

Reproductive Facts

Patient fact sheet developed by the
American Society for Reproductive Medicine



Assisted Hatching

What is Assisted Hatching?

Assisted hatching is a laboratory procedure that is sometimes done on human early embryos along with in vitro fertilization (IVF) treatment. IVF involves mixing eggs with sperm in a laboratory (as opposed to within the Fallopian tube like in natural conception).



During IVF, the fertilized eggs are monitored for 3 to 6 days as they divide and develop into embryos. The best embryo can then be selected and placed into the uterus (embryo transfer) in the hopes of establishing a pregnancy or the embryos can be frozen for future use. The egg is surrounded by a protective shell (zona pellucida) which protects the egg and the resulting embryo during development. The embryo naturally breaks out of this shell as it grows.

Occasionally, the doctor may ask the IVF laboratory to make a small “crack” or “hole” in the outer shell of the embryo right before it is placed into the uterus (this is called assisted hatching). The hope is that assisted hatching might help the embryo to “hatch out” from. During assisted hatching, the outer shell of the embryo is artificially weakened by making a small hole in the zona pellucida under the microscope.

How is assisted hatching done?

This can be done in several different ways. The most common method involves the use of laser pulses to “crack” the shell. An older and less common method involves the application of an acid solution, called Tyrode’s solution, to help melt a small hole in the shell.

Can assisted hatching damage the embryo or cause problems later in pregnancy?

Rarely, assisted hatching can damage the embryo, making it unusable. The risk for identical twins might be slightly increased when assisted hatching is applied. Medical complications are higher in identical twin pregnancies than in normal, singleton pregnancies.

Will I benefit from assisted hatching?

Experts do not recommend the use of assisted hatching in all patients undergoing IVF treatments. Some studies suggest that assisted hatching might help improve pregnancy chances for certain groups of patients.

Assisted hatching may help improve pregnancy chances in those patients who have failed to get pregnant in previous IVF cycles and those with a poor prognosis (who are not likely to conceive). Your fertility specialist can help you determine if assisted hatching might be useful to you.

Are there other reasons to do assisted hatching?

If preimplantation genetic testing (PGT) is planned, assisted hatching of embryos on the third day after fertilization can be performed for embryo biopsy for PGT. During a biopsy, a small number of cells are taken from the outer layer of cells of the embryo (trophectoderm) around the fifth or sixth day after fertilization (blastocyst stage).

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