

# “Salvemos el menisco”

secOT<sup>54</sup>

2017 2º CONGRESO IBERO-LATINOAMERICANO

PROGRAMA  
CONGRESO

27, 28 Y 29  
MIÉRCOLES, JUEVES Y VIERNES  
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B A R C E L O N A

secOT  
SOCIEDAD ESPAÑOLA DE CIRUGÍA  
ORTOPÉDICA Y TRAUMATOLOGÍA

La meniscectomía parcial no es inocua. ¿Qué es un síndrome post-meniscectomía?

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# “ La insuficiencia meniscal es el problema número uno en la ortopedia actual”

Frank Noyes Int. Course Lect 1998; 47: 379-96



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responsabilidad respeto **hospitalidad** espiritualidad calidad

# ¿Qué es?

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National Institutes of Health

PubMed postmeniscectomy syndrome Search

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Results: 3

[Polyurethane scaffold in lateral meniscus segmental defects: clinical outcomes at 24 months follow-up.](#)  
1. Bouyarmane H, Beaufils P, Pujol N, Bellemans J, Roberts S, Spalding T, Zaffagnini S, Marcacci M, Verdonk P, Womack M, Verdonk R.  
Orthop Traumatol Surg Res. 2014 Feb;100(1):153-7. doi: 10.1016/j.otsr.2013.10.011. Epub 2013 Dec 12.  
PMID: 24332925 [PubMed - in process] **Free Article**  
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[\[Adult lateral meniscus\].](#)  
2. Beaufils P, Hardy P, Chambat P, Clavert P, Djian P, Frank A, Hulet C, Potel JF, Verdonk R; Société Française d'Arthroscopie.  
Rev Chir Orthop Reparatrice Appar Mot. 2006 Sep;92(5 Suppl):2S169-2S194. French.  
PMID: 17088783 [PubMed - indexed for MEDLINE]  
[Related citations](#)

[Electromyographic changes in postmeniscectomy patients. Role of the pneumatic tourniquet.](#)  
3. Weingarden SI, Louis DL, Waylonis GW.  
JAMA. 1979 Mar 23;241(12):1248-50.  
PMID: 581679 [PubMed - indexed for MEDLINE]  
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New feature  
Try the new Display Settings option -  
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Search details  
postmeniscectomy[All Fields] AND ("syndrome"[MeSH Terms] OR "syndrome"[All Fields])  
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# ¿Qué es?

The screenshot shows the PubMed.gov search results for the query 'postmeniscectomy'. The page header includes the NCBI logo, navigation links for 'Resources' and 'How To', and user options for 'rosyalvarez', 'My NCBI', and 'Sign Out'. The search bar contains the text 'postmeniscectomy' and a 'Search' button. Below the search bar, there are links for 'RSS', 'Save search', and 'Advanced'. The main content area displays 'Results: 1 to 20 of 45' and navigation controls for 'First', 'Prev', 'Page 1 of 3', 'Next', and 'Last'. On the left, there is a section for 'Article types' with links for 'Clinical Trial', 'Review', and 'More ...'. On the right, there is a 'Filters' section with a 'Manage Filters' link and a 'New feature' announcement about 'Display Settings' and 'Sort by Relevance'. The 'Display Settings' are set to 'Summary, 20 per page, Sorted by Recently Added'.

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# ¿Qué es?

“Dolor compartimental a medio o largo plazo en el paciente que previamente ha sido sometido a meniscectomía”

# ¿Qué es?

“...Cada vez estamos asistiendo a más problemas relacionados con la falta de menisco. Son pacientes de **mediana edad**, **activos**, con **dolor**, generalmente en interlínea medial y meseta. Con **discreto pinzamiento articular**. Sin imágenes degenerativas. Las imágenes de RNM suelen mostrar cierto **edema óseo** en compartimento medial. Es el síndrome postmeniscectomía....”

