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UNIVERSITÄTS KLINIKUM FREIBURG

Fasciitis plantaris: Abklärung und Therapie

Prof. Dr. Anja Hirschmüller

Rheuma - Workshop 06.01.2022
USZ Klinik für Rheumatologie

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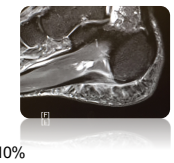

Häufiges Krankheitsbild

Prävalenz Allgemeinbevölkerung 4% bis 10%
Prävalenz Athleten 5 % bis 18%.

(Burton 2021, Dunn et al. 2004, Thomas et al. 2019)

Lebensqualität teils erheblich beeinträchtigt

2 typische Personengruppen:
- Laufsportler (zählt zu den häufigsten Verletzungen bei Läufern)
- Übergewichtige Menschen in stehenden/gehenden Berufen

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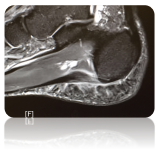
Nomenklatur



„Plantarfasciitis“ ?
„Plantarfaziopathie“ ?
“Plantarer Fersenschmerz“
= eine meist durch Degeneration +- Inflammation des Plantarfaszienansatzes verursachte Schmerzsymptomatik

Aufgrund der oft generalisierten Fersenschmerzen und mehrerer involvierter Gewebe wird in der Zwischenzeit der unspezifische Begriff „**plantarer Fersenschmerz**“ („plantar heel pain“) favorisiert

Riel et al. BJSM 2017

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Ursachen

Repetitive Mikrotraumata

Verstärkte Spannung der PF
(Windlass Mechanismus)

Verkürzung Gastrognemius
Hohlfuss, Senkfuss
Halllux rigidus

Falsches Schuhwerk
Hypercholesterinämie
Typ II Diabestes mellitus

(Thomas et al 2019,
Catal et al. Foot Ankle Surg 2021)

Am Ende der Abrollbewegung des Fußes nimmt die Spannung der Plantarfaszie durch die Dorsalextension der Zehen zu (Windlass Mechanismus)
Dies wird durch eine verkürzte Wadenmuskulatur verstärkt.

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Klinik

Beginn meist schleichend

Schmerzen
- stechend oder spitz/brennend
- belastungsabhängig + nach längeren Ruhephasen
- zu anfangs milde daher oft längere Zeit ignoriert

Lebensqualität beeinträchtig
- berufliche Probleme
- Ggf. soziale Isolation

(Thomas et al 2019,
Catal et al. Foot Ankle Surg 2021)

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Klinik

Schmerzen typischerweise Ferse zentral und am medialen Calcaneusrand

Spannung der Faszie erhöht?

Trauma?
→ Partialruptur, Fad pad Contusion

Brennende/elektrisierende Schmerzen?
→ Tarsaltunnelsyndrom, Baxter Neuropathie?

Klopfschmerz Calcanear?
→ Stressfraktur

Andere Enthesiopathien, Gelenkbeschwerden, etc
→ Spondylarthopathie

Fussform? Schuhwerk? Abrollvorgang? Gastrognemiusverkürzung?

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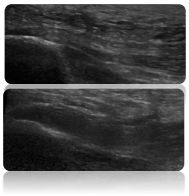
Bildgebung

Sonographie



Einfach, reproduzierbar, dynamisch

Gesunde Faszie:
homogen, ca. 3 mm dick

Degeneration:
Verdickung(> 4mm), Hypoechogenität
häufig umgebendes Weichteilödem

Neovaskularisationen sehr selten.

Hyperechogenität/ Ausziehungen der knöchernen Leitlinie des Calcaneus
→ „Fersensporn“

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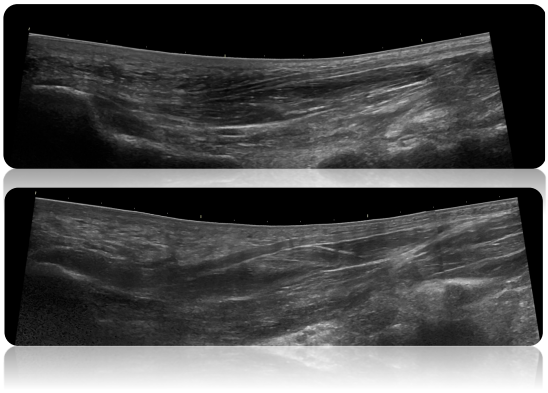

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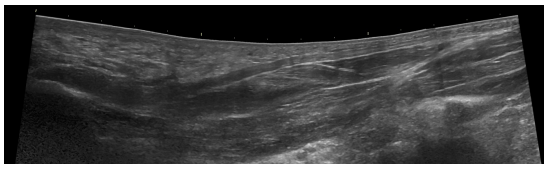
IJSPT

