

MASTER

STRENGTHENING KEY MUSCLES USED IN WALKING

Strong arch muscles are essential to the health of the foot and protect foot ligaments from being overstretched. These muscles contribute to a strong push-off when walking. The gluteus medius muscles of the buttocks help give you a healthy gait with a soft landing, contribute to pelvic anteversion, and help externally rotate your legs. The tibialis anterior muscles help you create and support a kidney-bean shape in your feet and help externally rotate your knees.

STRENGTHENING THE ARCH MUSCLES

Achieving a kidney-bean shape in your foot substantially restores the inner arch, the most important of the three arches of the foot. The following exercises further strengthen it, as well as the outer and transverse arches.

INCH WORM

1. WHILE STANDING OR SITTING WELL, PLACE YOUR FEET INTO KIDNEY-BEAN SHAPE
2. RELEASE MOST OF THE WEIGHT FROM ONE FOOT
3. FIX THE TOES OF THE UNWEIGHTED TO THE FLOOR AND CONTRACT ALL THE ARCH MUSCLES IN THE BOTTOM OF THE FOOT (a) Your objective is to shorten the foot into an arched shape, drawing the heel closer to the toes.
4. FIX THE HEEL TO THE FLOOR, RELEASE THE TOES AND RELAX ALL THE ARCH MUSCLES Allow your foot to return to its longer length.
5. REACH FORWARD WITH THE TOES AND FIX THEM TO THE FLOOR IN THIS NEW POSITION (b) Your toes should be slightly ahead of their starting position; they have "inched" forward.
6. REPEAT STEPS 1 - 4 SEVERAL TIMES (c, d) UNTIL YOUR FOOT HAS CREPT ABOUT 6 INCHES FORWARD

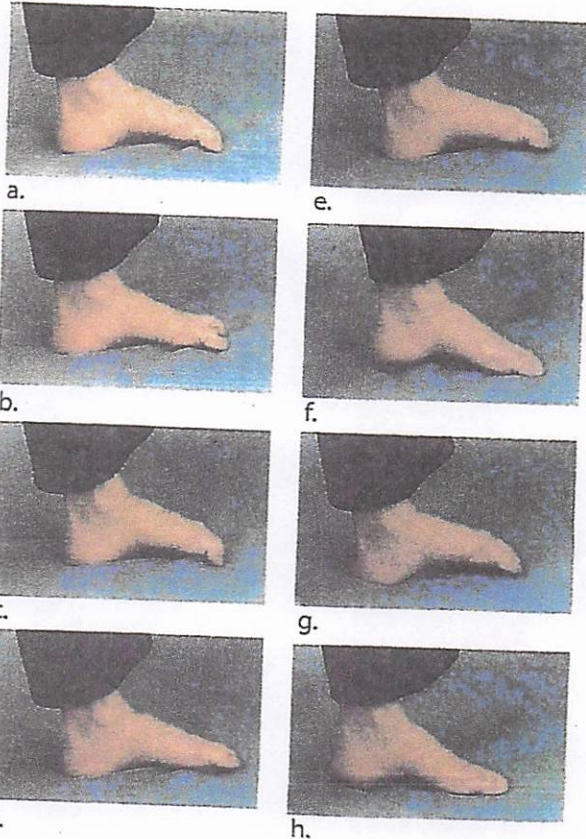
7. FIX THE HEEL TO THE FLOOR
You will now reverse the action to move your foot backwards.

8. RELEASE THE TOES FROM THE FLOOR WHILE CONTRACTING THE ARCH MUSCLES (e)
The toes draw back toward the heel and the foot shortens.

9. FIX THE TOES TO THE FLOOR AND RELEASE THE CONTRACTION OF THE ARCH MUSCLES (f)
This allows the heel to move backwards.

10. REPEAT STEPS 7 - 9 SEVERAL TIMES UNTIL YOUR FOOT RETURNS TO ITS STARTING POSITION (g,h)
It is common for beginners to contract their toes more than their arches. Try to maximize the contraction of your arches while minimizing the contraction of your toes. Over time you will improve your ability to isolate these movements.