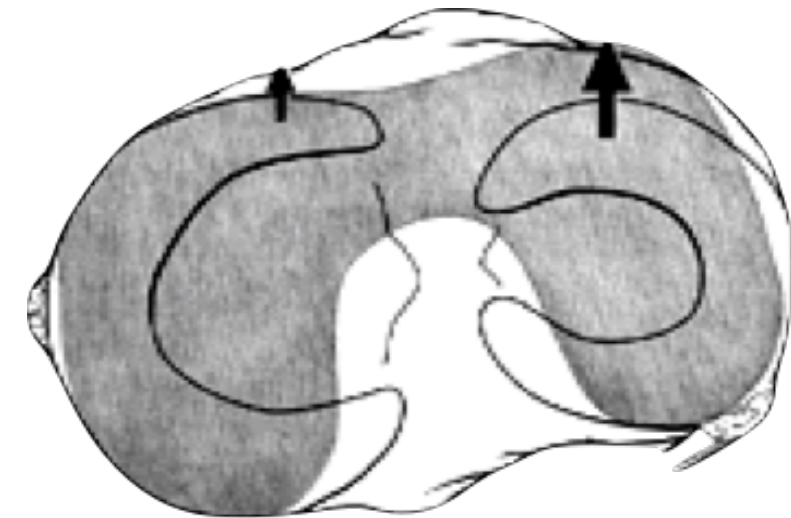
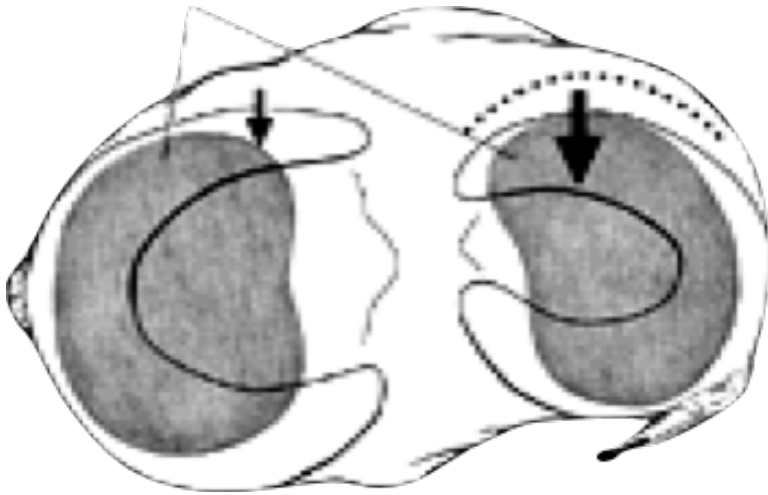
Enrique Gastaldi Orquín, 2011

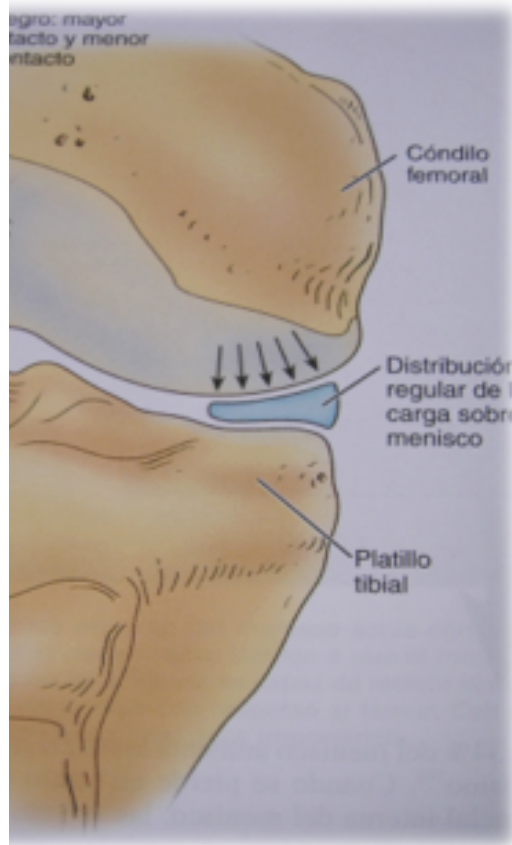
(Discurso de Ingreso en la Real Academia de Medicina de la Comunidad Valenciana)

