



UANL

UNIVERSIDAD AUTÓNOMA DE NUEVO LEÓN



University
of Glasgow

Lesiones de Tendón de Aquiles

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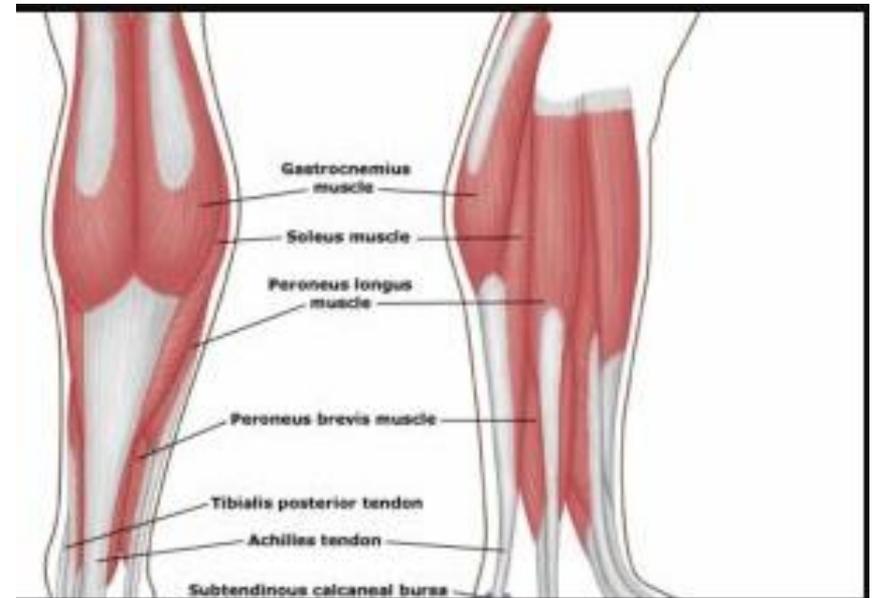
MSc. Ciencias del Ejercicio y Medicina Deportiva



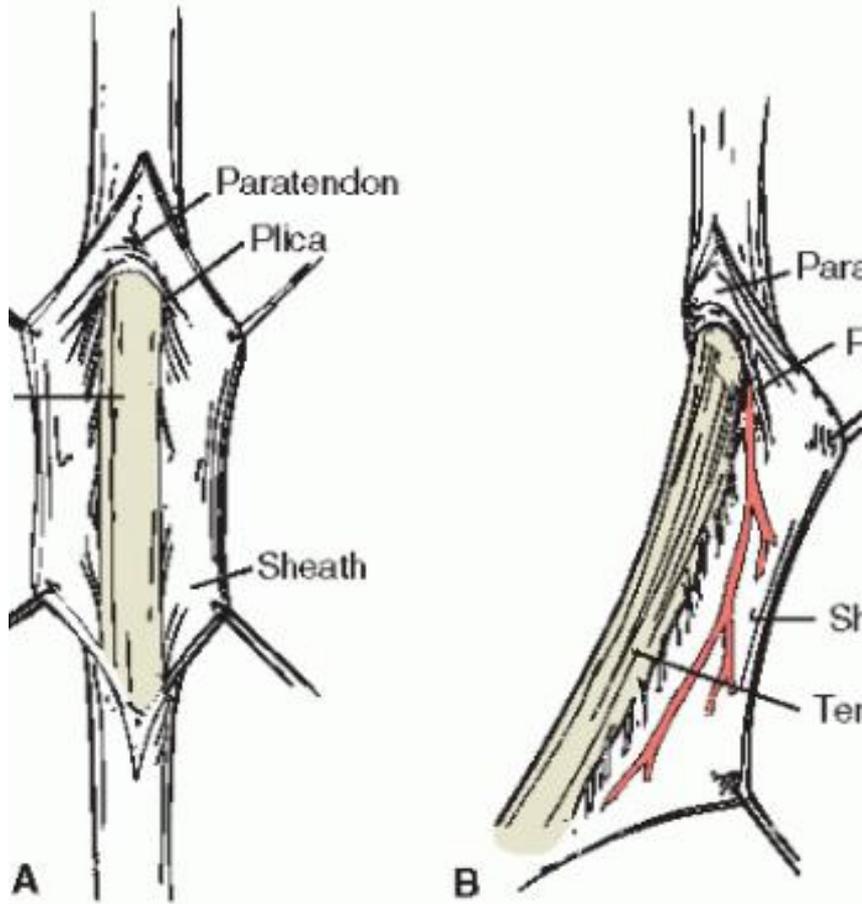
Encargada del área de composición corporal del Laboratorio de Rendimiento Humano de la Facultad de Organización Deportiva de la UANL

