



# Children's footwear in a material world

**F**inally, several of the more innovative shoe companies are beginning to take a fresh look at the children's shoe category. When it comes to children's shoes, the wearer may be influenced by athletic heroes and brand peer pressure in the retail environment; but do kids really have any input when it comes to fit, choice of materials or influencing designers in the manufacturing sector? Very rarely, and that's because, unlike adult shoe purchases, the young people do not choose their own footwear. The responsibility for selecting footwear for young, growing feet lies entirely in the hands of the mother, a medical practitioner (pediatrician, podiatrist or pedorthist) or a retail shoe fitter. With an infant, crawling (3-9 months), standing (6-24 months), walking (15-30 months) or running off at the age of two years onward, we are dealing with feet that are growing at a faster rate than at any other time of life. Infants feet are not standardised, however small they appear in giant adult hands. Like their eventual fully-grown facsimiles, they come in many variations: narrow or wide, fat or slender, long or short toes, flat or

arched and most importantly, as a foot, they are soft and pliable and lack the definition of an older foot. In addition, unlike the adult foot, the infant foot is highly prehensile requiring lots of toe wriggling room to develop naturally. The foot bones have to chondrify (grow cartilage) before they ossify (grow bone) and the feet grow to half their fully developed adult size within 30 months



*Lizard CubPlus sport sandals. Great for growth but not so popular with parents.*

 Lizard



*Gronel TrailRunKid boots with specially developed soles by Vibram.*

 Vibram

after birth. A baby's foot will grow eight to nine shoe sizes by the age of two-and-a-half. These amazing but true statements will emphasise the importance of choosing the correct footwear for the young foot.

One would think, given the above criteria, that innovative designers and manufacturers of children's shoe would clamour for the opportunity to offer a wide range of fittings and styles for fast growing feet, or at least keep pace with the introduction of recently developed materials influencing the other shoe categories. However, in reality, over the past quarter century the opposite has been true. The children's shoe category has become dominated by lower priced, 'cartoon character' constructions, of a sort of 'Walt Disney versus the Planet of Lost Sneakers' era. However, there seems to be light at the end of the tunnel. After the turn of the century, children's shoes finally seem to be getting the functional attention afforded by most of the other major categories such as dress, athletic and orthopaedic. Only Stride-Rite has continued the tradition of educating parents, medical practitioners and young feet to the 'correct rules' for children's foot care in North America. In Europe the selection is much better in terms of both width fittings and the number of available brands and styles on the market. Recently, brands such as Ecco, Elefanten, TruFit and School Uniforms have realised that infants need new shoes every three months and children every four to six months.

What considerations can be given to young bone and muscle structures? Kids who wear tight shoes are likely to have foot problems in later years. So what's the parent of a squirmy, toe-curling toddler to do? Well, one brand has just won Time

Magazine's 'Coolest Inventions of 2003 award' for this idea. Preschoolians shoes look like ordinary children's footwear except they have soles made in durable polyvinyl acetate, providing viewing windows to ensure proper fit. That's one way a new material can impact the children's specialised footwear market.

### Forward with fitting materials

What then is regarded as 'proper footwear' for the normal growing foot? The answers to this question are shrouded in myths, old-fashioned rules and, simply, in a lack of education on correct fitting and choice of footwear. Shoe construction is usually not the difficulty. Given an adequate choice of lasts, width fittings and basic leather cement, Littleway stitched and stitch-and-turn (turnshoe) constructions, proper children's footwear should reflect the developmental changes that occur as the foot grows. The problem is the lack of choice in using suitable materials and the urge to place infant feet too early into low priced vulcanized or direct injection constructions. Children with clinically normal feet do not need shoes for walking until they can take several steps without falling. Until that time, a simple foot covering, such as a turnshoe for protection and warmth is sufficient.

A crib bootie should be loose and porous to allow the toes and foot to manoeuvre inside without restriction. As long as the foot is not 'at risk,' walking barefoot should be encouraged at all ages, but particularly throughout childhood. In the modern world it is realistic to assume most children will wear shoes from the early walking stages. Experts agree: the only purpose of baby shoes is to protect the feet. Flexible moccasin construction is ideal for indoor use. One cannot be careful enough protecting children from shoes using the wrong materials. Payless Shoe Source, a large US retail chain, has just announced it is recalling nearly half a million pairs of children's athletic shoes under the brand names Smart Fit and Teeny Toes that contain metal eyelet lace holders that can detach, posing a potential choking hazard for the hungry toddler.

