

The risk of congenital malformations and genomic imprinting defects in assisted reproductive technologies and nuclear transfer cloning El riesgo de malformaciones congénitas y defectos de la programación genómica, en relación con las técnicas de reproduc

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Recent studies show that assisted reproductive technologies (ART), whether in vitro fertilization (IVF) or intra-cytoplasmic sperm injection (ICSI) or applied to cloning by somatic cell nuclear transfer (SCNT) are associated to a higher risk of congenital malformations and errors in deprogramming, maintenance or reprogramming genomic imprinting in humans and animals. IVF and ICSI are also associated to an increased admission to neonatal intensive care units and more need for health care resources in infancy. A mutagenic effect of a chemical used in SCNT has been reported and gene depression was found in bovine embryos obtained by IVF or SCNT. The causes of these anomalies could be pathological conditions for which ART is applied, a direct effect of technologies on the zygotes or embryos, avoidance for zygotes or embryos of the oviduct path that is needed to elicit necessary immunity or genomic programming processes, or adaptive selective steps acquired during thousands of millions of