



BUILDING HEALTHY FEET

A child's foot is not just a smaller version of an adult's. It is structurally and functionally different, and adapts to the developing skeleton and its constant postural changes. Very young children's feet are also relatively 'soft' as they are composed of varying amounts of hyaline cartilage, whereas the adult foot is entirely structured from bone. The natural development of young feet is therefore greatly influenced by the footwear that is worn throughout childhood and, in particular, the period when a child is learning to walk. It is therefore vital that the correct footwear is worn at each stage of development.

This relative softness also means that a child feels no discomfort if its shoes do not fit properly and this is why it is so easy for permanent damage to be caused. The leg and the foot are the levers that enable us to get around. The foot is also highly complex and contains no less than 26 bones joined by 107 ligaments and linked to 19 muscles by a series of tendons in order to create movement. Early damage to this complex mechanism can result in a lifetime of problems.

Nowadays, styling for children's shoes increasingly mirrors adult fashion trends. Children in developed societies are also indulged to a far greater degree than ever before such that peer pressure rather than common sense frequently influences what parents buy in the way of clothing for their children as the latter naturally wish to conform to everyone else. Unfortunately, where footwear is concerned, it is not so much the materials used but rather the unsuitable toe shapes and heel heights that do the damage.

Aware of this implicit threat to child foot health, CTC, the Centre Technique Cuir Chaussures Maroquinerie, in France made a study of children's footwear in order to provide design guidelines for manufacturers. The aim was to set parameters for children's shoes with particular emphasis on those within the 18-23 and 24-27 Continental size ranges. While its findings were based on French children's feet and foot characteristics vary quite considerably across the world, at this stage of a child's development they do nevertheless contain some useful pointers for anyone wishing to produce or market healthy children's footwear in general.

CREDIT: MIDEA



BASIC REQUIREMENTS

The role of a child's shoe can be considered as being threefold:

- To be aesthetically pleasing.
- To support the foot in regard to fit and size.
- To fit in terms of morphological requirements and the individual foot.

A child's manner of walking is dependent on a number of parameters and functions which will vary from individual to individual depending on personality, development, surroundings and heritage. Children generally start to learn to walk between the ages of 11 and 18 months. From that moment on, the way they walk is used as a means of monitoring how well they are developing.

For the child, the progression from crawling to walking is the end result of a long process of physical and mental development. Walking gives it greater confidence in both itself and its environment. It also arouses its curiosity, encourages it to enjoy moving around and to begin to understand the world around it.

At this early stage, fit is fundamental. Children learn to walk by falling over, so it is important to find a compromise between providing enough space not to hinder growth, while at the same time offering enough support so as to avoid possible injury. By the age of two, walking has been mastered and the idea of comfort in the shoe becomes just as important as suppleness and support.

AGE AND SIZE

These can be classified as follows:

- Toddler 16 to 23
- Infant 24 to 27
- Small boy/girl 28 to 34

Using these three classifications, shoe size can be related to age. Beyond this point, shoes already follow adult sizing in terms of volume within the shoe. A child's shoe must be precisely suited to the different morphological requirements of each particular age group in the appropriate gender category in terms of size once the age of five to seven is reached. Prior to that, sizes for boys and girls barely differ.

GENERAL REQUIREMENTS

In terms of the foot's development, it is at its most sensitive at the age when the child begins to learn to walk. This sensitivity allows it to collect all the information it needs in terms of balance, stability and physical movement. It is therefore vital that the shoe does not hinder development in any way. At the same time, the foot is growing and, because the bones are only partially calcified, this places some restraints on the shoe. While it cannot be too tight, it must nevertheless still offer protection in terms of support to the anklebone on both the inside and outside of the foot for children aged from one to three.

Age (Years)	Boy's	Girl's
1	21-22-23	20-21-22
2	23-24-25	22-23-24
3	24-25-26-27	23-24-25-26
4	26-27-28	25-26-27-28
5	27-28-29-30	26-27-28-29
6	28-29-30-31	28-29-30-31
7	30-31-32-33	30-31-32-33
8	32-33-34-35	31-32-33-34
9	33-34-35-36	32-33-34-35
10	34-35-36-37	33-34-35-36

Too much room



Correct



Too little room



During this period, children must wear structured shoes that assist them in finding their balance and allow them to develop a certain amount of confidence. It is worth noting that very few children are born with malformed lower limbs. Only some 40% of adults however have healthy feet, mainly through wearing unsuitable shoes during childhood. The age of the child and the fit of the shoe are the keys to healthy footwear. And, as the latter is dependent on the shape of the last, so it must be correctly designed in order that this can be achieved.

