

PRESS RELEASE

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Could Fish Consumption Reduce the Risk of Hypertensive Disorders of Pregnancy?

New research explores the link between fish consumption and hypertensive disorders of pregnancy

A new prospective study from Japan explored whether fish consumption before and during pregnancy is linked to hypertensive disorders of pregnancy, including gestational hypertension and preeclampsia. Researchers analyzed data from women in Japan, examining fish, n-3 and n-6 polyunsaturated fatty acid (PUFA) intake across different stages of pregnancy. The results reveal an intriguing pattern that may have implications for preconception and prenatal nutrition.

Hypertensive disorders of pregnancy (HDP) are among the most common complications of pregnancy, affecting approximately 5–10% of pregnancies worldwide. Conditions such as gestational hypertension and preeclampsia can have serious consequences for both mothers and babies. As diet is a potentially modifiable factor, understanding whether specific dietary patterns are associated with HDP risk could help inform preconception and prenatal care. Fish is an important source of long-chain n-3 polyunsaturated fatty acids (PUFAs), which have been associated with cardiovascular and vascular health, partly through their anti-inflammatory effects. However, evidence linking fish consumption with the risk of HDP remains limited.

To explore this relationship, a team of researchers led by Associate Researcher Takuya Inouye from the Department of Obstetrics and Gynecology, Gunma University Graduate School of Medicine, Japan, along with Professor Eiji Yoshioka from the Department of Public Health, Faculty of Medicine, University of Toyama, Japan, and Professor Kei Hamazaki from the Department of Public Health, Faculty of Medicine, Gunma University Graduate School of Medicine, examined whether fish consumption before and during pregnancy was associated with the risk of HDP. Explaining the motivation behind the study, Dr. Inouye says, *“Given the importance of n-3 PUFAs during pregnancy, we have long been interested in how fish consumption may influence maternal and child health.”* The study was published in Volume 65 of the [European Journal of Nutrition](#) on September 8, 2026.

The researchers drew on data from the Japan Environment and Children’s Study (JECS), a large prospective cohort involving 86,009 women. Fish consumption, along with n-3 and n-6 PUFA intake, was assessed at two time points: during the year before pregnancy and during mid-to-late pregnancy. Participants were divided into five intake groups, or quintiles, and assessed for overall HDP and early-onset HDP.

The results revealed an interesting pattern. Dr. Inouye shares, *“Higher fish intake before pregnancy was associated with lower odds of early-onset HDP, while higher intake during*

pregnancy was associated with lower odds of overall and late-onset HDP.” Among all women, those in the highest fish-intake group before pregnancy had 34% lower odds of early-onset HDP (aOR, 0.66). The association was even stronger among women in their first pregnancy, who had 43% lower odds (aOR, 0.57). During pregnancy, women in the fourth fish-intake group had 14% lower odds of overall HDP (aOR, 0.86). Higher fish intake was also associated with a 21% reduction in the odds of late-onset HDP among women experiencing their first pregnancy (aOR, 0.79).

However, the findings were not equally strong for all dietary measures. Associations between total n-3 PUFA intake and HDP were weaker and less consistent, suggesting that the observed relationship may not be explained simply by total n-3 PUFA intake. The associations were most pronounced among women in their first pregnancy and were not statistically significant among women who had previously given birth.

These findings could have implications for preconception care and dietary counseling for women planning a pregnancy and those who are pregnant. *“Fish consumption, starting before pregnancy, should continue to be recommended as part of a healthy diet to support a healthy pregnancy,”* notes Dr. Inouye. However, as this was an observational study, participants’ diets were not controlled, and the results cannot establish that fish consumption directly prevents HDP. Further studies, including intervention trials that control fish intake, are needed to determine whether fish consumption itself has a beneficial effect on HDP risk.

Overall, this prospective cohort study found that higher fish intake before and during pregnancy was associated with lower odds of certain forms of HDP. While causation cannot be established, the findings support further research into fish consumption as part of healthy preconception and prenatal nutrition.

