



THE EQUINUS BRACETM

- QVC -



Here's our story...

Patrick A. DeHeer, DPM was suffering from posterior tibial tendonitis. He tried everything in the book to alleviate the pain, including a night splint. One night he woke up (in his night splint) and realized that it was not working because his knee had been bent all night while he was sleeping on his side. He knew the biomechanics of his symptoms were rooted in a tight gastrocnemius muscle. So...

He searched online and called all of his vendors to find a product that would actually help him achieve a gastroc stretch. NOTHING. Since then, educating on and finding a solution to equinus deformity has been Dr. DeHeer's obsession.

It took almost 5 years of researching, designing, going back and forth with Medicare, and RE-DESIGNING to get the self funded product to market.

We are very proud to provide the only device that effectively stretches the gastrocsoleus complex in a 1 hr. per day, 12 week treatment.

We solely focus on the non-surgical treatment of equinus and its related pathologies.



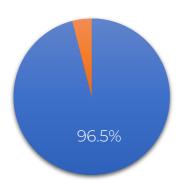


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Equinus Deformity 96.5% of those with a foot or ankle condition also exhibit equinus.

BACKGROUND:

- Equinus is defined as limited flexibility and upward movement of the foot (dorsiflexion) at the ankle joint. This results from an abnormal tightness in the calf muscles (soleus and gastrocnemius).
- People with equinus develop ways to compensate for their limited ankle motion as they walk, this often leads to other foot, leg, or back problems.
- Many people are unaware of their equinus until they see their doctor, seeking relief from one of its many related conditions.



Equinus: "The Root Of All Evils"



TREATMENT:

- Equinus is extremely common, but treatment options are relatively simple and it can often be cured with a proper stretching regimen. Consistent stretching of the calf muscles has been proven to significantly increase ankle joint mobility over time.
- Manual stretching doesn't always produce positive results because of difficulties maintaining technique, consistency, and patient compliance.
- Equinus has over 35 related conditions. In order to effectively treat these conditions in patients who also have equinus, the equinus must be treated as well.



EQUINUS' ROLE IN COMMON FOOT CONDITIONS



Plantar Fasciitis

Plantar Fasciitis is an inflammation of the tough, fibrous band of tissue (fascia) connecting your heel bone to the base of your toes. It is one of the most common injuries among athletes. A common symptom is pain on the bottom inside of the heel. Limitation of ankle dorsiflexion can lead to plantar fasciitis. Approximately 10% of individuals suffer from Plantar Fasciitis at some point in their lifetime.



Achilles Tendonitis

Achilles Tendonitis is a common condition that occurs when the large tendon that connects your calf muscles to your heel bone (Achilles Tendon) becomes irritated and inflamed. Sypmtoms include pain and stiffness along the tendon and back of the heel, swelling, and severe pain after exercising. Tendonitis is not typically related to a specific injury, the problem results from repetitive stress to the tendon. Having tight calf muscles and suddenly starting an aggressive exercise program can put extra stress on the Achilles tendon.



Shin Splints

Shin splints (medial tibial stress syndrome) is an inflammation of the muscles, tendons, and bone tissue around your shin bone (tibia). Pain typically occurs along the inner border of the shin, where muscles attach to the bone. This condition generally occurs when the muscle and bone tissue of the leg are overworked. Calf tightness is the most common cause of Shin Splints as this causes the muscles in the front of the shin to work harder, leading to strain.



Adult/Pediatric Flatfoot

Flatfoot is a deformity that occurs when the arch of the foot collapses and comes into complete or near-complete contact with the ground. Symptoms include pain in the mid-foot region and pain in the hips, knees, and lower back as a result of instability. Equinus is considered to be one of the most common causes of Flatfoot.

FACT: Ankle sprains are the most common injury in America with nearly 2 million occurring per year.





