

# Achilles Tendinitis & Tendinosis

with Rick Kaselj, MS

# My Story

## Rick Kaselj

- BSc – 1997
- MS – 2008 / RC
- Work – physio, studio, gym, rehab
- Courses – live, webinars
- Writing – books, manuals
- Blog – [ExercisesForInjuries.com](http://ExercisesForInjuries.com)



**Rick Hiking 4300 km / 5 months  
from Mexico to Canada**

**Rick Kaselj – [ExercisesForInjuries.com](http://ExercisesForInjuries.com)**

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# Objectives



- **Part 1** – What is Achilles Tendinitis and Tendinosis?
- **Part 2** – Exercise Considerations for Achilles Tendinitis and Tendinosis
- **Part 3** – 12 Week Exercise Program for Achilles Tendinitis and Tendinosis

# **Part 1 – What is Achilles Tendinitis & Tendinosis?**

# What is Achilles Tendinitis & Tendinosis?

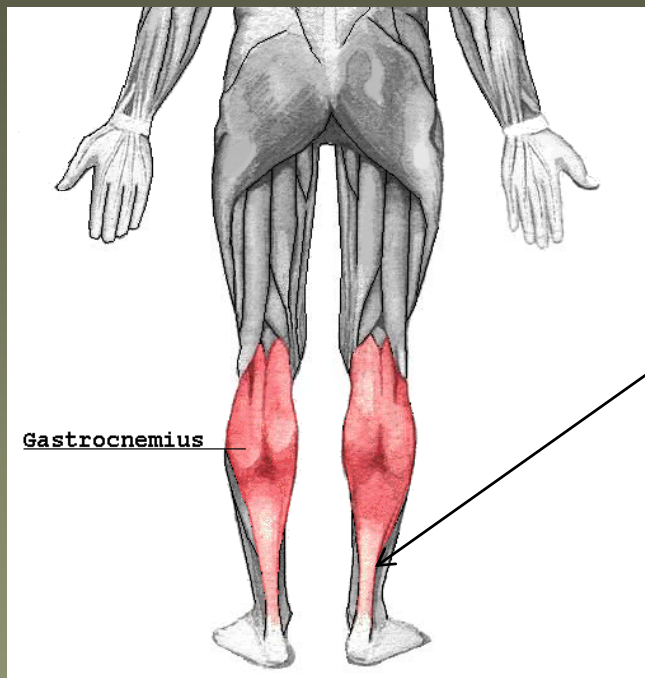
- **Tendinitis** – Acute irritation of the Achilles tendon that leads to inflammation and swelling that can be seen and touched.
- **Tendinosis** – Chronic and is a result of degenerative changes (aging) of the Achilles Tendon

# Few Things to Know About Achilles Tendinitis & Tendinosis



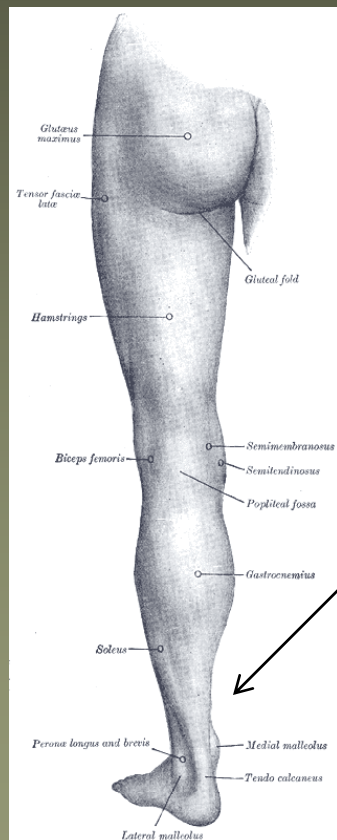
- Most frequently reported overuse injury
- Very common in people that are active (recreational & competitive)
- 7 to 9% of runners report Achilles tendinopathy (disease of the tendon) on a yearly basis
- Runners are most effected

# Key Structures Involved in Achilles Tendonitis & Tendinosis



- Key Structures
  - Achilles Tendon
    - 15 cm in length
    - From calf (tendon junction) to Calcaneus
    - Made up of 50% of Gastrocnemius and 50% Soleus

