

Multiple-frequency bioimpedance devices for fluid management in people with chronic kidney disease receiving dialysis: a systematic review and economic evaluation

Graham Scotland,¹ Moira Cruickshank,²
Elisabet Jacobsen,¹ David Cooper,² Cynthia Fraser,²
Michal Shimonovich,² Angharad Marks³
and Miriam Brazzelli^{2*}

¹Health Economics Research Unit, University of Aberdeen, Aberdeen, UK

²Health Services Research Unit, University of Aberdeen, Aberdeen, UK

³NHS Grampian, Aberdeen Royal Infirmary, Aberdeen, UK

*Corresponding author m.brazzelli@abdn.ac.uk

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Plain English summary

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Plain English summary

People undergo dialysis because of kidney problems. During dialysis, it is important to check the volume of fluid being removed, as removing too much or not enough fluid can cause serious health problems. Assessment of fluid levels in people receiving dialysis has traditionally been done by doctors and medical staff using their expertise and judgement, but this can be inaccurate. Recently, a type of technical device (called a multifrequency bioimpedance device) has been introduced to estimate a person's fluid level by sending painless electrical currents through the body by way of pads, which are placed on certain parts of the body (e.g. the hand and foot). This assessment looked at all clinical studies comparing the use of such devices with doctors' judgement in assessing the fluid levels of people receiving dialysis. Results from 13 clinical studies assessing 5819 adults showed that the use of these bioimpedance devices reduced overhydration levels, but blood pressure, arterial stiffness (the heart has to work harder to pump blood through stiffer arteries and stiffness can mean an increased risk of negative events such as heart attacks) and the number of deaths were similar regardless of the method of fluid assessment. The cost of using these devices was too high for the NHS budget when the actual costs of dialysis were included in the economic evaluation, but was acceptable when dialysis costs were not taken into account. The quality of the studies was generally poor and only one device was used by all the studies. In addition, the long-term effects of using these devices have yet to be established. It would be useful if dialysis centres, which have introduced the use of these devices in their routine practice, could provide further information on the effects of bioimpedance devices on people receiving dialysis over an extended period of time.

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