

NEOCHONDRO

Intraarticular Injection 60 mg

Cushioning* & Chondroprotection**

Cushioning

As an axial force is applied to HA, its structure reorganizes and the elastic properties dominate. HA's elastic property in healthy synovial fluid protects cartilage by acting as a shock absorber and providing cushioning, when the joint is exposed to an axial force such as jumping¹ (Figure 1). In a laboratory setting, a texture analyzer applies a downward force on a test sample with a probe. The probe measures the amount of resistance or counter force produced by the test sample.

Results

When measured, the texture analyzer reveals that **NEOCHONDRO** hyaluronate produces a greater counter force than LMW and HMW sodium hyaluronate and the non-cross-linked HA. In this test, **NEOCHONDRO** provided 212% more counter force than LMW and HMW sodium hyaluronate, and 338% more counter force than Non Cross-Linked HA (NCL-HA) (Figure 2). This means that **NEOCHONDRO** compressed less than the other HA materials.²

Counter Force Provided by HA

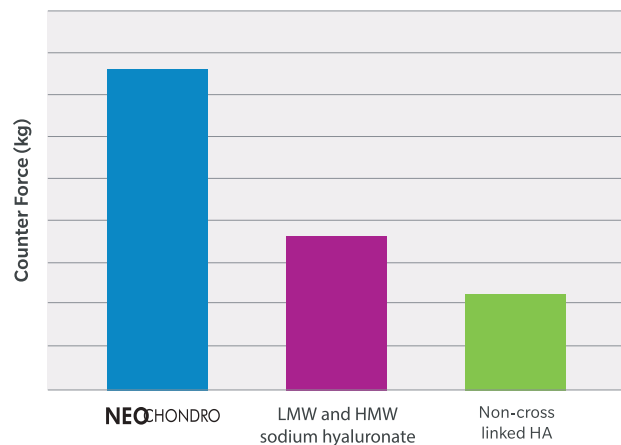


Figure 1: Counter force performance of **NEOCHONDRO** LMW and HMW sodium hyaluronate and non-cross linked HA

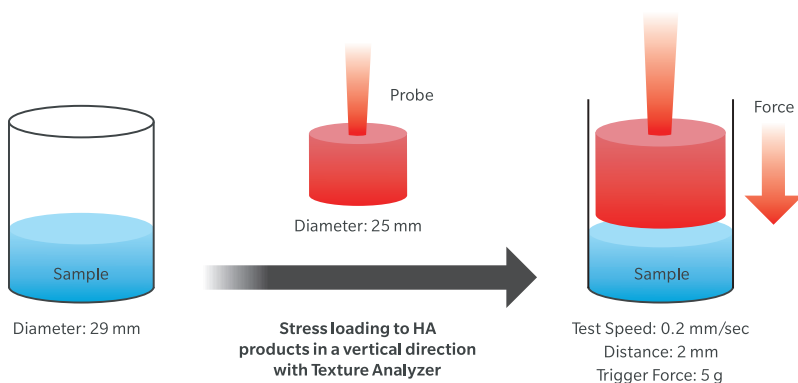


Figure 2: Representation of experimental setup of Texture Analyzer, and correlation to anatomy.

Chondroprotection

It has previously been reported that hyaluronic acid has chondroprotective properties, and can reduce cartilage wear.¹ It is possible that the viscoelastic properties of HA play a role in this function. According to a preclinical animal study, a single injection of **NEOCHONDRO** reduced cartilage wear and showed joint preservation effects.³

In this study, the ACLs of rabbits were surgically transected in order to mimic the pathological condition of OA. This model has been accepted as an arthritis model that produces cartilage degeneration similar to OA in humans.⁴ The rabbits were allowed to develop cartilage degeneration for 4 weeks, at which point animals that did not display abnormalities during observation were allocated into two groups. The experimental group was treated with a single injection of **NEOCHONDRO**, while the control group was treated with a single injection of phosphate buffered saline (PBS).³

Pictures of articular cartilage of the femoral condyle were observed at nine weeks after anterior cruciate ligament transection surgery. The lesions of cartilage wear and destruction were identified using india ink (blue arrow heads). The control group showed a larger percentage of test subjects with mild cartilage degeneration (Grade 1-3; 1 being mild and 3 being severe) than those treated with **NEOCHONDRO** (Figure 3).

