

# PRESS RELEASE

## Novel cell therapy solution for knee injuries

***Sri Ramachandra Orthopedics team with Waseda University & NCRM achieve a breakthrough  
Human joint cells grown for the first time in a cost effective manner***

Chennai 01 Aug 2011. Sports injuries to knee joint affect millions of people all over the world. Though Autologous Chondrocyte Implantation (ACI), offers a solution, need for several growth factors for growing human joint cartilage cells (chondrocytes) make the procedure very expensive. The Department of Arthroscopy & Sports medicine of Sri Ramachandra University Hospital headed by Prof. S. Arumugam, have accomplished a novel methodology for growing human chondrocytes using a unique three dimensional scaffold developed by the Polymer scientists from Waseda University, Japan in association with the tissue engineering experts from Nichi-In Centre for Regenerative Medicine(NCRM), Chennai, without any growth factors. This they hope to offer cost effective solutions to thousands of patients in India who have knee joint problems and their findings have been published in the *Journal of Orthopedics*.

Sports injuries affect the joint cartilage especially of the knee joint. The cartilage is made of cells called chondrocytes, which form a cushion between the bones and aid a smooth movement between the bones in any joint. When they are damaged, similar chondrocytes could be taken from another portion of the joint and upon multiplication in the lab could be fixed in the damaged portion to restore it to normalcy which is called Autologous Chondrocyte Implantation, a procedure in clinical practice in several countries all over the world. The major impediments in this procedure are the usage of growth factors which make the lab expansion very expensive and also the cells thus grown most of the time happen to be fibrocartilage instead of the hyaline cartilage, which are suitable for bearing the joint weight. Based on an earlier study published by Prof. Yuichi Mori of Waseda University, Japan, a 3D polymer based technology from Japan was used by the Tissue engineering experts of the city based indo-japan joint venture institute NCRM together with the team of Prof. S. Arumugam, head, Department of Arthroscopy & Sports medicine of Sri Ramachandra University. Though animal chondrocytes have been cultured in this manner, culturing of human cartilage tissue in the lab without growth factors could be the first such report in the world according to Dr Abraham, Director NCRM.

We are conducting an animal study in rabbits in collaboration with Central Leather Research Institute (CLRI) supported through research grant by the Department of Bio-Technology, Govt. of India and another study in rabbits in collaboration with NCRM, funded by the Dept of Science and Technology, Govt. of India to prove the outcome and once this reaches the clinical application, we can provide a cost effective solution to thousands of patients with sports injuries in India, said Prof. S. Arumugam, the first author of the study.

With abrupt lifestyle changes and increasing incidence of obesity, knee joint problems are prone to increase especially in Asia. An early diagnosis and preventive measures are very important and if found at early stages, these kind of novel approaches, we hope would yield a significant improvement in the quality of life, commented Dr Hiroshi Yoshioka one of the co-authors.

**\*The full publication is available online at:**

**<http://www.iortho.org/2011/8/3/e5/index5.html>**

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