

Simple blood test in the first trimester predicts fetal gender

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A new research study published in the January 2012 edition of *The FASEB Journal* describes findings that could lead to a non-invasive test that would let expecting mothers know the sex of their baby as early as the first trimester. Specifically, researchers from South Korea discovered that various ratios of two enzymes (DYS14/GAPDH), which can be extracted from a pregnant mother's blood, indicate if the baby will be a boy or a girl. Such a test would be the first of its kind.

"Generally, early fetal [gender determination](#) has been performed by invasive procedures such as chorionic villus sampling or amniocentesis. However, these invasive procedures still carry a one to two percent risk of miscarriage and cannot be performed until 11 weeks of gestation. Moreover, reliable determination of fetal gender using ultrasonography cannot be performed in the first trimester, because the development of external genitalia is not complete," said Hyun Mee Ryu, M.D., Ph.D., a researcher involved in the work from the Department of Obstetrics and Gynecology at Cheil General Hospital and Women's Healthcare Center at the KwanDong University School of Medicine in Seoul, Korea.

"Therefore, this can reduce the need for [invasive procedures](#) in pregnant women carrying an X-linked chromosomal abnormality and clarify inconclusive readings by ultrasound."

To make this discovery, Ryu and colleagues collected maternal plasma from 203 women during their first trimester of pregnancy. The presence of circulating fetal DNA was confirmed by a quantitative methylation-specific [polymerase chain reaction](#) of U-PDE9A. Multiplex real-time

polymerase chain reaction was used to simultaneously quantify the amount of DYS14 and GAPDH in maternal plasma. The results were confirmed by phenotype at birth.

"Although more work must be done before such a test is widely available, this paper does show it is possible to predict the sex of a child as early as the first few weeks after conception," said Gerald Weissmann, M.D., Editor-in-Chief of The [FASEB Journal](#). "At present, parents are sometimes given the wrong information about the sex of their unborn child; this [test](#) should prove helpful in resolving any uncertainties of today's ultrasound observations."

More information: Ji Hyae Lim, So Yeon Park, Shin Young Kim, Do Jin Kim, Ji Eun Choi, Min Hyoung Kim, Jun Seek Choi, Moon Young Kim, Jae Hyug Yang, and Hyun Mee Ryu. Effective detection of fetal sex using circulating fetal DNA in first-trimester maternal plasma. *FASEB J.* January 2012 26:250 [doi:10.1096/fj.11-191429](https://doi.org/10.1096/fj.11-191429)

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