Anatomía y Biomecánica

- Es un grupo de tres músculos (formada por los dos gemelos y el sóleo con una inserción común)
- Es el tendón mas largo y fuerte del cuerpo, es sometido diariamente a las cargas mas altas del cuerpo y cargas tensiles hasta por arriba de 10 veces cuando se corre salta, etc



Anatomía y Biomecánica



En lugar de vaina sinovial, tiene una capa de tejido graso aerolar llamada **PARATENDON**

Tiene una vascularidad limitada a 6 cm proximales del calcáneo

Factores predisponentes

Corredores de media y larga distancia

Errores de entrenamiento

Cambio súbito en incremento de actividad física

Reiniciar entrenamiento posterior a reposo

Pie pronado

Calzado inadecuado

Terrenos irregulares

Tipos de lesiones

- a. Paratendinitis: Inflamación y engrosamiento del peritendón
- b. Tendinosis: Degeneración asintomática del tendón Sin la presencia de inflamación
- c. Paratendinitis y Tendinosis a + b
- d. Bursitis retro calcánea: irritación de la bursa
- e. Entesitis inflamación del área de inserción

Causas de dolor en el tendón de Aquiles

- COMUNES
 - Tendinopatía (Tendinosis, paratendinitis, desgarros parciales)
 - Bursitis retrocalcánea
- MENOS COMÚN
 - Atrapamiento posterior
 - Enfermedad de Sever (apofisitis calcánea adolescentes)
 - Bursitis del Tendón de Aquiles
 - Dolor Referido
- EVITAR PASAR SUBDIAGNOSTICADA
 - Ruptura del tendón de Aquiles
 - Tendinopatía por artropatía inflamatoria