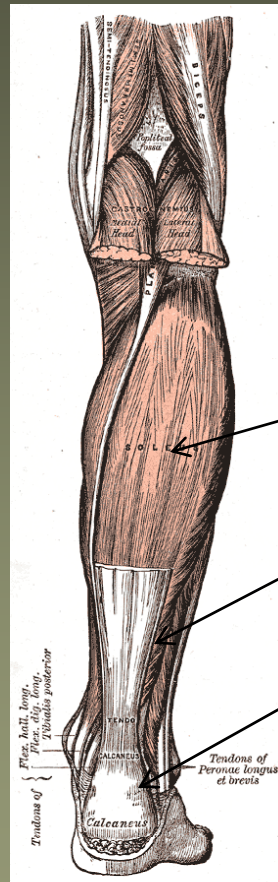
# Key Structures Involved in Achilles Tendonitis & Tendinosis



- Key Structures
  - Achilles Tendon
    - *Starts off broad and flat and goes rounded and then broad*

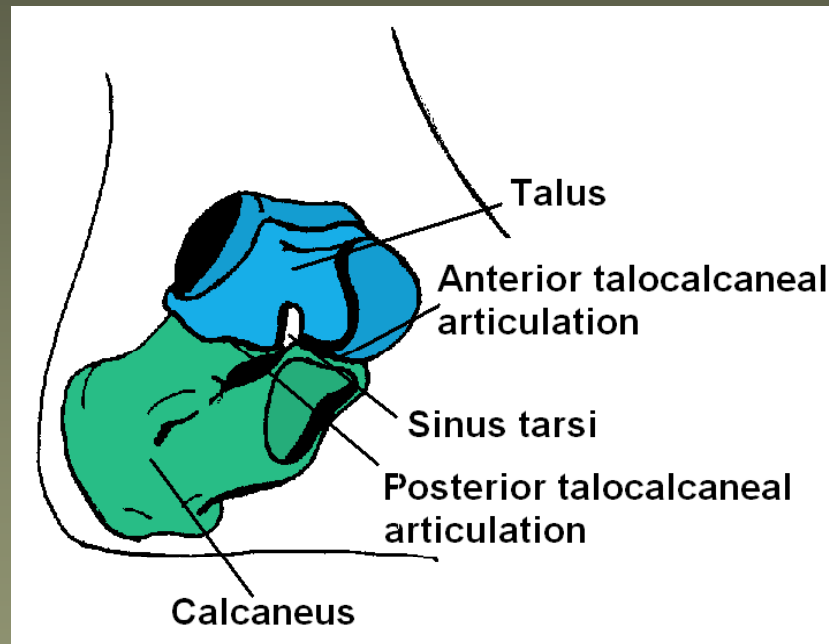


# Key Structures Involved in Achilles Tendonitis & Tendinosis



- Key Structures
  - Gastrocnemius (Calf)
  - Soleus
  - Achilles tendon
  - Calcaneus (Heel)

# Key Structures Involved in Achilles Tendonitis & Tendinosis



- Key Structures
  - Subtalar joint or Talocalcaneal Joint
    - *Allows inversion and eversion (foot in and out)*
    - *Meeting of talus and calcaneus*
    - *Calcaneus = heel*
    - *Talus = lower leg attaches*

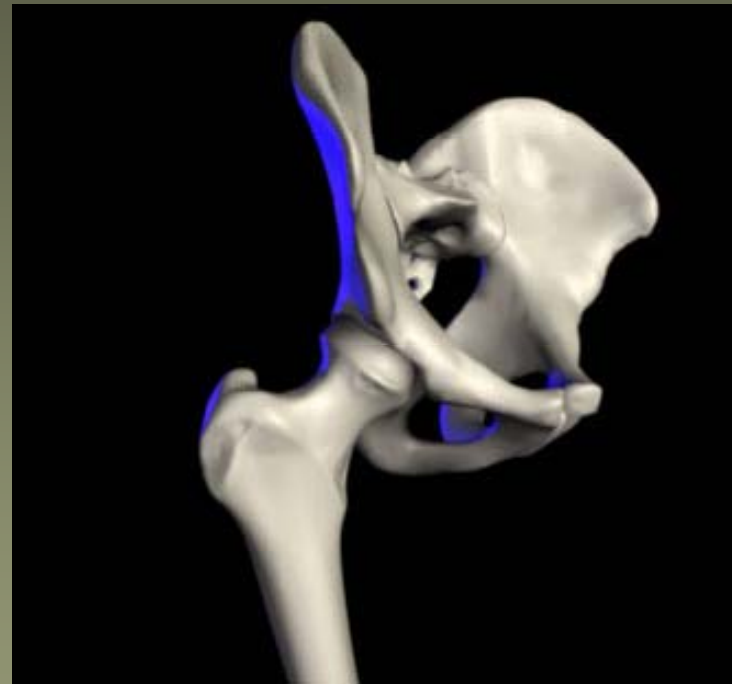
# Most Common Causes Leading to Achilles Tendinitis & Tendinosis