SPECIFIC REQUIREMENTS

Ages 1 to 3 (sizes 18–23) – uppers should be high cut to fit just under the anklebone at each side of the foot to ensure it is well supported. To allow for growth, the length of the shoe must be longer or equal to the length of the average foot in that size, bearing in mind that the increase in space between two sizes is normally 7mm but can be as much as 10mm. It is important to check this carefully as too much room also affects growth due to the fact that the flexing zone of the shoe is not positioned correctly in relation to the metatarsal joint of the foot.

Two separate factors affect the forepart of the shoe: the volume around the perimeter of the joint at the front of the foot and the area around the toes. Babies have relatively large big toes to help their balance, so it is important to make sure there is sufficient room so that the toes do not cross over on top of one another as this can lead to deformities such as ‘claw’ toes or ingrown toenails. At the joint, the volume must be sufficient for the individual foot and in no circumstances smaller than the average foot in that size.

At the heel, neither the perimeter nor the back height of the shoe should be less than the average measurement for the shoe size. In order to distribute body weight correctly and stabilise the foot, the shape round the back of the shoe should ideally correspond to the fit – approximately 45 mm relative to the back of the shoe. The instep should follow the natural line of the foot at a front and rear height of between 5–8 mm. The shoe needs to fit closely at this point in order to offer some support to the arch and locate the forefoot inside

“... as a matter of concern...”

It is not clear how much of problem poor fitting children’s footwear is globally but some statistics from the UK indicate it may well be a major one.

One survey suggested that 91% of children had some sort of problem with their feet or footwear and that 89% of adults required some form of foot care.

Another indicated only 6% of parents checked their child’s feet when they buy a new pair of shoes. 23% did not check them at all and a further 23% only when the child indicated there might be a problem.

The most alarming statistic, however, was that some 83% of five-year-olds at one school were wearing footwear that was too small for them.

the shoe. It must not, however, actually raise the arch of the foot. Any relief or allowance in the shape of the shoe should not be overdone and 3mm is ideal as it will not hinder the child’s step by creating longitudinal instability caused by too much rocking whilst the child is learning to find its balance.

Ages 3 to 5 (sizes 24–27) – compared with the first group, children at this age are much more dynamic in their movements. The foot is still weak, however, so that while the upper can now be cut lower, this factor must still be allowed for. In terms of length, this must again be longer or equal to the average length of the specific size. Sizes now go up in increments of 6mm.

At the front of the shoe, the area around the joint must again be sufficient and not less than the average for this



Normal feet of a six-month-old child vs. elderly feet damaged by poor footwear.

size, whilst at the back the circumference and height must again not be less than the average-sized foot. The instep continues to follow the natural arch of the foot and should have a front and rear tolerance of 5mm. So as not to hinder development of the foot, relief should be raised at both ends by several millimetres. 4-6mm is suggested at the front and 5-8mm at the rear.

Ages 5 to 7 (sizes 27-33) – The foot is now becoming more structured and defined. It is also gaining in flexibility and the arch is beginning to form, lengthening the foot by some 5mm. Footwear can now start to become more like that worn by adults. It is at this point that girls' and boys' feet begin to differ, with the main change occurring around the instep (difference in heel/forefoot) and the size of the main metatarsal joint. Girls' feet become defined earlier than do boys', so it is preferable to produce finer shoes for them. It is also important to make a difference to heel height as it is now becoming more important for girls to have a higher heel in order to accentuate the arch of the foot. 10mm is a good standard for boys, while heels on girls' shoes can be raised to 15mm or 18mm with an absolute maximum of 20mm.