# ¿CÓMO SE PRODUCE?

## FUNCION

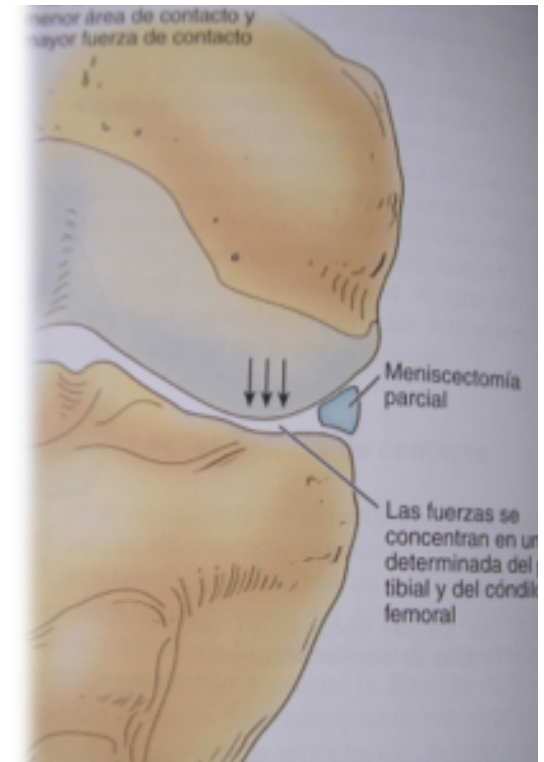
1. Distribución de cargas
2. Absorción de fuerzas de choque
3. Mejoría de la estabilidad articular
4. Lubricación articular





Resección de un 1/3 de su circunferencia aumenta la fuerza del contacto un 65%

Su ausencia total aumenta la fuerza de contacto entre 40 y 700%

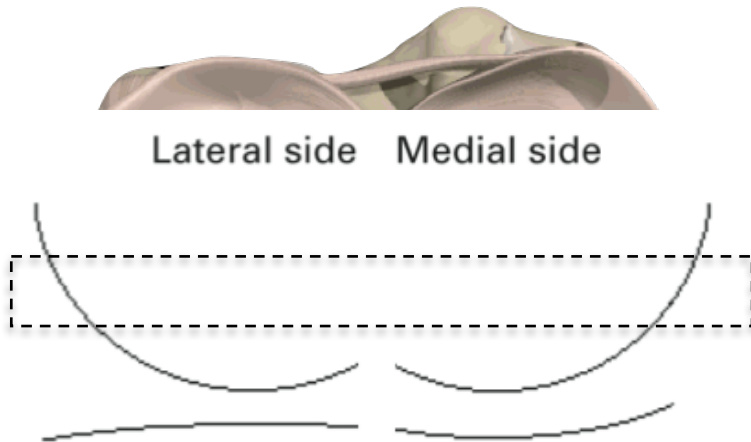


Baratz ME, Fu FH, Mengato RL. **Meniscus tears: The effect of meniscectomy and of repair on intra-articular contact areas and stress in the human knee.** *Am J Sports Med* 14:270, 1986



# ¿Cómo se produce?

¿Qué sucede tras la meniscectomía?



	Movilidad	Cobertura	CA	CP
ME	11.2 mm	80%	LCA	Delante CAMI
MI	5.1 mm	60%	Lig. Transv.	LCA-LCP

Thompson et al. Am J Sport Med 1991

Ahmed AM and Burke DL. J Biomech Eng 1983

*Jorgensen 1987, Higuchi 2000, Fabricant 2007, Bae 2011: peor MI que ME*

## Peores resultados a largo plazo en el ME

McDermott ID, Amis AA. The consequences of meniscectomy.

*J Bone Joint Surg [Br]* 2006;88- B:1549-56.

Salata MJ, Gibbs AE, Sekiya JK. A systematic review of clinical outcomes in

patients undergoing meniscectomy. *Am J of Sport Med* 2010; Vol 38-

9:1907-16.

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# ¿Cómo se produce?

## ¿Qué sucede tras la meniscectomía?

### TOTAL vs PARCIAL

- > OA clínica y RX en las totales.... pero a largo plazo se igualan
- 4.5% de MP desarrollaron OA en el primer año

McDermott ID, Amis AA. The consequences of meniscectomy. *J Bone Joint Surg [Br]* 2006;88- B:1549-56.

Salata MJ, Gibbs AE, Sekiya JK. A systematic review of clinical outcomes in patients undergoing meniscectomy. *Am J of Sport Med* 2010; Vol 38-9:1907-16.

