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The *eed* (embryonic ectoderm development) gene is a member of the mouse *Polycomb* group (*Pc-G*) and is required for early gastrulation. In the Advance Online issue of *Nature Genetics*, Jianbo Wang and colleagues from the University of North Carolina define a role for *eed* in X chromosome inactivation. They analysed trophoblast giant cells in *eed*-null embryonic deciduas and found developmental defects in *eed*-null females but not in male embryos. To investigate the role of paternal X inactivation, Wang *et al.* crossed the *eed*-mutant mice with mice carrying a paternally inherited X-linked green fluorescent protein (GFP) *transgene*. The presence of fluorescent extra-embryonic cells in *eed*-null females suggests that *eed* is essential for maintaining paternal X-inactivation. The authors propose a model in which interaction between the Eed protein and *histone deacetylases* maintains gene silencing on the imprinted X chromosome in mouse extra-embryonic tissues.

References

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