- Intrinsic Factors
  - Abnormal ankle dorsiflexion range of motion
    - *Less than 11.5 degrees increase risk by 3.5 times*
    - *Too much*
  - Subtalar joint range of motion
    - *Too much or too little*
  - Decrease in ankle plantar flexion strength
  - Increase foot pronation



# What Else Can It Be?

- Acute Achilles tendon rupture
- Partial tear of the Achilles tendon
- Retrocalcaneal bursitis
- Posterior ankle impingement
- Irritation of neuroma of the sural nerve
- Os trigonum syndrome
- Accessory soleus muscle
- Achilles tendon ossification
- Systemic inflammatory disease
- Insertional Achilles tendinopathy



# Remember!

1. Get things check out
2. Get an accurate diagnosis
  1. Ultrasound
  2. Magnetic Resonance Imaging - MRI
3. Get clearance to start an exercise program
4. Bring this exercise program to your doctor to see if it is right for you



# Assessing of Achilles Tendinitis & Tendinosis?



- Self Assessment or Client Assessment

1. Feet on Wall (Dorsiflexion range of motion)
2. Single Leg Toe Raises (Plantar flexion strength – 1 time)
3. Multiple Single Toe Raises (Plantar flexion endurance – 10 to 20 times)
4. Pain with palpation



# Assessing of Achilles Tendinitis & Tendinosis?



- Self Assessment or Client Assessment
  - Use to show a starting point
  - Measure progress

# Assessing of Achilles Tendinitis & Tendinosis?



- How are they or you with?
  - Walking
  - Descending stairs
  - Single Leg Hopping



# **Part 2 – Exercise Considerations for Achilles Tendinitis & Tendinosis**

# Most Common Causes Leading to Achilles Tendinitis & Tendinosis

- Extrinsic Factors
  - Training errors
    - *Increase in mileage*
    - *Increase in intensity*
    - *Hill training*
    - *Return off of a break*
  - Environmental factors
    - *More prone in Winter*
  - Faulty equipment



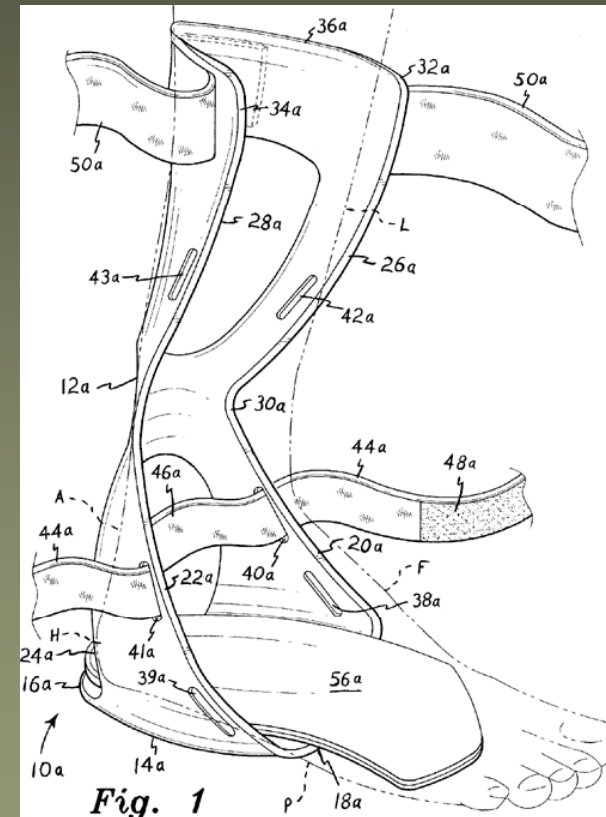
# Most Common Causes Leading to Achilles Tendinitis & Tendinosis

- Other Conditions
  - Obesity
  - Hypertension
  - Diabetes



# What Else Could Help Other than Exercise?

- Low-level laser therapy
- Manual Therapy
- Taping
- Foot Orthotics
  - Custom
- Night Splints



# What Else Could Help Other than Exercise?

- Surgery
  - 29% of people needed surgery
  - 4 to 6 months to recover



# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis

- Abnormal Ankle Dorsiflexion Range of Motion

- Need to improve
- Mobility
- Stretching





# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis



- Abnormal Subtalar joint range of motion
  - Work on balance

# Important Training Techniques for Recovering from Achilles Tendinitis

- Decreased Calf Strength
  - Ankle plantar flexion (Go onto toes) strength





# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis

- Increase Foot Pronation

- Flattening of feet
- Good set of shoes
- Over the counter foot inserts
- Work on balance
- Calf strength



# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis

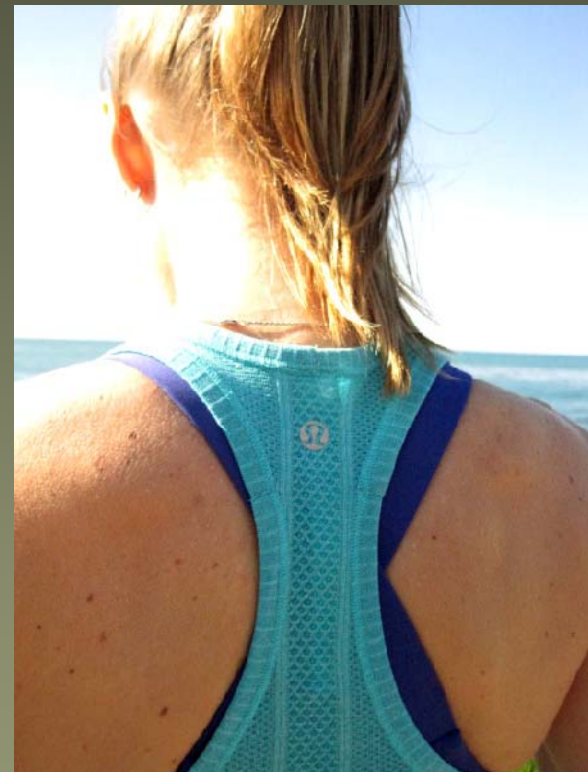


- When To Do Training

- End of exercise program
- End of day

# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis

- Manage Conditions
  - Obesity
  - Hypertension
  - Diabetes



# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis

- Extrinsic Factors
  - Training errors
  - Environmental factors



# Important Training Techniques for Recovering from Achilles Tendinitis & Tendinosis



- Education

- What is Achilles tendinitis and tendinosis?
- What make it worse?
- What to do about it?
- How to do exercise program properly?

# **Part 3 – 12 Week Exercise Program for Achilles Tendinitis & Tendinosis**

# Week Exercise Program for Achilles Tendinitis

	Stage 1	Stage 2	Stage 3
<b>Self Massage</b>	Foam Roller Calf Toe Up	Foam Roller Calf Toe Out	
<b>Self Massage</b>	Self Massage with Ball Toe Up	Self Massage with Ball Toe Out	
<b>Self Massage</b>	Self Massage with Thumb		
<b>Ankle Mobility</b>	Knee to Wall	Knee to Wall (Toe Away)	Three Way Knee to Wall
<b>Calf Stretch</b>	Natural	Straight	Toe In
<b>Soleus Stretch</b>	Natural	Straight	Toe In
<b>Calf Strength</b>	Calf Raises Both Toes	Calf Raises One Toe	Calf Raises Hoping
<b>Balance</b>	Single Leg Balance	Single Leg Deadlift	Single Leg on Toe
<b>Hip Stability</b>	Lateral Walking	Lateral Tubing Walk	Monster Walking
<b>Stepping</b>	Step Up	Step Down	Step Over



# The Exercise NOT to DO if You Have Achilles Tendonitis



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- Non-weight Bearing
- Weight Bearing
  - Standing
  - Squatting
  - Single Leg Balance
  - Single Leg Squat
  - Lunge
- Functional
  - Walking
  - Jumping
  - Running
  - Hiking
  - Cutting



# Exercises for Achilles Tendinitis



- Equipment

- Foam roller or soda bottle
- Medicine Ball or Ball
- A thumb
- Riser or stair step
- Tubing
- Dumbbells or backpack

# Exercises for Achilles Tendinitis

## #1 - Foam Roller Calf

- Toe up
- Toe out
- *No foam roller use 2L soda / pop bottle*
- *Hold until subside and go up leg once*
- *1 to 3 times a day*

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# Exercises for Achilles Tendinitis



## #2 - Self Massage with Ball

- Ball

-Tennis

-Dog toy

- *Hold until subside and go up leg once or twice*

- *1 to 3 times a day*

# Exercises for Achilles Tendinitis



## #3 - Self Massage with Thumb

- Thumb
- Massage around sore area
- 1 to 3 times a day

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# Exercises for Achilles Tendinitis

## #4 - Ankle Mobility

- Knee to wall
- Knee to Wall (Toe Away)
- Three Way Knee to Wall
- 10 times
- Smooth controlled movement
- 1 to 3 times a day



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# Exercises for Achilles Tendinitis

