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Press Release

**Under embargo until 11pm this evening**

## **Ovarian insufficiency: a genetic cause identified**

**Researchers from the Institut Pasteur have identified genetic mutations responsible for cases of ovarian insufficiency, a term that covers various disorders affecting female fertility, from the absence of ovaries to ovarian dysfunction. This discovery, published in *The New England Journal of Medicine*, opens up new avenues for diagnosis and genetic counseling.**

Ovarian insufficiency is due to problems affecting ovary development and function, such as the absence of ovaries, lack of puberty, or early menopause. It concerns at least 1% of the female population. Autoimmune and environmental factors may have a role to play in this disorder but in the majority of cases the cause is unknown.

Research lead by Dr Anu Bashamboo in the Human Developmental Genetics Unit, Department of Developmental Biology, headed by Ken McElreavey at the Institut Pasteur, has identified and explained a major genetic cause of ovarian insufficiency.

The team's research interests include the fundamental mechanisms of mammalian sex determination. The researchers identified and studied several families affected by testicular developmental disorders. Analysis of these families showed various ovarian disorders in some women in the same families. A genetic study identified different mutations in a gene termed *NR5A1*, in these families. This gene plays a key role in testis formation and in regulating the biosynthesis of hormones produced by the testis. This study demonstrates the key role of *NR5A1* in ovarian development and function.

The team also found evidence for mutations of this gene in sporadic cases, i.e. in 2 individuals out of the 25 cases of ovarian insufficiency studied.

*"This study shows how research into an essential aspect of developmental biology, such as sex determinism, can have a clinical impact", explains Ken McElreavey. "In the future, a diagnosis based on the identification of mutations of the NR5A1 gene\**

could be offered. *Genetic counseling could then be given to women who carry pathological mutations and who could be at risk of developing infertility.*"

How frequent are mutations in this gene in cases of ovarian insufficiency? It is still too early to say, and research must be conducted on a large number of women before this question can be answered. But preliminary results from Institut Pasteur researchers suggest *NR5A1* gene mutations are involved in a significant number of cases of ovarian insufficiency.

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## Source

***"Mutations in NR5A1 associated with ovarian insufficiency": The New England Journal of Medicine***, February 26, 2009.

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