

ASSISTED HATCHING



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WHAT IS ASSISTED HATCHING?

Assisted Hatching is a Laboratory procedure whereby the shell (zona pellucida) around the 2 or 3 day old embryo is mechanically weakened in a way which assists that embryo to “hatch” from the zona more easily and to allow implantation into the lining of the uterus.

The Assisted Hatching technique was commenced in 1990 by a team led by Dr Jacques Cohen at Cornell in New York. Since then a large number of reputable centres have commenced these procedures with an improvement in the hatching rates and subsequent implantation and pregnancy rates in a particular group of women who could benefit from this procedure.

WHO CONSIDERS ASSISTED HATCHING?

Normally, the “natural hatching” process involves dissolving of the zona pellucida at about 120 hours (5 days) after fertilisation. This allows the embryo to leave the protected environment of the zona pellucida and commence implanting into the lining of the uterus.

Normally, the uterine lining is in a condition which is receptive for implantation for about 48 hours (i.e. from 120 to 168 hours after fertilisation). However, in women who undergo ovarian stimulation (as occurs in IVF/GIFT etc) this window of implantation is brought forward to between 72 and 120 hours after fertilisation. Thus, if hatching does not occur, or occurs after 120 hours, implantation will be unsuccessful and a pregnancy will not ensue. Those women who would benefit from Assisted Hatching include all those who have either thicker (and therefore harder) zonae or those who have harder (but normal thickness) zonae.

The following conditions would benefit from Assisted Hatching:

- a) Older eggs—eggs from older women generally have thicker zonae than those from younger women;
- b) Reduced embryo energy levels—In some women who have had repeatedly unsuccessful ART cycles it is possible that the cellular energy level required for normal hatching may be insufficient;
- c) Asymmetry between the “window of implantation” and the hatching time of the embryo. (If the embryo hatches too late for the uterine lining to accept it); and
- d) Frozen/thawed embryos—It is evident that the freezing/thawing process can harden the zonae.



BENEFITS OF ASSISTED HATCHING

Assisted Hatching allows embryos to “hatch” with greater ease and earlier than would otherwise have occurred. It also assists embryos to “hatch” which might not have otherwise done so. The other benefits are that, in ensuring a greater percentage of embryos “hatch” and “hatch” earlier, then a greater percentage will implant.

Pregnancy rates in various units have increased up to 2 times in those patient groups who have been shown to benefit from this procedure.

DISADVANTAGES OF ASSISTED HATCHING

We are only able to offer limited data on the likely success rates using Assisted Hatching at the Canberra Fertility Centre. In some instances, the creation of a weakness in the zona pellucida will not be enough to improve the chances of adequately hatching.

Patients who use the Assisted Hatching procedure cannot undergo GIFT. It can only be performed in association with IVF treatment and embryo transfer to the uterus.

METHOD OF ASSISTED HATCHING

The Canberra Fertility Centre uses a recently developed technique that uses an infra red laser to dissolve a portion of the zona. Unlike other techniques, this method does not involve trauma to the embryo and produces an opening of known size that has smooth edges.

MANAGEMENT OF ASSISTED HATCHING

Canberra Fertility Centre does not wish for couples to use Assisted Hatching unless it is considered necessary. Where there has been some suggestion that reduced hatching rates have occurred, which could benefit from Assisted Hatching, this will be offered.

All patients who undergo Assisted Hatching and who conceive may be required to have all babies born examined by a consultant paediatrician and a report sent to their gynaecologist.