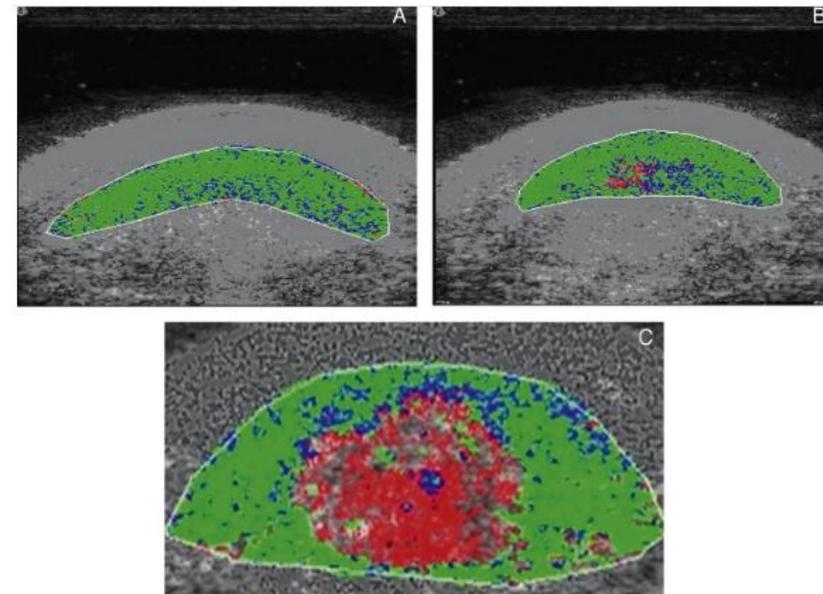
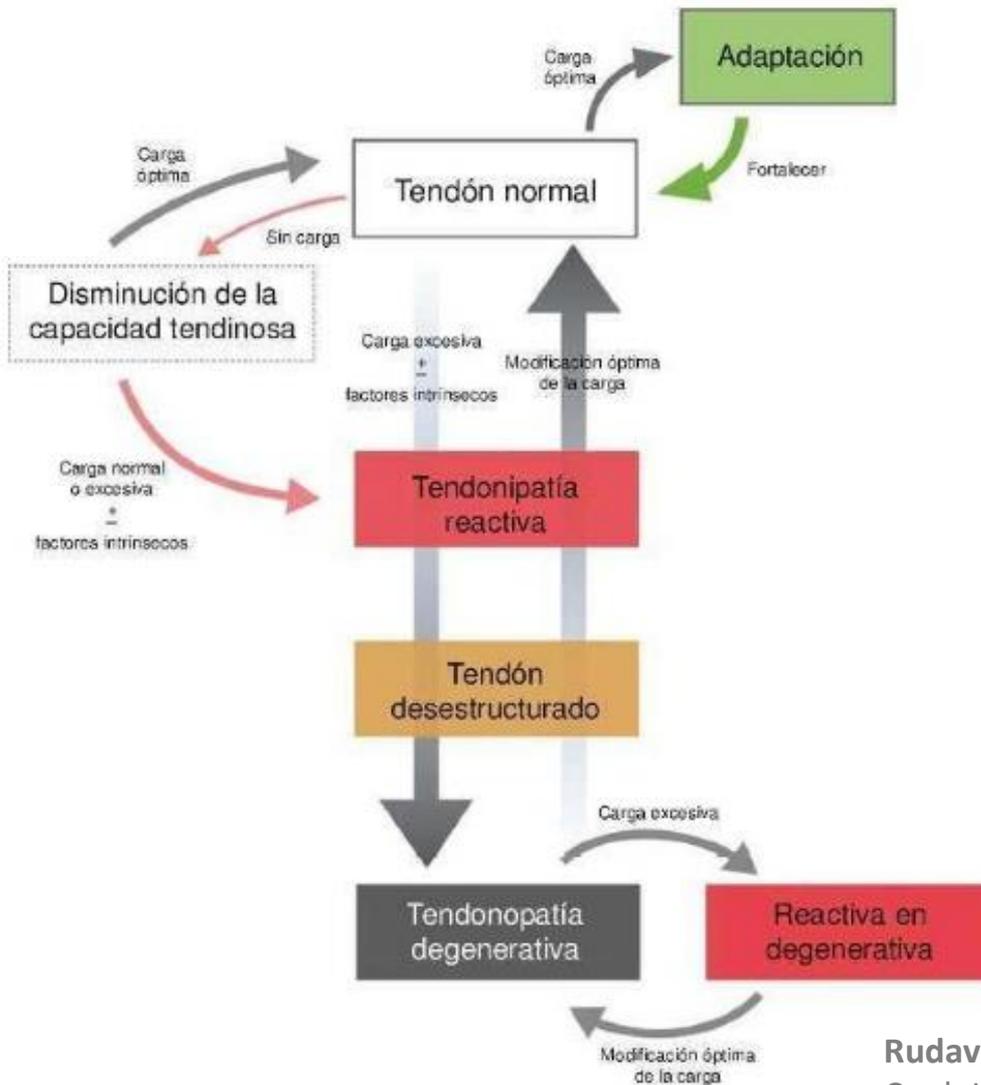
Valoración Clínica

- Interrogatorio (inicio, intensidad, duración, discapacidad)
- Exploración
 - Crepitación y edema (intensidad)
 - La extensión del dolor a la palpación
 - Presencia de dolor
 - Cuando el paratendón es la causa de la inflamación al movilizar el tobillo no se moviliza el nódulo.
 - Cuando el involucro es tendinoso el nódulo se moviliza

Radiología

- **ULTRASONIDO**
 - Hipoecogenicidad (en que extensión)
 - Discontinuidad de las fibras tendinosas
- **RESONANCIA MAGNÉTICA**
 - Aumento de la señal anormal en T2

Fisiopatología



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Figure 3. Ultrasonic tissue characterisation: (A) normal patellar tendon appearance, (B) mild patellar tendon disorganisation and (C) severe patellar tendon disorganisation.