Reference

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About University of Toyama

The University of Toyama, located in Toyama Prefecture, Japan, is a national university formed in 2005 through the integration of three institutions: Toyama University, Toyama

Medical and Pharmaceutical University, and Takaoka National College. Today, it encompasses nine schools and multiple graduate programs, research centers, and a university hospital. The university is particularly recognized for its strengths in medicine, pharmaceutical sciences, natural medicine, and interdisciplinary research. Its School of Medicine and School of Pharmacy and Pharmaceutical Sciences promote collaboration across healthcare and life sciences, while the Institute of Natural Medicine advances research integrating traditional and Western medicine.

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About Dr. Takuya Inouye from the University of Toyama, Japan

Dr. Takuya Inouye, MD, PhD, is an obstetrician-gynecologist affiliated with Gunma University's Department of Obstetrics and Gynecology and the Toyama University EcoChild Research Unit. He graduated from medical school in 2015 and is a certified specialist in obstetrics and gynecology in Japan. He also completed his doctoral program in 2026 and earned a PhD in Medicine. His research focuses on maternal nutrition, pregnancy outcomes, reproductive health, and the relationship between fish and polyunsaturated fatty-acid intake and maternal health. Inouye has contributed to several clinical and epidemiological studies, including research using the large-scale Japan Environment and Children's Study (JECS).

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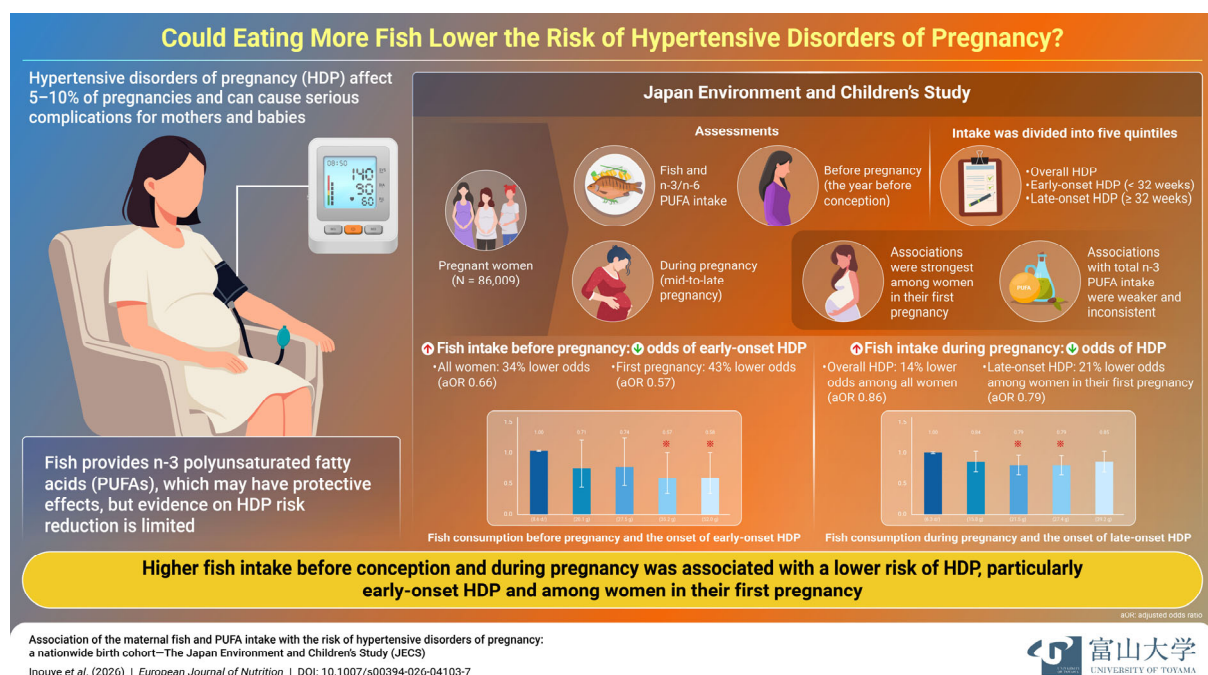
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Image



Title: Fish Consumption Before and During Pregnancy: What Does the Evidence Show?

Caption: Prospective study from Japan explores the potential link between fish consumption before and during pregnancy and the risk of hypertensive disorders of pregnancy.

Credit: Professor Kei Hamazaki from University of Toyama, Japan

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