

# Does the position of the inner cell mass during biopsy affects implantation?

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## STUDY QUESTION

The most common trophoectoderm biopsy technique requires assisted hatching (AH) on day 3, but this process makes the inner cell mass (ICM) can be inside, outside or in the herniation in the moment of biopsy. Therefore, the position of the inner cell mass could affect implantation and early fetal development.

## SUMMARY ANSWER

The position of the ICM at the time of the biopsy does not affect embryo implantation, although there is a tendency to decrease implantation if it is in the herniation position.

## WHAT IS KNOWN ALREADY

Trophectoderm biopsy allows more accurate genetic diagnosis without apparent embryo damage. The AH previous to the biopsy itself is performed on day 3 because it promotes embryo hatching and is easier to remove the cells. However, the ICM may have gone along with trophoectoderm cells through the hole hatching or stay in the herniation. In our knowledge there is any publication relating the position of the ICM with the implantation of euploid embryos.

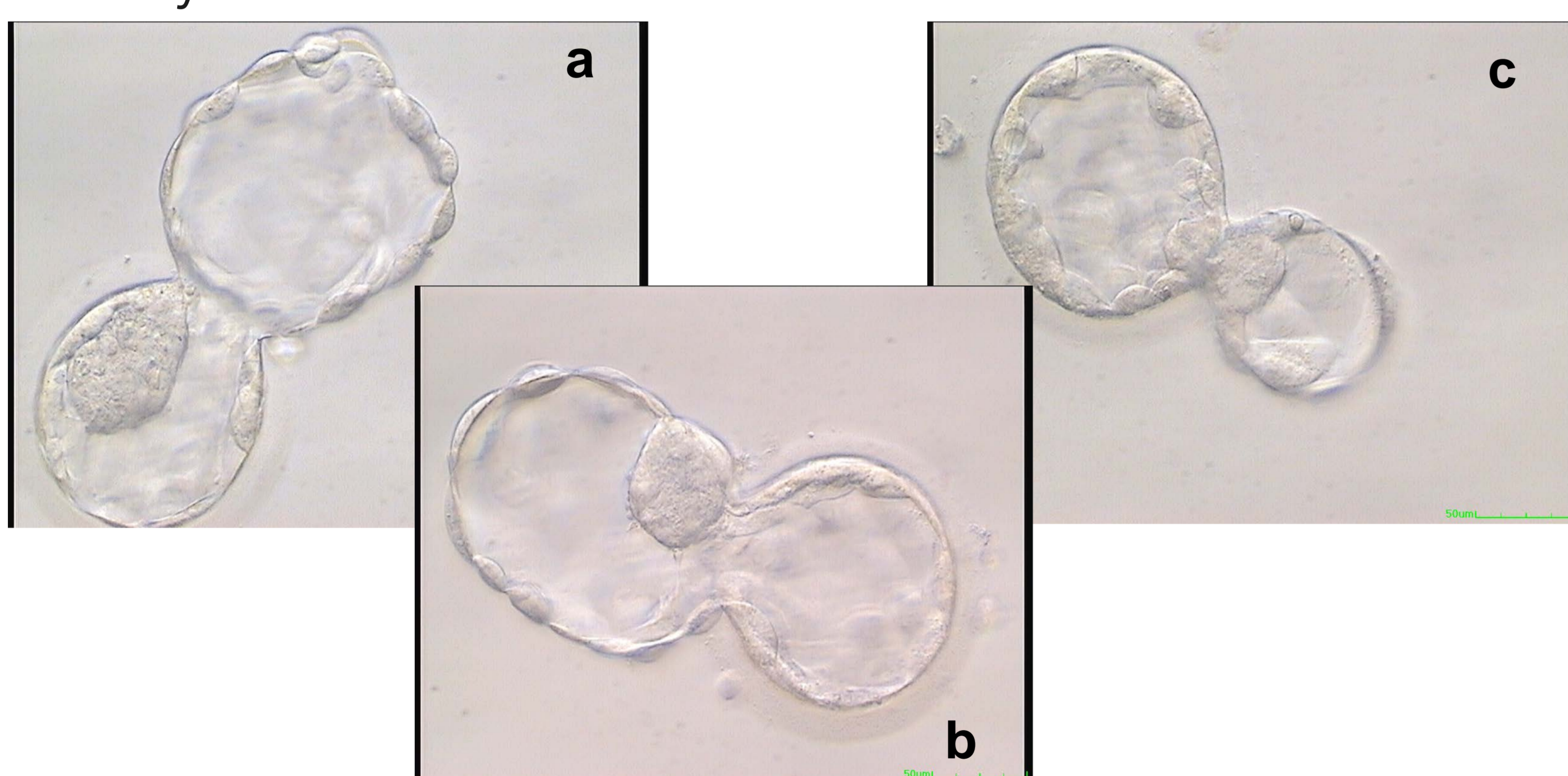


Figure : ICM position: inside (a), outside (b) and herniation (c) position

## WIDER IMPLICATIONS OF THE FINDINGS

The results obtained in this preliminary study confirm that the position of the ICM in the moment of trophoectoderm biopsy does not affect implantation. However, we observe a tendency to decrease implantation when the ICM is in the herniation, probably due to the manipulation during biopsy that makes the ICM would be subjected to more movement and pressure. So, we could suggest waiting longer for biopsy if we observe the ICM located in the herniation.

