Importance of Running Shoes

Mark J. Mendeszoon, DPM
Precision Orthopaedic Specialties
Achilles Running Shop
Running Shoes
History of Running

- Ancient Greeks - sound body & sound mind
- Initially barefoot & naked
- Romans - thin soled sandals
- Leather used due to durability
Running Shoe History

× 1839- Charles Goodyear- vulcanized rubber

× 1852- first running shoe with spikes

× 1900- all purpose sneaker: canvas

× +rubber{sulfphur}

× A Scotsman ‘Old Man’ Richings- seamless toebox
ADIDAS

- Adolph Dassler
- Rudolph Dassler
- 1925
- Arch Support & Speed Lacing
- 1936 Olympic Games
- Jesse Owens
Puma

- Rudolph Dassler
- Family Fight
- SNEAKER WARS
New Balance

- American Company
- 1960’s
- Provided Running Research
- Lightweight support & nylon
- Used as comfort
ASICS

- Kihachiro Onitsuka - 1949
- Tiger
- Post World War Two
- Children Shoes - exercise
- Running 1956
- Kohei Hori - Juvenal Satire
- "If you pray to God, you should pray for a sound mind in a sound body" ("Anima Sana in Corpore Sano")
Other Running Shoe Companies

- Asics
- Mizuno
- Reebok
- Saucony
- Brooks
- Pearl Izumi
- Altra
- Newton
- Hoka
- On Cloud
1972- Nike

- Phil Knight
- Bill Bowerman
- Steve Prefontaine
- Waffle Iron
- Hayward Field
OUT OF NOWHERE
The Inside Story of How Nike Marketed the Culture of Running

by Geoff Hollister
Bowerman and the Men of Oregon
The Story of Oregon's Legendary Coach and Nike's Cofounder
Kenny Moore
Steve Prefontaine
February 1975

1. 18 miles run

2. 18 miles run

3. 18 miles run

4. 18 miles run

5. 18 miles run

6. 18 miles run

7. 18 miles run

8. 18 miles run

9. 18 miles run

10. 18 miles run

11. 18 miles run

12. 18 miles run

TUESDAY, FEBRUARY 25 (309)

8. 10 miles run

9. 17 miles run

10. 17 miles run

11. 17 miles run

12. 17 miles run

WEDNESDAY, FEBRUARY 26 (310)

8. 13 miles run

9. 13 miles run

10. 13 miles run

11. 13 miles run

12. 13 miles run

FRIDAY, FEBRUARY 28 (312)

8. 2 Abbey 30

9. 2 Abbey 30

10. 2 Abbey 30

11. 2 Abbey 30

12. 2 Abbey 30

SATURDAY, MARCH 1 (313)

8. 1 mile run

9. 1 mile run

10. 1 mile run

11. 1 mile run

12. 1 mile run

SUNDAY, MARCH 2 (314)

8. 1 mile run

9. 1 mile run

10. 1 mile run

11. 1 mile run

12. 1 mile run

PREFONTAINE

STEVE PREFON

METICULOUS IN HIS RUNS AND
WAFFLE IRON—THIS IS SIMILAR TO THE ORIGINAL WAFFLE IRON, WHICH BARBARA BOWERMAN THREW AWAY BECAUSE HER HUSBAND HAD GLUED IT SHUT.
NIKE CORTÉZ 1972—BLUE RIBBON SPORTS SUCCESSFULLY SUED ONITSUKA IN THE EARLY ‘70s TO KEEP THEIR EXCLUSIVE RIGHT TO THE CORTÉZ NAME.

NONE OF THE MARKS PROVIDED BY DESIGNER CAROLYN DAVIDSON IMPRESSED PHIL KNIGHT, INCLUDING THE SWOOSH.
Nike Changed Running & Industry

- Thick Heel
- Promote heel-toe strike
- Addressed Pronation
- Blown Rubber
- Massive Marketing
- Overseas Production
The Majority of Western Civilization wear the WRONG shoes
Function of Running Shoes

- Protection
- Support
- Shock Absorption
- Ventilation
- Cushioning
- Performance
Have a General Understanding of ALL Musculoskeletal Injuries

Lower Extremity MUST have a Thorough Understanding!
Foot & Ankle Biomechanics

- The Science of How the Foot Propels the Body From Point A to Point B
Running Statistics

