**Hospital pioneers Magneto-style stem cell surgery**

HIROSHIMA – In a world first, a team at Hiroshima University Hospital on Friday conducted regenerative knee surgery using a technique that employs magnets to concentrate iron-laced stem cells around damaged cartilage, it said.

The endoscopic surgery is less arduous for the patient, said the team led by Mitsuo Ochi, a professor at the hospital. Conventional treatment requires two operations to repair cartilage.

It will take at least a year to determine the effectiveness of the regenerative technique, though previous tests on animals have proven successful, it said.

The team plans to conduct further operations to reaffirm the regenerative surgery’s safety in clinical research.

In the operation, the team extracted mesenchymal stem cells from bone marrow of an 18-year-old female high school student and cultivated them with a dash of iron powder to create magnetic stem cells that can develop into various tissues.

The team injected the iron-laced stem cells into the patient’s right knee joint and used the magnet to concentrate them in areas where cartilage was lost. The stem cells are expected to develop into cartilage.

Cartilage absorbs shock and reduces friction between bones so everything moves smoothly, but its regenerative abilities are limited.