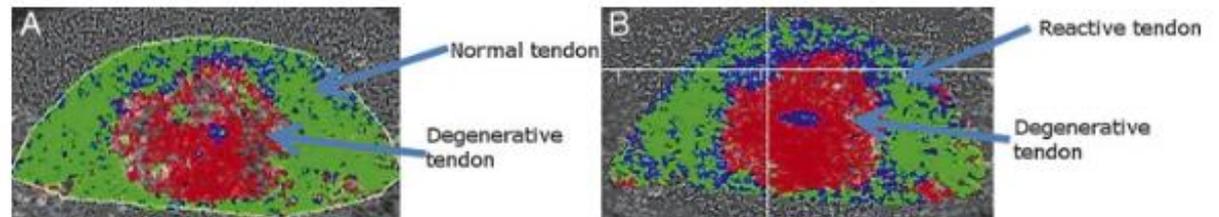
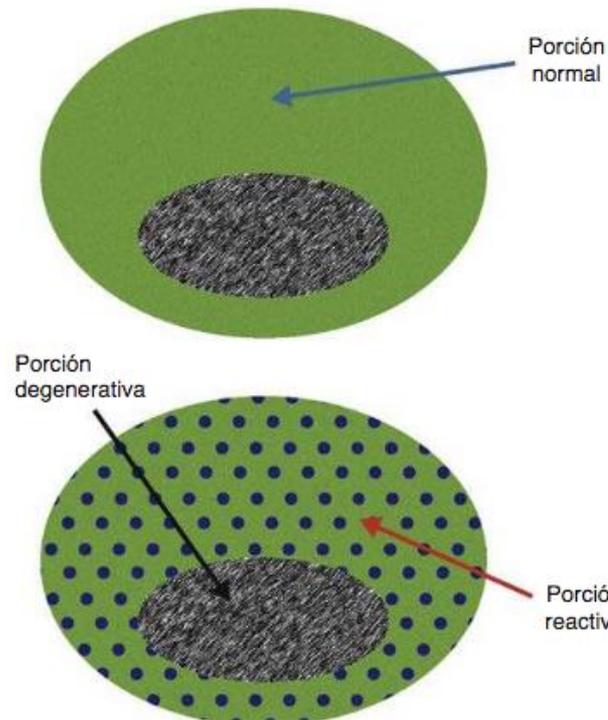
Note: green colour represents good tendon structure; blue, red and black represent increasing structural disruption.

Tendonopatía degenerativa

Carga excesiva

Modificación óptima

Tendonipatía reactiva



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Figure 4. UTC pictures of a degenerative patellar tendon structure (A) progressing to a reactive on degenerative patellar tendon structure (B).

Note the increase in blue pixilation in what was previously normal (green) tendon structure.

(Images supplied by SI Docking)

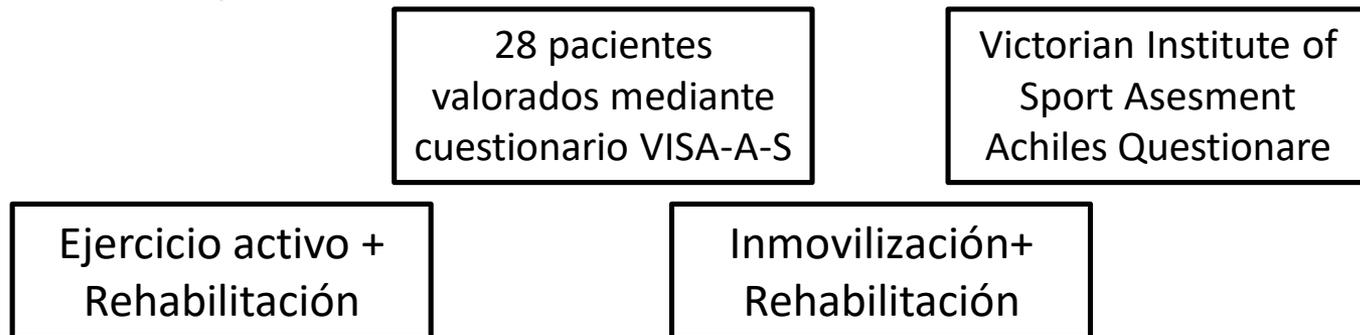
Continued Sports Activity, Using a Pain-Monitoring Model, during Rehabilitation in Patients with Achilles Tendinopathy

A Randomized Controlled Study

[Karin Grävare Silbernagel](#), PT, ATC, PhD, [Roland Thomeé](#), PT, PhD, [Bengt I. Eriksson](#), MD, PhD, more...

