



## **Standpunt van de Nederlandse Orthopaedische vereniging (NOV) over distractietherapie voor de knie**

Op basis van advies van de NOV Werkgroep Knie heeft het NOV bestuur voor de NOV een standpunt vastgesteld met betrekking tot het verrichten van kniedistractie.

Het standpunt van de NOV is dat kniedistractie een veelbelovende behandeling is.

Dit wordt onderbouwd door de verschillende reviews (1-8), proefdierstudies (11-13), humane cohort-studies (12-17) en gecontroleerde studies (18-22), studies betreffende de veiligheid en procedure van de behandeling (23-26), het werkingsmechanisme (26,27) en de kosteneffectiviteit (28). Zie onder voor de specifieke referenties. Deze publicaties beschrijven positieve effecten van de knie distractie.

Van al deze studies betreft het twee gerandomiseerde trials beschreven met een beperkt aantal geïncludeerde patiënten. Dit achten wij onvoldoende om een duidelijk definitief standpunt in te nemen.

Hierom is de NOV van mening dat distractie therapie voor de knie plaats kan vinden in het kader van onderzoek in een beperkt aantal geselecteerde centra om zo de evidence te verbeteren.

Binnen deze setting zou deze behandeling vergoed dienen te worden, zodat er werkelijk voldoende ervaring kan worden op gedaan.

### **Reviews over kniedistractie**

Lafeber FP, Intema F, Van Roermund PM, Marijnissen AC. Unloading joints to treat osteoarthritis, including joint distraction. *Curr Opin Rheumatol.* 2006; 18(5): 519-25. Review.

Mastbergen SC, Saris DB, Lafeber FP. Functional articular cartilage repair: here, near, or is the best approach not yet clear? *Nat Rev Rheumatol.* 2013; 9(5): 277-90. Review.

Eckstein F., Peterfy C. A 20 years of progress and future of quantitative magnetic resonance imaging (qMRI) of cartilage and articular tissues—A personal perspective. *Semin Arthritis Rheum.* 2016; 45(6): 639-47. Review.

Flouzat-Lachaniette CH, Roubineau F, Heyberger C, Bouthors C. Distraction to treat knee osteoarthritis. *Joint Bone Spine.* 2017; 84(2) :141-144.

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Piscaer TM, van der Jagt OP, Gosens T. Knee joint distraction: a solution for young patients with osteoarthritis of the knee? *Ned Tijdschr Geneeskd.* 2016; 160: D899.

Bayliss LE, Culliford D, Monk AP, et al. The effect of patient age at intervention on risk of implant revision after total replacement of the hip or knee: a population-based cohort study. *Lancet.* 2017; 389 (10077): 1424-1430.

Flouzat-Lachaniette CH, Roubineau F, Heyberger, Bouthors C. Distraction to treat knee osteoarthritis. *Joint Bone Spine.* 2017; 84: 141-144.

Tsuneari Takahashi, Thomas G. Baboolal, Jonathan Lamb, Thomas W. Hamilton, Hemant G. Pandit. Is Knee Joint Distraction a Viable Treatment Option for Knee OA?—A Literature Review and Meta-Analysis. *J Knee Surg.* 2018 Aug 29. doi: 10.1055/s-0038-1669447. [Epub ahead of print]

### **Proefdierstudies over kniedistractie**

KajiwaraR,IshidaO,KawasakiK,AdachiN,YasunagaY,OchiM.Effectiverepairofafresh osteochondral defect in the rabbit knee joint by articulated joint distraction following subchondral drilling. *J Orthop Res.* 2005; 23(4): 909-15

vanValburgAA,vanRoermundPM,MarijnissenAC,WentingMJ,VerboutAJ,LafeberFP,BijlsmaJW. Joint distraction in treatment of osteoarthritis (II): effects on cartilage in a canine model. *Osteoarthritis Cartilage.* 2000; 8(1): 1-8.

WiegantK,IntemaF,vanRoermundPM,Barten-vanRijbroekAD,DoornebalA,HazewinkelHA, Lafeber FP, Mastbergen SC. Evidence of cartilage repair by joint distraction in a canine model of osteoarthritis. *Arthritis Rheumatol.* 2015; 67(2): 465-74.

### **Humane cohort studies over Kniedistractie**

DeieM,OchiM,AdachiN,KajiwaraR,KanayaA.Anewarticulateddistractionarthroplastydevicefor treatment of the osteoarthritic knee joint: a preliminary report. *Arthroscopy.* 2007; 23(8): 833-8.

AlyTA1,HafezK,AminO.Arthrodiastasisformanagementofkneeosteoarthritis.*Orthopedics.*2011; 34(8): e338-43.

IntemaF,VanRoermundPM,MarijnissenAC,CotofanaS,EcksteinF,CasteleinRM,BijlsmaJW, Mastbergen SC, Lafeber FP. Tissue structure modification in knee osteoarthritis by use of joint distraction: an open 1-year pilot study. *Ann Rheum Dis.* 2011; 70(8): 1441-6.

