

Matrix makes foot sole related therapies better understood

a hypothesis

by

Peter W.B.Oomens (posturologist)

As a retired podopostural therapist it is my conclusion that I have been able to help a lot of patients with this, in my opinion logical, therapy. And still I immerse myself for several years in the difficult position of podopostural therapy within the current therapeutic arsenal. Is this due to the apparent simplicity of the treatment? 'Because flat insoles with thin slices of cork do not support' is the prevailing thought. Is it an anatomical-physiological lack of knowledge about the (dynamic) foot? Is it the anti-pronation lobby of the sports shoes industry? Or is it due to not being able to position the profession by the professionals themselves? The answer is not so easy to give. 'Footbed thinking' is so common that one speaks of 'good and bad' footbeds. In my view, good footbeds do not exist, even when people say that they fit well. The particular of the foot is in its dynamics; standard (arch) supports and footbeds work only against.

Yet I also think that the profession itself needs to introspect. How effective the insoles may be, it is 'only' a part of the treatment. The founder of the podopostural therapy, René Jacques Bourdiol, a French physician, meant the so called 'proprioceptive' therapy soles 'only' as a part of the overall treatment. Mobilization and perist reflexology of the foot, alongside other complementary techniques complete in his view the full treatment. Despite the proven effective treatment of postural complaints and posture-related symptoms with this therapy soles, this therapy is therefore in my opinion not complete.

Posturology

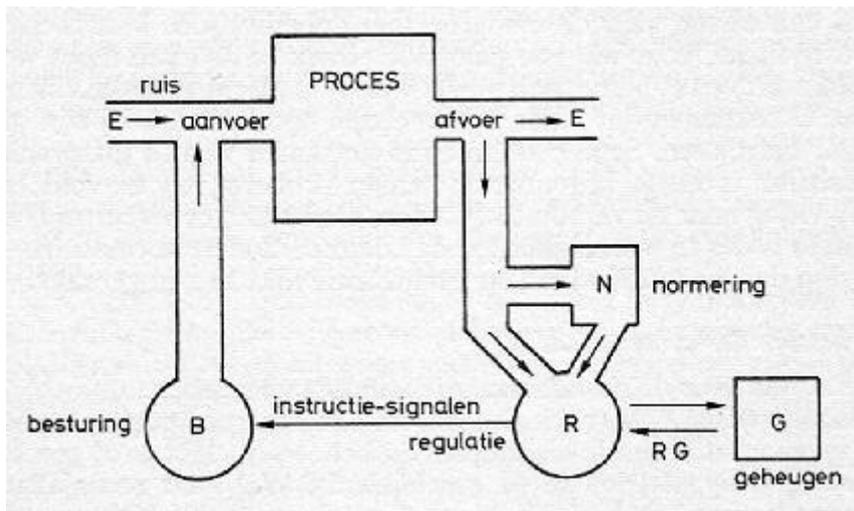
Thus one of the reasons for me, after my practice termination, to go deeper in the **posturology** is to achieve a more homogeneous approach.

Posturology represents the integral knowledge of the human posture, the body's own interfering control systems, and, based on feedback, its implementation.

Was this concept a few years ago fully unknown, now 'googling' it gives over 100,000 hits! I see it as my job to put posturology on the map, at least in the Netherlands. So far I have edited a number of publications to my name and I publish on my website <http://www.posturologie.nl/en/>

Cybernetics

Posturologists are familiar with the fact that there is a demonstrable and reproducible effect of the motor eye muscles on the human posture and vice versa. Also the occlusion of the jaw joint seems to be related to the posture .. More connections will certainly be proven; the body is indeed a complex cybernetic mechanism, consisting of numerous interactive systems. In regular medicine especially sensomotor relationships have attention. Influences of organ problems on the posture are clinically described most locally.



feedback system

Basic Bio Regulation System

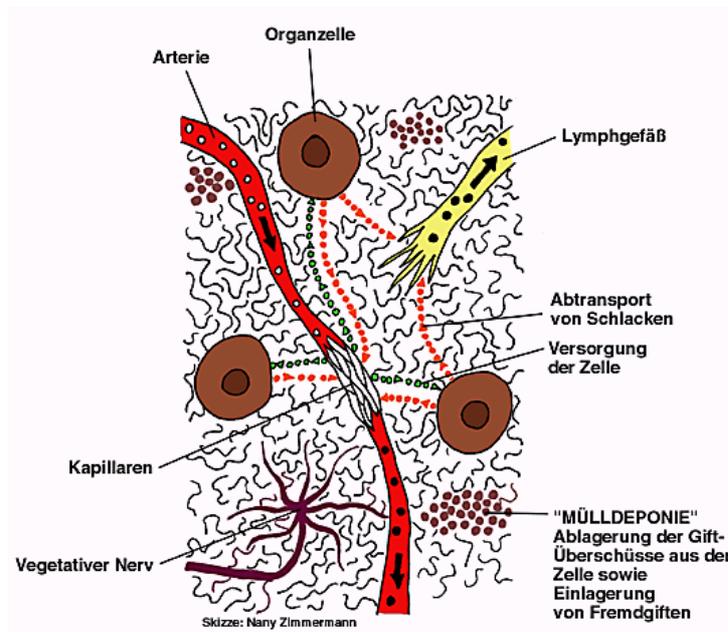
This concept has its origins in 'Das System der Grund Regulation' pioneering research of Prof. Alfred Pischinger (Vienna). Scientists from the University of Utrecht have named this later as the '**basisbioregulatiesysteem**'.