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First Published June 1, 2007 | Research Article



Phase 1: Weeks 1-2

Patient status: Pain and difficulty with all activities, difficulty performing ten 1-legged toe raises

Goal: Start to exercise, gain understanding of their injury and of pain-monitoring model

Treatment program: Perform exercises every day

- Pain-monitoring model information and advice on exercise activity
- Circulation exercises (moving foot up/down)
- 2-legged toe raises standing on the floor (3 sets \times 10-15 repetitions/set)
- 1-legged toe raises standing on the floor (3 \times 10)
- Sitting toe raises (3 \times 10)
- Eccentric toe raises standing on the floor (3 \times 10)

Phase 2: Weeks 2-5

Patient status: Pain with exercise, morning stiffness, pain when performing toe raises

Goal: Start strengthening

Treatment program: Perform exercises every day

- 2-legged toe raises standing on edge of stair (3 \times 15)
- 1-legged toe raises standing on edge of stair (3 \times 15)
- Sitting toe raises (3 \times 15)
- Eccentric toe raises standing on edge of stair (3 \times 15)
- Quick-rebounding toe raises (3 \times 20)

Phase 3: Weeks 3-12 (longer if needed)

Patient status: Handled the phase 2 exercise program, no pain distally in tendon insertion, possibly decreased or increased morning stiffness

Goal: Heavier strength training, increase or start running and/or jumping activity

Treatment program: Perform exercises every day and with heavier load 2-3 times/week

- 1-legged toe raises standing on edge of stair with added weight (3 \times 15)
- Sitting toe raises (3 \times 15)
- Eccentric toe raises standing on edge of stair with added weight (3 \times 15)
- Quick-rebounding toe raises (3 \times 20)
- Plyometric training

Phase 4: Week 12-6 months (longer if needed)

Patient status: Minimal symptoms, morning stiffness not every day, can participate in sports without difficulty

Goal: Maintenance exercise, no symptoms

Treatment program: Perform exercises 2-3 times/week

- 1-legged toe raises standing on edge of stair with added weight (3 \times 15)
- Eccentric toe raises standing on edge of stair with added weight (3 \times 15)
- Quick-rebounding toe raises (3 \times 20)

