



# THE SHOE E-BOOK



Aleena Kanner

Our feet boast a remarkable design, consisting of 28 bones that enable movement in various directions. In addition to facilitating movement, our feet play a crucial role in communicating with the ground, transmitting vital sensory information to the brain. It's fascinating how they interact with the ground, communicating vital feedback with each step we take.

From the moment we awaken, our feet are the first point of contact with the ground. Thus, the footwear we choose significantly impacts our overall bodily health and alignment.



In modern society, most of us walk on flat surfaces like concrete or wood in our daily lives. So, it's crucial to pick the right shoes to minimize the effects of walking on these surfaces.



Essential components of proper footwear include a heel counter for calcaneal guidance, arch support for giving us a better ability to pronate, a flexible midfoot for fluid movement when it comes to the push off aspect of gait, proper heel lift, and a wide toe box for optimal alignment and comfort. These features work together to support our foot biomechanics.



## **Postural Restoration Institute®**

(PRI®) is a respected organization focused on studying and implementing techniques to address imbalances in the body's musculoskeletal system.

PRI® recognizes that our modern lifestyles often lead to postural issues and inefficient movement patterns. All of the information that I have learned about footwear comes directly from the Postural Restoration Institute & the Hruska Clinic.







Every six months, faculty members at the Hruska Clinic come together to assess the impact of newer footwear models on human posture and movement. They pay particular attention to elements like heel counters and arch support, which are crucial for guiding proper foot mechanics and allowing the body to be able to oscillate well from right to left.

Based on anecdotal observations and insights gathered by the Hruska Clinic and PRI over the past two decades, PRI releases a new Hruska Clinic Shoe list every six months to keep pace with the evolving range of shoe models available in stores.

Given the predominance of flat surfaces in our daily surroundings, PRI offers tailored recommendations for specific shoe models and supportive designs. This guidance is founded on the recognition that appropriate footwear plays a vital role in preserving musculoskeletal health and enhancing movement efficiency.

By advocating for informed footwear choices, PRI® aims to empower individuals to take control of their posture and movement, aligning with their broader mission of promoting wellness through comprehensive understanding and targeted interventions in human biomechanics.





# LET'S GET INTO THE COMPONENTS OF A SHOE

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# HEEL COUNTER

A proper heel counter is essential for maintaining calcaneal guidance, facilitating a stable connection to the talus position. Since the talus bone lacks muscular attachments, it relies on the calcaneus to guide and align it effectively. Without a proper heel counter, we struggle with calcaneal guidance, impacting our connection to the talus position. Consequently, influencing the talus position from the ground up requires a shoe with adequate heel guidance. Such footwear not only ensures better positioning and mechanics but also facilitates the transfer of stability and support up the body's kinetic chain.



# ARCH SUPPORT

Adequate arch support is crucial for promoting proper foot pronation and supporting neurological functionality. Foot pronation, which is the foot's ability to flatten down into the ground and aid in propelling the body forward, is essential for healthy movement. When there's a lack of pronation, it can manifest in various ways during a gait assessment. We might observe individuals turning their feet outward as they try to find a way to push off their standing leg. Additionally, we might notice the development of bunions, both of which are related to the inability to pronate effectively. Without proper arch support, our foot's natural movement patterns may be hindered, potentially leading to discomfort and alignment issues over time.


# MID FOOT FLEXIBILITY

The ability to push off is crucial for propelling the body forward during walking or running. Some shoes offer better midfoot flexibility, which enhances this propulsion capability. Conversely, shoes with a rigid midfoot require the foot, ankle, and lower limb to compensate for the lack of flexibility in order to achieve forward propulsion. During the push-off phase of gait, we rely on the extension of the big toe to press into the ground and propel us forward. If the shoe does not adequately support this movement, compensatory efforts may be observed. Shoes with significant rigidity may be more suitable for individuals lacking adequate big toe extension or range of motion, such as the elderly or those who have undergone surgery or sustained injuries to the big toe.

# TOE BOX

There's much discussion online regarding toe splay and the importance of a wide toe box, and I wholeheartedly agree! Naturally, our feet shouldn't be constricted, as is often the case with shoes like high heels or tight-fitting footwear. To ensure optimal foot function, a wider toe box is essential. I advocate for anyone without narrow feet to consider opting for shoes with a wide fit, if available.





Each aspect emphasized — heel counter, arch support, medial arches, heels, and toe box—plays a crucial role in maintaining our body's alignment and functionality.

Understanding the importance of these components is key to making informed choices about footwear.

Ultimately, prioritizing proper footwear isn't just about comfort—it's about safeguarding our body's structural integrity and promoting optimal movement patterns.







