

Genomic Imprinting— Genes Inherited From the Father May Act Dif- ferently Than the Same Genes When Inherited From the Mother: Four Reports

Research on embryogenesis in the mouse, utilizing transplantation and transgenic mice, indicates that maternally derived genes seem to play a greater role in the early development of the embryo, while paternally derived genes play a greater role in the development of the extraembryonic membranes. The pattern of DNA methylation is different and depends on whether the alleles on the mouse chromosomes are maternally or paternally derived. These observations have been interpreted to suggest that differential imprinting of the genome occurs during male and female gametogenesis. These

findings may help to explain why human diseases such as myotonic dystrophy and Huntington disease, both autosomal dominant disorders, may vary in severity depending on which parent passed on the gene.

Marx JL. *Science* 1988;239:352-353.

Solter D. *Trends in Genetics* 1987;3:23-27.

Reik W, Collick A, Norris ML, et al. *Nature* 1987;328:248-251.

Sapienza C, Peterson AC, Rossant J, et al. *Nature* 1987;328:251-254.

Editor's comment—This new work is startling, but "imprinting" has been observed by several groups. This suggests there are many such mechanisms at work in embryogenesis and early development that may be critical to normal growth.

Judith G. Hall, M.D.