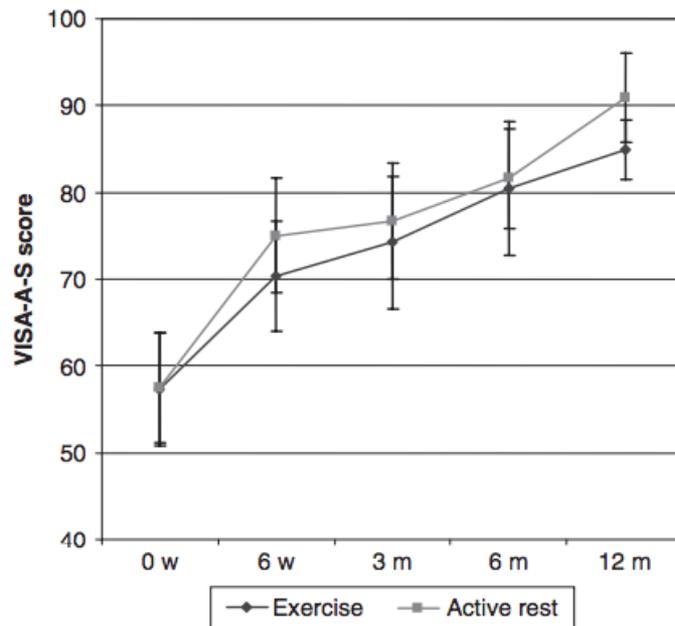


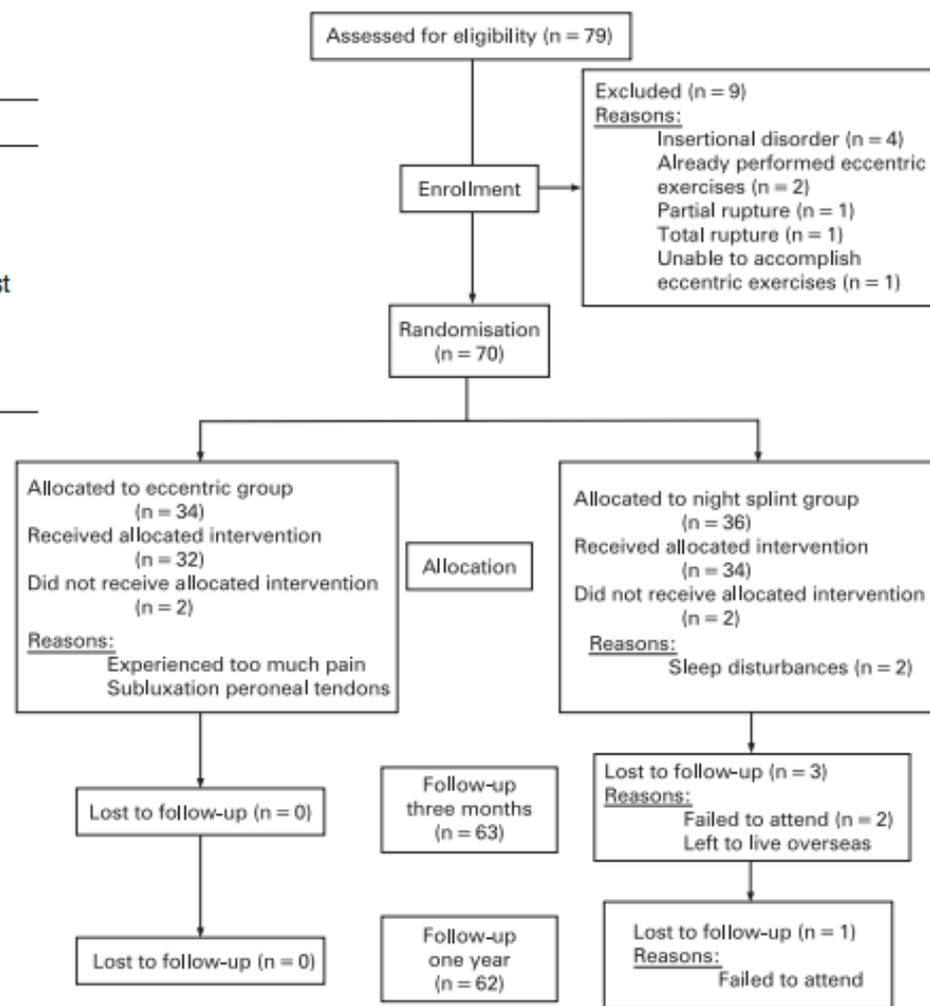
Figure 1. Mean VISA-A-S scores with 95% confidence interval, at 0 and 6 weeks and at 3-, 6-, and 12-month evaluations. VISA-A-S, Swedish version of the Victorian Institute of Sports Assessment–Achilles questionnaire.

One-year follow-up of a randomised controlled trial on added splinting to eccentric exercises in chronic midportion Achilles tendinopathy

S de Jonge,¹ R J de Vos,² H T M Van Schie,² J A N Verhaar,² A Weir,¹ J L Tol¹

Table 1 Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Age 18–70 years	Insertional disorder
>2 Months' duration of symptoms	Tendon ruptures
Active sport participation before onset	Systemic illness
Wish to return to original sports level	Heavy load training in the past
Swollen tendon, tender on palpation and during sports	Inability to perform exercises
Tendon thickening 2–7 cm proximal to insertion	



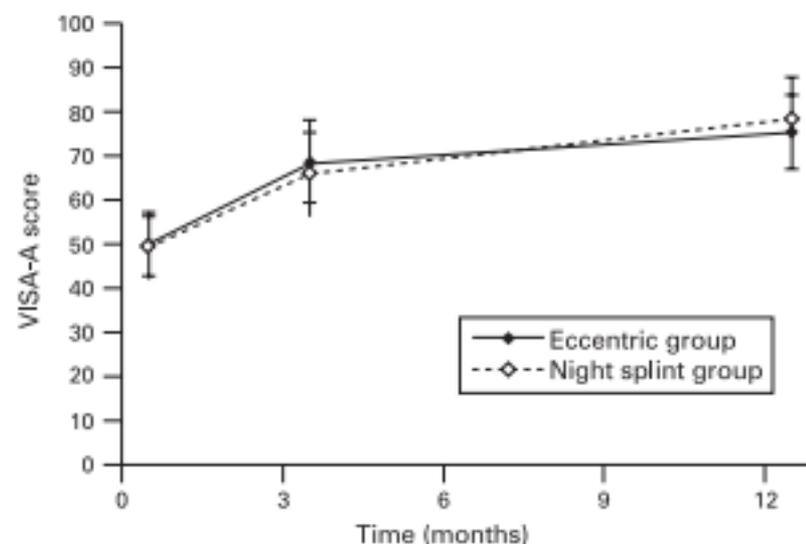


Figure 2 Changes in the Victorian Institute of Sports Assessment—Achilles (VISA-A) score in both treatment groups at baseline, 3 months follow-up and one year follow-up. No significant differences were found between the two treatment groups. A significant increase for the eccentric and night splint group between 3 months and one year follow-up was found.

