A New Paradigm:

On Nerve Tissue Treatment

By Christoph Sommer, Certified Advanced Rolfer

When I trained as a Certified Rolfer in 1986, the accepted teaching in structural integration was to avoid touching and thereby injuring nerve tissues. We were told to be especially careful around the brachial plexus and some nerves in the face. In more recent years, some pioneers – David Butler (author of *Mobilisation of the Nervous System*; Churchill Livingstone, 1991) in Australia, and Jean Pierre Barral, D.O. and Alain Croibier in France, D.O. – have taken existing anatomical and histological knowledge about nerves into greatly expanded practical application, proving the therapeutic relevance. In particular, their work highlights that unresolved nerve compressions will impact structure, causing and maintaining structural imbalances.

Let me be clear here: as Rolfers we have always had an effect on nerves and their connective tissues – there is no way to avoid them. But we have not explicitly included them in our thinking or, more specifically, our spectrum of touch.

Structural integration has evolved thus far within a context of greater differentiation within the body of knowledge of the work and finer differentiation of practitioners' perceptive and manual skills. In the past twenty years our field has evolved based on inspiration from and integration of elements of various adjacent fields. These include: craniosacral and biodynamic craniosacral therapy; spinal mechanics; visceral manipulation; Somatic Experiencing; and movement education, particularly in light of how coordination, perception and meaning play a major role in organization in gravity via tonic function. As Rolfing® incorporates knowledge from other fields, the paradigm we work from is revaluated and reshaped.

To remain vital and relevant in the changing landscape of the 21st century, it is essential that structural integration stay true to the values of holism and the aim of integrating structure into the gravitational field by the means of connective-tissue manipulation and education (about coordination, perception, and the inclusion of the individual's psycho-emotional meaning). It is also vital that our work continue to evolve. Some new challenges to our understanding and methodology are already present, particularly in Certified Advanced Rolfer Robert Schleip's research findings on the contractility of fascia by means of embedded myofibroblasts, and in the very elaborate work of Barral and Croibier on the manipulation of peripheral and cranial nerves. I believe that these developments represent the next paradigm shift for our work.

The bullet points that follow highlight essential elements of the anatomy and basics of nerve manipulation. This is meant to awaken curiosity and invite further reading[1] and education[2] in this "technique."

- Peripheral nerves consist of highly elastic nerve tissue surrounded by connective tissue and fat (see Figure 1).[3]
- Peripheral nerves have their own blood vessels (Vasi Nervorum), maintaining a turgor effect (internal pressure), and their own nerve supply (Nervi nervorum), sending sensory feedback to the central nervous system on the state of the nerve itself (see Figure 2).[4]

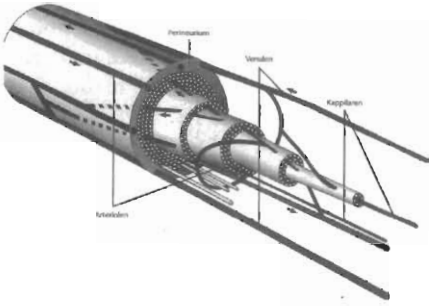

Figure 1 In this image you see the arrangements of the connective tissues and their vascularisation. [Translation: Micro vascular structure of a fascicle (microscopic scan of living tissue; Lundberg and Branemark, 1968); the arrows indicate the direction of flow.]

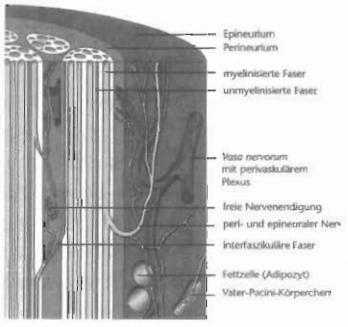

Figure 2 Epi- and Perineural nerves (according to Hromada). Legend reads from top to bottom: Epineurum, Perineurum, myelinized fibres; unmyelinised fibers, Vasa Nervorum including perivascular plexus, free nerve ending, peri- and epineural nerve, interfascicular fiber, fat cell (adipocyte), Vater- Pacini bodies.

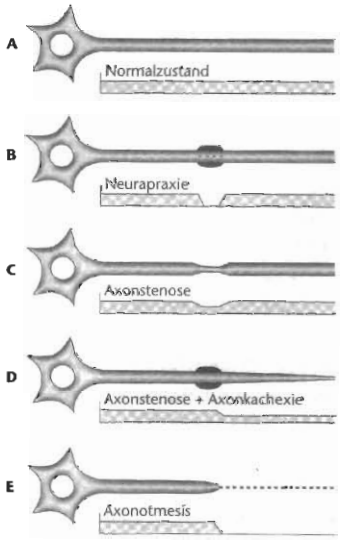

Figure 3 Nerve fiber lesions (acc. to de Bishop). Schematic graph with the speed of transmission shown below each nerve. Translation (top to bottom): Normal; Neurapraxie; Axon stenosis; Axon stenosis and Axon kachexie; Axonotmesis.