SYSTEMATIC REVIEW

ULTRASONOGRAPHY, AN EFFECTIVE TOOL IN DIAGNOSING PLANTAR FASCIITIS: A SYSTEMATIC REVIEW OF DIAGNOSTIC TRIALS

Ahmed Radwan, PT, DPT, PhD[1]
Matthew Wyland, PT, DPT[1]
Lee Applequist, ATC, PT, DPT[1]
Erin Bolowsky, PT, DPT[1]
Heather Klingensmith, PT, DPT[1]
Isaac Virag, PT, DPT[1]

Radwan 2016



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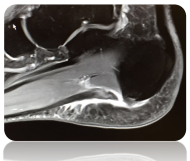
Bildgebung

MRI
Nützlich für Differentialdiagnostik:



Partialruptur
Knochenödeme/-stressreaktionen

Fad pad Contusion
Bursitiden
USG Arthritis
Frakturierter Fersensporn

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Therapie

Edukation***
Streching***

ESWT ***

Injektionen: PRP ***, Botox ***
Dehydrierte Amniotic Membrane ***
Hyperosmolare Dextrose

Schuheinlagen **
Taping **
Nachtlagerungsschiene *

Bestrahlung *

Strengthening Training *
Faszienmobilsation, Dehnung, Akkupunktur, Radiofrequenzablation

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Therapie

Review

OPEN ACCESS

Management of plantar heel pain: a best practice guide informed by a systematic review, expert clinical reasoning and patient values

Dylan Morrissey ,[1,2] Matthew Cotchett ,[3] Ahmed Said J'Bari,[1] Trevor Prior,[1] Ian B Griffiths ,[1] Michael Skovdal Rathleff,[4] Halime Gulle,[1] Bill Vicenzino ,[5] Christian J Barton [3,6]

- 90% der Patienten können konservativ therapiert werden
- Evidenzbasierter Handlungsleitfaden (aktuelle Literatur + Experteninterviews Morrissey et al BJSM 2021

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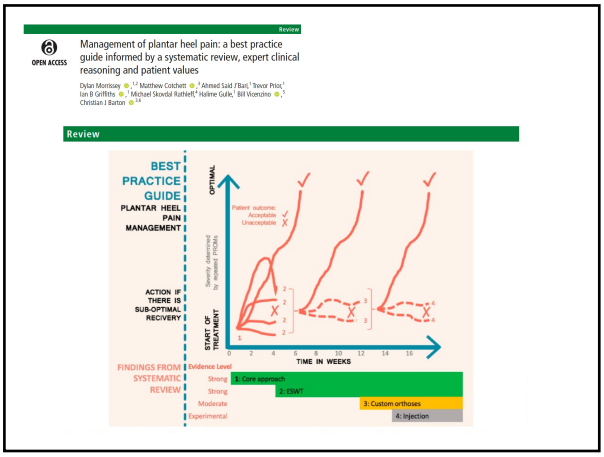

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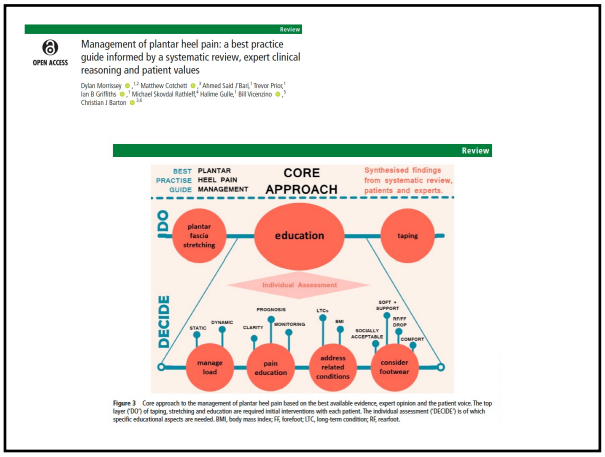

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Evidenzbasierte Therapieoptionen (Datenlage inzwischen sehr gut!)