EVIDENCE-BASED MEDICINE CONDITIONS ASSOCIATED WITH EQUINUS

Lower extremity conditions shown to have an equinus component:

- Plantar heel pain/plantar fasciitis
- Achilles tendonitis/tendonosis
- Adult flat foot deformity
- Muscle strains
- Stress fractures
- Shin splints/Medial tibial stress syndrome
- Iliotibial band syndrome
- Patellofemoral syndrome
- Ankle sprains/fractures
- Diabetic foot ulcers
- Charcot deformity
- Metatarsalgia
- MPJ synovitis/PDS
- Hallux abducto valgus
- Hammer toes/Claw toes
- Lis Franc's/Midfoot arthrosis
- Hallux limitus/Hallux rigidus
- Forefoot calluses
- Morton's neuroma
- Chronic ankle instability
- Poor balance/Increased fall rate in elderly
- Sever's disease
- Pediatric flatfoot
- Lateral foot pain
- Genu recurvatum
- Low back pain
- Arch pain
- Ankle arthrosis
- Subtalar arthrosis
- Sesamoiditis
- Anterior compartment syndrome
- Forefoot nerve entrapment

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THE EQUINUS BRACE PRODUCT INFO

"One hour per day for one month and my shin splints were gone." KATE DUNWORTH - ASHEVILLE, NC

THE EQUINUS BRACE® **EFFECTIVE EQUINUS TREATMENT**

Equinus deformity has been described as the "root of all foot evils." The Equinus Brace® design is based on the significant library of equinus literature, providing treatment for numerous lower extremity conditions and injury risk reduction for the most commonly associated running related injuries.

PATIENT FRIENDLY TREATMENT

The Equinus Brace® requires 1 hour per day of treatment for 12 weeks, unlike other treatment options, resulting in greater patient compliance.

ESSENTIAL FOR TREATMENT OF NUMEROUS EQUINUS-RELATED CONDITIONS

Equinus is associated with more than 35 lower extremity conditions referenced in the literature. A comprehensive treatment plan of these pathologies should include proper equinus management.

FACT: During an average day of walking, the forces on your feet can total hundreds of tons, equivalent to an average of a fully loaded cement truck.

✓ PDAC Approved

THE EQUINUS BRACE®

Created to provide optimal evidence-based results for equinus related pathologies.

- Patented "Above the Knee Extension"
 - The Equinus Brace® is the only brace for equinus that extends above the knee maintaining the knee in full extension while dorsiflexing the ankle.
- Patented "Toe Wedge"

Patented "60° toe wedge" engages the Windlass mechanism, isolating the dorsiflexion force to the hindfoot—while removing it from the midfoot.

3 Adjustable Ankle Hinges

Ankle joint hinges in 10° increments allow for precise, gradual, and safe stretching while preventing overstretching thereby providing more consistent and measurable results.

Adjustable Straps

Provide easy to use fit and customization.



THE EQUINUS BRACE PRODUCT INFO CONT.









SEE THE DIFFERENCE

Comparison of the Equinus Brace to Night Splints

Products	Completely Lock Knee	Engages Windlass Mechanism	Ease of Use	Time to Use	Technique Dependant	Controllable Stretch	Cost	Maintenance Therapy
Equinus Brace	~	~	~	1 hr	No	Yes	\$\$	~
Equinus Brace 2.0	~	~	~	1 hr	No	Yes	\$\$	~
Night Splint	×	×	~	All Night	No	No	\$	×
Manual Stretching	Possible	×	×	1 hr per side	Yes	No	0	×
Fitness Gadgets	×	×	×	1 hr per side	Yes	No	\$\$\$	×
Physical Therapy	~	×	×	1 hr per side	Yes	No	\$\$\$\$	×



SIZING

THE EQUINUS BRACE

We currently have one size available that is customizable and fits a wide range of foot and leg sizes. On the large end, the brace fits up to a US men's 13, while on the small end the brace is only limited to length of the patient's lower leg.

THE EQUINUS BRACE 2.0

We currently have one size available that is customizable to fit a wide range of foot and leg sizes. The 2.0 brace fits children's size 7 to women's size 6.





THE EQUINUS BRACE PRODUCT INFO CONT.



PHYSICIAN DESIGNED

The Equinus Brace® was designed to address the insufficiencies of alternative methods to treat equinus and provides effective treatment for the primary cause of numerous pathologies.

Dr. DeHeer

BENEFIT OF USING TWO BRACES

Studies show that Equinus is largely a symmetrical condition even though many only experience symptoms on one side. 98.4% of those with ankle Equinus on one side also have it on the other side.





