

REFERENCES

1. Burchiel, K. and Burgess, J., "Differential Diagnosis of Orofacial Pain," Handbook of Chronic Pain Management, ed. Baltimore, Maryland: Tollison, C. Williams & Wilkins, 1989, pp. 282.
2. Frankel, V.H., "Temporomandibular Joint Pain Syndrome following Deceleration Injury to The Cervical Spine.," Bulletin of the Hospital for Joint Diseases. New York: Orthopaedic Institute, 1969; 26: pp. 47-51.
3. Cox, C., Soft Tissue Management of Acute Physical Trauma. Private Publication, 1988, pp. 13.
4. Mennell, J.M., The Musculoskeletal System: Differential Diagnosis from Symptoms and Physical Signs. Gathersberg, Maryland: Aspen Publishers, 1992, pp.138.
5. Cailliet, Rene, Head and Face Pain Syndromes. Philadelphia: F.A. Davis, 1992, pp.145 (fig.10-2).
6. Cox, C., Four Chronic Pain Syndromes and The Basic Rolfing® Series. Private Publication, 1989, pp. 26.
7. Hilton, J., in Jacobson WHA (ed) Rest and Pain, 2nd ed. New York: William Wood & Co, 1879, pp. 96.
8. Gorman, D., The Body Movable. Ontario, Canada: Ampersand Press, 1981, pp. 194.
9. Travell, J., Myofascial Pain and Dysfunction: The Trigger Point Manual. Baltimore, Maryland: Waverly Press, 1983, pp. 264.
10. Ibid, pp. 261.
11. Ibid, pp. 266 (fig. 11.3).
12. Cailliet, R., Head and Face Pain Syndromes. Philadelphia: F.A. Davis, 1992, pp. 148.
13. Sheikoleslam, A., Holmgren, K., and Riise, C., Journal of Oral Rehabilitation. 1986: 13: pp.137-145.
14. Cailliet, R., Head and Face Pain Syndromes. Philadelphia: F.A. Davis,, 1992, pp. 153.
15. The TMJ Association Newsletter [www.tmjassociation.com], "Temporomandibular Joint Implants," Spring/Summer 1994, pp. 5.
16. Rolf, I.P., Rolfing. Santa Monica, CA: Dennis-Landman, 1977, pp. 69.

The Temporomandibular Joint in the Context of Structural Integration

By Christoph Sommer, Certified Advanced Rolfer
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Editor's Note: Christoph Sommer interviewed Peter Schwind in Munich, Germany on September 25, 2008. While it was the time of year that Munich celebrates Oktoberfest, they report that they did not!

Christoph Sommer: Peter, you gave me a session last Monday – I had a sore tooth extracted three months ago and I had started suffering from headaches two months ago. I was tired and I started getting sinus infections. Can you tell us something about the relationship of the jaw and mandible into the cranium and the rest of the body's organization?

Peter Schwind: When you entered my work room and told me about your situation with the temporomandibular joint (TMJ) and your cranium, it was important for me first to recognize whether these, let's say, microtraumas caused by the extraction of the tooth had started some kind of non-productive dialogue with restrictions in the rest of your body which had been "waiting" there anyway.

CS: What kind of restrictions did you find, and what were the unproductive dialogues that this tooth extraction caused in connection with already existing restrictions?

PS: I think that the way in which the deep intrinsic tensions traveling from the upper part of the neck into the cranium connect with the tensions of the lower part of the pelvis, connecting with the lower extremities, represents a productive or non-productive dialogue in a person who is integrated or well-compensated, as I would say is the case with you. And when I say dialogue, I mean relationship.

CS: What was it that you actually found and what did you work on?

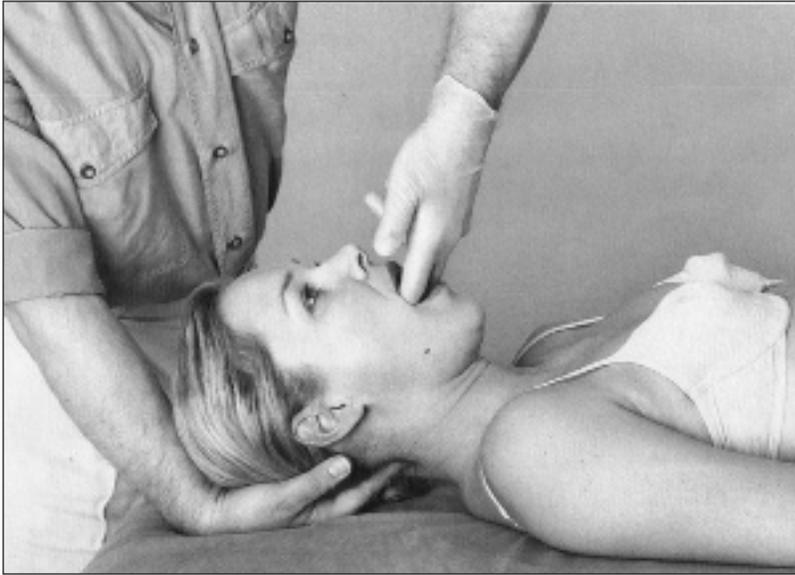
PS: I found a motion restriction around the coccyx, related laterally to one of your sit bones, and to my big surprise I found a restriction inside your left lung. I say "to my big surprise" because I have known you for quite a while and I have never seen that in you. Whenever you had a restriction in the thorax, deep inside the thorax, it was usually related to your right main bronchus inside the lung. That you showed a restriction in the left side of your lung told me that there must be either an incredible imbalance in your body or something new had arisen, creating a kind of confusion and causing a restriction inside the left side of your thorax I had never recognized before.