Rudolf Virchow (1821-1902) pathologist, had great influence on our medical thinking. Virchow suggested that disease is caused by disruption of the cell metabolism and cell structure. Cell research since then has an important place in the mainstream medical research. Obviously man is more than the sum of his cells.

This 'more' need to be found, according to **Pischinger**, in the environment surrounding the cells and organs, in which the very-fine endings of the autonomic nervous system and blood vessels are present: the 'ground regulation system'. The end of the vegetative nervous system terminates freely in this extracellular fluid. This is actually found anywhere in the body: bones, mucous membranes, organs, glands and so on. Disease is a disorder according to **Pischinger** at the base of the autonomic nervous system in this environment. The **ground system** of mesenchymal origin consists of soft connective tissue and intracellular fluid, approximately 60% of the human tissue comprising. In the Netherlands, **cell biologist Dr. R. van Wijk** et al of the University of Utrecht has done a very extensive research. Also **Harry Lamers**, physician and the motor behind the neural therapy has made a significant contribution to this.

If we look at this connective tissue, also called matrix (van Wijk) in further detail, we see there capillaries, tiny blood vessels that supply nutrients and oxygen to the cells and remove waste products. Furthermore, we find small lymph vessels which end freely in this matrix. This also applies to the networks found here of free nerve endings. Specific cells involved in the construction and functions of the matrix itself, are also found. Besides the exchange of many substances, also hormonal interactions take place.

From day 24 after the fertilization, originated from the mesoderm (C 5-C 8) the limb buds for the arms of the embryo start to form, as from day 28, the limb buds for the lower extremities. These arise from the segments L 3-L 5. The limb buds develop from the mesoderm and ectoderm. Examination of the plantar tissue of the foot, shows the presence of collagen fibers, elastic fibers, and adipose tissue. On the surface of the plantar aponeurosis we find a large number of fibrous septa in order to hold the fatty substance during foot load in place.



INTEGRATION OF INSIGHTS

With the previous text I want to integrate insights. It has always amazed me that for example reflexology therapists so firmly believe that with massage of the foot sole the whole body is achieved. This despite the fact that the plantar foot is somatically 'only' innervated from the segments L 5 t/m S 2 and the lower extremity sympathetic only efferent from Th 10 till L 2. A parasympathetic innervation to the extremities is lacking.

Sideways It should be noted that the sequence of the segments in the leg is different from that in the arm. The hip abductors are somatic practically innervated from the same segments as the most intrinsic foot muscles!

In professional discussions about the proprio-/exteroceptive insoles I seldom meet incomprehension. This while now sufficient scientific publications are available demonstrating that

- the intrinsic foot muscles play a much more important role in stance and gait than previously thought (eg force closure foot joints)
- mechanoreceptors of the glabrous skin of the foot sole under pressure (= load) have a corrective effect on human postural balance: measurable and reproducible

Core activity of the previously mentioned podopostural therapy is the prescription of very thin insoles, individually provided with cork slices of 1 to 2 mm thick. Walking and standing on them is the actual therapy and leads to a gradual change of the foot load and, consequently, a postural change. The insoles can usually be left off after some time.

It seems strange that such a subtle small element causes a postural change. However, we can walk barefoot through the garden and on the beach, but who can take tickling the foot sole? The aforementioned mechanoreceptors (= nerve endings) of the foot appear able to register pressure and intensity.

Hypothesis

Remains that where a direct effect through massage of the foot sole above the level L 4/L 5 neurological does not seem very probable the 'ground regulation system' or **matrix** may be the connective tissue to originate physical reactions at '**distance**'. I refer also to therapies as neural therapy and needling.

Claimed effects by foot sole massage above level L 4/5 could then be accomplished through this 'ground regulation system' or matrix.

Only further research can (hopefully) give us an answer. About this system extensive literature is available, to which I further refer.

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Peter W.B.Oomens
Research on posturology
Villa d'Este
3962 LP Wijk bij Duurstede,

3962 LP Wijk bij Duurstede,
peteroomens@xsall.nl
regulatietherapie@gmail.com
<http://www.posturologie.nl/en/>

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