

Stem cells could create new skin to help burns victims

French researchers say they have found a way of using human embryonic stem cells to create new skin which could help serious burns victims.

They say the stem cells grew into fully formed human skin 12 weeks after being grafted on to mice. The researchers, writing in the Lancet journal, say the skin could solve the problems of rejection that burns patients currently face. One stem cell expert said they had made an important advance. Burns techniques For more than 20 years, patients with serious burns have benefited from a technique which grows new skin in the laboratory using their own skin cells. But the technique takes three weeks, putting the patients at risk of dehydration and infection. Skin from cadavers is used during this period to cover the wounds but its availability is limited and it is often rejected by the patient's immune system. Artificial nets which cells can grow on have also been tried. But they do not work on large burns, where they increase the risk of rejection and disease transmission because they can contain material from cows and other humans.

Skin formation The researchers duplicated the biological steps that lead to skin formation during embryonic development. They placed the cells on an artificial net which helped the cells to form a layer of skin. This was grafted on to five mice and 12 weeks later, the skin had a structure consistent with human skin. Dr Christine Baldeschi, from the Institute for Stem Cell Therapy and Exploration of Monogenic Diseases in Evry, France, who led the research, said the results were promising. She said the technique could lead to "an unlimited resource for temporary skin replacement in patients with large burns awaiting grafts of their own skin". Researchers are now planning a human trial of the new technique. An accompanying editorial by Holger Schluter of the Peter MacCallum Cancer Centre in Melbourne, Australia, said the research represented an important advance. He said: "This report takes research into regenerative skin stem cells to the next level. "This finding suggests that skin derived from embryonic stem cells could be transplanted onto burnt patients awaiting skin grafts, with a reduced risk of rejection."