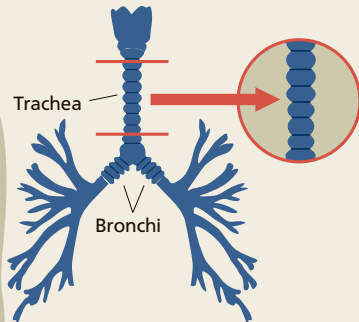


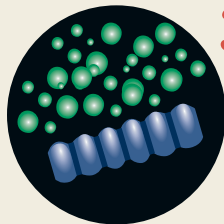
Replacing the bronchus

Donor

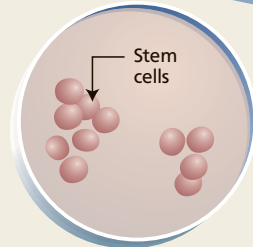
1 The trachea is removed from a donor to treat Claudia Castillo, in Barcelona, who suffers from a blocked bronchus caused by tuberculosis



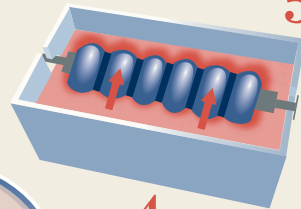
2 Scientists in Barcelona use a technique pioneered in Padua, Italy, to cleanse the donated trachea of antigens and other cells that could provoke its rejection, leaving a "scaffold" of collagen



3 Stem cells taken from Ms Castillo are cultivated in Bristol to form new cartilage and epithelial cells exactly like those inside her body



4 In Barcelona the cells are infused onto the tracheal "scaffold" in a bioreactor machine developed in Milan, Italy, that immerses and rotates the organ for three days



5 A section of the new trachea is cut to size and transplanted into Ms Castillo, replacing her collapsed bronchus

Patient