Instead of looking down at kids footwear maybe we should look to where Bobux, from New Zealand, is making a favourable impression on the world footwear scene. Bobux boasts to be 'the perfect shoe' for children under two years of age. With soft, sueded flexible soles, they seem to be well liked by both parents and kids. Bobux baby shoes are made from chrome

(VI) free eco-leather, a soft, natural leather drum dyed with environmentally friendly, water based dyes that meet very strict safety standards in both the UK and Japan. Some parents consider this important because babies commonly put their feet into their mouths. The unique feature of these shoes is the elastic ankle closure system that, according to the rave testimonials from grateful mothers, makes the shoes very comfortable for the baby and very difficult to remove.

Bobux are not lined with synthetic materials that keep the leather from absorbing perspiration and they allow the feet to breathe naturally to keep them cool in summer and warm in winter. Now, isn't that what the latest moisture wicking and phase change materials are promoting? Seems like a perfect opportunity for a new material introduction here.

### Imperfect perfection

The perfect shoe for a child's growing foot does not exist. Yet given the challenge of grow room, support and a proper fit nothing better has been manufactured than a breathable, soft leather shoe or bootie with an oblique roomy toe box, a blucher cut upper with laces or a hook 'n loop closure and a leather stitched sole. Correctly measured and fitted with a choice of widths and styles every three to four months up to the age of three is as close to perfect as possible. Starting the child with very soft leather uppers and progressively allowing flexible to firmer constructions through to the age of five or six is a good outline for safe foot development. Most medical practitioners agree that the introduction of athletic footwear (basic running and



*The Elefanten brand continues to make provision for parent education.*

 Elefanten



*Ecco's other preoccupation with sport's footwear is a good base for its range of children's outdoor boots and shoes.*

 Ecco

court styles) at the 'active' or running age is not harmful for the growing foot. Even canvas vulcanized 'sneakers', made on a roomy last, if worn for long periods, will cause hyperhidrosis (sweaty feet) and bromhidrosis (smelly feet). Synthetic (PVC moulded) shoes are not recommended but they are still popular for children. Unfortunately, these "eye candy" constructions lend themselves well to pictures, shapes and gimmicks that attract children's attention, especially if the theme is concurrent with the latest "Star Wars" movie.

Another attraction at this vulnerable age is price. Obviously an injected PVC shoe costs a lot less to produce than stitched leather construction and economic considerations always play a role in the parent's choice of footwear. At this stage of development there is another important factor to consider - potential problems in later life caused by ill-fitting or improper footwear. Rubber soled shoes are less expensive than leather soles but during the early stages of walking and running a child's plantar foot clearance is not completely coordinated, a rubber soled shoe will stick to carpet easily and cause the child to trip more frequently.

Toe spring and heel pitches are the other sole features to be aware of when designing children's shoes. Low wedges are safer and more natural than higher heels. Heel pitch is the relationship between heel and sole height on a shoe.

If the shoe has a heel it should be minimal and have a shank in the waist to support the sole. Toe spring is the upsweep of the sole's toe tip, creating a space between toe tip and ground. An adequate toe spring helps the shoe clearance on the swing-through phase of gait.

Lasts for growing feet should follow the natural progression of foot development, from broad and square to accommodate the fat, flat foot of infancy and progressively slimming down as the arches appear and the foot assumes a more conventional tapered appearance. The foot at all ages is asymmetrical, but that is different from a straight or curved last. Both lasts are asymmetric but a curved last has a much more pronounced in-flare. At maximum bi-pedal locomotive speed (i.e. an Olympic sprinter), a curved, semi-pointed last is recommended. For the toddling infant a straight oblique-toed last has proven to be best for natural foot development. However carefully chosen and correctly fitted, a child's foot will unavoidably be 'conditioned' to

conventional footwear over the years. This should be done as slowly and naturally as possible by alternating sensible footwear choices with plenty of barefoot exercise.

### Barefoot ideal

Walking barefoot, at least in the home, is obviously the most natural way for a child's feet to develop, but realistically, if we insist on spreading ever-increasing amounts of chemicals, asphalt and concrete on the surface this planet, shoes must be worn. The knowledge and research exists in the shoe industry to produce well designed, quality feature footwear in an adequate range of sizing, widths and styles for the healthy foot in children's development but, with a few notable exceptions, many footwear brands are reluctant to do so. We must pay more attention to the foot-shoe relationship especially in the infants and children's categories. 'Cartoon Footwear' may be cute to look at in the store but perhaps, like cartoon films, they provide more fun when viewed rather than worn. 

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