

# Endometriosis and infertility

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**Annotation:** In this article, the causes and mechanisms of infertility in endometriosis are fully explained, the four main factors of infertility related to endometriosis, the importance of the embryo factor in infertility in endometriosis, the fundamental differences in embryos.

**Key words:** infertility in endometriosis, embryonic factor, potential effect, fundamental differences in embryos.

## **Introduction:**

Given that the symptoms of endometriosis were described as early as 1690, but even after 330 years, there is no consensus on the causes and mechanisms of the development of this rare disease, which is called a mysterious disease and an epidemic of the 21st century. with infertility, this problem becomes even more important. The true causes and mechanisms of infertility caused by endometriosis are not fully known, questions about the contribution of one or another factor are very controversial and the answers are controversial.

## **Literature analysis and methodology:**

For data structure, we distinguish 4 causative factors of endometriosis-related infertility: tubal peritoneal, ovarian, embryonic and endometrial. Perhaps their combination or isolated forms. In some cases, the cause of infertility in endometriosis is blockage of the fallopian tubes due to anatomical changes in the pelvic cavity due to adhesions.

There is also a controversial opinion about the violation of the functional activity of the fallopian tubes in endometriosis. But because of the few studies on this topic, this factor has been overlooked as a good cause of endometriosis-related infertility. The relationship between the extent of endometriosis damage to the pelvic organs and its effect on fertility is interesting.

## **Results:**

In many observations, the following relationship was noted: the more obvious the degree of damage, the worse the probability of spontaneous conception. The answer is that endometriosis, recognized as a chronic inflammatory disease associated with immune disorders, can change the composition of the abdominal fluid, impair the quality of eggs, sperm, embryos, and the ability of the blastocyst to implant.

Endometrioid peritoneal implants induce an acute inflammatory response primarily involving the recruitment and activation of a subset of T helper and regulatory T cells that produce large amounts of inflammatory mediators. Oxidative stress is a cofactor in this process and induces abnormal production of cytokines through the induction of light chain enhancer nuclear factor kappa of activated B cells, which promotes the growth of endometrioid heterotopias.

## **Discussion:**

Prolonged activation of peritoneal macrophages by cytokines leads to chronic inflammation and promotes the formation of adhesive lesions in the peritoneum. The causes of infertility caused by the ovarian factor of endometriosis are, first of all, a decrease in the ovarian reserve and a violation of folliculogenesis, resulting in a deterioration of the quality of oocytes and embryos.

Morphological changes affecting normal ovarian tissue initiated by endometrioma are characterized by low distribution density and accelerated follicular atresia processes, changes in the stromal compartment, and fibrous deformation of the cortical substance. The above metabolic processes that change the composition of

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the abdominal fluid can also be extrapolated to the effect of the toxic content of endometriomas on the ovarian follicular apparatus.

**Conclusion:**

In conclusion, it can be said that the importance of the embryo factor in infertility in endometriosis has been questioned by reliable controversial studies that did not identify fundamental differences in embryos and their ability to implant in cohorts of patients with and without endometriosis. Thus, the embryonic factor as a cause of endometriosis-related infertility is very attractive for scientific research due to the small amount of data collected and its potential effect on fertility, but it is not without controversy.

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