Roemer FW. Partial meniscectomy is associated with increased risk of incident radiographic OA and worsening cartilage damage in the following year. *Eur radiol* 2017; 27(1): 404

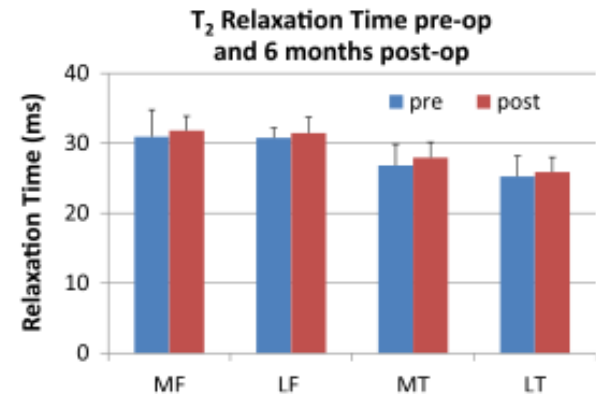
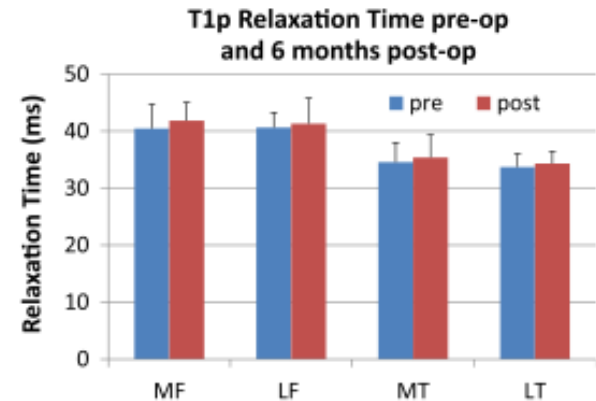
# ¿Cómo se produce?

Knee Surg Sports Traumatol Arthrosc. 2014 May 4. [Epub ahead of print]

## Cartilage MRI relaxation times after arthroscopic partial medial meniscectomy reveal localized degeneration.

Souza RB<sup>1</sup>, Wu SJ, Morse LJ, Subburaj K, Allen CR, Feeley BT.

RM a los 6mPO: cambios en la señal del cartílago del comp.



# ¿Cómo se produce?

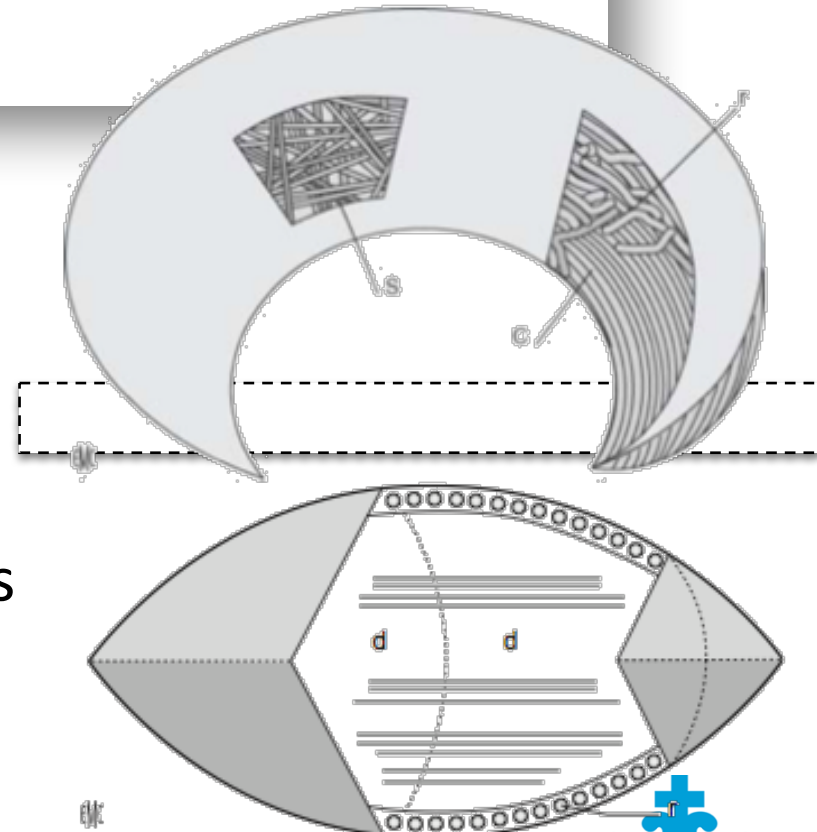
J Bone Joint Surg Br. 2001 May;83(4):513-6.