FACT: Regular stretching can reduce muscle tension, increase movement in joints, enhance coordination, and increase circulation and energy levels.





FACT: Because humans walk on two legs, foot and ankle problems have the potential to affect everything above the feet, even the knees. Pain or discomfort in the feet/ankles can cause you to modify your gait, putting stress on other parts of the body.



med PATENTED TECHNOLOGY



(12) United States Patent DeHeer et al.

US 8,777,884 B2 (10) Patent No.: Jul. 15, 2014 (45) Date of Patent:

(54)	HINGED EQUINUS BRACE WITH
` ′	PEDIATRIC, DIABETIC AND CLUBFOOT
	VERSIONS

(76) Inventors: Patrick DeHeer, Carmel, IN (US); John H. Moorin, Carmel, IN (US); Ricky Heath, Fishers, IN (US)

Subject to any disclaimer, the term of this (*) Notice: patent is extended or adjusted under 35

U.S.C. 154(b) by 222 days.

(21) Appl. No.: 13/480,430

(22) Filed: May 24, 2012

(65)**Prior Publication Data**

> US 2012/0283613 A1 Nov. 8, 2012

Related U.S. Application Data

- (63) Continuation-in-part of application No. 13/439,449, filed on Apr. 4, 2012.
- (60) Provisional application No. 61/489,398, filed on May 24, 2011, provisional application No. 61/583,474, filed on Jan. 5, 2012, provisional application No. 61/471,302, filed on Apr. 4, 2011.
- (51) Int. Cl. A61F 5/00 (2006.01)U.S. Cl.
- (58) Field of Classification Search USPC 602/5, 16, 23–29; 128/882 See application file for complete search history.

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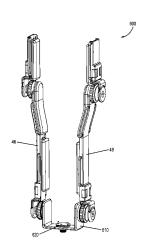
JA Radford, et al., "Does stretching increase ankle dorsiflexion range of motion? A systematic review." Br J Sports Med, Aug. 22, 2006, pp. 870-875, 40.

Primary Examiner - Michael A. Brown (74) Attorney, Agent, or Firm — D'Hue Law LLC; Cedric A. D'Hue

(57)ABSTRACT

Devices and processes used to treat ankle equinus for users with specific conditions such as young age, diabetes, or clubfoot. More specifically, the present disclosure relates to a brace and the corresponding method of use to treat equinus by stretching the Gastrocnemius muscle.

18 Claims, 14 Drawing Sheets



^{*} cited by examiner



med PATENTED TECHNOLOGY



(12) United States Patent DeHeer et al.

US 8,814,815 B2 (10) Patent No.: (45) Date of Patent: Aug. 26, 2014

(54)	ADJUSTABLE-SOLE, HINGED EQUINUS
	BRACE WITH TOE WEDGE

(76) Inventors: Patrick DeHeer, Carmel, IN (US); John H. Moorin, Carmel, IN (US); Ricky

Heath, Fishers, IN (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 110 days.

(21) Appl. No.: 13/439,449

(22) Filed: Apr. 4, 2012

(65)**Prior Publication Data**

> US 2012/0253253 A1 Oct. 4, 2012

Related U.S. Application Data

- (60) Provisional application No. 61/471,302, filed on Apr. 4, 2011, provisional application No. 61/489,398, filed on May 24, 2011, provisional application No. 61/583,474, filed on Jan. 5, 2012.
- (51) Int. Cl. A61F 5/00 (2006.01)

(52) U.S. Cl. USPC 602/16; 602/23; 602/26; 602/27

Field of Classification Search USPC 602/16, 23, 26-28; 128/882 See application file for complete search history.

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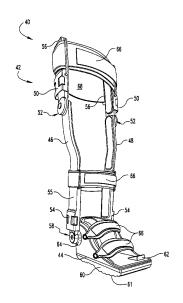
* cited by examiner

Primary Examiner - Michael A. Brown (74) Attorney, Agent, or Firm — D'Hue Law LLC; Cedric A. D'Hue

ABSTRACT (57)

Devices and processes used to treat ankle equinus. More specifically, the present disclosure relates to a brace and the corresponding method of use to treat equinus by stretching the Gastrocnemius muscle.