## #5 - Calf Stretch

- Natural
- Straight
- Toe In
- *2 times for 30 seconds*
- *1 to 3 times a day*



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# Exercises for Achilles Tendinitis

## #6 - Soleus Stretch

- Natural
- Straight
- Toe In
- *2 times for 30 seconds*
- *1 to 3 times a day*



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# Exercises for Achilles Tendinitis

- **#7 - Calf Raises**
  - Both toes
  - One toe
  - Hoping
  - *10 to 20 times*
  - *1 to 3 times a day*





# Exercises for Achilles Tendinitis

- **#8 - Balance**

- Single Leg Balance
  - Single Leg Deadlift
  - Single Leg on Toe
- 10 times
  - 2 sets for a 30 second hold
  - 1 to 3 times a day



# Exercises for Achilles Tendinitis

- **#9 - Lateral Movement**
  - Lateral Walking
  - Lateral Tubing Walk
  - Monster Walking
  - *10 times each way*
  - *Smooth controlled movement*
  - *1 to 3 times a day*



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# Exercises for Achilles Tendinitis

- #10 - Step Ups
  - Up
  - Down
  - Over
  - *10 times*
  - *Smooth controlled movement*
  - *1 to 3 times a day*



# Exercises for Achilles Tendinosis

- Heel Drop Program

- Both Legs
- One Leg
- One Leg with Weight



# Exercises for Achilles Tendinosis

- Heel Drop Program
  - Return to start with uninjured leg
  - Controlled movement
  - Knee straight and knee bent



# Exercises for Achilles Tendinosis

- Heel Drop Program
  - Progress to a leg press machine
  - 12 weeks
  - 2 times a day
  - 3 sets of 15 repetitions
  - Moderate pain but not disabling pain





# Objectives



**Part 1** – What is Achilles Tendinitis and Tendinosis?

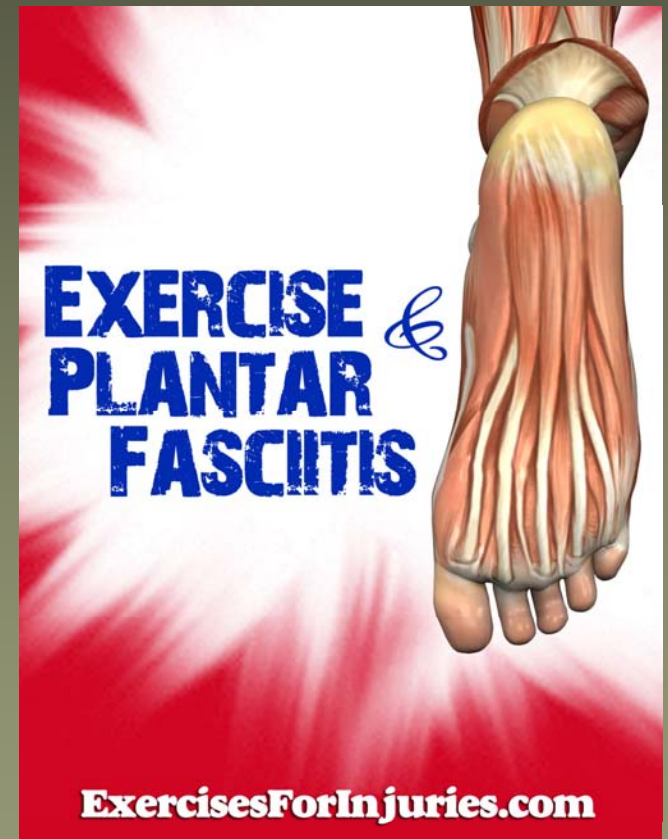
**Part 2** – Exercise Considerations for Achilles Tendinitis and Tendinosis

**Part 3** – 12 Week Exercise Program for Achilles Tendinitis and Tendinosis



# Other Exercises & Injuries

- Scapular Stabilization Exercises
- Plantar Fasciitis and Exercise
- The Most Effective Rotator Cuff Exercise Program
- Exercises for Prevention, Rehabilitation and Overcoming Knee Injuries
- Corrective Exercises for Running Injury-free
- Lumbar Spinal Fusion and Exercise



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# More FREE Information on Exercise & Injuries

- \$299 Fitness Education
  - Returning the Shoulder Back to Optimal Function Seminar
  - Exercise Modification for the Sensitive Shoulder Seminar
  - Visit [www.ExercisesForInjuries.com](http://www.ExercisesForInjuries.com)

# Thank You

- Send me your questions!
- Visit [ExercisesForInjuries.com](http://ExercisesForInjuries.com) to get \$299 in Fitness Education Gifts
- Rick Kaselj
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