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## **GOAL**

### **Understanding Recovery and the search for how making walking easier on your body can help reduce stress and enhance the recovery process**

Experienced athletes have learned through trial and error the importance of recovery. Those who test the limits of their bodies' ability and care more about running daily, instead of running consistently, are destined to injury. The key to reaching your goals is to listen to your body and understanding when it's OK to push and when to take your foot off the accelerator. So, what exactly is recovery? Absolute recovery means to completely stop all athletic activities and perhaps raise our legs above our heart. That's nice but not practical. Especially for those of us who use exercise like running as a release from our hectic worlds. I like to use the term "Dynamic Recovery." This allows the athlete to play an active role. It can take the form of utilizing a long walk or a bike ride on off days from typical training. Self-massage, foam rolling, ice baths, proper sleep, nutrition and hydration play important roles in recovery as well. Most of us do not have enough hours in our schedules to perform all of these tasks. For those of us who enjoy a long weekend run but also have family and work responsibilities that same day, there is a need for some type of "recovery shoe." To be quite honest, when I first heard this terminology I was quite skeptical. I figured it was the brainstorming of a savvy marketing team to sell a product. Enter into the picture a product called OOFOS. This shoe makes claims that their technology actually speeds up your recovery by reducing stress on your body. Their basic tenet was that their proprietary foam absorbs 37% more impact than traditional footwear foam

materials. Being of a scientific background, I am a huge believer in evidence based medicine. As a clinical consultant for OOFOS, I can report on the anecdotal response of their shoes on my patients. The scientific data needed to be concluded by an expert in the field of biomechanical analysis. Someone who had no bias and had a vast amount of experience in sports footwear. Jay Dichary, PT, the Director of the REP Lab in Bend, OR was the perfect individual. Jay is able to blend the fields of clinical practice and engineering to better understand and eliminate the cause of overuse injuries in athletes.

## **THE STUDY**

The goal of the study was to utilize scientific biomechanical analysis to determine if it is easier on your body to walk in OOFOS footwear, specifically the OOriginal. Going into this study we had a large amount of anecdotal theory as to why the OOFOS were making people feel better. What we learned through the data is game changing! Three popular casual sandals and one OOFOS OOriginal sandal made out of traditional athletic EVA, were compared to the OOFOS OOriginal made out of OOFOS' OOfoam. All subjects were picked at random and the scientific collection of data was conducted at the University of Virginia's world-renowned SPEED Clinic in Charlottesville, VA.

Kinematics is the science of motion. In human movement, it is the study of the positions, angles, velocities, and accelerations of body segments and joints during motion. What this study has shown is that the materials used and the geometry of the different products shows differences. There is no way to say that a person who walks with 1 degree less ankle dorsiflexion is going to recover faster than someone who doesn't. Essentially all the data collected here would fall into a normal value in terms of walking gait. As we looked deeper at the mechanical demands inside

the body we began to see that the moments and power show differences that translate to functional demands.

When walking, we must propel our body forward under control. The Ground Reaction Force (GRF) measurement allows us to quantify these global demands. During average walking, the impact peak is greatest at heel strike, due to the fact that walkers always have at least one limb in contact with the ground. The question for this study was, does OOfoam dampen the load? The answer to this question was interesting. When comparing the OOFOS OOriginal with OOfoam to an OOFOS OOriginal made out of traditional athletic EVA, it was noted that the EVA shoe had an 88% higher loading rate. The conclusion was that the OOfoam has advantages on walking gait when looking at identical shoe geometry, therefore it is not just the geometry at work! An important finding was that loading rate by itself is not the be all and end all. Two of the other shoes tested did have lower loading rates but their softness made gait wobbly and unstable. It was concluded that although the ability to absorb shock was exhibited by OOfoam, it is not only the property of the shoe that makes it significantly unique.

Power is a rate of movement. Joint power in gait measures the amount of power it takes to move our body over the ground. The research shows that the primary way we propel our bodies when walking is through the use of storage and release of energy through the ankle joint. The OOFOS OOriginal resulted in much less energy storage, but more importantly, much less energy generation through the ankles. This quite simply translates to less effort needed to walk in the OOFOS OOriginal with OOfoam! Adaptive cushioning material in my opinion is the Holy Grail. A product that makes it easier to walk in when you are fatigued will definitely be utilized for dynamic recovery. The propulsion mechanics to walk with the OOFOS OOriginal through

the ankles and knees is easier, as compared to the other shoes in this study. The fact that it places less muscular force demands at these joints may be why individuals dealing with overuse injuries to their lower extremities feel better when wearing them.

### **The Results**

The data gained from this study is very supportive of the anecdotal experiences of this clinician. It is also very encouraging that there is now research proven evidence that the OOFOS original with OOfoam is a true recovery shoe,

The results and the future of the OOFOS footwear and OOfoam technology are very exciting. Through real science we learned much more than we had hoped for – OOFOS, with OOfoam technology, have begun to answer the search for how making walking easier on the body can help reduce stress and enhance recovery. OOFOS offers “dynamic recovery” for the body.