DOING IT RIGHT

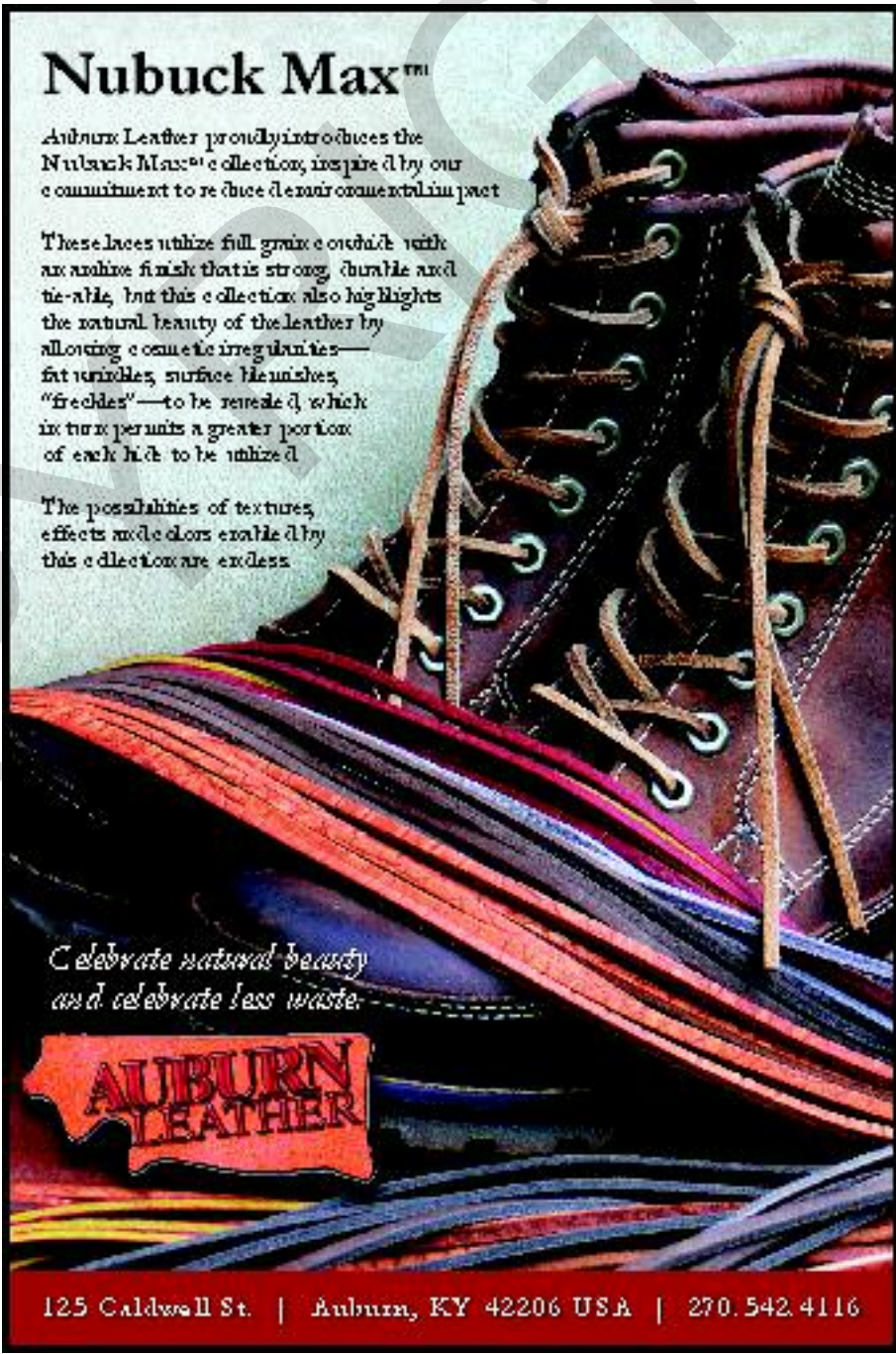
Unfortunately, there are not enough shoe retailers employing staff who are capable of fitting children's shoes. They have been driven to the wall by discount stores and supermarkets where measuring and fitting are considered to be DIY if anything is provided at all. It is a pity they do not act more responsibly in this regard as the vast majority of parents have no idea how a shoe should fit and their children are not usually able to help. They, however, are the ones who will have to live with the consequences for the rest of their lives.

It is also regrettable that too many children's shoes are still being produced around the world with style and price the sole considerations. Just a little more effort on the part of these manufacturers would make a great deal of difference in ensuring that even if their shoes

were not measured properly at point of sale they would at least be fit for purpose in terms of suitability. Following basic guidelines such as those detailed above is neither difficult nor expensive.

POTENTIAL FOR DAMAGE

What happens to wearers of ill-fitting or unsuitable footwear? The twin image of young and old feet shows just what can happen after a lifetime of wearing unsuitable footwear; it is hard to believe that this degree of damage can be caused. The sad truth is that there are all too many people around the world just so crippled when it need not always be the case. As good foundations are essential for a good building, so ensuring children's feet develop properly will reap benefits for them later in life. 🍷



Nubuck Max™

Auburn Leather proudly introduces the Nubuck Max™ collection, inspired by our commitment to reduce denim environmental impact.

These shoes utilize full grain cowhide with an aniline finish that is strong, durable and tie-able, but this collection also highlights the natural beauty of the leather by allowing cosmetic irregularities—fat wrinkles, surface blemishes, “freckles”—to be revealed, which in turn permits a greater portion of each hide to be utilized.

The possibilities of textures, effects and colors enabled by this collection are endless.

Celebrate natural beauty and celebrate less waste.

AUBURN LEATHER

125 Caldwell St. | Auburn, KY 42206 USA | 270.542.4116