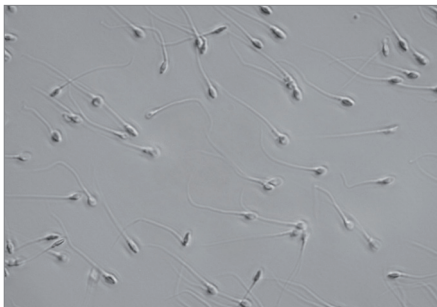




ZEISS Microscope Systems for Assisted Reproductive Technologies

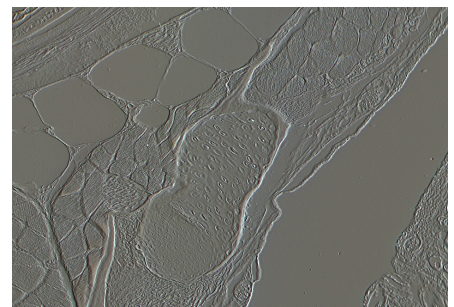
IVF, ICSI and IMSI



Sperm cells, PlasDIC contrast; Copyright: A. Wold, Trondheim University Hospital, Norway



ICSI: Oocyte with Zona pellucida, PlasDIC



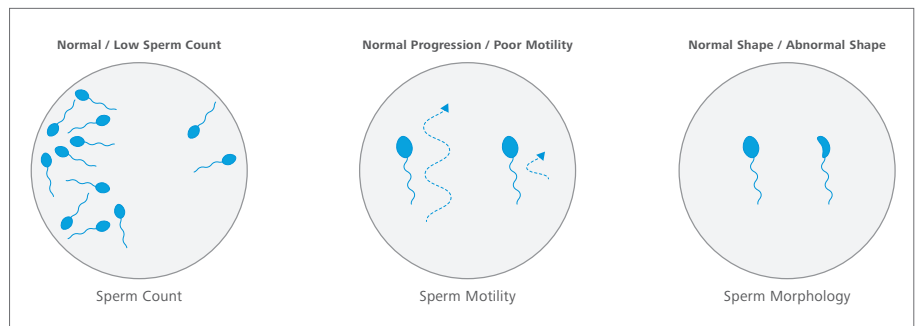
Fish embryo, HMC

Reproductive Technologies

In vitro fertilization (IVF), Intracytoplasmic sperm injection (ICSI) and Intracytoplasmic morphologically-selected sperm injection (IMSI) are reproductive technologies for fertility treatment of humans and animals. All those methods have in common, that eggs (ova) are retrieved from a female and fertilized outside the female's body (in vitro) with sperms. Fertilized eggs (zygotes) are then implanted into the same or another female's uterus to establish pregnancy.

Routine Semen Analysis

The evaluation of the overall sperm quality is the most important step before any artificial insemination is carried out. A semen analysis (seminogram) evaluates total volume, the number of motile sperm per millilitre (ml) and sperm morphology. Only vital sperms and healthy oocytes will result in a successful fertilization.



Sample Preparation and Quality Control

Before the ICSI or IVF procedure, the outer somatic cell layers (except the Zona Pellucida) surrounding the oocyte must be removed. The denuding is done under stereomicroscopic control inside a petri dish with a denuding pipette. Thereafter the oocyte is examined with respect to morphological abnormalities. After a successful artificial fertilization, the embryologist monitors the developing embryos over the next days. Also here, the embryo is morphologically examined. Only the "best" embryos are considered for implantation.

Fertilization Procedures

The most common fertilization procedure is ICSI, where a sperm cell is injected into an oocyte using a micromanipulator. For successful ICSI, structures such as the zona pellucida and polar body of the oocyte must be clearly visible. With IMSI, you can also assess the sperm morphology in detail and visualize vacuoles. Several contrast techniques, such as DIC or iHMC can deliver the necessary information.





ZEISS Microscope Systems for Assisted Reproductive Technologies

IVF, ICSI and IMSI

Recommended ZEISS Microscopes

ZEISS Stemi 508



Description

- Compact design – easily fits in laminar flow box
- Large working distance for comfortable and ergonomic handling
- Brilliant visualization through apochromatic optics
- Digital documentation possibility
- Wi-Fi compatibility
- Recommended for sample preparation and quality control
- Alternative solution: ZEISS SteREO Discovery.V8

ZEISS Axio Lab.A1



- Compact and easy to use upright light microscope
- Phase contrast, brightfield, darkfield and fluorescence possible
- Optimal visualization through positive and negative phase contrast, even available in one objective
- Documentation
- Recommended for routine semen analysis
- Alternative Solution: ZEISS Axio Scope.A1

ZEISS Axio Observer 5



- Rock solid inverted light microscope
- Brilliant contrast options, such as iHMC, PlasDIC, DIC, fluorescence and others
- Compatible with heating plates
- Compatible with laser techniques
- Compatible with all common micro-manipulation systems
- Encoded for reliable and improved usability
- Recommended for fertilization and quality control of embryos
- Alternative solution: ZEISS Axio Vert.A1

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