



FERTILIZATION



WHAT DOES IT MEAN?

“I have had IVF and when I phoned the clinic they told me that I had 6 out of 10 fertilized, but that there might be more the next day, and I am confused.”

THIS IS A COMMON QUESTION AND THIS HANDOUT IS DESIGNED TO HELP REMOVE THIS CONFUSION.

The process of fertilization is a complex process, which commences with attachment of a sperm to the egg, and finishes with cell division to form a 2-cell embryo. The embryologist checks the eggs for fertilization on 2 occasions, first at an intermediary stage called the pronuclear stage, and then later at the cell division stage. The first check is at 15–20 hours after addition of sperm and the second is 38–44 hours after addition of sperm. The eggs are only checked at each stage once, as this minimizes environmental changes. The intermediary pronuclear stage lasts about 5 hours. If fertilization has occurred normally, then sometime during this 5-hour window, the embryo will appear as in the figure. However, if the pronuclear stage is not observed then it can mean:

a) The egg is not fertilized

OR

b) The stage was completed or had not commenced at the time of observation. This will have been the case if cell division is observed the following day in previously apparently unfertilized eggs. There is no evidence that early or late entry or a shorter duration for the pronuclear stage has any meaning with respect to possible outcome for that egg.

The other question that often arises is when there are fewer embryos on day 2 than the number observed fertilized on day 1 (intermediary stage). The fertilization process can cease at any point and it is not uncommon for this to occur after observation of the pronuclear stage. As a general rule 15% of all eggs observed as being fertilized at the pronuclear stage, will show no further development. This failure to develop after observation of the pronuclear stage becomes increasingly more common with increasing maternal age. It is also more commonly observed in women suffering from Polycystic Ovarian Syndrome.