- Peripheral nerves are "healthy" if suspended in good span between the spinal cord and the distal nerve endings. In cases of strong and continuous compression they degenerate (see Figures 3 and 3a).[5]
- 45% of peripheral nerves have a sensory function; another 45% regulate vasomotor activity, and only 10% govern motor activity (see Figure 4).[6]
- Manual treatment of peripheral nerves requires a very light touch and mainly influences the connective tissues surrounding the nerve, but it may well affect the vascularization and the Nervi nervorum as well (see Figure 5).[7]

How do we apply this to our day-to-day work? I want to give one example. Often we find high tension on one side of the suboccipital musculature, and with finer palpation we feel one or even two very fine "guitar strings" embedded within the muscle. Despite working on these tensions repeatedly – and even after all our work in the Seventh Hour of the ten-session series – the tension still reoccurs. This is an indication to work with the nerves (see Figure 5 for an idea of the anatomy). To do this, try to contact the nerve (the "guitar string") with a very light touch using the pad of your middle finger. Go into a very refined and sensitive "listening mode," and follow as you listen (the nerve will usually descend at first towards the foramen). Wait for a pause in the tension, which you may perceive as an initial expansion and softening of the nerve-string circumference, and then apply very light traction cranially. (You may perceive very small cracking "noises" under your finger pad.) Continue the distal traction to its end and then overtake the stretch boundary a bit. Repeat this procedure once or twice and then check whether the tension has resolved. You may also find and need to treat a reciprocal nerve tension on the opposite side.

You may realize that you have already been doing "nerve manipulation" unconsciously in your practice with the same results, or maybe not. In either case, being more specific and light in your touch and clear in your intention will enhance the results.

As you can imagine, there are many spots of interest in the 100,000-kilometer length of the peripheral-nerve webbing. Treating those "narrows" can resolve tensions and irritations in any type of tissue and therefore augment structural changes. This work may liberate your clients from nagging pains that they – prior to this treatment – needed to compensate for in their structure, coordination, and perception.

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1. Barral and Croibier's book on peripheral nerves is available thus far in French (*Manipulations des nerfs périphériques*, Elsevier, 2004) and German (*Manipulation peripherer Nerven*, Elsevier GmbH, Urban und Fischer Verlag, 2005). Their book on manipulation of cranial nerves is forthcoming in French (*Manipulations des nerfs crâniens*, Elsevier, due in December 2006).

2. Those interested in studying nerve manipulation can find course information at the following websites. For Europe: www.muenchnergruppe.de; in the USA: www.IAHE.com

3. Barral, J. P. and Croibier, A. (2005). *Manipulation Peripherer Nerven* (pg. 27). Munich: Elsevier GmbH, Urban und Fischer Verlag. Caption translation by Christoph Sommer.

4. Barral, J. P. and Croibier, A. (2005). *Manipulation Peripherer Nerven* (pg. 38). Munich: Elsevier GmbH, Urban und Fischer Verlag. Caption translation by Christoph Sommer.

5. Barral, J. P. and Croibier, A. (2005). *Manipulation Peripherer Nerven* (pp. 38-39). Munich: Elsevier GmbH, Urban und Fischer Verlag. Caption translation by Christoph Sommer.

6. Schleip, Robert. "Fascial plasticity – a new neurobiological explanation: Part 1," *Journal of Bodywork and Movement Therapies*, (1/2003). Churchill Livingstone, Elsevier.

7. Barral, J. P. and Croibier, A. (2005). *Manipulation Peripherer Nerven* (pg. 109). Munich: Elsevier GmbH, Urban und Fischer Verlag. Caption translation by Christoph Sommer.

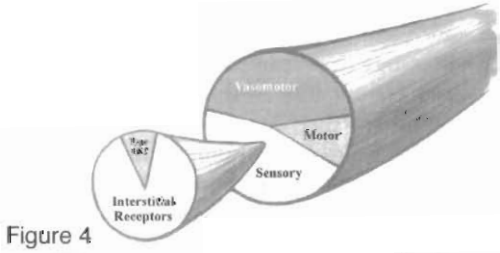

Figure 4

Within a typical muscle nerve there are almost three times as many sensory neurons than motor neurons. Note that only a small portion of the sensory information comes from types I and II afferents which originate in muscle spindles, Golgi receptors, Pacinian and Ruffini endings. The majority of the sensory input comes from the group of types III and IV afferents or interstitial receptors which are intimately linked with the autonomic nervous system. Figure by Twyla Weixl, Munich, Germany.

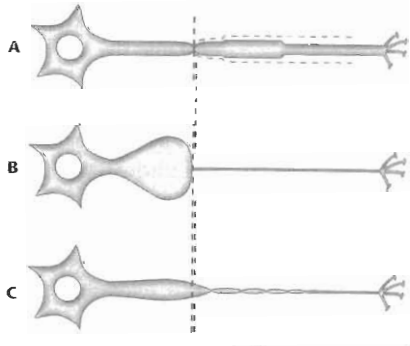

Figure 3a Injuries within the nerve canal. A: Axon stenosis; B: Axon kachexie; C: slow regeneration after decompression

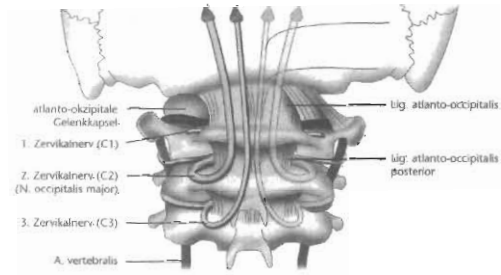

Figure 5 Nervus Occipitalis Major. Position and topographical orientations