

## **BLASTOMERE BIOPSY FOR PGD DELAYS EMBRYO COMPACTION AND BLASTULATION: A TIME LAPSE MICROSCOPIC ANALYSIS**

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**Purpose:** To explore the dynamics of the developmental events following blastomere biopsy for preimplantation genetic diagnosis (PGD) by determining their precise timing following culture in an EmbryoScope™ concomitantly with time-lapse analysis.

**Methods:** The study group included 366 embryos from all PGD treatments (9/2012-6/2014) cultured in a timelapse monitoring system. The control group included all intracytoplasmic sperm injection (ICSI) embryos cultured in EmbryoScope™ until day 5 during the same time period (385 embryos). Time points of key embryonic events were analyzed with an EmbryoViewer™.

**Results:** Most (88%) of the embryos were biopsied at  $\geq 8$  cells. Blastomere biopsy of cleavage-stage embryos significantly delayed compaction and blastulation compared to the control non-biopsied ICSI embryos. This delay in preimplantation developmental events following biopsy was also observed when non-implanted embryos were compared to implanted embryos.

**Conclusion:** Analysis of morphokinetic parameters enabled us to explore how blastomere biopsy interferes with the dynamic sequence of developmental events. Biopsy delays the compaction and the blastulation of the embryos. It may also affect their implantation rate.