34 Claims, 4 Drawing Sheets





Medil PATENTED TECHNOLOGY



(12) United States Patent DeHeer et al.

(10) Patent No.: US 9,375,342 B2 (45) Date of Patent: Jun. 28, 2016

(54) ADJUSTABLE-SLIDER, EQUINUS BRACE WITH TOE WEDGE

(71) Applicants: Patrick DeHeer, Carmel, IN (US); John H. Moorin, Carmel, IN (US); Ricky Heath, Fishers, IN (US)

(72) Inventors: Patrick DeHeer, Carmel, IN (US); John H. Moorin, Carmel, IN (US); Ricky Heath, Fishers, IN (US)

(73) Assignee: IQMED LLC, Carmel, IN (US)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 14/469,545

(22) Filed: Aug. 26, 2014

(65) **Prior Publication Data**

US 2014/0371648 A1 Dec. 18, 2014

Related U.S. Application Data

- (63) Continuation-in-part of application No. 13/439,449, filed on Apr. 4, 2012, now Pat. No. 8,814,815.
- (60) Provisional application No. 61/471,302, filed on Apr. 4, 2011, provisional application No. 61/489,398, filed on May 24, 2011, provisional application No. 61/583,474, filed on Jan. 5, 2012.

(51) **Int. Cl.**A61F 5/00 (2006.01)

A61F 5/01 (2006.01)

(58) Field of Classification Search

CPC A61F 2005/016; A61F 5/0102; A61F 5/0125; A61F 5/0127; A61F 2002/5006; A61F 2002/745; A61F 2002/748; A61F 2/68;

(56) References Cited

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5,393 A 12/1847 Chamberlain 73,768 A 1/1868 Allen (Continued)

FOREIGN PATENT DOCUMENTS

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OTHER PUBLICATIONS

J.A. Radford, et al. "Does stretching increase ankle dorsiflexion range of motion? A systematic review." Br J Sports Med, Aug. 22, 2006, pp. 870-875, 40.

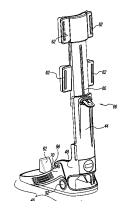
(Continued)

Primary Examiner — Michael Brown (74) Attorney, Agent, or Firm — D'Hue Law LLC; Cedric A. D'Hue

(57) ABSTRACT

Devices and processes used to treat ankle equinus. More specifically, the present disclosure relates to a brace and the corresponding method of use to treat equinus by stretching the Gastrocnemius muscle.

16 Claims, 11 Drawing Sheets

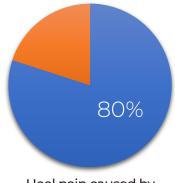




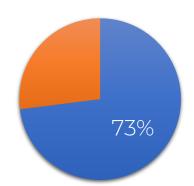
Approximately 7 million individuals are diagnosed with Equinus-related conditions each year.

PLANTAR FASCIITIS

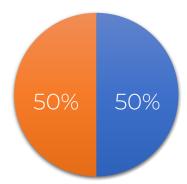
- Plantar Fasciitis is the most common form of foot pain with approximately 3,000,000 new cases each **year** in the United States.
- The cost of treatment of Plantar Fasciitis to third-party payers ranges from \$192 to \$376 million. This can equal well over \$1 billion annually.
- Plantar Fasciitis is responsible for **80%** of heel pain cases.
- · Most cases can be resolved or greatly improved with stretching, but for more severe cases, plantar fasciitis surgery can cost \$10,000 or more.
- Plantar Fasciitis may become a chronic condition if left untreated.



Heel pain caused by plantar fasciitis



Improvement of heel pain with non-surgical treatment



Those satisfied after surgical procedures for heel pain

PLANTAR HEEL PAIN

- The cost of evaluation and treatment of plantar heel pain by providers is approximately \$284 million.
- Over **2 million** individuals undergo treatment for heel pain annually in the United States.
- Approximately 73% of patients with heel pain have improvements with non-surgical treatment options.
- Less than **50%** of those who have had surgical procedures for heel pain were satisfied with the results.
- A home stretching program is the first-line treatment of plantar heel pain.

FACT: The feet are the body's structural foundation and any problems with the feet will eventually cause further problems throughout the entire body.



MARKET OPPORTUNITY KEY FACTS AND FIGURES CONT.