WiegantK,vanRoermundPM,IntemaF,CotofanaS,EcksteinF,MastbergenSC,LafeberFP.Sustained clinical and structural benefit after joint distraction in the treatment of severe knee osteoarthritis. *Osteoarthritis Cartilage.* 2013; 21(11): 1660-7.

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VanderWoudeJAD,WiegantK,vanRoermundPM,IntemaF,CustersRJH,RM,EcksteinF,vanLaar JM, Mastbergen SC, Lafeber FPJG. Five-year follow-up of knee joint distraction; clinical benefit and cartilaginous tissue repair in an open uncontrolled prospective study. *Cartilage*. 2017; 8(3):263-271.

JansenMP,vanderWeidenGS,vanRoermundPM,CustersRJH,MastbergenSC,LafeberFPJG.Initial Structural Response Predicts Long-Term Survival of Knee Joint Distraction as Treatment for Knee Osteoarthritis. *Osteoarthritis Cartilage*. 2018; 26(12): 1604-1608.

### **Humane controlled studies over Knie Distractie**

WiegantK,vanHeerwaardenRJ,vanderWoudeJAD,CustersRJH,EmansPJ,KuchukNO,Mastbergen SC, Lafeber FPJG. Knee joint distraction as an alternative surgical procedure for patients with osteoarthritis considered for high tibial osteotomy or for a total knee prosthesis: rationale and design of two randomized controlled trials. *International Journal of Orthopaedics* (print ISSN 2311-5106, online ISSN 2313-1462).

vanderWoudeJAD,WiegantK,vanHeerwaardenRJ,SpruijtS,vanRoermundPM,CustersRJH, Mastbergen SC, Lafeber FPJG. Knee joint distraction compared with high tibial osteotomy: a randomized controlled trial. *Knee Surg Sports Traumatol Arthrosc*. 2017; 25(3): 876-886.

vanderWoudeJA,WiegantK,vanHeerwaardenRJ,SpruijtS,EmansPJ,MastbergenSC,Lafeber FP. Knee joint distraction compared with total knee arthroplasty: a randomised controlled trial. *Bone Joint J*. 2017 Jan;99-B(1):51-58.

JansenMP,BesselinkNJ,vanHeerwaardenRJ,CustersRJH,EmansPJ,SpruijtS,MastbergenSC, Lafeber FPJG. Knee Joint Distraction Compared with High Tibial Osteotomy and Total Knee Arthroplasty: Two-Year Clinical, Radiographic, and Biochemical Marker Outcomes of Two Randomized Controlled Trials. *Cartilage*. 2019 Feb 13:1947603519828432. doi: 10.1177/1947603519828432. [Epub ahead of print]

### **Veiligheid en procedure in de reguliere praktijk.**

WiegantK,vanRoermundPM,vanHeerwaardenR,SpruijtS,CustersR,KuchukN,Mastbergen, Lafeber FPJG. Total knee prosthesis after joint distraction treatment. *J Surg Surgical Res* 2015; 1: 066-071.

vanderWoudeJA,vanHeerwaardenRJ,SpruijtS,EcksteinF,MaschekS,vanRoermundPM, Custers RJ, van Spil WE, Mastbergen SC, Lafeber FP. Six weeks of continuous joint distraction appears sufficient for clinical benefit and cartilaginous tissue repair in the treatment of knee osteoarthritis. *Knee*. 2016; 23(5): 785-91

JansenMP,MastbergenS,vanHeerwaardenRJ,SpruitS,vanEmpelenMD,KesterEC,LafeberFP, Custers RJ. Outcome of knee joint distraction in regular care for treatment of osteoarthritis: a comparison with clinical trial data. Manuscript submitted for international peer reviewed publication.

Werkingsmechanismen van kniedistractie

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BaboolalTG,MastbergenSC,JonesE,CalderSJ,LafeberFP,McGonagleD.Synovialfluidhyaluronan mediates MSC attachment to cartilage, a potential novel mechanism contributing to cartilage repair in osteoarthritis using knee joint distraction. *Ann Rheum Dis.* 2016; 75(5): 908-15.

vanderWoudeJA,WelsingPM,vanRoermundPM,CustersRJ,KuchukNO,LafeberFP.Predictionof cartilaginous tissue repair after knee joint distraction. *Knee.* 2016 Oct;23(5):792-5.

### **Kosteneffectiviteit**

Van der Woude JAD, Nair SC, Welsing PM, Castelein RM, Van Laar J, Lafeber FPIG. Knee joint distraction as compared to total knee arthroplasty as initial treatment for severe osteoarthritis: simulating long-term outcomes and cost-effectiveness. *PLoS One* 2016; 11(5): e0155524.