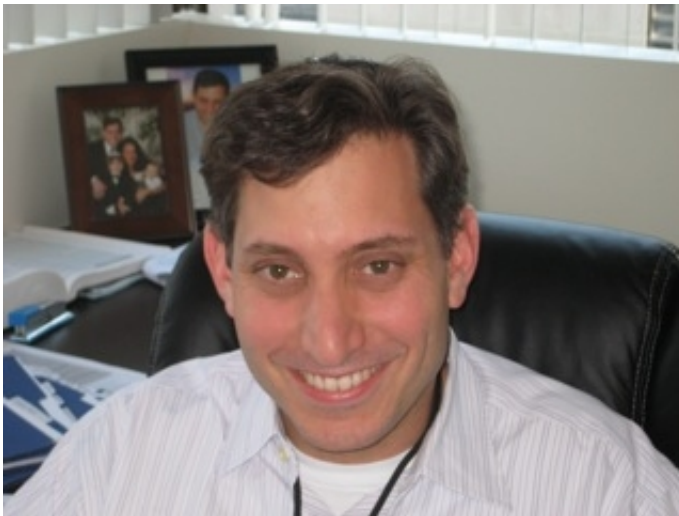


In-hospital nocturnal dialysis may be good for the heart

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In-hospital nocturnal dialysis may be good for patients' hearts as well as their kidneys, according to a new study by Dr. Ron Wald of St. Michael's Hospital in Toronto. Credit: Courtesy of St. Michael's Hospital

In-hospital nocturnal dialysis may be good for patients' hearts as well as their kidneys, a new study suggests.

People with end-stage kidney disease who receive [chronic dialysis](#) have high rates of [cardiovascular disease](#) and death from cardiovascular disease. About 15-20 per cent of dialysis [patients](#) die each year, most from cardiovascular disease.

Interventions that reduce the risk of cardiovascular disease in the general population have less success with dialysis patients, suggesting there may be unique mechanisms driving cardiovascular disease in patients with advanced kidney disease. The dialysis procedure itself, especially when performed on a conventional schedule of 12 hours a week, may promote or exacerbate cardiovascular disease.

Little is known about the link between in-hospital nocturnal dialysis, one of the most intense forms dialysis, and cardiovascular disease. In a study published today in the *Canadian Journal of Cardiology*, a team led by Drs. Ron Wald and Andrew Yan of St. Michael's Hospital compared the thickness of the heart wall in patients who converted to in-hospital nocturnal dialysis and those who remained on conventional dialysis.

They found that compared with conventional dialysis, in-hospital nocturnal dialysis was associated with a "significant reduction" in left ventricular mass after one year. The left ventricle is the bottom left chamber of the heart, which pumps blood out to the aorta and to the rest of the body. The size or mass of the [left ventricle](#) is an important risk factor in cardiovascular disease, with a larger mass being associated with more cardiovascular disease and more deaths from cardiovascular disease. Importantly, reduction in left ventricular mass has also been linked to a lower risk of cardiovascular diseases such as heart failure, heart attack and stroke.

The study also found a trend toward lower blood pressure among in-hospital nocturnal dialysis patients compared to the conventional [dialysis patients](#) and lower blood phosphate levels, another marker of adverse cardiovascular outcomes.

Patients receiving conventional dialysis get 12 hours of dialysis a week, given as four hours a session, three days per week. In-hospital nocturnal dialysis provides twice as much time - eight hours on each of three

nights.

"This study is good news in several ways," said Dr. Wald, a nephrologist. "It suggests there is a cardiovascular benefit for people who are receiving in-hospital nocturnal dialysis and it may encourage other kidney patients to switch to this more intense form of dialysis. In addition to the potential health benefits, nighttime dialysis may free up patients' daytime hours to do the things that hemodialysis treatments typically disrupt such as employment, child care and household chores."

Dr. Yan, a cardiologist, noted this study was not a randomized clinical trial, so the conclusions that can be drawn are that in-hospital nocturnal dialysis is associated with reduced [left ventricular](#) mass, not that it necessarily caused the reduction. Nevertheless, their findings are consistent with other randomized trials of intensified dialysis, and provide support for the use of in-hospital nocturnal dialysis among eligible patients.

Provided by St. Michael's Hospital

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