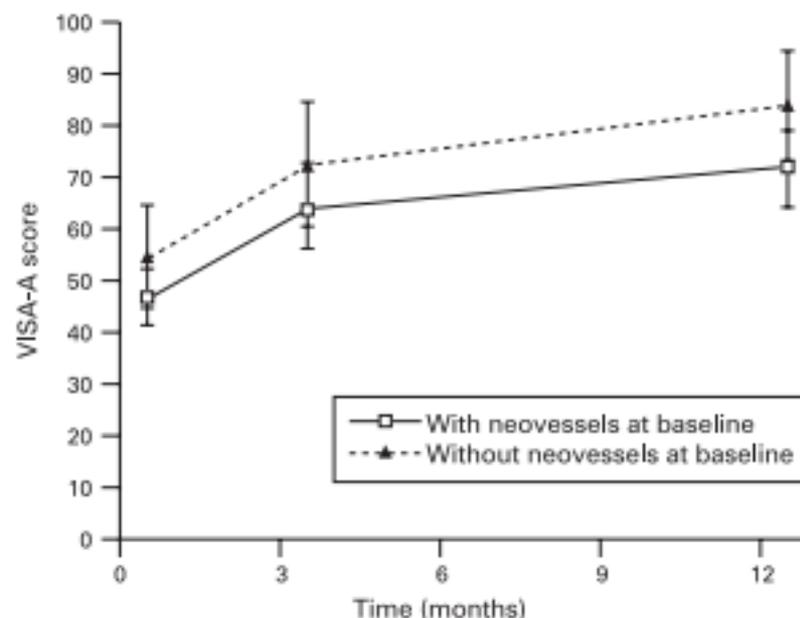
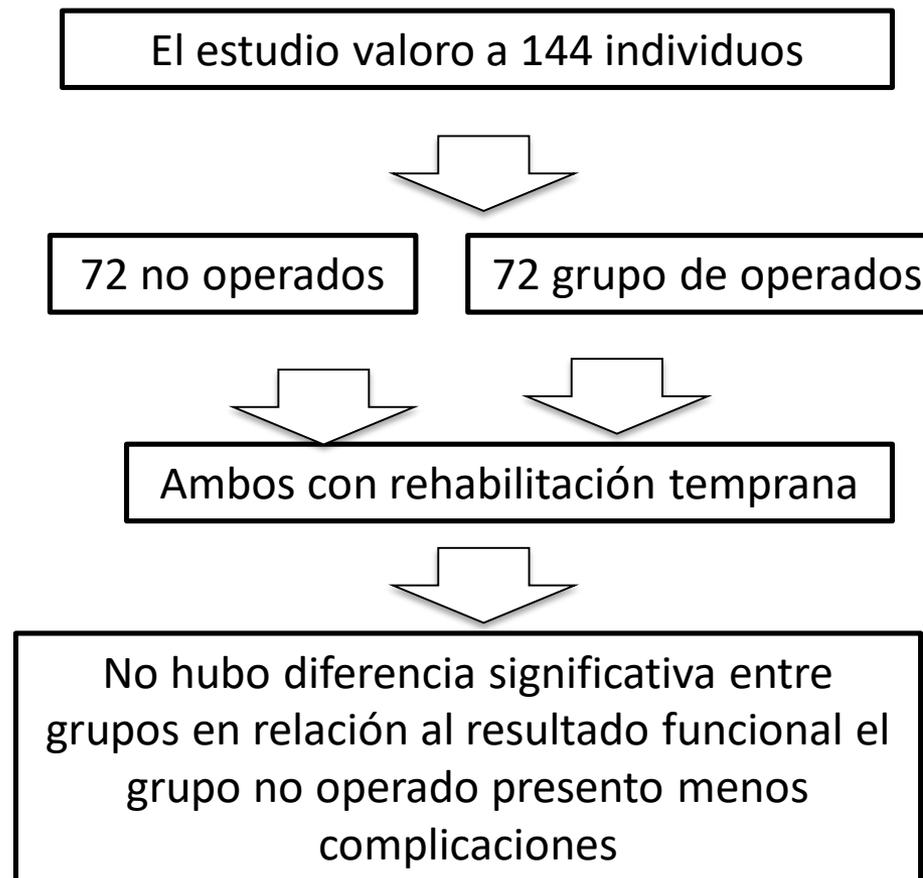


