

World first blood test reduces risk and increases accuracy in prenatal testing

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Research into a simple, accurate and low risk blood test that can detect foetal blood group, sex, and genetic conditions in unborn babies has been published in the international scientific journal, *Clinical Chemistry*.

The research is the result of a collaboration between Plymouth Hospitals NHS Trust and Plymouth University. The DNA test costs pence and is non-invasive - as opposed to the traditional amniocentesis test that is available on the NHS, involves a needle and carries a minor (1%) risk of miscarriage.

The test developed can be carried out on mothers at risk of X-linked genetic recessive diseases including haemophilia and Duchenne muscular dystrophy and mothers at risk of haemolytic disease of the new-born. It can use the [blood](#) that is taken from the mother when she has her first appointment with her GP or midwife at the early stages of pregnancy, negating the need for multiple appointments and making best use of resources.

Lead corresponding author for the study, Professor Neil Avent from Plymouth University School of Biomedical and Healthcare Sciences, explained: "Although foetal blood grouping and sexing using maternal blood has been done for over a decade, this research proves a much more accurate and sensitive method of detecting foetal DNA. This offers great opportunities to detect other conditions using this technique, but is much cheaper than current non-invasive methods. The end is now in sight for the invasive techniques of amniocentesis and chorionic villus

sampling."

He added: "The technique represents a comparatively low-risk method for the early identification of a number of conditions, which in turn will aid earlier diagnosis and possible therapies to the potential benefit of both mother and child. It is important to emphasise that the objective of such a test is to contribute to clinical management - in such testing strategies termination never a consideration."

Dr Ross Welch, a consultant in fetomaternal medicine at Plymouth Hospitals NHS Trust added: "Doing a test is an option for people continuing with a pregnancy as they have the right to know what is ahead. It is of course correct that the [test](#) should not only be effective but also delivered at low risk to the health of both mother and child."

More information: 'Fetal sex and RHD genotyping using droplet digital PCR demonstrates greater sensitivity compared to real-time PCR' *Clinical Chemistry*, [DOI: 10.1373/clinchem.2015.239137](https://doi.org/10.1373/clinchem.2015.239137)

Provided by University of Plymouth

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