Edukation***
Streching***

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Injektionen: PRP ***, Botox ***
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Bestrahlung *

Strengthening Training *
Faszienmobilsation, Dehnung, Akkupunktur, Radiofrequenzablation

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ESWT

CME ARTICLE • 2016 SERIES • NUMBER 00

CME

Effectiveness of Extracorporeal Shock Wave Therapy Without Local Anesthesia in Patients With Recalcitrant Plantar Fasciitis

A Meta-Analysis of Randomized Controlled Trials

Jing Lou, MD, Shuai Wang, MD, Shuitao Liu, PhD, MD, and Gengyan Xing, PhD, MD

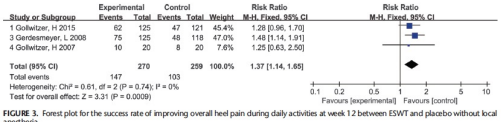

FIGURE 3. Forest plot for the success rate of improving overall heel pain during daily activities at week 12 between ESWT and placebo without local anesthesia.

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Injektionen

Injection therapies for plantar fasciopathy ('plantar fasciitis'): a systematic review and network meta-analysis of 22 randomised controlled trials

Konstantinos Tsikopoulos,[1] Haris S Vasiliadis,[2] Dimitris Mavridis[3,4]

Summary Although the dehydrated amniotic membrane provided significant clinical relief at 0–2 months, there were no data about this treatment at 2 months and beyond. Botulinum toxin-A injections significantly reduced pain intensity at 0–6 months.

Image guidance of the injections

The current literature suggests that US-guided CS injections are more effective than palpation-guided ones for the management of PF. There is strong evidence that the accuracy of US guidance is greater than that of palpation guidance.[74] For these reasons,

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PRP

Adv Biomed Res. 2016; 5: 179.
Published online 2016 Nov 28. doi: 10.4103/2277-9175.192731
PMCID: PMC5157007

Beneficial effects of platelet-rich plasma on improvement of pain severity and physical disability in patients with plantar fasciitis: A randomized trial

Babak Vahdatpour, Lida Kianimehr,[1] Ahmad Moradi, and Shila Haghighat

Author information ▶ Article notes ▶ Copyright and License information ▶

Chronic Plantar Fasciitis: Effect of Platelet-Rich Plasma, Corticosteroid, and Placebo

PANKAJ MAHENDRA, MS; MOHAMMAD YAMIN, MS; HARPAL S. SELHI, MS; SONIA SINGLA, MD; ASHWANI SONI, MS

in the placebo group at any stage of the study. The authors concluded that local injection of platelet-rich plasma or corticosteroid is an effective treatment option for chronic plantar fasciitis. Platelet-rich plasma injection is as effective as or more effective than corticosteroid injection in treating chronic plantar fasciitis. [*Orthopedics*. 2016; 39(2):e285-e289.]

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PRP

Table 4

Previous Studies of Platelet-Rich Plasma Treatment in Chronic Plantar Fasciitis

Study	Design	Doses of Platelet-Rich Plasma	Assessment Method	Follow-up	Conclusion
Shetty et al[37] (2014)	Comparison between PRP injection and corticosteroid injection (60 patients)	1	VAS score FADI AOFAS score	3 mo	No significant difference between PRP and corticosteroid injection
Monto[31] (2014)	Comparison between PRP injection and corticosteroid injection (50 patients)	1	AOFAS score	Preinjection; 3, 6, 12, 24 mo	PRP more effective and durable than corticosteroid injection
Martinelli et al[26] (2013)	PRP injection in 14 patients	3	VAS score Roles and Maudsley score	12 mo	PRP injection effective in treatment
Kumar et al[27] (2013)	PRP injection in 44 patients (50 heels)	1	[illegible] score	6 mo	PRP injection effective in treatment
Wilson et al[38] (2014)	PRP injection	[illegible]	FAAM score Foot-SANE score SF-12v2	4, 8, 16, 32, 52 wk	PRP injection effective in treatment
Aksahin et al[24] (2012)	[illegible] between injection and corticosteroid injection (60 patients)	1	VAS score Modified Roles and Maudsley score	3 wk; 6 mo	PRP injection as effective as corticosteroid injection
Ragab and Othman[29] (2012)	PRP injection in 25 patients	1	VAS score Ultrasound	Preinjection; 2, 6 wk; 6, 12 mo	PRP injection effective in treatment
Peerbooms et al[25] (2010)	Comparison between PRP injection and corticosteroid injection (120 patients)	1	VAS score AOFAS score	4, 8, 12, 26 wk; 1 y	Results not available
Lee and Ahmad[21] (2007)	Comparison between autologous blood injection and corticosteroid injection (61 patients)	1	VAS score Tenderness threshold	Preinjection; 6 wk; 3, 6 mo	Better results in corticosteroid injection group
Barrett and Ereedge[20] (2004)	Autologous blood injection in 9 patients	1	Ultrasound	1 wk; 1, 2, 3, 12 mo	Autologous blood treatment effective in treatment

Abbreviations: AOFAS, American Orthopaedic Foot and Ankle Society; FAAM, Foot and Ankle Ability Measure; FADI, Foot & Ankle Disability Index; PRP, platelet-rich plasma; SANE, Single Assessment Numeric Evaluation; SF-12v2, Short Form-12 Health Survey version 2; VAS, visual analog scale.