# ISSUES THAT WE SEE



# BUNIONS:

Bunions are often attributed solely to genetics, but faulty movement patterns play a significant role as well. Now, I'm not suggesting that your mother and grandmother are exempt from the bunion club... But we shouldn't place all the blame on them! Observing the movement patterns of our elders can influence our own, potentially leading to similar patterns. For instance, lacking proper arch support and sufficient foot pronation can contribute to the development of bunions.



# BUNIONS:

When our feet lack the support and alignment they need, it can lead to abnormal pressure and stress on the joint at the base of the big toe, eventually resulting in bunion formation. While this may contribute to bunion development, labeling them as solely genetic might stem from a limited understanding rather than conclusive evidence. Bunions develop due to Wolff's Law, which suggests that bones adapt to mechanical loading. This makes it more plausible that movement patterns contribute to their development rather than genetics alone



# HAMMER TOES:

Proper interaction with the ground is essential for optimal foot function. I often observe hammer toes in individuals with limited sensory connection to the ground. **Hammer toe is a deformity affecting the second, third, or fourth toes, where the toe bends at the middle joint, resembling a hammer.** These toes lack adequate splay and are slightly lifted at the joint, hindering their ability to interact properly with the ground. Ill-fitted shoes, like those worn by ballerinas, can exacerbate this condition.



# HAMMER TOES:

The tightness of such shoes restricts the foot's natural movement, leading to rough-looking feet and potential foot deformities like hammer toes. The question arises: which came first, the hammer toe or the inability to sense the ground? While research on this matter is limited, based on my observations and anecdotal evidence from working in the clinic, I would argue that it's the inability to properly sense and utilize the ground in correct gait mechanics that precedes the development of hammer toe—unless, of course, you are a dancer or have been wearing ill-fitting shoes!





# THE HRUSKA CLINIC SHOE LIST





The PRI shoe list includes various categories such as high arch, low arch/rigid, and rocker shoes. To make an informed choice, it's crucial to grasp the characteristics of each category. Typically, there are a few top-ranking shoes that serve as excellent overall picks for the average individual, aligning with the typical bell curve distribution. Now, let's delve deeper into these categories.

# RIGID MID FOOT/ HIGH ARCH

Having a higher arch indicates that the middle part of your foot is somewhat more rigid, which isn't necessarily a drawback. Determining whether you have a high arch requires understanding the spectrum from average to low arches.



Visual aids, like images, can assist in self-assessment. It's worth noting that high arches in this shoe category may not be excessively high; in fact, individuals with a less pronounced arch may still benefit from high arch shoes. Ultimately, the most important factor is how the shoe feels on your foot. While selecting the right shoe isn't an exact science and often involves trial and error, prioritizing comfort is key.



# SEMI-RIGID MID-FOOT

(AVERAGE TO LOW ARCH)

I often come across this type of foot category among athletes, which I've always found interesting. For individuals in this category, their arches typically fall somewhere in between super high and very low. In fact, I fall into this category myself.

Some individuals in this category may not feel comfortable in either high arch or low arch shoes. Once again, it's crucial to prioritize how the shoe feels when trying it on. This is the foremost and most vital aspect of finding the best shoe.

# LAXED MID FOOT/ LOW ARCH

This is the category I typically lean towards for individuals who have been accustomed to wearing barefoot shoes for some time. It's also my go-to for those who do not like shoes. I find that this category can be particularly beneficial during transition phases for certain individuals. For example, when someone presents with a very low arch, almost kissing the ground, I often suggest shoes from this category. As always, the most important factor is how the shoe feels on your foot. While selecting the right shoe involves some trial and error, prioritizing comfort remains paramount.

# ROCKER SHOES

This category is designed for a very specific type of individual who has lost the ability to extend the first metatarsal (big toe). Consequently, the rocker shoe provides increased flexibility in their gait by gently rocking them forward. I usually reserve this shoe for those who have experienced injuries or have restricted motion in their big toe, as well as for elderly individuals or those who haven't found success with other shoes on the list.





# HRUSKA CLINIC RECOMMENDED SHOE LIST

*The correct shoe can make or break your program.*

*Every time you stand up, your whole body is influenced by your feet. The proper shoe can provide more control of the heel bone and arch, sensory guidance for proper gait mechanics, and/or cushion to sense the foot's impact on your body.*

A PRI therapist can confirm whether your shoe fits your specific needs by conducting objective tests on your pelvis, thorax, and neck during an in-person session. If you do not have that option-- the next part of this ebook is made for you!



