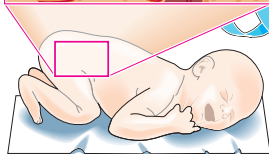


Pioneering gene therapy operation for baby

A 10-month-old baby girl is set to undergo the first operation of its kind, at the Royal Manchester Children's Hospital. The girl, who suffers from Hurler's syndrome, had bone marrow cells removed last week – to be genetically modified in a laboratory before being transplanted back into the child

Hurler's syndrome

Rare, inherited genetic disorder in young children caused by a defective gene. Chemicals called **mucopolysaccharides** build up within cells instead of, under normal circumstances, being broken down. **Untreated, children between six and 12 months of age develop cardiac and skeletal abnormalities and an enlarged tongue, liver and spleen.** **Physical growth slows and the child is left mentally handicapped.** Hurler's syndrome affects approximately 100 children in the UK at



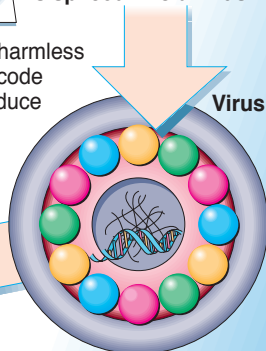
1. Cells from baby's bone marrow extracted and transferred to laboratory



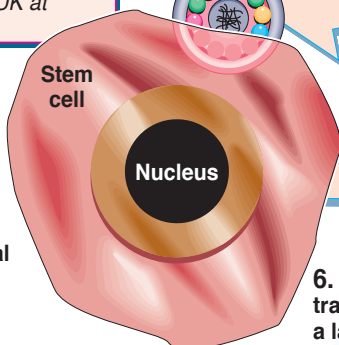
2. Normal copy of baby's defective gene is spliced into a virus

3. The virus is rendered harmless by removing the genetic code which enables it to reproduce

4. Baby's bone marrow is placed in contact with virus containing normal gene



5. Infections are continued over 5 days until sufficient bone marrow cells contain the normal gene



6. Bone marrow cells are transfused back into baby via a large vein. Cells find their way back to the bone marrow cavity and re-establish themselves