ACP 3 x sonogesteuert

Mahindra et al 2016

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Dehnung und Kräftigung

Einlage

Faszienmobilisation

Nachtlagerungsschiene

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Einlagen und Nachtschiene

Mechanical Treatment of Plantar Fasciitis

2001

A Prospective Study

Joe E. Martin, DPM*

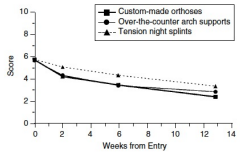

Figure 4. The visual analog scale scores for pain during the day for patients with complete follow-up.

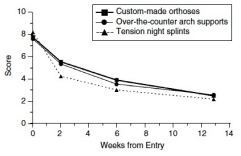

Figure 5. The visual analog scale scores for first-step pain for patients with complete follow-up.

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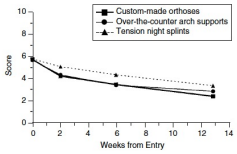
Einlagen und Nachtschiene

Mechanical Treatment of Plantar Fasciitis

A Prospective Study



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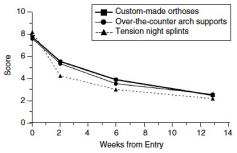

Figure 5. The visual analog scale scores for first-step pain for patients with complete follow-up.

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Einlagen und Nachtschiene

Original Research Report

Full-length silicone insoles versus ultrasound-guided corticosteroid inj in the management of plantar fasciit A randomized clinical trial

Prosthetics and Orthotics International 37(6) 471–476

Ufuk Yucel[1], Sami Kucuksen[2], Havva T Cingoz[2], Emel A Orhan Ozbek[2], Ali Salli[2] and Hatice Ugurlu[2]

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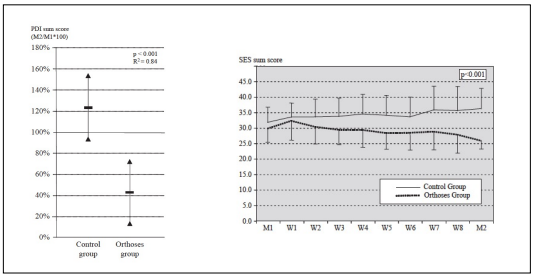
Clinical effectiveness of customised sport shoe orthoses for overuse injuries in runners: a randomised controlled study

Br J Sports Med 2011

A Hirschmüller,[1,2] H Baur,[3] S Müller,[3] P Helwig,[1] H-H Dickhuth,[2] F Mayer[3]



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Einlagen und Nachtschiene

Fuß & Sprunggelenk 12 (2014) 42–47
ELSEVIER
Online verfügbar unter www.sciencedirect.com
ScienceDirect
Fuß & Sprunggelenk
http://journals.elsevier.de/fuspru

Originalarbeit

Eine dorsale Lagerungsschiene mit kontinuierlicher Dorsalextension der Großzehe zur Behandlung der therapierefraktären, plantaren Fasziitis

A dorsal night splint with continuous extension c big toe for treatment of plantar heel pain

Alexander Mehlhorn*,[1], Anja Hirschmüller[1], Norbert P. Südkan Hagen Schmal[1]

Abb. 1. DARCO Body Armor Night Splint mit Belegten Zeh in der Zehenbasis

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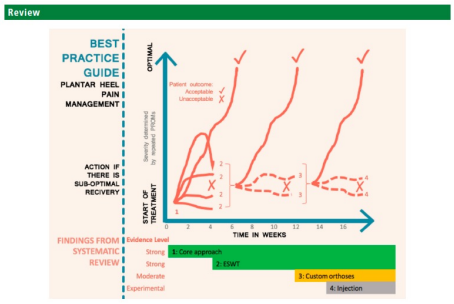
Evidenzbasierte Therapieoptionen



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Faszienmobilsation, Dehnung, Akkupunktur, Radiofrequenzablation

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Thank you!
anja.hirschmueller@altius.ag

Further reading to be published soon

1) Hirschmüller, A., Knupp M. Plantarer Fersenschmerz in: Fuhrmann et al. Orthopädie. Thieme e Ref
2) Hirschmüller, A. Fasciitis plantaris: Ursache, Diagnose und Therapie des Fersenspornes in: Therapeutische Umschau 3/22

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