Department of Obstetrics & Gynecology

Infertility & Fertility Preservation

Gynecologic Diseases

Delivery

+ Proportion of Embryo Cryopreservation

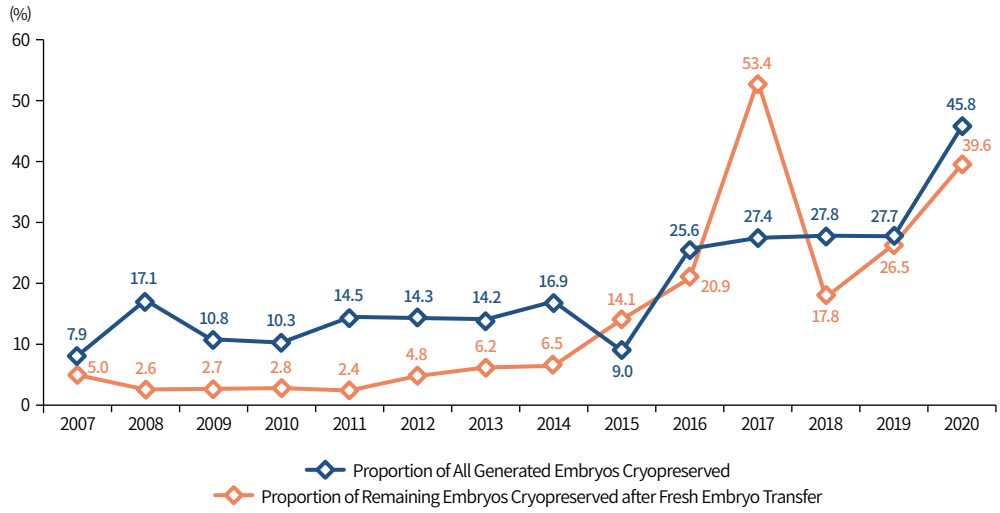
The proportion of cases who had their embryos cryopreserved for further utilization

Definitions

- **Embryo**: An early stage of development after conception of fertilized gametes during the period of fastest growth, which develops from a zygote.
- **Fertilization**: The process by which the male and female gametes are fused together, initiating the development of a zygote.
- **Cryopreservation**: The process of cooling and storing cells, tissues, or organs at very low temperatures to maintain their viability.

Result

January 1, 2007 - December 31, 2020



Interpretation

- Along with the increasing trend of single embryo transfers in order to reduce multifetal pregnancy, the rate of cryopreserving the remaining embryos is also steadily increasing.
- Also, recently the benefits of thawed embryo transfers compared to fresh embryo transfers have been highlighted, and this has led to the increase in cases who have all their embryos cryopreserved for subsequent thawed embryo transfers.

Data source SNUBH EMR (Electronic Medical Record)

Relevant Research 1) Roque M, Lattes K, Serra S, Solà I, Geber S, Carreras R, et al. "Fresh embryo transfer versus frozen embryo transfer in in vitro fertilization cycles: a systematic review and meta-analysis". 「Fertil Steril」, 2013, 99(1), pp. 156-62.

2) McLernon DJ, Harrild K, Bergh C, Davies MJ, De Neubourg D, Dumoulin JC, et al. "Clinical effectiveness of elective single versus double embryo transfer: meta-analysis of individual patient data from randomised trials". 「BMJ」, 2010, 341, pp. c6945.

+ Number of Embryo Transfer

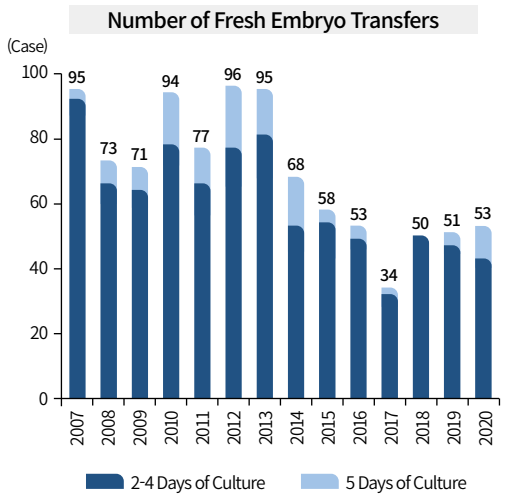
The number of embryo transfers either during the same menstrual cycle or after cryopreservation and thawing, after culturing the generated embryos

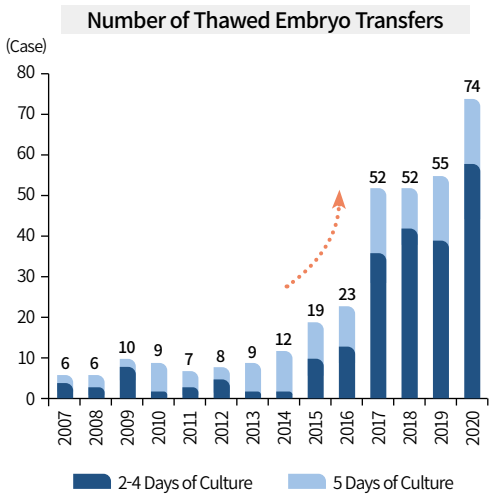
Definitions

- **Embryo**: An early stage of development after conception of fertilized gametes during the period of fastest growth, which develops from a zygote.
- **Cryopreservation**: The process of cooling and storing cells, tissues, or organs at very low temperatures to maintain their viability.
- **Embryo culture**: Divided into 2- to 4-day culture or 5-day culture.

