

Genome Editing Optimizations: Implications for Pre- and Post-Implantation Genetics

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Among the greatest of 'Controversies in preconception, preimplantation and prenatal genetic diagnosis,' is now the pressing question of, perhaps not if, but when, will genetic modifications be introduced into human embryos destined for implantation. Already human embryonic stem cells in culture are being modified. The techniques for editing the human genome – both nuclear and mitochondrial DNA – are accelerating at stunning paces with near perfect accuracy and efficiency, simplicity, swift speeds and at affordable costs. These newest approaches will be reviewed, including CRISPR/Cas9. Compelling medical justifications for trying to avoid devastating human diseases and disorders will be considered, as well as equally compelling scientific and societal concerns about genetically enhanced offspring.