Figure 4 shows a histological image of articular cartilage of the femoral condyles. The Safranin O stain displays glycosaminoglycan (red) and bone and collagen fibers (green). As seen from the macroscopic level, in the **NEOCHONDRO** group cartilage degeneration was less severe compared with that of the control group. Overall, the **NEOCHONDRO** group had less cartilage degradation than the control group (Figure 4).³

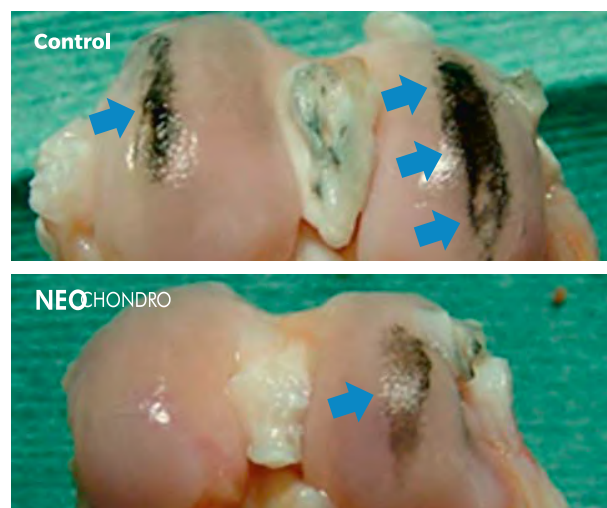


Figure 3: Gross morphological assessment of cartilage degeneration in the rabbit OA model

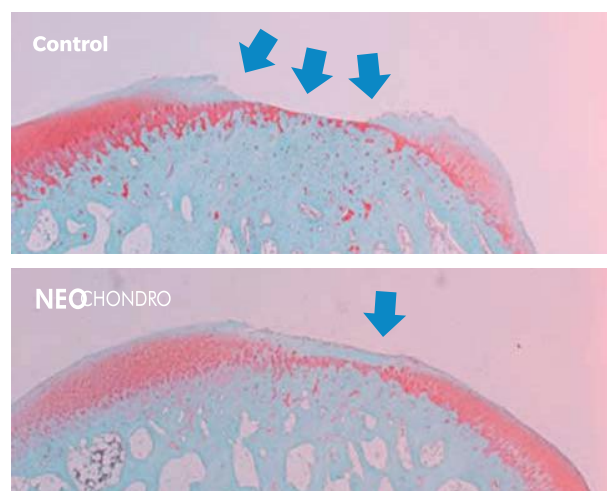


Figure 4: Histological examinations of cartilage degeneration in the rabbit OA model

References

* Lab testing not necessarily indicative of clinical results
 ** Animal studies not necessarily indicative of clinical results

Important Safety Information

Before using **NEOCHONDRO**, tell your doctor if you are allergic to hyaluronan products, cinnamon, or products from birds such as feathers, eggs, and poultry. **NEOCHONDRO** is only for injection into the knee, performed by a doctor or other qualified health care professional. You should not receive a **NEOCHONDRO** injection if you have a skin disease or infection around the area where the injection will be given. **NEOCHONDRO** has not been tested to show pain relief in joints other than the knee and for conditions other than OA. **NEOCHONDRO** Hyaluronate has not been tested in patients who are pregnant, mothers who are nursing, or anyone under the age of 21. You should tell your doctor if you think you are pregnant or if you are nursing a child. Talk to your doctor before resuming strenuous or prolonged weight-bearing activities after treatment. The safety and effectiveness of repeat treatment cycles of **NEOCHONDRO** have not been established. The side effects most commonly seen after injection **NEOCHONDRO** in the clinical trial were knee pain, swelling, and/or fluid build-up around the knee. These reactions are generally mild and do not last long. Other conditions, including but not limited to skin redness and rash, knee stiffness, knee muscular weakness and dizziness, were also reported rarely. If any of these symptoms or signs appear after you are given **NEOCHONDRO** or if you have any other problems, you should call your doctor.



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