

# Preventive measure during procedures using contrast material unnecessary

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Contrary to what international guidelines have prescribed for many years, preventive hydration to protect renal function during procedures using contrast material appears to have no added value. In fact, in some cases there are negative consequences. Research by Maastricht UMC+ shows that omitting the standard intravenous hydration given to people with compromised renal function could prevent complications and save millions of euros in care costs. The results were published this week in the prominent scientific journal *The Lancet*.

More than 75 million procedures per year are carried out with the injection of iodinated contrast material. Examples of such procedures are CT scans or angiograms (X-rays of the cardiovascular system) to make diagnoses. In some people, these contrast materials can lead to [acute kidney injury](#) (known as contrast-induced nephropathy). People whose [renal function](#) is already compromised are at a higher risk. This is around ten percent of the global population.

## International guidelines

To minimise damage, high-risk groups receive additional fluid intravenously during procedures involving contrast material. This requires that patients are hospitalised for one or several days. This working method is described in international guidelines and has been applied as such in the for over six years. However, it presents additional burdens for patients and hospitals and an increase in care costs of some

50 to 100 million euros per year in the Netherlands alone.

## No added value

As a result of the doubts about the effectiveness of this procedure, Maastricht researchers from various departments decided to put the matter to the test. Over two years, 660 patients with compromised renal function took part in the study. Prior to procedures involving [contrast material](#), around half of the patients received intravenous hydration (following current guidelines). For the other half, this preventive measure was omitted. The findings: the occurrence of an acute decrease in renal function was practically the same (2.7 percent versus 2.6 percent). In addition, 5.5 percent of the patients experienced complications (including heart problems) when they received additional fluids.

## Cost-savings

Research coordinator Estelle Claire Nijssen: "The results confirm our suspicions that we need to look very critically at the current guidelines on fluid administration to prevent renal damage." According to fellow researcher Dr Vincent van Ommen (interventional cardiologist), this could potentially represent enormous cost savings: "Just think of the reduction in the number of hospitalisation days per year alone. It would spare the patient from unnecessary treatments and side effects, but would also save costs."

The research project is entitled AMACING (A MAastricht Contrast-Induced Nephropathy Guideline study) and is a multidisciplinary cooperation between the departments of radiology, internal medicine, cardiology, clinical epidemiology, and medical technology assessment at the Maastricht UMC+. The project was made possible by funding by

Stichting de Weijerhorst foundation.

**More information:** Estelle C Nijssen et al, Prophylactic hydration to protect renal function from intravascular iodinated contrast material in patients at high risk of contrast-induced nephropathy (AMACING): a prospective, randomised, phase 3, controlled, open-label, non-inferiority trial, *The Lancet* (2017). [DOI: 10.1016/S0140-6736\(17\)30057-0](https://doi.org/10.1016/S0140-6736(17)30057-0)

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