CS: Peter, what does that mean for the actual trouble I had in my head?

PS: It means we have to check first how the trouble, the acute trouble, within your head has started a dialogue with restrictions manifesting farther down in your body – restrictions which had been manifesting long ago.

CS: Can you elaborate on anatomical or physiological reasons why lower restrictions manifest in the cranium or vice versa, and why higher restrictions in the cranium manifested down into my left lung, for example?

PS: As we are always seeking horizontal orientation with our eyes, many unilateral restrictions in lower parts of the body do



Treatment of the spatial relationship between the maxillae, the base of the skull, and the neck: Patient in the dorsal position, legs bent, arms lying next to the torso; therapist at the head. Contact: With one palm in the region of the occiput on the nuchal ligament; with the index and middle fingers of the other hand intraorally in the center section of the palate. Action: The goal of this treatment is to guarantee that both halves of the maxillae provide adequate orientation as the stable pole of the mandibular joint while the internal membrane lining and exterior fascial layer of the base of the skull display equivalent tension patterns.

The precondition for such a global and, at the same time, detailed strategy is that the therapist use one hand to produce intensive contact with the origin of the nuchal ligament on the occiput without compressing the intracranial cavity in the process. The ligament originates as a large surface from the occiput and is attached to each of the posterior processes of the cervical spine before it ends in the fascia of the trapezius muscle. It is essential that we not limit the dynamics of the base of the skull. In other words, all tension modifications that become evident at the occiput during our treatment will be followed but not inhibited. As soon as the supporting hand has found sufficient contact with the occiput, we adapt the index and middle fingers of the other hand intraorally to the form of the center of the palate and create a spatially tangible connection between the two hands. While the occiput remains stable, it is important to sense the dynamics of both halves of the maxillae: it is as if we were placing our hands below two wings of an airplane and pushing against them in order to gradually stretch inflexible membrane layers (the wings) until the impression arises of an even spatial distribution of forces.

During this process, we should bear in mind that “normal” mobility of the bones in tissue is not forced: the index and middle fingers of the intraoral hand come into intensive and, at the same time, slightly elastic contact with the center section of the palate. As soon as one half of the palate moves, the contact finger allows it. If a twisting of the two halves occurs axially, we can “exaggerate” it without risk until the “wings” of the maxillae find a harmonic movement.

Image and text reprinted from Peter Schwind’s book *Fascial and Membrane Technique* (2006, Churchill Livingstone / Elsevier), pp. 187-188, with permission.

create a sort of counter-reaction in the upper part of the body to make upright movement possible. But addressing the TMJ, there is another very essential aspect. The temporomandibular joint manifests itself as a suspended hinge, meaning it’s hanging up there on the cranium, and we know that joints which are built as suspended hinges tend to take tensions from below.

But there’s another aspect that I think is even more significant. It’s a fact that many fascial and membranous layers that run vertically – or, more precisely, diagonally – through the body end laterally underneath the tongue, at the floor of the mouth, and that’s just one part of the game. There are plenty of, let’s say, longitudinal structures. Look, for example, at the esophagus.

It’s usually not running straight down through the neck to the stomach, but it takes very characteristic curves within the neck and thorax until it finally arrives at the entrance of the stomach. However, the esophagus is not a static structure, it is actually something like a very long closed sphincter that doesn’t open until something travels through. We have an ongoing inner motion within the neck. As soon as a person swallows, a similar very significant deep connection is manifested in the way that the prevertebral fascia, sometimes called the deep cervical fascia, travels all the way up into the nose. I don’t know how that happens, but in practice our hands may feel that this tension inside the deep cervical fascia is also connected to deep tensions we find in the main bronchus inside the lung.

CS: But do those anatomical structures you just mentioned have an influence on the TMJ, and if so, in what way?

