manner; increasing range of motion of the foot is resulting in a more powerful stride." And this is not merely a case of elaborate marketing jargon. The company conducted seven years of work with high level athletes and teams. Furthermore, independent institutes such as the Sport Medicine Unit of the Rehabilitation Clinic of SuvaCare in Sion, Switzerland, and the Sport and Health Physiology and Physiopathology lab of the University of St-Etienne, France, have certified the company's claims that SpringBoost's Dorsi Technology improves performance in explosive power, vertical leap, speed, and efficiency in muscular work load.

A scientific twist on nature

Newton Running, based in the USA, has also developed footwear to mimic 'natural' barefoot running, but the company has adopted a very scientific approach to creating 'natural' movement. Biomechanically tested, Newton's membrane technology is located at the forefoot to improve afferent feedback and has been developed for the serious runner, based on the concepts and laboratory testing of eminent researchers such as Benno Nigg, B.De Wit, M.A. Nurse, C. Reinschmidt, D.J. Stefanyshyn, L.N. Burkett and the late Dr. Amy Roberts. All of these experts recognised the differences in the foot-ground interface contact between barefoot running and when wearing footwear—such that the active initiation of the kinetic adaptations just before foot contact is followed by a more passive kinetic interaction between the contacting leg and the ground during the initial contact phase when wearing a shoe. The 'disadvantages' are specific to the properties of the athletic shoe when compared with the biomechanical properties of the unshod foot.

The forepart of the foot is the most sensitive area to load-bearing and vibration stimuli. In the barefoot condition the Achilles tendon, the ligaments and arch of the foot have a much greater potential to store energy. Therefore in the unshod condition almost all of the stored energy can be returned to the athlete. In shod running the sensory feedback from cutaneous receptors in the plantar surface are dampened by the cushioned sole of the forefoot portion of the athletic shoe and this results in reduced lower extremity muscular activation patterns.

Taking this into account, Newton placed its Membrane Technology and active units in the forepart of the shoe so that the affect of the technology is centred on the metatarsal heads to develop a shoe that is said to maximise the energy return between the ground, shoe and foot and minimise the energy lost during shock absorption.

Looking to nature and 'natural walking' has also inspired another of the latest 'trends' in modern footwear to enjoy success in the marketplace. Known by the unusual name of MBT Swiss Masai, this footwear technology was developed by Swiss engineer Karl Müller. MBT was the result of observing the Masai, an East African semi-nomadic tribe, that maintain excellent posture while walking barefoot on soft, natural ground, thus better balancing their bodies with each step. Furthermore, joint and back pains are almost unknown amongst the Masai people who also seem to enjoy stable health and remarkable athletic ability.

MBT claims 'regular' shoes promote a passive, often slouched posture (left) which its outer sole technology counteracts (right) by stimulating the body to upright itself.
MBT

Promoted as 'physiological footwear', MBT shoes and sandals are marketed as a 'challenge' for the whole body, offering a training effect that offers the wearer benefits such as "gait and posture improvements, relief from pressure on the joints and back and firming up muscle activity in the abdomen, back, buttocks, rear thigh and lower limbs... by stimulating the metabolism which leads to weight loss and speeding up regeneration."

From a biomechanical standpoint, MBT states that one of the human body's most complex tasks is to remain upright and balanced when walking and standing, which is dependent on a multitude of supporting muscles throughout the body. The company claims that conventional shoes support and lead the foot, stabilising the body in an unnatural way thus leading to important muscles losing their function and