

Cell therapy

No knee-jerk reaction

NEW YORK

An innovative way to fix knees appears to provide lasting benefits

FOR centuries, healers have had high hopes for cell therapy. Various scientists and courtiers since the days of Louis XIV tried infusing those who were ailing with tissue from healthy humans or animals. In 1912 German doctors attempted to treat children who had underactive thyroids with normal thyroid cells, but to little avail. Advances in medicine now offer greater promise for the technique, especially as Carticel implants, which in 1997 became the first cell therapy to be given approval in America, show signs of providing long-term benefits.

Over 14,000 patients in America have been treated with Carticel, which uses the patient's own cartilage cells to repair damaged knees. Genzyme, an American biotechnology firm which developed the therapy, believes such treatments could become more mainstream after the results of a trial were unveiled at this week's meeting of the American Academy of Orthopaedic Surgeons.

Fixing damaged knees is tricky because the form of cartilage found in the joints does not easily regenerate and in some cases total joint replacement is the only option. However, if the patient is

relatively healthy and young, and the damage is not extreme, they have found that cell therapy can work well.

Genzyme's approach takes a small sample of healthy cartilage cells from the damaged knee and uses them to grow millions more cells in a laboratory. The doctors then insert the new cells. In most cases, the implanted cells grow without rejection, since they share an identity with nearby cells. The trial showed that almost a decade after the initial surgery, nearly 90% of the patients who had shown an early positive response to Carticel (about three-quarters of the total) still enjoyed those benefits.

This enduring success could silence critics who grouse that the costs of the approach are not justified by the benefits. Allen Anderson, an orthopaedic surgeon involved with the study, believes evidence of durability will help to expand the use of cell therapy, taking it from being an expensive niche approach towards one with economies of scale. In time, reckons Dr Anderson, therapies may even advance to the point where "we can put a gene into a virus, inject it into the knee, and let it heal itself."