

SOMATIC CELL GENE THERAPY	GERM LINE GENE THERAPY
Therapeutic genes transferred into the somatic cells.	Therapeutic genes transferred into the germ cells.
E.g.. Introduction of genes into bone marrow cells, blood cells, skin cells etc.	E.g.. Genes introduced into eggs and sperms.
Will not be inherited later generations.	It is heritable and passed on to later generations.
At present all researches directed to correct genetic defects in somatic cells.	For safety, ethical and technical reasons, it is not being attempted at present

Types of somatic cell gene therapy



Ex vivo

- cells are modified outside the body and then transplanted back in again
- called ex vivo because the cells are treated outside the



In vivo

- genes are changed in cells when the cells are still in the body
- called in vivo because the gene is transferred to cells

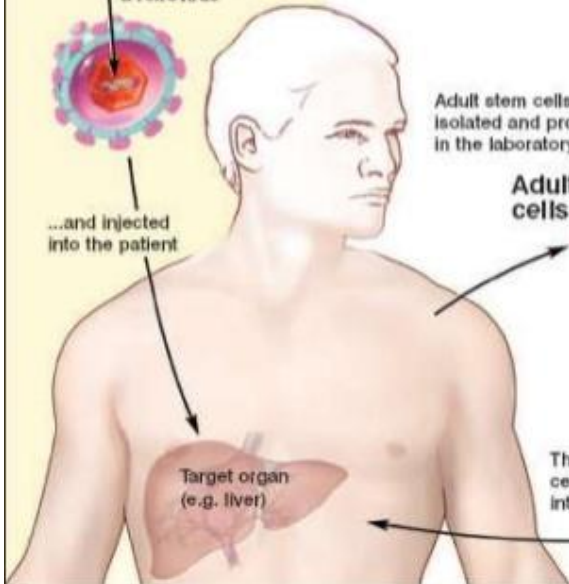
Direct Delivery



The therapeutic gene is packaged into a delivery vehicle such as a retrovirus



...and injected into the patient



Target organ
(e.g. liver)

Cell-based Delivery

Ex vivo and In vivo gene therapy



Therapeutic gene



The therapeutic gene is packaged into a delivery vehicle such as a retrovirus and introduced into the cells.

in vitro differentiated stem cell

Adult stem cells are isolated and propagated in the laboratory.

Adult stem cells



The genetically modified cells are reintroduced into the patient.

