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Bionic implants melding man and machine IANS/London

A range of recently unveiled bionic implants have converted the science-fiction fantasy of the “bionic-man” into a tantalising real-life possibility.

Take the case of Miikka Terho, a man born without eyesight, who was one of three patients who had their sight temporarily restored by a bionic-eye - artificial light sensors and microchips placed on the retina at the back of their eyes by doctors in Germany.

This extraordinary melding of man and machine proves that we finally have the technology to create real-life bionic humans, reports the Telegraph.

Here are some examples:

Brain: Theodore Berger, from the University of Southern California, has been developing a device that can be planted into the brain to restore memory functions. It models the complex neural activity that takes place in the hippocampus, which is responsible for forming new memories.

The device - a microchip that encodes memories for storing elsewhere in the brain - has been tested using tissue from rats' brains. Researchers are planning trials on live animals soon.

Ears: The bionic ear has been around for more than 40 years, and thousands of patients are already wearing these. Unfortunately, the devices are unable to tune in to specific sounds, so patients struggle to hear in noisy conditions.

However, scientists at La Trobe University, Australia, have produced a device that behaves far more like a human ear.

Heart: Artificial hearts, essentially miniaturised pumps, are often planted in patients to help their damaged organs pump blood while they are awaiting transplants.

Last month, doctors in Italy gave a 15-year-old boy the first permanent artificial heart implant.

A French company called Carmat has developed a prototype for a fully artificial heart that can replace the organ altogether. Surgeons plan to perform the first human implant in late 2011.

Arm: In July, Patrick Kane, a 13-year-old schoolboy from London, was fitted with a prosthetic arm by the Livingston-based firm Touch Bionics.

Their revolutionary iLimb Pulse hand means Patrick, who lost his left hand after falling victim to meningitis when he was nine months old, can now perform rudimentary tasks with his hands.

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