Importance of complete chromosome screening (CCS) at different stages of embryonic development: from oocyte to blastocyst.

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In human gametes and embryos resulting from IVF cycles there is a high rate of chromosomal abnormalities that cause embryos not implanting or pregnancy ending in miscarriage, resulting in decrease success rates of reproduction techniques. Today we have the CCS (complete chromosomal screening), a powerful tool for the diagnosis of chromosomal abnormalities in the embryo before being transferred to the womb, which significantly increases implantation rates and live birth from IVF cycles. Using this technology at Instituto Bernabeu Biotech we have studied chromosomal evolution during embryonic development from the oocyte to the blastocyst. Our data show that in the different stages of the embryo development , chromosomes are involved in some changes and a chromosomal selection occurs during in vitro culture in the laboratory so that embryos reaching the blastocyst stage on day 5 post - fertilization have fewer chromosome defects and therefore more likely to result in a healthy child.