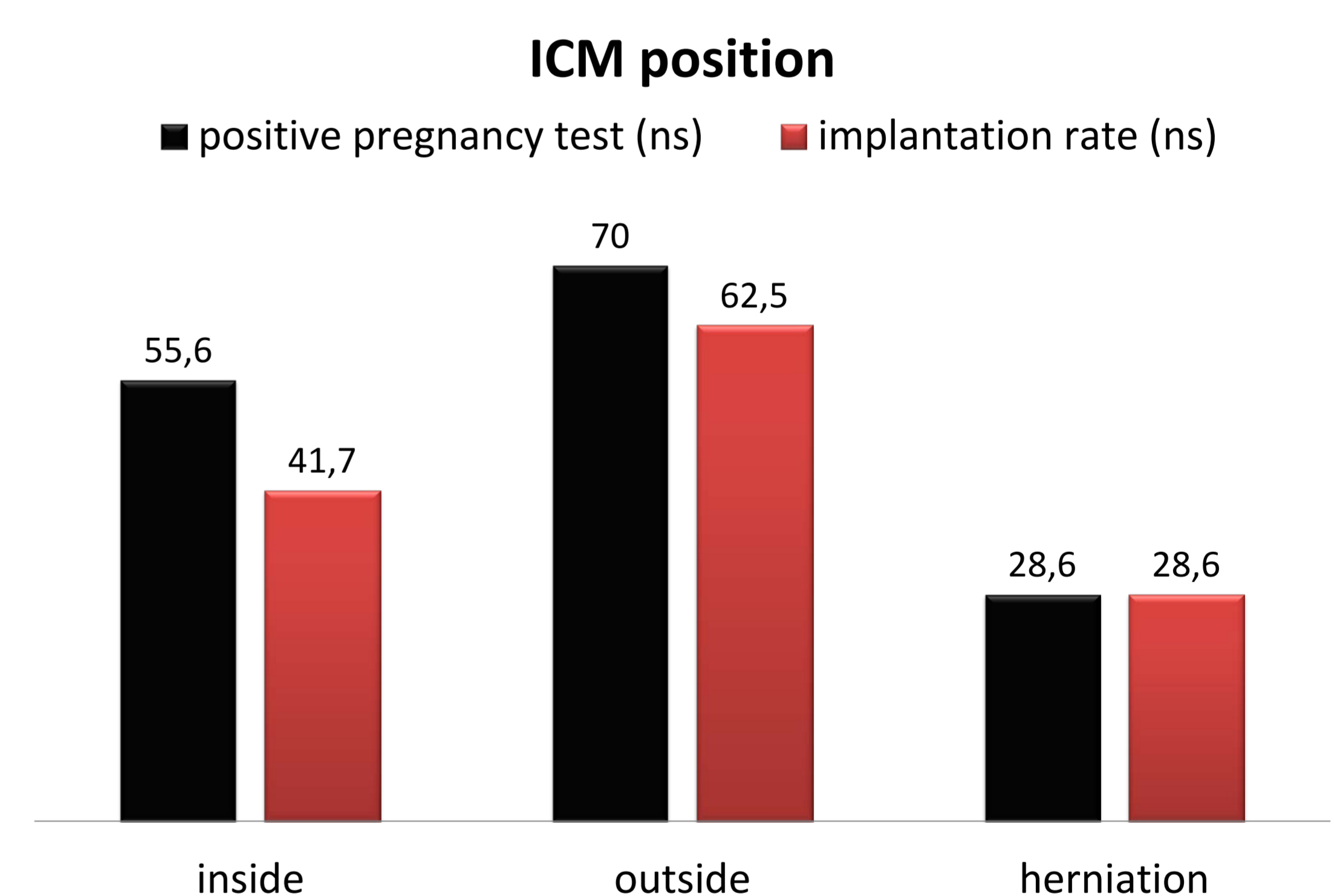
## STUDY DESIGN

Prospective study. We include the known clinical results of 44 euploid embryos transferred coming from 39 women that underwent CCS treatments from September to December 2014.

## MATERIALS AND METHODS

At least one euploid embryo was transferred to 39 patients. AH was performed on day 3 using laser pulses (Saturn Active, Research Instruments). On day 5 of development, conventional trophoectoderm biopsy was done. The position of the ICM in the moment of biopsy was recorded. Clinical outcomes were evaluated.

## MAIN RESULTS AND THE ROLE OF CHANCE



There was no statistically significant difference neither positive pregnancy test nor implantation rate into the three groups. However, we can observe a tendency to decrease the clinical results when the ICM is in the herniation position.

## LIMITATIONS, REASON FOR CAUTION

Study currently under development to increase the number of cases and test the study question,



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