## Long-term results of arthroscopic partial lateral meniscectomy in knees without associated damage.

Hoser C<sup>1</sup>, Fink C, Brown C, Reichkender M, Hackl W, Bartlett J.

¿Por qué hay parciales (laterales) que parecen totales?

¿Puede ser la interrupción de las fibras circunferenciales profundas?



Imágenes tomada de: EMC, Lesiones traumáticas de los meniscos de la rodilla , E-14-765. 2006

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# ¿Cómo se produce?

## ¿QUÉ SUCEDE TRAS LA MENISCECTOMÍA?

### TIPOS DE ROTURA

- > OA en las degenerativas vs traumáticas (McDermont 2006)
- No dif. entre traumáticas / no traumáticas (Haviv 2016)
- “Mejores” resultados tras las radiales que otros tipos
- Peor si afecta al cuerno posterior
- “Hoja de libro”: ser muy conservador

Salata MJ, Gibbs AE, Sekiya JK. *A systematic review of clinical outcomes in patients undergoing meniscectomy. Am J of Sport Med* 2010; Vol 38-9:1907-16.

Koh JL. Tibiofemoral contact mechanics with horizontal cleavage tear and resection of the medial meniscus in the human knee. *JBJS Am* 2016; 98(21): 1829

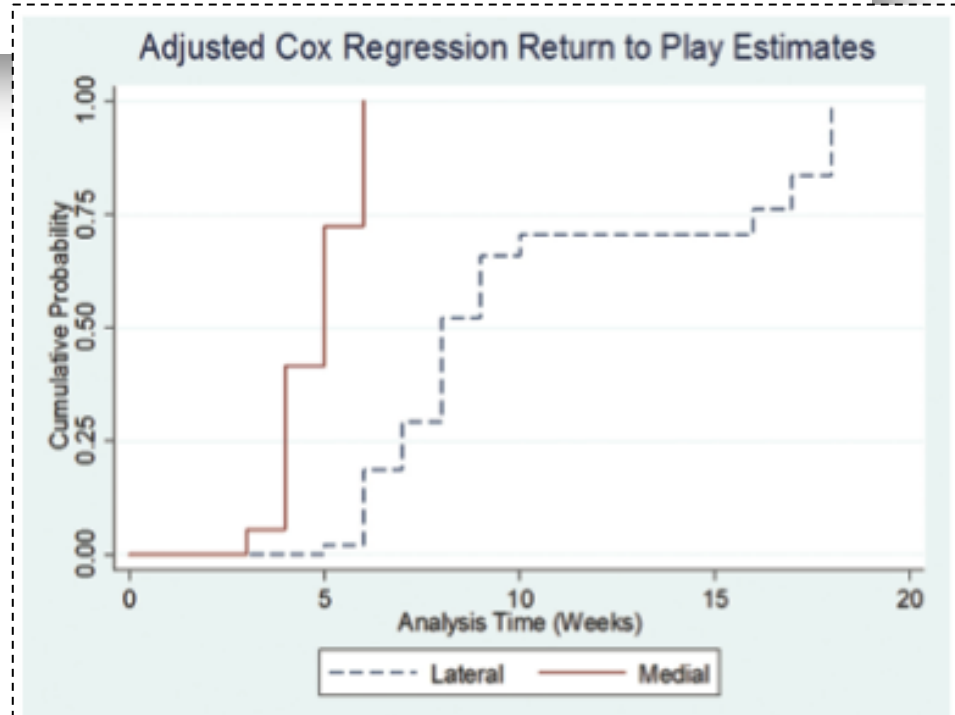
# ¿Cómo se produce?

Am J Sports Med. 2014 Sep;42(9):2193-8. doi: 10.1177/0363546514540271. Epub 2014 Jul 17.

## Return to play after lateral meniscectomy compared with medial meniscectomy in elite professional soccer players.

Nawabi DH<sup>1</sup>, Cro S<sup>2</sup>, Hamid IP<sup>3</sup>, Williams A<sup>4</sup>.

