

The ICMART glossary on ART terminology*

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The International Committee Monitoring Assisted Reproductive Technologies (ICMART) is an independent, international non-profit organization that has taken a leading role in the development, collection and dissemination of worldwide data on ART. Information on availability, efficacy and safety is provided to health professionals, health authorities and the public. The glossary facilitates dissemination of ART data through a set of agreed definitions as seen in the most recent World Report on ART. It provides a conceptual framework for further international terminology and data development of ART.

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In 2001, the World Health Organization (WHO) organized an international meeting on 'Medical, Ethical and Social Aspects of Assisted Reproduction'. ICMART was asked to prepare a 'Glossary on ART Terminology' to be used at this meeting. The glossary was discussed and endorsed by all participants. A report from this meeting, including the glossary, can be obtained in a WHO publication (WHO, 2002).

The glossary facilitates dissemination of ART data through a set of agreed definitions as seen in the most recent World Report on ART (Adamson *et al.*, 2005). It provides a conceptual framework for further international terminology and data development of ART and should be used in conjunction with the section on infertility in the international diagnostic coding system, ICD-10 International Statistical Classification of Diseases and Related Health Problems, 10th revision (WHO, 1993).

The need for standard definitions is critical for benchmarking the outcomes of ART procedures at both a national and an international level. The increase in the use of ART treatment worldwide and the continuing discussions, controversies and debates over measurements of efficacy and safety have generated both scientific and public interest (Adamson *et al.*, 2005). Different definitions used in different countries usually serve national needs, and are many times influenced by cultural settings, generating a variety of laws and regulations. However, when it comes to international data collection, standardization is necessary so that monitoring of efficacy, safety and quality of procedures and multinational research can be undertaken. A core set or minimum data set of ART procedures and treatment outcomes with internationally accepted definitions is needed so that comparisons are meaningful. Also, the surveillance of rare events regarding safety requires international cooperation and clear common definitions.

The ICMART glossary tries to remove these obstacles. Regional and national registries reporting their results to ICMART, such as ESHRE, SART and the Latin American RED, use this set of definitions in an effort to synchronize their reporting. The glossary will need to be revised periodically as new techniques become available and corresponding clinical policies are introduced.

Considering the limited access to the WHO publication and the increasing need for a fluent and efficient communication among the professional community, it was agreed with the

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corresponding editors to have the glossary re-published simultaneously in *Fertility and Sterility* and *Human Reproduction*. We thank these two prestigious journals for promoting the dynamic process of reviewing and standardizing terminology in ART. We also thank the World Health Organization for giving permission to publish the glossary.

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Glossary

Aspiration cycle: Initiated ART cycle in which one or more follicles are punctured and aspirated irrespective of whether or not oocytes are retrieved.

Assisted hatching: An *in vitro* procedure in which the zona pellucida of an embryo (usually at eight-cell stage or a blastocyst) is perforated by chemical, mechanical or laser-assisted methods to assist separation of the blastocyst from the zona pellucida.

Assisted Reproductive Technology (ART): All treatments or procedures that include the *in vitro* handling of human oocytes and sperm or embryos for the purpose of establishing a pregnancy. This includes, but is not limited to, IVF and transcervical embryo transfer, gamete intra-Fallopian transfer, zygote intra-Fallopian transfer, tubal embryo transfer, gamete and embryo cryopreservation, oocyte and embryo donation and gestational surrogacy. ART does not include assisted insemination (artificial insemination) using sperm from either a woman's partner or sperm donor.

Birth defect: Structural, functional or developmental abnormalities present at birth or later in life, due to genetic or non-genetic factors acting before birth.

Blastocyst: An embryo with a fluid-filled blastocele cavity (usually developing by 5 or 6 days after fertilization).

Cancelled cycle: An ART cycle in which ovarian stimulation or monitoring has been carried out with the intent of undergoing ART but which did not proceed to follicular aspiration or, in the case of a thawed embryo, to transfer.

Clinical abortion: An abortion of a clinical pregnancy which takes place between the diagnosis of pregnancy and 20 completed weeks' gestational age.

Clinical pregnancy: Evidence of pregnancy by clinical or ultrasound parameters (ultrasound visualization of a gestational sac). It includes ectopic pregnancy. Multiple gestational sacs in one patient are counted as one clinical pregnancy.

Clinical pregnancy rate: number of clinical pregnancies expressed per 100 initiated cycles, aspiration cycles or embryo transfer cycles. When clinical pregnancy rates are given, the denominator (initiated, aspirated or embryo transfer cycles) must be specified.

Controlled ovarian hyperstimulation (COH): Medical treatment to induce the development of multiple ovarian follicles in order to obtain multiple oocytes at follicular aspiration.

Cryopreservation: Freezing and storage of gametes, zygotes or embryos.

Delivery rate: Number of deliveries expressed per 100 initiated cycles, aspiration cycles or embryo transfer cycles. When delivery rates are given, the denominator (initiated, aspirated or embryo transfer cycles) must be specified. It includes deliveries that resulted in a live birth and/or stillbirth. Note: The delivery of a singleton, twin or other multiple pregnancy is registered as one delivery.

Early neonatal death: Death occurring within the first 7 days after delivery.

Ectopic pregnancy: A pregnancy in which implantation takes place outside the uterine cavity.

