

Cell transplant therapy to reverse paralysis

A man paralysed from the chest down by a knife attack has been able to walk again following pioneering surgery that transplanted cells from his nose into his back, allowing his severed spinal cord to regrow

HOW CELL TRANSPLANT THERAPY CAN REVERSE PARALYSIS

1 Surgeons remove one of patient's two **olfactory bulbs** – where sense of smell is located. Bulb is rich source of **olfactory ensheathing cells** (OECs), which enable nerve fibres in olfactory system to regenerate throughout person's life

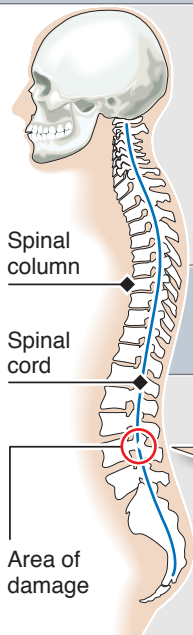
2 OECs grown in laboratory culture until sufficient number produced

Brain

Olfactory bulb

Nasal cavity

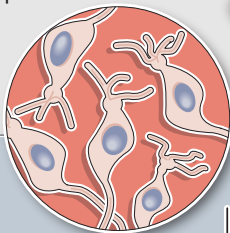
Olfactory nerve fibres and receptor cells



Spinal column

Spinal cord

Area of damage



OEC injection site

3 Multiple injections of OECs performed above and below damaged area of spinal cord

Spinal cord

Nerve tissue grafts

4 Thin strips of nerve tissue taken from patient's ankle and grafted across gap in spinal cord. Scientists believe OECs provide pathway for nerve fibres above and below injury to reconnect, using tissue grafts as bridge