Peor tras meniscectomía parcial  
del ME



# ¿Cómo se produce?

*Knee Surg Sports Traumatol Arthrosc.* 2013 Sep;21(9):2131-6. doi: 10.1007/s00167-012-2261-6. Epub 2012 Nov 11.

## Does varus alignment increase after medial meniscectomy?

Yoon KH<sup>1</sup>, Lee SH, Bae DK, Park SY, Oh H.

Related factors	$\beta$ values	<i>p</i> values
Sex	0.131	n.s.
Age	-0.078	n.s.
Body mass index	-0.006	n.s.
Preoperative alignment	0.102	n.s.
Resection amount	0.528	0.002*
Cartilage injury	0.008	n.s.
Follow-up duration	-0.136	n.s.

>% de resección medial = > progresión del genu varo

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# ¿Es un procedimiento inocuo?

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responsabilidad respeto **hospitalidad** espiritualidad calidad

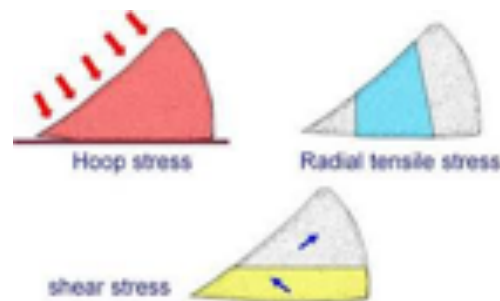


## Arthroscopic Partial Meniscectomy: MR Imaging for Prediction of Outcome in Middle-Aged and Elderly Patients<sup>1</sup>

*Radiology*: Volume 259: Number 1—April 2011 • [radiology.rsna.org](http://radiology.rsna.org)

Cargas axiales se incrementan sustancialmente en el CI tras una MP **pudiendo empeorar** los síntomas en pacientes con artrosis previa.

La extensión meniscal altera las cargas de “hoop stress” normales sobre el menisco (carga circunferencial) lo **que incrementa la presión local** de contacto en el compartimento afectado.

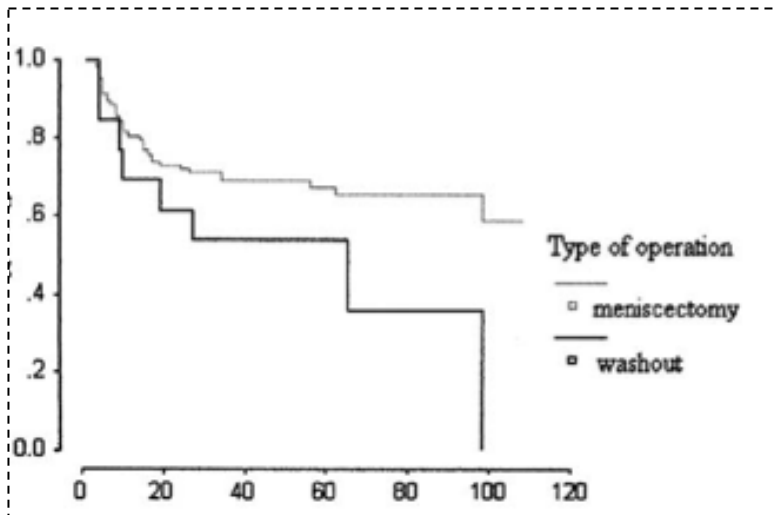


# ¿Cuándo puedo / debo?

Arthroscopy. 2003 Nov;19(9):963-8.

**Partial meniscectomy in the presence of severe osteoarthritis does not hasten the symptomatic progression of osteoarthritis.**

Pearse EO<sup>1</sup>, Craig DM.



La MP vs. lavado articular  
no acelera la progresión de la OA

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# ¿Cuándo puedo / debo?

## SI HAY LESIONES DEGENERATIVAS

¿Corticoides vs MP?

Vermesan, 2013: Mínima diferencia a favor de la meniscectomía sólo a corto plazo

¿RH + fármacos vs MP?