Embryo: Product of conception from the time of fertilization to the end of the embryonic stage 8 weeks after fertilization (the term 'pre-embryo' or dividing conceptus has been replaced by embryo).

Embryo donation: The transfer of an embryo resulting from gametes that did not originate from the recipient or her partner.

Embryo transfer (ET): Procedure in which embryo(s) are placed in the uterus or Fallopian tube.

Embryo transfer cycle: ART cycle in which one or more embryos are transferred into the uterus or Fallopian tube.

Fertilization: The penetration of the ovum by the spermatozoon and fusion of genetic materials resulting in the development of a zygote.

Fetus: The product of conception starting from completion of embryonic development (at 8 completed weeks after fertilization) until birth or abortion.

Full-term birth: A birth that takes place at 37 or more completed weeks of gestational age. This includes both live births and stillbirths.

Gamete intra-Fallopian transfer (GIFT): ART procedure in which both gametes (oocytes and sperm) are transferred to the Fallopian tubes.

Gestational age: Age of an embryo or fetus calculated by adding 14 days (2 weeks) to the number of completed weeks since fertilization.

Gestational carrier: A woman in whom a pregnancy resulted from fertilization with third party sperm and oocytes. She carries the pregnancy with the intention or agreement that the offspring will be parented by one or both of the persons that produced the gametes.

Gestational sac: A fluid-filled structure containing an embryo that develops early in pregnancy usually within the uterus.

Hatching: Is the process that precedes implantation by which an embryo at the blastocyst stage separates from the zona pellucida.

Host uterus: See gestational carrier.

Implantation: The attachment and subsequent penetration by the zona-free blastocyst (usually in the endometrium) which starts 5-to-7 days following fertilization.

Infertility: Failure to conceive after at least 1 year of unprotected *coitus*.

Initiated cycles: ART treatment cycles in which the woman receives ovarian stimulation, or monitoring in the case of spontaneous cycles, irrespective of whether or not follicular aspiration was attempted.

Intracytoplasmic sperm injection (ICSI): IVF procedure in which a single spermatozoon is injected through the zona pellucida into the oocyte.

IVF: An ART procedure, which involves *extracorporeal* fertilization.

Live birth: A birth in which a fetus is delivered with signs of life after complete expulsion or extraction from its mother, beyond 20 completed weeks of gestational age. (Live births are counted as birth events, e.g. a twin or triplet live birth is counted as one birth event).

Live birth delivery rate: Number of live birth deliveries expressed per 100 initiated cycles, aspiration cycles or embryo transfer cycles. When delivery rates are given, the denominator (initiated, aspirated or embryo transfer cycles) must be specified. It includes deliveries that resulted in at least one live birth. Note: The delivery of a singleton, twin or other multiple birth is registered as one delivery.

Malformation rate: Includes all structural, functional, genetic and chromosomal abnormalities identified in aborted tissue or diagnosed before or subsequent to birth.

Medically assisted conception: Conception brought about by non-coital conjunction of the gametes. Includes ART procedures and intrauterine, intracervical and intravaginal insemination with semen of husband/partner or donor.

Micromanipulation (also referred to as Assisted Fertilization): The use of special micromanipulative technology that allows operative procedures to be performed on the oocyte, sperm or embryo.

Microsurgical epididymal sperm aspiration (MESA): Procedure in which spermatozoa are obtained from the epididymis, by either aspiration or surgical excision.

Missed abortion: A clinical abortion where the products of conception are not expelled spontaneously from the uterus.

Neonatal death: Death within 28 days of birth.

New borns or infants born: The number of live births plus stillbirths.

Oocyte donation: An ART procedure performed with third-party oocytes.

Preclinical abortion: An abortion that takes place before clinical or ultrasound evidence of pregnancy.

Preclinical pregnancy (biochemical pregnancy): Evidence of conception based only on biochemical data in serum or urine before ultrasound evidence of a gestational sac.

Preimplantation genetic diagnosis (PGD): Screening of cells from preimplantation embryos for the detection of genetic and/or chromosomal disorders before embryo transfer.

Preterm birth: A birth which takes place after at least 20, but less than 37, completed weeks of gestation. This includes both live births and stillbirths. Births are counted as birth events (e.g. a twin or triplet live birth is counted as one birth event).

Recipient: In an ART cycle refers to the woman who receives an oocyte or an embryo from another woman.

Spontaneous abortion: Spontaneous loss of a clinical pregnancy before 20 completed weeks of gestation or, if gestational age is unknown, a weight of 500 g or less.

Stillbirth: A birth in which the fetus does not exhibit any signs of life when completely removed or expelled from the birth canal at or above 20 completed weeks of gestation. Stillbirths are counted as birth events (e.g. a twin or triplet stillbirth is counted as one birth event).

Surrogate mother: See gestational carrier.

Testicular sperm aspiration (TESA): Procedure in which spermatozoa are obtained directly from the testicle, by either aspiration or surgical excision of testicular tissue.

Zygote intra-Fallopian transfer (ZIFT): Procedure in which the zygote, in its pronuclear stage of development, is transferred into the Fallopian tube.

Zygote: Is the diploid cell resulting from the fertilization of an oocyte by a spermatozoon, which subsequently develops into an embryo.

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