

# Common Load Based Adaptations in People with Achilles Tendinopathy

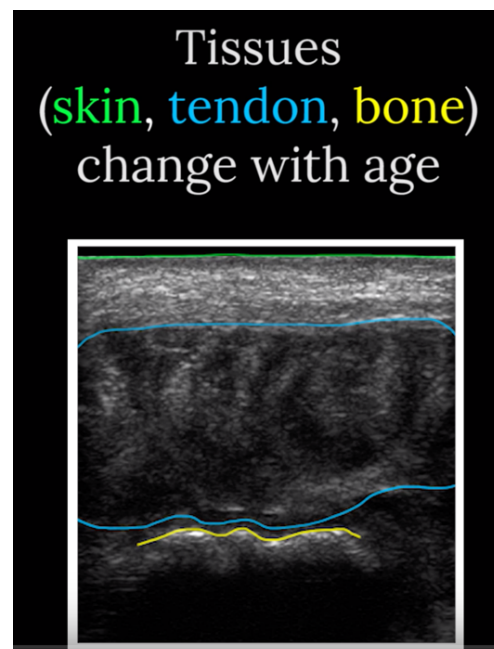
## Handout for Treatment Session 2

### Home Education Program

1. Watch video: Common Load Based Adaptations in People with Achilles Tendinopathy
  - <https://youtu.be/pOB5JcPygyo>
2. Review handout and take online quiz
3. Answer questions on handout/online
4. Complete exercise log

### All tissues in the body adapt to load

- All the tissues in the body adapt over time. This is particularly the case for tissues that carry load like tendons, muscles, bones, and joints
- These adaptations are normal and should become more obvious the older we get.
- Unfortunately, when these adaptations are seen on imaging, they are often reported as “degeneration” or “disease”
- Even though our understanding has changed a lot, the labels first given to describe these adaptations, such as “heel spur” or “Haglund’s deformity”, tend to stick



- Here are four common findings on images of tendons. Keep in mind that not all of these findings mean you will always experience pain.

## Tendon changes

- Tendons get thicker when you load them
- This can be a **natural adaptation** of your tendon to various loads
- The size of a tendon **does not** always relate to pain or stiffness
- Reported **degeneration** means that your tendon does not look like a 15-year-olds on an image



## Bone spurs and calcification

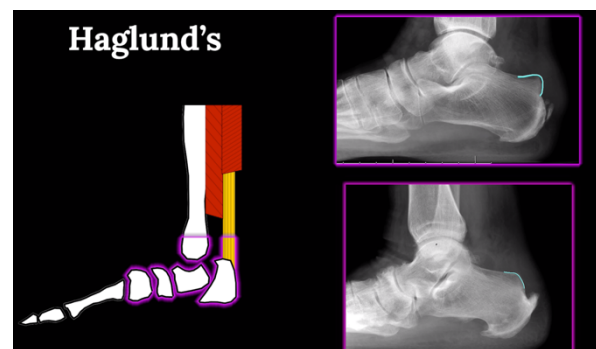
- Bony changes at the heel develop slowly over time in response to load
- These changes can occur at:
  - Attachment of the Achilles tendon to the bone (Bone spur, Figure 1A)
  - Within the Achilles tendon (Calcification, Figure 1B)
- These bony changes are highly integrated within tough tendon
- The size of bony changes does **NOT** determine how much pain you will have
- The finding of a bone spur or calcification will **NOT** change the type of treatment that is best fit for you

Figure 1. A) Bone spur, B) Calcification



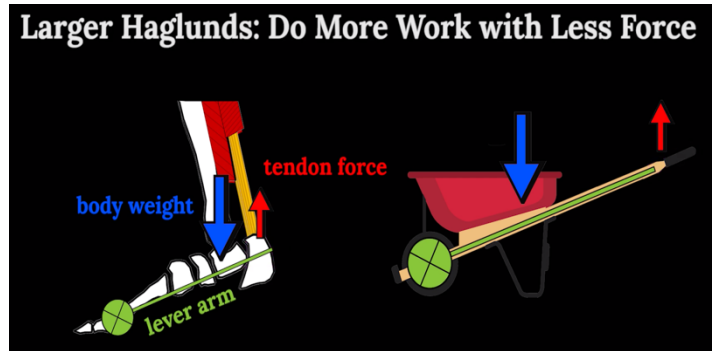
## Haglund's deformity

- The upper part of the heel bone behind the Achilles tendon varies in size between people and is often referred to as a "Haglund's deformity"
- When you raise up onto your toes the tendon pulls up on the back of the



