can then lead to serious complications such as heart attack and stroke,” Prof Arnolda said.

The researchers believe that sensory nerves in the kidney tell the brain something is wrong in the kidney, making the sympathetic nervous system increase blood pressure inappropriately.

The circulating hormone angiotensin II will also be investigated as to the role it plays in driving the sympathetic nervous system to increase blood pressure.

“We want to determine what parts of the brain are important in the pathway, and will also test treatments that block the two different pathways - nerves versus hormones,” Prof Arnolda said.

By doing this the researchers hope to find not only the most effective way to control blood pressure, but also to slow down the progression of kidney and heart disease.

“This work is important as it will not only help us understand how the brain and kidney communicate with each other, but will also have the potential to improve quality of treatment for people with kidney disease,” Prof Arnolda said.