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Retroviral risk

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Gene therapy strategies have been riddled with technical problems and much-publicized risks. In the April 19 *Science*, Li *et al.* deal another blow to gene therapy (*Science* 2002, **296**:497). They found that when they used replication-defective retroviruses to deliver a marker gene to mouse bone marrow cells, the animals developed leukemia. Li *et al.* transplanted the bone marrow cells into irradiated recipients; all these animals developed hematopoietic disorders after six months. All the diseased mice had the same leukemic clone with a single integrated vector copy. The insertion event induced expression of the *Evl* gene, encoding a transcription factor linked to acute myeloid leukemia. The authors suggest that the marker transgene may also contribute to tumor formation. The risk of cancer is yet another factor that must be considered in future gene therapy trials.

References

1. *Science*, [<http://www.sciencemag.org>]
2. Influence of multiplicity of infection and protein stability on retroviral vector-mediated gene expression in hematopoietic cells.