heel bone, which is part of a level, to lift your body weight

- The larger the Haglund's the greater the amount of force your calf muscle can use to lift your body
- Like a wheel barrow, the longer the handle the easier it is to lift the load
- At times your tendon pressing against the heel bone can be painful. However, there are simple ways that you can relieve this compression such as heel-lifts.



## Review Questions

### Multiple Choice Questions:

1. Imaging showing a thickening of your achilles tendon are often related to what?
  - a. Breakdown of your tendon
  - b. Natural changes of your tendon
  - c. Deformities of your tendon
  - d. Bone spurs
  
2. Reports on imaging of degeneration in a tendon often means what?
  - a. Pain in the tendon
  - b. Lack of strength of the tendon
  - c. Normal changes of the tendon with age
  - d. Stiffness in the tendon
  
3. How do findings of a bone spur or calcification in your achilles tendon affect your pain?
  - a. Achilles tendon pain will always be present
  - b. Chronic heel pain will limit physical activity
  - c. Not significantly or none at all as this is a common/natural change
  - d. Surgical intervention will be required
4. What is a simple change that can be done to reduce load and pressure on the achilles during daily activities?
  - a. Putting a heel lifts in your shoe or wearing a shoe with a higher heel
  - b. Complete rest
  - c. Walking barefoot
  - d. Stretching prior to any activity or exercise

### Short response questions:

- Make a list of 3 things that you've been told by your physician/physical therapist/etc. about pathology in your tendon/body.

## Exercise Log

Your goals for home exercise until your next visit include:

- Isometrics: \_\_\_\_\_
- Heel-lifts: \_\_\_\_\_
- Spring-phase: \_\_\_\_\_
- Other: \_\_\_\_\_

Day 1

Type of isometric exercise performed (circle)

- Sitting Bilateral
- Body-weight Bilateral
- Body-weight Unilateral
- Machine-weighted Unilateral

Number of sets performed (0 to 5) \_\_\_\_\_

Duration of isometric hold (0 to 45 s) \_\_\_\_\_

Day 2

Type of isometric exercise performed (circle)

- Sitting Bilateral
- Body-weight Bilateral
- Body-weight Unilateral
- Machine-weighted Unilateral

Number of sets performed (0 to 5) \_\_\_\_\_

Duration of isometric hold (0 to 45 s) \_\_\_\_\_

Day 3

Type of heel raise exercise performed (circle)

- Sitting bilateral
- Body-weight bilaterally
- Body-weight unilateral
- Machine bilaterally
- Machine unilateral

Number of repetitions and sets: \_\_\_\_\_

Day 4

Type of heel raise exercise performed (circle)

- Sitting bilateral
- Body-weight bilaterally
- Body-weight unilateral
- Machine bilaterally
- Machine unilateral

Number of repetitions and sets: \_\_\_\_\_

Day 5

Type of heel raise exercise performed (circle)

- Sitting bilateral
- Body-weight bilaterally
- Body-weight unilateral
- Machine bilaterally
- Machine unilateral

Number of repetitions and sets: \_\_\_\_\_

Day 6

Type of heel raise exercise performed (circle)

- Sitting bilateral
- Body-weight bilaterally
- Body-weight unilateral
- Machine bilaterally
- Machine unilateral

Number of repetitions and sets: \_\_\_\_\_

Day 7

Type of heel raise exercise performed (circle)

- Sitting bilateral
- Body-weight bilaterally
- Body-weight unilateral
- Machine bilaterally
- Machine unilateral

Number of repetitions and sets: \_\_\_\_\_