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# HRUSKA CLINIC INTEGRATIVE FOOTWEAR SHOES



## **Brooks Adrenaline (GTS) 23:**

Great overall shoe for average arch individuals for heel, arch, and big toe sense during the gait cycle.  
(average arch category)

# HRUSKA CLINIC INTEGRATIVE FOOTWEAR SHOES



## **New Balance 860 V 13:**

Great overall shoe for average arch individuals for heel, arch, and big toe sense during the gait cycle with a wider toe box.  
(average arch category)

# SEMI-RIGID MID-FOOT (AVERAGE TO LOW ARCH)



**Asics Kayano V30**



**Brooks Adrenaline GTS 23**



**Brooks Glycerin GTS 21**



**New Balance 860 V13**

# RIGID MID-FOOT (HIGH ARCH)

*All shoes are compatible with PRI orthotics*



**Asics Cumulus 26**



**Brooks Glycerin 21**



**Brooks Ghost 15**



# LAXED MID-FOOT (LOW ARCH)



**Asics GT 2000 V12**



**Brooks Addiction 15**



**Brooks Ariel GTS 23 (women)**



**Brooks Beast GTS 23 (men)**

# ROCKER SHOES

(Only for Limited Big Toe Motion)



**Hoka Arahi 7**  
(average mid-foot)



**Hoka Bondi 8** (rigid mid-foot)



**Brooks Ghost Max 15**



**Hoka Clifton 9** (average to low arch)



# HRUSKA CLINIC SHOE LIST GUIDELINES



The qualities we look for in a shoe are based on the mechanics and sensory input we want our patients to have when they wear the shoe. This is to ensure their entire body can maintain appropriate position and balance while they stand and walk. All shoes on the Hruska Clinic shoe list have these qualities, however this list is not an exhaustive list of all “good” shoes possible. **The same qualities should be used to determine if any shoe, basketball, hiking, casual wear, etc. are “good”.** The number one quality for any shoe is its ability to keep your entire body neutral as determined by your PRI Trained therapist.





# TIPS FOR SHOE SHOPPING



- Shoes should feel comfortable right away. You should not need to “break them in.”
- Tighten the shoelaces from the bottom up. Shoes should be tied tight enough that you need to untie them to take your shoes off. This will help hold your foot in the shoe.
- You should be able to “sense” your heel, arch, and big toe on both feet when walking.
- Your heel bone should not slip up and down in the shoe when you walk
- If you stand and balance on each foot with your opposite leg in front of you (as if you took a step), you should be able to balance and sense your heel, arch and big toe on the ground all at the same time. If you can't sense all 3 together, the amount of support of that shoe is not ideal for you.



If you are looking for any shoe, here are some qualities to look for and to avoid.

## GOOD EXAMPLES

## POOR EXAMPLES



Heel counter does not collapse in



Shoe bends in the toe box easily and not in the middle of the shoe



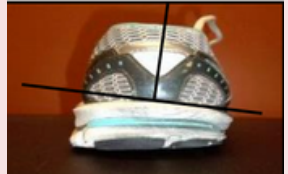
Toe box bend stiffness okay with limited big toe motion or early heel rise



Limited outside heel give



Heel support should be vertical (not tipped)





# HRUSKA CLINIC RECOMMENDED SHOE LIST

The correct shoe can make or break your program. Every time you stand up, your whole body is influenced by your feet. The proper shoe can provide more control of the heel bone and arch, sensory guidance for proper gait mechanics, and/or cushion to sense the foot's impact on your body. Your PRI Trained Therapist should ensure the shoe you have is YOUR shoe with PRI objective tests of your pelvis, thorax, and neck.

## Hruska Clinic Integrative Footwear Shoes

- Brooks Adrenaline (GTS) 23: Great overall shoe for average arch individuals for heel, arch, and big toe sense during the gait cycle. (average arch category)
- New Balance 860 V 13: Great overall shoe for average arch individuals for heel, arch, and big toe sense during the gait cycle with a wider toe box. (average arch category)

### Semi-Rigid Mid-Foot (average to low arch)

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- Brooks Adrenaline GTS 23
- Brooks Glycerin GTS 21
- New Balance 860 V 13

### Rigid Mid-Foot (high arch)

- Asics Cumulus 26
- Brooks Glycerin 21
- Brooks Ghost 15

### Laxed Mid-Foot (low arch)

- Asics GT 2000 V12
- Brooks Addiction 15
- Brooks Ariel GTS 23 (women)
- Brooks Beast GTS 23 (men)

### Rocker shoes: (Only for Limited Big Toe Motion)

- Hoka Arahi 7 (average mid-foot)
- Hoka Bondi 8 (rigid mid-foot)
- Hoka Clifton 9 (average to low arch)
- Brooks Ghost Max 15

Underlined shoes above are all compatible with PRI orthotics

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Lincoln Running Company: 1213 Q Street, Lincoln, NE and can be reached at (402) 474-4557  
Scheels: 27th and Pine Lake, Lincoln, NE and can be reached at (402) 420-9000





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Shoe bends in the toe box easily and not in the middle of the shoe



Toe box bend stiffness okay with limited big toe motion or early heel rise



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## POOR EXAMPLES





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