PS: I think what is important about the TMJ is that we have to evaluate it while it is moving, while it is in functional action. Look at that passage in *Ida Rolf Talks about Rolfing and Physical Reality®* where she describes how she developed intra-oral work, mentioning the singer who wasn’t able to open his mouth along a central vertical line and who had lots of differences in the tensions on the right and the left TMJ. I think this was the starting point for all the work Ida Rolf had developed around the cranio-mandibular relationship, the neck, and the whole upper pole.

But you are right, the question is what is behind the anatomical details? I owe a lot of thanks to Dr. Sebastian Schmidinger, a dental surgeon who has always been ready to build a bridge between his dental and surgical work and what we are actually doing in the manual field. I remember writing a letter to Upledger in the early 1980s when he had just opened his institute. He responded by saying he couldn’t come to Munich to teach but he could send one of his assistants. That was how we started to study cranial work. This first course in craniosacral therapy took place in the home of my friend, the dentist and oral surgeon Sebastian. After all those years we are still asking ourselves again and again, where is the most significant structural frame for all this detailed work done in craniosacral therapy in all its different schools?

CS: How does all this relate to the traditional seventh hour of Rolfing?

PS: To a certain degree I tried to describe that in my book *Fascial and Membrane Technique*. My hypothesis is that, in various respects, the independent dynamics of the craniosacral system are able to develop as a micromovement only as far as the membranes in the region of adjacent sections of the body allow for that. The tension of the intracranial membranes extensively depends on the pressure of bodily fluids arriving in the interior of the cranium by way of the neck and flowing back out by way of the neck into the thoracic cavity. In order to maintain the intracranial equilibrium of the membranes, unrestricted inward and outward flow is necessary. I think that, to a certain degree, the complexity of the craniosacral system can be circumvented if, in the course of our treatment, we first concentrate on freeing the inward and outward paths of restrictions.

CS: What you say sounds very dynamic and intriguing, Peter, but what does that have to do with this structural grid we are looking for in the seventh hour of Rolfing?

PS: Well, it's not so simple to really describe it as a structural grid, because it's in permanent functional activities. However, what I wanted to mention is there is one observation I made in particular when cooperating with my friend, the oral surgeon. His theory is that for mammals, including humans, the roof of the mouth is in relationship upward to the neural cranium and downward to the mandible and the front side of the neck, that this relationship is the keystone for the head. And I have to say that this, let's say, very clear and almost simplistic statement has accompanied me for more than twenty years now and continues to lead me to all sorts of interesting investigations.

CS: What does that mean for you practically when you do work on, i.e. inside, the head?

PS: For me it means, in a way, that I go back to the very early roots of traditional Rolfing work in the seventh hour, where we paid a lot of attention to, I would say, the capacity of springiness of the roof of the mouth; we compared that on both sides. We didn't look for craniosacral motion thirty years ago, but we looked for the missing springiness of the right side and the left side of the maxillae, and I believe it was a very intelligent thing to do.

CS: Peter, now that you have compared the springiness of the right and left side of the maxillae, what does that tell you about the seventh hour you are going to give to the client?

PS: The maxillae, especially the posterior part, are made of extremely thin bone, but the way in which they are connected with membranes and actually situated between the neurocranium and the mandible gives orientation for almost everything. The maxillae with their membranous connections are very stable, much more stable than the thick bone of the mandible. In the 1980s we thought that we had to do very detailed work on the individual muscles involved in the motion of the TMJ.

CS: So, what do you think now?

PS: In 1993, I was invited to participate in a fairly big international conference about TMJ problems. There were many people, more than 460 surgeons and dentists, and there was an incredible amount of knowledge and research present. But one of the really interesting statements in this conference was a lecture given by an anatomist from Tübingen, Professor Dauber. He tried to describe that the main dysfunctions are not related to a disorder of the activity of individual muscles, he was talking about a unifying layer of connective tissue lateral to the TMJ. In his understanding, a global imbalance between those layers on the left and right sides is more significant for the trouble we have with the motion, with the function of the TMJ, than the individual muscle activity. That was a big surprise for me to hear! When you relate this connective tissue plate on the two sides, lateral to the joint, to the inner construction of the roof of the mouth, what you get is indeed a three-dimensional view to recognize function and dysfunction of that joint.

The difference nowadays is that I am not talking anymore about the lateral pterygoid and the medial pterygoid and related fascia. In fact, we are just observing how the roof of the mouth separates everything above it from everything below it and whether the two parts of the mouth have an almost equivalent elasticity. We also check how that is related to the big layer of connective tissue lateral to the TMJ. In a way things have become much simpler. The way the arch of the maxillae relates upward to the neurocranium and especially backward to the base of the cranium and downward to all

the longitudinal structures within the neck and thorax is what provides orientation for all the muscles around the TMJ.

CS: So this is in a way the keystone of the cranium?

PS: I think that for the structure of the cranium and for the function of the cranium, the maxillae and the relationship of the arch they describe to everything around them is just as significant as the neck of the uterus, the cervix, in the female pelvis is for the whole pelvic structures. So in a way, the maxillae are the "cervix of the cranium," both for men and women.

