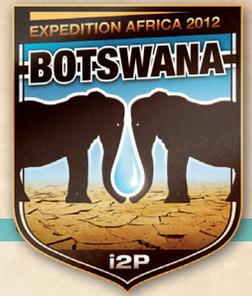
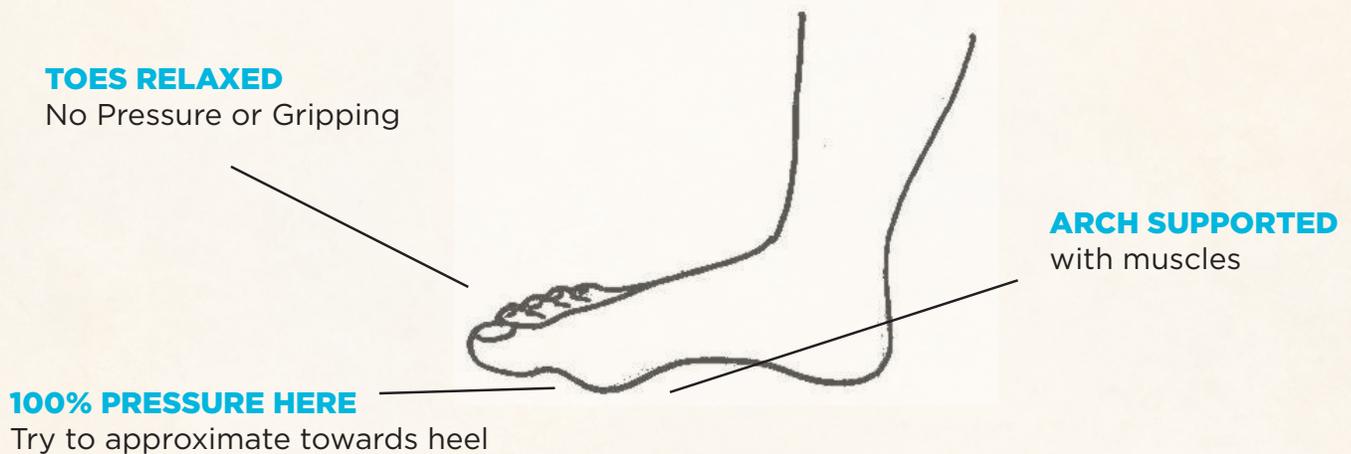


Training the intrinsic muscles of the foot



STEP #1: Stand in front of a wall, with the feet shoulder width apart and knees slightly flexed. The fingertips may be lightly placed on the wall.

STEP #2: In order to increase the height of the medial longitudinal arch (MLA) and achieve subtalar joint neutral, gently supinate the feet by lifting all the toes off the floor - while at the same time actively attempting to approximate the head of the first metatarsal (the part of the ball of the foot that is just behind the big toe) towards the heel, without flexing the toes. Even weight distribution is maintained between the ball of the foot and the heel, (ie the ball and heel are in firm contact with the ground). Once this position is attained, then slowly drop the toes down again but maintain the MLA. It is important to note that you are NOT just rolling your ankle to put the weight on outside of your foot - and you are NOT creating the arch to lift by flexing (scrunching) your toes. Once toes return to the floor there should be no pressure with your toes. The picture below shows where the pressure should be - not on the toes.

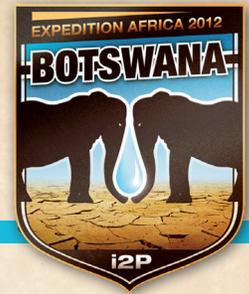


STEP #3: While actively maintaining the MLA, stand on a single leg. The knee on the weight-bearing lower extremity should ideally be flexed 10-20° to help the contraction of the quadriceps muscle and the potential facilitation of the intrinsic foot muscles (IFM). The fingertips should remain lightly on the wall for balance and fall prevention.

STEP #4: Hold the position for a count of 10 seconds and attempt to maintain the MLA as steady as possible during the entire time without any compensatory extrinsic foot muscle activity. Following the 10-seconds, slowly and with eccentric control allow the foot to pronate and the MLA to lower to a relaxed state.

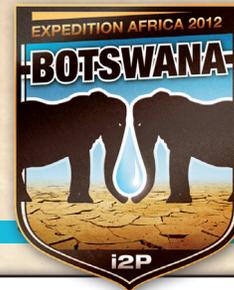
STEP #5: Following 1-2 seconds of rest, actively re-supinate and repeat steps 3-4. Perform up to five repetitions of this concentric, isometric and slow eccentric IFM retraining exercise, several times per day. The IFM retraining exercise may be progressed by gradually lifting the fingers off the wall and performing them in unsupported single leg standing with eyes open and eventually with eyes shut.