Result

January 1, 2007 - December 31, 2020





Interpretation

- The recent focus on the benefits of the thawed embryo transfer has led to the increase of cases where all embryos are cryopreserved for the subsequent thawed embryo transfers. Thus, a fresh embryo transfer that immediately follows the oocyte retrieval is showing a decreasing trend.
- With the advancement of techniques for embryo cryopreservation and thawing, as well as culture, the proportion of a 5-day culture embryo transfer has increased.

Data source SNUBH EMR (Electronic Medical Record)

Relevant Research 1) Roque M, Lattes K, Serra S, Solà I, Geber S, Carreras R, et al. Fresh embryo transfer versus frozen embryo transfer in in vitro fertilization cycles: a systematic review and meta-analysis. Fertil Steril 2013;99(1):156-62.
2) apanikolaou EG, Kolibianakis EM, Tournaye H, Venetis CA, Fatemi H, Tarlatzis B, et al. Live birth rates after transfer of equal number of blastocysts or cleavage-stage embryos in IVF. A systematic review and meta- analysis. Hum Reprod 2007;23(1):91-9.

+ Number of Cryopreservation

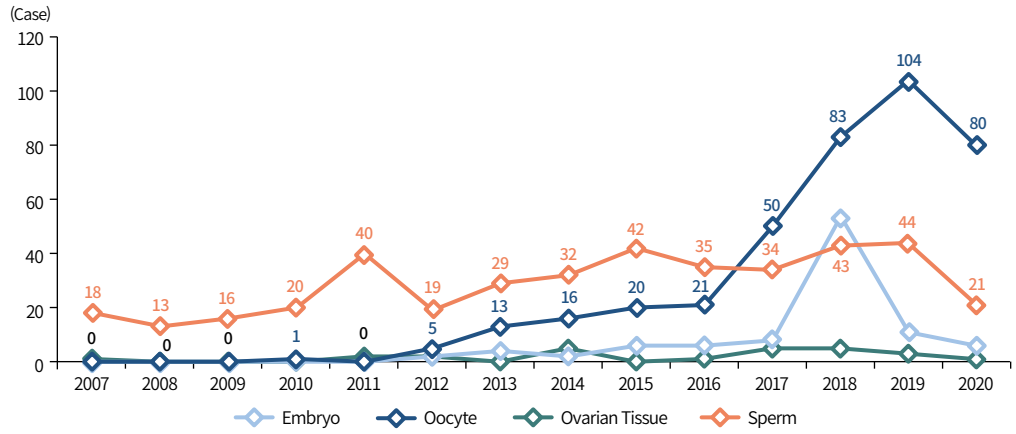
The cryopreservation of the embryo, oocyte, ovarian tissue, or sperm, for the purpose of fertility preservation

Definitions

- **Fertility preservation**: All surgical, pharmacological, and laboratory procedures performed to preserve fertility.
- **Embryo cryopreservation (Embryo banking)**: Cryopreservation of an embryo generated by the fertilization of a retrieved oocyte with a sperm.
- **Oocyte cryopreservation (Oocyte banking)**: Cryopreservation of a retrieved oocyte.
- **Ovarian tissue cryopreservation (Tissue banking)**: Cryopreservation of a fragment of ovarian tissue after ovarian resection and processing.
- **Sperm cryopreservation (Sperm banking)**: Cryopreservation of collected sperms.

Result

January 1, 2007 - December 31, 2020



Interpretation

- Women's social and work life are becoming more important, and due to this marriage and childbirth are being delayed, therefore the social interests in fertility preservation is increasing. Furthermore, the development of medical technology has led to an improvement in cancer treatment outcomes, and thus the quality of life after cancer survival has become more important, which in turn has highlighted the need to preserve cancer survivors' fertility. As a result of these social and medical changes, the number of fertility preservation cases is growing continuously.
- Ovarian tissue cryopreservation procedure is still in its early stages globally. However, good results are continuously reported overseas regarding the ovarian tissue transplantation, and its numbers are expected to increase steadily in Korea.

Data source SNUBH EMR (Electronic Medical Record)

Relevant Research 1) Loren AW, Mangu PB, Beck LN, Brennan L, Magdalinski AJ, Partridge AH, et al. "Fertility preservation for patients with cancer: American Society of Clinical Oncology clinical practice guideline update". 「J Clin Oncol」, 2013, 31(19), pp. 2500-2510.
2) von Wolff M, Germeyer A, Nawroth F. "Fertility preservation for non-medical reasons: controversial, but increasingly common". 「Dtsch Arztebl Int」, 2015, 112(3), pp. 27.