11. REPEAT THIS COMPLETE SERIES WITH THE OTHER FOOT



EAT THE CLOTH

1. SPREAD A HAND TOWEL OR SMALL CLOTH ON THE FLOOR
Use a cloth with some texture, such as terry cloth. Avoid slippery fabrics like silk.
2. WHILE STANDING OR SITTING WELL, PLACE ONE FOOT ON THE EDGE OF THE CLOTH CLOSEST TO YOU (a)
3. USING JUST YOUR FOOT, TRY TO GATHER THE CLOTH UNDER THE FOOT (b)
This exercise strengthens the muscles that control the underside of your foot.
4. REPEAT WITH THE OTHER FOOT



a.



b.

GRAB THE BALL

1. PLACE A SMALL BALL ON THE FLOOR
It is useful to have various sized superballs for this exercise. Most students begin with a ball of one-half to one inch in diameter.
2. WHILE STANDING OR SITTING WELL, TRY TO GRAB THE BALL WITH ONE FOOT
Initially, you may only be able to grab a ball with your toes. Work to grab increasingly larger balls. As your arches grow stronger, you may be able to grab a ball under your transverse arch.
3. REPEAT THESE STEPS WITH THE OTHER FOOT



STRENGTHENING THE TIBIALIS ANTERIOR

This muscle enables you to create and maintain a kidney-bean shape in your foot. It is also the muscle associated with shin splints and fallen arches. When the muscle is weak and you place demands on it, as in running and long-distance walking, it can cause significant pain. The following exercise, which you might want to do to music with a driving beat, strengthens the muscle very efficiently.

1. STAND WITH SOFT KNEES AND KIDNEY-BEAN SHAPED FEET

Engage all the arch muscles of the foot to emphasize its convex shape.

2. SHIFT ALL YOUR WEIGHT ONTO YOUR HEELS

Allow your body to hinge forward slightly at the hip joint to maintain your balance.

3. WHILE MAINTAINING YOUR FOOT SHAPE, LIFT THE FRONT OF ONE FOOT OFF THE FLOOR (a)

Be sure not to curl your toes upward as you do this.

4. REPLACE THAT FOOT TO THE FLOOR AS YOU LIFT THE OTHER FOOT (b)

Notice that your entire weight remains on your heels.

5. REPEAT THE MOVEMENT, INCREASING THE SPEED UNTIL YOU FEEL MUSCLE FATIGUE

6. ALLOW YOUR MUSCLES TO RECOVER, THEN REPEAT THE EXERCISE

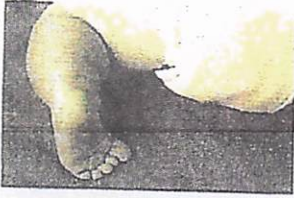


a.



b.

HEALTHY FOOT SHAPE
AROUND THE WORLD



Six-month-old infant with pronounced kidney-bean shaped foot (USA)



Young child showing healthy toe spacing (USA)



Baby with pronounced transverse arches in the feet (USA)



Children with sturdy feet from walking on natural surfaces (India)



Laborer with muscular, healthy feet (India)

10 WHILE CONTINUING TO STRETCH SIT, FIX THE TOES AND BALL OF ONE FOOT ON THE FLOOR WHILE LIFTING THE HEEL



Lift foot just high enough so that the heel clears the floor.



A common mistake is to lift the heel too high, tensing the foot muscles and making the next step difficult.

11 TWIST AND PIVOT THE HEEL INWARD BEFORE PLANTING IT FIRMLY ON THE FLOOR



Your goal is to create a "kidney-bean" shape with your foot.

12 REPEAT THIS ACTION WITH THE OTHER FOOT



Notice that your knees point in the same direction as your toes.