ACHILLES INJURIES

- About 230,000 people injure their Achilles tendon each year in the United States and that number is on the rise.
- Nonsurgical treatment is typically recommended first for Achilles tendon injuries, more severe cases may require surgery.
- Achilles tears are one of the toughest injuries for athletes to overcome.
- NBA players returning from a ruptured Achilles tendon have seen substantial decreases in points per game, rebounds per game and overall performance.
- Seven of the 18 players who suffered a ruptured Achilles tendon from 1992-2012 never returned to

FACT: Only a small percentage of people are born with foot problems. Millions are affected by foot problems at any given day because of wear and tear as well as unhealthy habits and poor foot care.





IQ med ACCOLADES WE THINK WE'RE PRETTY COOL



MED-TECH

"Top 10 Orthopedic Solution Provider 2019"









MITCH - PORTLAND, OR



GREAT PRODUCT

Thought I would have to take 6 months off to fix my foot. IQMed's brace had me back on the track in 2 months and completely healed in 3.





PATIENTS LOVE ME

We have shaved months off the recovery time of multiple conditions with the Equinus Brace alone. Let's just say. . . the patients love me.

ALEXANDRA HUGHES



COMPLETE RELIEF

The brace helped relieve my tired muscles and stretch the entire leg, from the toes to the thigh, providing complete relief.

CYNTHIA - LITTLEROCK, AK



SOLVED!

I have been suffering from plantar fascitis for over a year now. I was just turned onto this brace and already seeing some results. Kudos to IOMed.



DR. ELLIOT UDELL



SO EXCITED ABOUT THIS BRACE

One of my patients, who I have been treating for plantar fasciitis for months, is now for the first time showing signs of improvement.



CRAIG - IRVINE, CA



GREAT PRODUCT!

I never thought I would get rid of the pain and within 12 weeks and just an hour a day I am back to running and enjoying my life again.



KANEESE BRIDGES



I HAVE MOBILITY!

I use the brace daily and I am here to tell you, I HAVE MOBILITY again! My ankle is nearly brand new!



SUSAN FREY



THANKS FOR A GREAT PRODUCT

After the three months of treatment, increasing the angle of the brace each month, the plantar fasciitis is gone and I have not had any problems or pain at all!



a ACCOLADES FEATURE IN CURRENT IN CARMEL

"Local Podiatrist's Pain FISHERS-GEIST-NOBLESVILLE-WESTFIELD-ZIONSVILLE Leads To New Foot Brace"

Mark Ambrogi - July 23, 2018



An idea for a new medical device for foot pain surfaced when podiatrist Dr. Patrick DeHeer suffered from posterior tibial tendonitis — a common foot and ankle problem — after taking up running. Since traditional treatment options weren't efficient or effective enough, DeHeer and his partners formed IQ Med LLC and developed "The Equinus Brace™."

DeHeer initially tried everything to alleviate the pain, including a commonly prescribed night splint. "You need to wear them all night and they're not super comfortable to sleep with. Patients are always complaining about waking up with them," commented DeHeer, a Westfield, Indiana resident. "I consistently woke up in the middle of the night while sleeping on

my side with my knee bent. I realized the night splint wasn't doing anything, because to effectively stretch your calf muscle, you have to have the knee fully extended. That's where I came up with the idea for 'The Equinus Brace."

After DeHeer's experience with night splints, he began working to create a better brace. Nearly five years later, he created "The Equinus Brace™" with Carmel, Indiana residents John Moorin (owner of another medical distribution business) and Ricky Heath (a long-time executive in medical devices). "The Equinus Brace™" helps Achilles tendonitis, plantar fasciitis and over 30 other foot and ankle disorders. The name is based on equines because horses often walk on their toes. Likewise, many humans lean too far forward when walking, causing multiple foot and ankle disorders.

"As humans, we have consistently tight calf muscles, which results in about seven million foot and ankle injuries a year. One billion dollars a year is spent surgically and non-surgically just to fix plantar fasciitis alone," said Moorin.