WARM UP & MOBILITY/PREP WORK (prior to Strength/Stability routine)	SETS	REPETITIONS
General Warm-up: 5-10 minutes of light aerobic activity	-	-
Activation and Movement Preparation (following General Warm-up, prior to Strength/Stability)		
1. Intrinsic Muscles of the Feet - Training	See attached sheet	
2. Four-Point Kneeling Sequence: Begin with a slow cycle of Cat/Camel – this is an active range of motion exercise – not a stretch. Ensure that you are remaining in your comfortable ranges on flexion/extension...do not try to stretch beyond these. Following the Cat/Camel sequence return to neutral spine position, set your core and perform an opposite arm/leg raise each side. There should be no “un-wanted” movement of spine/pelvis while you are lifting limbs. While slowly lifting the leg focus on engaging glute. While lifting the arm focus on adducting scapula without elevating (do not shrug). Finally slowly rock back butt towards to heels (do not go to a point where you feel pinching in anterior hip), and with hands out in front “walk” hands to one side (lateral bend in torso – you should feel a lat stretch).	1	4-8 circuits
3. Stability Ball Wall Overhead Static Press with Slow Hip Flexion: Keep core engaged. Maintain neutral spine and pelvis position throughout. Maintain good alignment (there should be no shift of hips, sagging of your low back, or rotation of your pelvis. Press palms into ball (trying to indent – this will assist in engaging your core. The greater the amount of pressure into the ball – the greater demand you will have on the musculature of the core.	1 to 2	Up to 12 reps each side at a slow tempo
4. Broomstick Stability Mobility Sequence: Focus on alignment/control. At each point where you feel a comfortable stretch – hold for 3 seconds, before continuing through the sequence. When you are in the end range of the hip flexor lunge stretch position – use both arms to pull the stick into the floor to assist in activating your core. Stay within an un-restricted range of motion.	1	2 circuits (of 4 reps) each side, then move on to next position.
5a. Cook Hip Lift: Keep core engaged and focus on glute max contraction before you lift, while you lift and while you lower. Relax glute for a brief pause between reps. Focus on lifting hip by extension, rather than by knee extension (relax your quad). Followed by:	1 to 2	10 reps each side, of 3 second holds Perform as: 5a right-->5b right, 5a left-->5b left.
5b. Rear Foot Raised Dynamic Hip Flexor Stretch: Maintain good alignment. Stay within a comfortable range of motion. Focus on relaxing the side that the foot is raised... the weight of your body should be supported through the side where the foot is in contact with the ground. Hold at point of stretch for 3 sec – before returning to upright position. As mobility increases – work on progressively elevating foot further.	1 to 2	10 reps each side, of 3 second holds
CONTINUED ON NEXT PAGE...		





<p>6. Stability Ball-Wall Static Hip Abduction with Partial Single Squat: Keep core engaged - maintain good alignment. Focus on glute med contraction on stance side. Maintain a constant pressure on the ball by pressing the alternate side knee into the ball. While descending into the partial squat – ensure that you are able to maintain the glute med contraction. You may have to limit range at the beginning – to maintain the contraction - and you must stay within a comfortable range of motion with the knee.</p>	2	10 reps each side, at a slow tempo
<p>7. Overhead Body Weight Squat Progression. Keep core engaged throughout and maintain good alignment. When bringing arms to overhead “Y” position – focus on setting shoulder blades in slight retraction/depression (do not shrug). Alternate which arm comes off of the step first – per repetition. Stay within a comfortable range of motion (i.e. shoulders, back, knees, hips) – do not go to a depth where you are feeling discomfort anywhere</p>	1 to 2	Up to 10 reps at a slow tempo

FLEXIBILITY	SETS	REPETITIONS
Perform post-activity, and may be performed daily. Stay within a comfortable range.		
A. Half Kneeling Hip Flexor Rope Stretch	2	Hold for 30-40 seconds
B. Lying Figure 4 Glute Stretch	2	Hold for 30-40 seconds
C. Lying Hamstring-Peroneal Rope Stretch	2	Hold for 30-40 seconds
D. Seated Calf Rope Stretch or Standing Calf Stretch	2	Hold for 30-40 seconds
E. Bowing Kneeling Side Bend Stretch	2	Hold for 30-40 seconds
F. Chest Wall Stretch	2	Hold for 30-40 seconds
THERE SHOULD BE NO PAIN OR SYMPTOMS ASSOCIATED WITH THE PERFORMANCE OF ANY EXERCISE. IF PAIN PRESENTS, STOP THE ACTIVITY AT ONCE.		

FOR ADDITIONAL RESOURCES:

Please visit the Expedition Africa 2012 Website, or click on the pictures to the right to view instructional videos featuring John Zahab.