- 8 times body weight per step
- Approx. 1500-2000 steps per mile
- Do the math
  - $\text{Distance} \times \text{body weight} \times \text{steps} = \text{total}$
The Foot Is a Mobile Adaptor

- Absorbs shock
- Adapts to underlying surfaces
- Balances the body
- Propels forward
As Foot & Ankle Specialist we must take into consideration several issues when placing patient into proper running shoes.
As Foot & Ankle Experts We Must

Learn the Anatomy of Shoes
Familiarize with Shoe Materials
Understand the Category of Shoes
Realize One Brand isn’t the BEST
Work with Local Stores
Work with Local Orthotist
Patient Considerations

- Height
- Weight
- Foot Type
- Orthopedic Condition
- Medical Condition
- Activities
- Goals
Insoles & Custom Orthotics

- Will definitely change which running shoe to utilize
How Do People Buy Shoes?

- Price
- Color
- Name
- Trends
- Advice
Majority of People and Runners Are In The Wrong Shoes
Many Type of Walking & Running Shoes

- Cushion
- Support
- Stabilizing
- Motion Control
- Racing Flats
- Spikes
- Hybrids
- Minimalist
- Negative Heels
Running Shoe Anatomy

- Uppers
- Lace system
- Lasts
- Midsole- $$$ research
- Outsole/rubber
- Achilles notch
ANATOMY OF A RUNNING SHOE & SOME FUN FACTS

Presented by Believe in the
FIGURE 1. Knowing basic running shoe anatomy will help physicians recommend shoes that are best suited for an individual patient’s needs.
Running Shoe Materials

Nylon
Mesh
Plastic
Gels
Carbon Rubber
Cardboard
Compressed Air
Liquid Silicone
Most Import Material
EVA: Ethylene Vinyl Acetate

Ethylene + Vinyl Acetate \rightarrow Ethylene Vinyl Acetate Copolymer
Adidas Boost
Thermoplastic Poly Urethane
TPU
Shoe Lasts
Curved Last
Straight Last
Modified Last
Uppers & Lace System
Shoe Lace Techniques

- Lock Lacing
- Loop Lacing Lock
- High-Instep Lacing
- Wide Forefoot Lacing
Midsole
Shock Absorption System
Midsole Arch
Midsole Arch
Midsole Arch
Outsole
Minimal Shoes

Read Runblogger’s Guide to Minimalist Running Shoes
Minimalist Philosophy

Man is not designed to walk/run in shoes

??? Reduce injuries

Natural Gait & Foot Strike
Vibram Five Fingers
Barefoot
Minimal to Zero Drop

- Measurement Heel height to Forefoot height
- Typical shoe is 12 MM
- Minimal : 8 mm, 4 mm, 0 mm
12 mm drop
8 mm Drop
4 mm drop shoe
0 mm Drop
Negative Heel
Negative Heel

Allows Achilles to be elongate
Reduces equinus
Rolling action
Earth Shoe
Protocol For Proper Shoe Selection

- Individual’s running history
- Inspection of old shoes
- Proper measurement of feet
- Evaluation of walking & running
- Video analysis

“I just have a question...”
Video Analysis
Running Shop Shoe Fitting Protocol

- Place the individual in the proper fitting and functional shoe !!!
Custom Orthoses & Insoles Will Change Shoe Selection
Care of Your Walking & Running Shoes

- Use them only for running
- Wear proper socks - ‘wicking’ fabric
- Lace & Unlace shoes at all times
- Powder shoes
- Keep in area of air currents
- Rotate Shoes
- Maximum mileage 400-600 miles
Socks
The financial anatomy of a $100 adidas shoe*

$21  $5  $8  $13  $50
COST TO PRODUCE  RETAILER MARGIN

- $5 - Freight, Insurance, custom duty
- $8 - Marketing
- $13 - Other expenses and overheads
- $1 - Income taxes**
- $2 - Net profit or income

* Based on overall cost of sales as per 2015 adidas income statement. Freight+insurance+duities are assumptions.
** Taxes are calculated on the gross income, which is 3% of the retail price.

$2.00 is adidas’s profit on a $100 shoe
Advantages of Bricks & Mortar Stores

- Local Community Business
- Price Points are set by Industry
- Local Discounts
- Support Local Events & Schools
- Local Employment
- Fit Process
- Shoe Variability
- Knowledge
- Symbiotic Relationship
Thank You