Neogi, 2013: Sin diferencia

# ¿Cuándo puedo / debo?

Khan, 2014:

- Meta-análisis
- Rot. degenerativas + afectación condral  $\leq 2$

✓ Ningún beneficio a medio plazo con respecto a tto's no qx (*evidencia moderada*)

CMAJ

RESEARCH

## Arthroscopic surgery for degenerative tears of the meniscus: a systematic review and meta-analysis

Moin Khan MD, Nathan Evaniew MD, Asheesh Bedi MD, Olufemi R. Ayeni MD MSc, Mohit Bhandari MD PhD

### ABSTRACT

**Background:** Arthroscopic surgery for degenerative meniscal tears is a commonly performed procedure, yet the role of conservative treatment for these patients is unclear. This systematic review and meta-analysis evaluates the efficacy of arthroscopic meniscal débridement in patients with knee pain in the setting of mild or no concurrent osteoarthritis of the knee in comparison with nonoperative or sham treatments.

**Methods:** We searched MEDLINE, Embase and the Cochrane databases for randomized controlled trials (RCTs) published from 1946 to Jan. 20, 2014. Two reviewers independently screened all titles and abstracts for eligibility. We assessed risk of bias for all included studies and pooled outcomes using a random-effects model. Outcomes (i.e., function and pain relief) were dichotomized to short-term (< 6 mo) and long-term (< 2 yr) data.

**Results:** Seven RCTs ( $n = 805$  patients) were included in this review. The pooled treatment

effect of arthroscopic surgery did not show a significant or minimally important difference (MID) between treatment arms for long-term functional outcomes (standardized mean difference [SMD] 0.07, 95% confidence interval [CI] -0.10 to 0.23). Short-term functional outcomes between groups were significant but did not exceed the threshold for MID (SMD 0.25, 95% CI 0.02 to 0.48). Arthroscopic surgery did not result in a significant improvement in pain scores in the short term (mean difference [MD] 0.20, 95% CI -0.67 to 0.26) or in the long term (MD -0.06, 95% CI -0.28 to 0.15). Statistical heterogeneity was low to moderate for the outcomes.

**Interpretation:** There is moderate evidence to suggest that there is no benefit to arthroscopic meniscal débridement for degenerative meniscal tears in comparison with nonoperative or sham treatments in middle-aged patients with mild or no concomitant osteoarthritis. A trial of nonoperative management should be the first-line treatment for such patients.

**Competing interests:** Mohit Bhandari declares consultancy payments from Smith & Nephew, Stryker, Amgen, Zimmer, Moximed and Bioventus, and grant support from Smith & Nephew, DePuy, Eli Lilly and Bioventus. No other competing interests were declared.

This article has been peer reviewed.

**Correspondence to:** Moin Khan, moinkhanm@gmail.com

CMAJ 2014; DOI:10.1503/cmaj.140433

Arthroscopic meniscal débridement is one of the most commonly performed procedures in orthopedic surgery. More than 700 000 such procedures are performed each year in the United States, and more than 4 million are performed each year worldwide, with substantial economic and social burdens.<sup>1-6</sup> Many patients who undergo arthroscopic meniscal débridement have concurrent osteoarthritis, and orthopedic surgeons are often challenged to determine the true cause of patients' symptoms: the meniscal tear, osteoarthritis or a combination of both.<sup>7</sup>

Although 2 well-designed randomized controlled trials (RCTs)<sup>8,9</sup> have shown a lack of efficacy for arthroscopic surgery in patients with severe and advanced knee arthritis, many patients present with degenerative meniscal tears and mild or minimal concurrent osteoarthritis.<sup>10</sup> Patients with degenerative meniscal tears in the setting of mild osteoarthritis may experience functional improvement or pain relief with

arthroscopic surgery,<sup>11-14</sup> but the role of conservative treatment is unclear.<sup>15-17</sup> Arthroscopic surgery involves the potential for complications, which must be weighed against the prognosis for relief from presenting symptoms.<sup>6,18</sup>

The objective of this systematic review and meta-analysis was to evaluate the efficacy of arthroscopic meniscal débridement in comparison with nonoperative or sham treatments in patients with degenerative meniscal tears and knee pain with regard to function and pain relief in the short term (< 6 mo) and long term (< 2 yr).

### Methods

We conducted this study according to the methods of the *Cochrane Handbook for Systematic Reviews of Interventions*.<sup>19</sup> The findings are reported according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement.<sup>20</sup>

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# ¿Cuándo puedo / debo?