Figure 3 Changes in the Victorian Institute of Sports Assessment—Achilles (VISA-A) score at baseline, 3 months and one year follow-up in patients with neovessels (grades 1–4) at baseline and without neovessels at baseline (grade 0). There was no significant difference in improvement in the VISA-A score between these groups at 3 months and one year follow-up.

Operative versus Nonoperative Treatment of Acute Achilles Tendon Ruptures: A Multicenter Randomized Trial Using Accelerated Functional Rehabilitation

Willits, Kevin, MA, MD, FRCSC¹; Amendola, Annunziato, MD, FRCSC²; Bryant, Dianne, MSc, PhD³; Mohtadi, Nicholas G., MD, MSc, FRCSC⁴; Giffin, J. Robert, MD, FRCSC¹; Fowler, Peter, MD, FRCSC¹; Kean, Crystal O., MSc, PhD¹; Kirkley, Alexandra, MD, MSc, FRCSC⁵

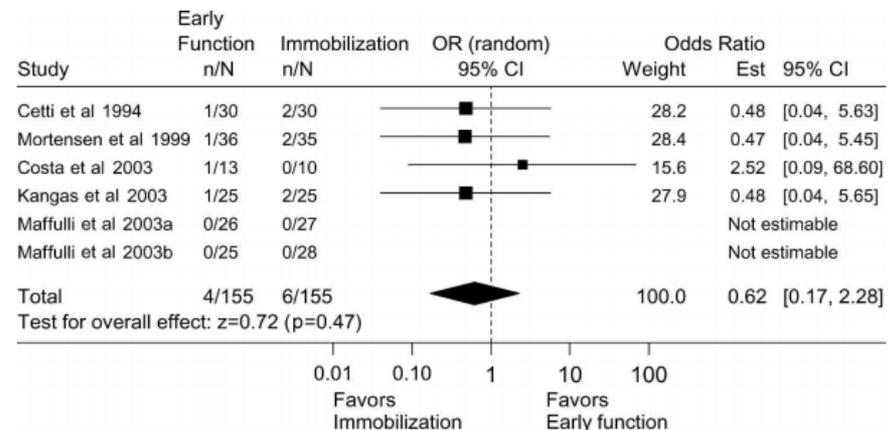
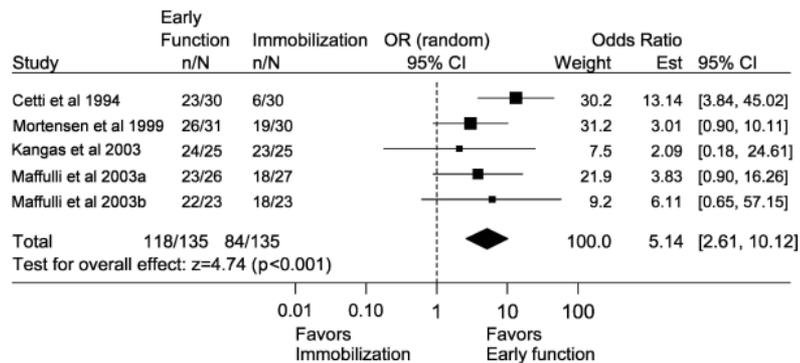


Postoperative Rehabilitation Protocols for Achilles Tendon Ruptures

A Meta-analysis

Amar A. Suchak, MD; Carol Spooner, MSc; David C. Reid, FRCS(C); and Nadr M. Jomha, FRCS(C)

Se compararon protocolos de inmovilización por 6 semanas contra rehabilitación temprana. Los protocolos de movilización presentaron una satisfacción del 88% contra un 62, El porcentaje de re ruptura no presento diferencias estadísticamente significativas entre grupos



Conclusiones

- Movilización temprana
- Ejercicios excéntricos
- Programas tempranos de rehabilitación funcional generan mayor satisfacción en los pacientes