

Excellence in Cartilage Research Award: Nose2K's Two-Decade Journey Toward Next-Generation Cartilage Regeneration

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At the 18th World ICRS Congress held in Boston, October 11-14, 2025, the Nose2K research consortium was honored with the **Excellence in Cartilage Research Award**, marking a significant milestone in a visionary European project that began over two decades ago. This recognition celebrates the translational success of a scientific idea that evolved into a clinical reality—using **nasal chondrocytes** to regenerate knee cartilage and restore function in patients with focal cartilage defects.

FROM CONCEPT TO CLINICAL REALITY

The award-winning work, “**Engineered Cartilage From Nasal Chondrocytes for Knee Repair**,” integrates expertise from leading European institutions in Zagreb, Basel, Milan, Würzburg, and Freiburg. Funded by the **EU Horizon programme BIO-CHIP**, the project translated years of basic science into a **multicentric Phase II clinical trial** involving more than 100 patients. The trial compared two therapeutic modalities: **Nasal Chondrocyte-Tissue Engineered Cartilage (N-TEC)**, an ex vivo matured graft, and **Nasal Chondrocyte-Cell Activated Matrix (N-CAM)**,

an earlier-generation implant. Results confirmed that **N-TEC** achieved superior cartilage quality and functional outcomes, emphasizing the critical role of pre-implantation tissue maturation in regenerative orthopaedics.

THREE CORE INNOVATIONS

1. Different cell source

The project pioneers the use of **nasal chondrocytes** instead of articular chondrocytes, capitalizing on their unique regenerative capacity and adaptability to joint environments.

2. Minimal donor morbidity

Donor cartilage is obtained from a minimal nasal biopsy, enabling tissue harvest with negligible patient morbidity, in contrast to traditional joint cartilage extraction.

3. Tissue maturation

The clinical advantage stems from **matured graft engineering** prior to implantation. The resulting N-TEC grafts demonstrate improved structure, integration, and long-term biomechanical performance.



Prof. Alan Ivković received Excellence in Cartilage Research Award at the 18th World ICRS Congress held in Boston, October 11-14, 2025

LEADERSHIP AND INTERNATIONAL COLLABORATION

The award was **accepted by Prof. Alan Ivković**, orthopaedic surgeon and **leader of the multidisciplinary Zagreb team**, who played a pivotal role in translating this regenerative approach from laboratory research to clinical implementation. Prof. Ivković has long been recognized as a pioneering figure in clinical tissue engineering, being one of the first surgeons to perform a **nasal cartilage-to-knee transplantation**, and currently leads major European regenerative medicine projects from his base at **Sveti Duh University Hospital and Polyclinic Ivković in Zagreb**.

FROM NOSE2K TO ENCANTO: EXPANDING THE HORIZON

Encouraged by the clinical success of phase II clinical trial, the team has now extended this technology within the new **EU project ENCANTO**, aimed at applying nasal-chondrocyte-based cartilage engineering to **treat osteoarthritis**. The ENCANTO program seeks to develop scalable, matured tissue constructs for broader clinical indications—offering renewed hope for patients suffering from degenerative joint disease.

A EUROPEAN SUCCESS STORY

Receiving the **Excellence in Cartilage Research Award in Boston** underscores not only outstanding scientific achievement but also the long-term dedication of a truly international team. The Nose2Knee consortium, under the leadership of pioneers such as Prof. Ivković, exemplifies how cross-border collaboration, EU support, and sustained translational focus can push regenerative orthopaedics toward real-world impact—transforming patient care from **nose to knee**, and soon, from **repair to regeneration**.