Lamplot, 2016:

- Rev. sistemática 1975-2015
- Rot. degenerativas + afectación condral moderada:  
beneficio de MP artroscópica vs. tto conservador

# CONCLUSIONES

- Extender / entender el síndrome post-meniscectomía
- No es inocuo
- Ser conservador
- Hacer indicaciones correctas (consensos)

# ¡GRACIAS POR SU ATENCIÓN!

JORNADA TRAUMATOLÓGICA

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# ¿CÓMO SE PRODUCE?

## ¿QUÉ SUCEDE TRAS LA MENISCECTOMÍA?

### OTROS CONDICIONANTES

- Peor si inestabilidad (rotura del LCA)  
*Hazel 1993, Gillquist 1999, Louboutin 2009, Borchers 2011, Chen 2013, Ghodadra 2013, Sri-Ram 2013*
- Edad y sexo: “parece” que peor si >40ª y mujer.  
*Hede, 1996: peor en jovenes*
- Peor si lesión condral (u OA de otras articulaciones, especialmente la mano – genética?)

McDermott ID, Amis AA. The consequences of meniscectomy. *J Bone Joint Surg [Br]* 2006;88- B:1549-56.

Salata MJ, Gibbs AE, Sekiya JK. A systematic review of clinical outcomes in patients undergoing meniscectomy. *Am J of Sport Med* 2010; Vol 38-9:1907-16.

in 1942,<sup>13</sup> it was felt that "A far too common error is shown in the incomplete removal of the injured meniscus". This attitude was based on teoglycan, an increase in synthesis of proteoglycan and an increase in hydration.<sup>19</sup> The macroscopic and microscopic signs of fail-

1549





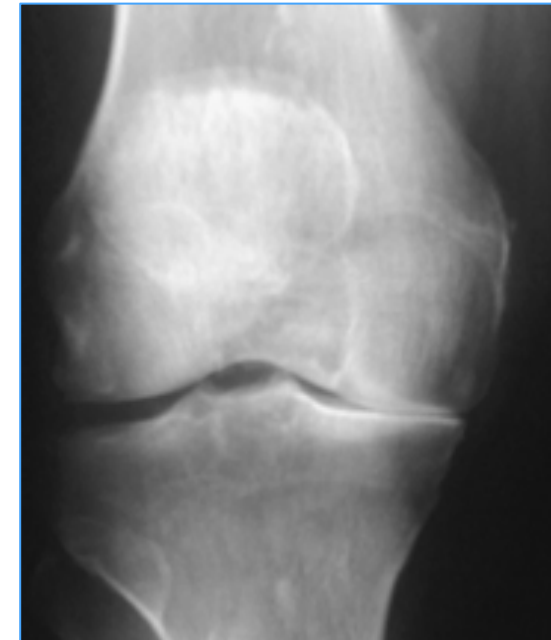
# ¿CÓMO SE PRODUCE?

## ¿QUÉ SUCEDE TRAS LA MENISCECTOMÍA?

### OTROS CONDICIONANTES

- **IMC>30 =>OA**
- Varo / Valgo >OA si meniscct med / lat

*Chatain, 2003; Kruger-Franke, 1999; Burks, 1997; Bolano and Grana, 1993*



McDermott ID, Amis AA. The consequences of meniscectomy. *J Bone Joint Surg [Br]* 2006;88- B:1549-56.

Salata MJ, Gibbs AE, Sekiya JK. A systematic review of clinical outcomes in patients undergoing meniscectomy. *Am J of Sport Med* 2010; Vol 38-9:1907-16.




# ¿CÓMO SE PRODUCE?


## ¿QUÉ SUCEDE TRAS LA MENISCECTOMÍA?

### OTROS CONDICIONANTES

- Actividad deportiva “puede” >OA.
  - Fenotipo del jugador: varo / valgo
  - Intensidad (elite, recreativo...)
  - Tipo de lesión



McDermott ID, Amis AA. The consequences of meniscectomy. *J Bone Joint Surg [Br]* 2006;88- B:1549-56.



Salata MJ, Gibbs AE, Sekiya JK. A systematic review of clinical outcomes in patients undergoing meniscectomy. *Am J of Sport Med* 2010; Vol 38-9:1907-16.