A doctor typically sends a foot or ankle patient to a physical therapist, who usually gives them a night splint or shows them several basic stretches. The likelihood is that the patient won't do the stretches properly or as often as needed. This lack of compliance is what leads to ineffective treatment, explained Moorin. "The Equinus BraceTM" solves the problem of compliance by only having to be used one hour a day (unlike night splints). It's also a much better way to stretch the two calf muscles – the gastrocnemius and soleus – which is critical for proper treatment and long-term results for plantar fasciitis, Achilles tendonitis and other disorders.

Medicare covers "The Equinus Brace™," as do nearly all insurance companies. A shorter brace, "The Equinus Brace™ 2.0, became available in June for children and smaller adults.

For more, visit <u>www.fixequinus.</u>com







"Could One Hour a Day Make the Foot Pain Go Away?"

A new brace targets Achilles tendonitis, plantar fasciitis, and more than 30 other foot and ankle disorders.

Daphne Allen - September 21, 2018



More than three-quarters of Americans have suffered from foot pain, the American Podiatric Medical Association reported a few years ago.

Tendonitis and plantar fasciitis are common complaints, and treatments can include stretching and splints. Patients don't always comply with stretching regimens, however. And night splints are not "super comfortable to sleep with," explained podiatrist Dr. Patrick DeHeer, himself a patient with posterior tibial tendonitis. "Patients are always complaining about waking up with them. I consistently woke up in the middle of the night while sleeping on my side with my knee bent. I realized the night splint wasn't doing anything, because to effectively stretch your calf muscle, you have to have the knee

fully extended."

DeHeer decided to develop an alternative. He focused on addressing equinus, described by the American College of Foot and Ankle Surgeons as "a condition in which the upward bending motion of the ankle joint is limited."

"The term equinus comes from equine. Its correlation is walking on the toes compared to a horse hoof," DeHeer told MD+DI.

"Studies show patients with equinus have higher incidence of foot and ankle pain," he continued. "It has accurately been termed 'the root of all foot evils' for a reason. Management of equinus either conservatively or surgically has been shown to reduce foot and ankle pain."

To help patients stretch the two calf muscles associated with equinus—the gastrocnemius and soleus— DeHeer created The Equinus Brace along with John Moorin and Ricky Heath. Launched under the company name IQ Med LLC, The Equinus Brace is intended to address Achilles tendonitis, plantar fasciitis, and more than 30 other foot and ankle disorders.

The Equinus Brace only needs to be used for one hour a day, unlike night splints. According to the company, it is the only brace for equinus that extends above the knee, maintaining the knee in full extension while dorsiflexing the ankle. A patented toe wedge isolates the dorsiflexion force to the hindfoot as well as externally rotates the tibia to fully extend the knee. Adjustable ankle hinges promote gradual, safe stretching, the company stated in a brochure.

IQ Med reported in a news release that "Medicare covers The Equinus Brace, as do nearly all insurance companies." In June a shorter brace launched for children and smaller adults, called "The Equinus Brace 2.0."

IQ Med plans to launch a consumer version by the first quarter of next year.



NewsWatch

Equinus Brace - Keeping Your Feet Health and Pain-Free | NewsWatch Review

Health



There's a condition known as Equinus, which is a tightness of the calf muscle and Achilles tendon. This leads to abnormal stress and strain on the foot, ankle, and leg resulting in common conditions like plantar fasciitis, heel spurs, Achilles tendonitis, flat feet, pain in the ball of the foot, bunions and hammer toes.

IQ Med is a leading manufacturer of orthopedic braces for foot and ankle injuries as well as preventive products for athletes.

Realizing the damaging long-term effects of Equinus, they designed The Equinus Brace. The Equinus Brace treats tightness of the calf muscle and Achilles tendon by extending above the knee to hold the knee straight as the ankle is flexed upward. It's worn once a day for an hour for 8-12 weeks to allow it to properly work its magic.

While there may be other braces out there, IQ Med's Equinus Brace is the only brace that extends above the knee, has adjustable ankle hinges to allow for precision of treatment, and a patented toe wedge to ensure proper stretching of the calf and Achilles. Maintain the stretch with one to two nights per week to keep your feet healthy and pain-free.

Learn more by visiting FixEquinus.com.



IN MEDICAL WHAT'S NEXT? DIRECT TO CONSUMER "TRU STRETCH" BRACE

COMING SOON...





THE EQUINUS BRACE™

