

# Universal late pregnancy ultrasound screening to predict adverse outcomes in nulliparous women: a systematic review and cost-effectiveness analysis

Gordon CS Smith,<sup>1\*</sup> Alexandros A Moraitis,<sup>1</sup>  
David Wastlund,<sup>2</sup> Jim G Thornton,<sup>3</sup>  
Aris Papageorghiou,<sup>4</sup> Julia Sanders,<sup>5</sup>  
Alexander EP Heazell,<sup>6</sup> Stephen C Robson,<sup>7</sup>  
Ulla Sovio,<sup>1</sup> Peter Brocklehurst<sup>8</sup>  
and Edward CF Wilson<sup>2,9</sup>

<sup>1</sup>Department of Obstetrics and Gynaecology, NIHR Cambridge Biomedical Research Centre, University of Cambridge, Cambridge, UK

<sup>2</sup>The Primary Care Unit, Department of Public Health and Primary Care, University of Cambridge, Cambridge, UK

<sup>3</sup>Division of Child Health, Obstetrics and Gynaecology, School of Medicine, University of Nottingham, Nottingham, UK

<sup>4</sup>Nuffield Department of Obstetrics and Gynaecology, University of Oxford, Oxford, UK

<sup>5</sup>School of Healthcare Sciences, Cardiff University, Cardiff, UK

<sup>6</sup>Faculty of Biology, Medicine and Health, School of Medical Sciences, University of Manchester, Manchester, UK

<sup>7</sup>Reproductive and Vascular Biology Group, The Medical School, Newcastle University, Newcastle upon Tyne, UK

<sup>8</sup>Birmingham Clinical Trials Unit, University of Birmingham, Birmingham, UK

<sup>9</sup>Health Economics Group, Norwich Medical School, University of East Anglia, Norwich, UK

\*Corresponding author [gcss2@cam.ac.uk](mailto:gcss2@cam.ac.uk)

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## Plain English summary

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## Plain English summary

Ultrasound scans allow doctors to check on the health of an unborn infant. Usually, all pregnant women receive a scan at about 3 months and about 5 months of pregnancy. After that, women are offered a scan during birth only if they have risk factors or if a problem develops. Problems can arise in the later stages of pregnancy, including issues with the infant's growth or whether or not the infant is breech. Some of these problems may be prevented if a scan is carried out, but scans can also be inaccurate. When they are, a woman may receive unnecessary treatment, which could even harm her or her infant.

In this study we set out to review previous research about how good ultrasound scanning is at detecting infants who may be born with a condition. This study focused on detecting if the infant was too big or too small. Unfortunately, much of the previous research was not carried out to a high standard. Scanning can detect the size of a infant relatively well, but it is much less clear if scanning can predict complications that may harm the infant during birth. We also studied the costs and outcomes of scanning. We calculated the extra cost required to scan every woman and compared this with the extra benefits from preventing complications. One thing that ultrasound scans detect is whether the infant is presenting head first or bottom first (a 'breech presentation'), as infants presenting breech have high risks of complications. Scanning all women to check whether or not their infant is presenting breech seems to be cost-effective and the cost savings may even be higher than the cost of implementation, although this depends on how much the scan would cost.

Whether or not it is worthwhile scanning all infants to see if they are above or below the thresholds for normal size is less clear. A larger research study could provide more reliable numbers from which to draw a conclusion. We show how such a study could be designed, so that a single study could tell us both how well scans can predict adverse outcomes and how helpful this information is.



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