FOOTWEAR TECHNOLOGY



Foundations for a good golf swing

by Mel Cheskin

Golf has been one of the last major sport categories to come under the scrutiny of footcare professionals and bio-mechanics during the explosive, specialised athletic footwear era. Golf shoes were rarely the subject of a kinematic study, let alone biomechanical testing inside a gait laboratory. Now, thanks to collaboration between Callaway, one of golf's premier names and Aetrex Worldwide, Inc. headquartered in Teaneck, New Jersey, biomechanically designed orthotic inserts for golf shoes are out of the laboratories and onto the links.

Sport specific shoe orthotics have become increasingly popular in the past decade. Orthotics, once reserved for patients seeking relief from painful foot conditions, are now the product of choice for anyone who wants improve gait biomechanics or simply to feel good on their feet. More athletes today recognise that placing the appropriate orthotic in their shoes is the easiest and most effective way to immediately provide foot comfort and improve footwear performance. Running has led the way with an emphasis on injury prevention and treatment, largely through custom inserts prescribed by podiatrists. However, there are many branded over-the-counter (OTC) inserts for runners available on the market that address alignment, gait patterns and proper arch support. New Balance, one of the well established running

shoe companies, has introduced its own line of OTC inserts to match its running shoe line. Many downhill ski boot makers offer an adjustable orthotic insert to add comfort to their boots and further customise the skier's downhill biomechanics. Several brands of mouldable OTC ski orthotics are also available through specialised ski fitters. Ice-skating, in all its forms—hockey, speed and figure-skating—is another category of sports requiring specialised orthotics. Due to the shape of ice skates, where boots have a very narrow waist (shank) and restricted toe-box area, specialised orthotics are required; soccer, cycling and cross-country ski boots are other sports requiring narrow fitting orthotics for the same reason.

In golf, one of the key determinants of a good swing is balance. All golf strokes are made with the body in a stationary position with the arms rotating around the body—comparable to spokes around a hub. It is very common with this swing motion, especially driving with force off the tee, for the golfer to pull the body off balance. Proper maintenance of body balance starts at the feet where Callaway's specialised shoe insert programme has been designed to keep the golfer's foundation in balance during the swing phase.

Based on the successful Aetrex Lynco Orthotics program, sold through medical footwear and comfort footwear stores, Aetrex has biomechanically designed the Callaway Performance Golf orthotic series to enhance the golfer's balance and swing mechanics. By offering four distinct choices of ready-made orthotic, Callaway Golf Orthotics provide golfers with a variety of custom-selected options based on their specific foot type and biomechanical preference. Options include metatarsal support to provide additional protection at the ball-of-the-foot or medial posting to gently realign the rearfoot and control the problem of over-pronation.

Available in both women's and men's sizes, every Callaway insert features a deep anatomical cupped rearfoot that cushions and stabilises the rearfoot, recommended for medium and high arched feet and wearers not suffering from ball-of-the-foot pain. Model 800 has just the anatomical heel cup, while models L820 and L825 are posted with a build-up on the medial side to help prevent over-pronation, while model L805 has a metatarsal support pad that both cushions and offloads the metatarsal heads, redistributing body weight from the metatarsal area. Model L825 has both the medial rearfoot posting and the metatarsal forefoot pad.

A unique feature incorporated into the range of orthotics is the copper-fibre lining to keep bacteria, fungi and odour at bay. The addition of copper to a fabric has been scientifically tested and clinically proven to help keep feet healthy and clean. The CopperGuard top cover is made from advanced cupron fibres that have the qualities of copper and bind the metal to textile fibres. This allows for the production of woven, knitted and nonwoven fabrics containing copper-impregnated fibres with antimicrobial protection against micro-organisms such as bacteria and fungi. Cupron's proprietary copper oxide compound is natural and long-lasting and is biocompatible with non-intrusive medical devices.

Golf is one of the sports that requires players to wear specialised cleated shoes for long periods of time; often a considerable amount of walking is required. Aetrex has not neglected this comfort factor in the Callaway orthotic range. Callaway tri-density golf orthotics are made from open cell polyurethane foam for maximum shock absorption and cushioning. By incorporating an innovative CS3 Gel System into the range, Aetrex has added cushioning and shock absorption while redistributing pressure and preventing injuries. This is achieved by strategically placing varying density gels in the arch area according to arch type—low, medium and high—thus providing maximum comfort and stability from tee-off on hole one to putt sinking at the 18th.

Any series of specialised orthotics can only maximise performance with expert advice or by offering wearers a tool to analyse their own needs. Aetrex introduced technology called iStep into the comfort footwear industry several years ago. iStep is basically digital foot scanning in a computerised pressure platform that measures the foot from three different aspects—foot size, arch type and pressure points. Originally designed and marketed as a diagnostic tool, the iStep system has been upgraded to integrate the Aetrex Lynco OTC orthotics program and Aetrex's own sport, comfort and therapeutic footwear lines. By stepping onto the iStep pressure platform and supplying basic information, such as weight and gender, the computerised foot scanning program quickly identifies the ideal orthotic for the individual's needs. The technology is available in four integrated programs including a wireless version with Flat Panel TV option.

Designers of golf footwear may have been slow in catching up with the biomechanical sport shoe era in the past, but the Callaway-Aetrex orthotics series has laid a firm foundation to catapult golf shoe performance well into the future.



Aetrex Worldwide and Callaway have combined to bring expertise in orthotics to the world of golf.

Aetrex