CS: Would you describe in greater detail what you just said about the cervix?

PS: When you look at the female pelvis, it looks like a basin, like the dome of a Romanesque cathedral turned upside down, since the uterus is falling backward, forward, and to the sides all the time. The uterus is very dynamic. And the uterus is reaching up from below into the peritoneum, but it is below and outside the peritoneum and moves around all the time. Now, the cervix has very deep fascial or ligamentous or membranous fixations which go three-dimensionally all the way, i.e., laterally, backward and forward to connect with the pelvic bones. So, from a fascial perspective, with the dome of the cathedral turned upside down, the cervix is the very keystone from an architectural point of view. That is why in gynecological surgery, when you have to remove the uterus, let's say because of a tumor, and you also remove those membranous and fascial components of the cervix, you create a very difficult situation for the lower back of that woman. By the way, some surgeons became quite aware of that a few years ago and significantly changed their techniques, the approach of this surgical intervention.

Anyway, I think just like the cervix in the female pelvis shows us the keystone in the pelvis, the "cervix of the cranium," for both men and women, is the maxillae and related membranes. And in my observation, if we don't get this balance of the two sides of the maxillae, the balance to everything related above and below it, if we don't get that balance to start with, we have to work very hard and we won't achieve such good results...

CS: ...And not such sustainable results...

PS: ...Exactly.

CS: Coming back to my session, you started working on the “neck of my uterus,” which I don’t have as a man, then you approached my thorax and the connections through the esophagus and trachea into my nose and lungs. Finally, you worked on one side’s maxilla, what I would call the “big move” in that session. Can you say more about why you built the session from below?

PS: I had to build it from below because we had realized in your treatment that one side’s maxilla was in total restriction. It didn’t show resilience when I touched it – I am not talking about craniosacral motion, I am just talking about something you touch and you check whether it gives in like a small trampoline or it doesn’t – and one side didn’t give in. I realized that this was in dialogue with two or three other deep restrictions you had in your body, which tried to disturb your good alignment or your relatively good movement function, and it is good to start the treatment from far away. So we had to start on the side of the coccyx, we had to go up to the inside of your lung, then we had to go to some of the very, very small functional pieces of muscles around your thoracic spine, and finally we arrived at that pronounced fixation inside your mouth.

What we did was very simple. We tried to balance the two sides of your maxilla in relationship to all the tissues which end at the base of and around the occiput. So, when you think statically, we tried to have the same space between your front teeth on both sides in relationship to the base of the cranium. When you think functionally, we tried to give the same spatial orientation even for your tongue on both sides of the mouth.

CS: Peter, you talk about the maxilla as the keystone you didn’t touch until at the end of the session to make it springy, but what is this maxilla built of?

PS: What is behind this keystone should be very flexible and resilient, but sometimes it’s sort of a fixed point for the whole inner construction of cranium and neck. Above the keystone we find an incredible dynamic situation inside the sinuses – I had not been aware of that until I had the chance to assist surgery in that field.

When you do an implant in the upper jaw, sometimes, if you don’t have enough bony substance to do an implant, what the surgeons do is they have to put some bone granules inside there, and they have

to create a new bony base to put the screw of the artificial tooth in. In order to do that they have to open the maxillary sinuses from inside the mouth.

When I assisted these surgical interventions for the first time, I was quite amazed to learn that inside the sinuses membranous components can be found which move five millimeters to seven millimeters forward and backward during inhaling and exhaling. The inside of the sinuses is not as solid or fixed as we imagine, so behind or above the fixed point of the two sides of the maxillae we come across tremendous functional dynamics related to our breathing activity. I didn’t find that in dissecting dead bodies, I really had to go with a surgeon and look inside the living body to observe a reality we don’t find in anatomy books because these are far too static and not dynamic enough for this kind of observation.

By the way, it is due to these dynamics inside the maxillary sinuses that nose work might be so efficient. I remember that when I started studying this work thirty years ago, we were wondering what nose work was about, and I think it is a little bit too simplistic when we believe that we just widen the inside of the two conchae. I remember Emmett Hutchins saying in one of my very early advanced trainings that nose work was done to stretch the membranes inside the maxillary sinuses and in order to arrive there we had to do it in the most elegant way possible.

CS: Speaking of how I experienced the session, especially the last part of the treatment in the maxilla, it was quite intense.

PS: Was it particularly painful?

CS: No, but the effect was that within a minute after your intense direct intervention my whole cranium started to breathe again, which I realized it hadn’t been doing for a couple of weeks. I had the feeling my “juices and my thoughts” can flow again. Was this the intention of your intervention?

PS: I think when we work with the outside fascia and the inside membranous construction of the cranium at the same time, we may arrive at a result where the cranial mechanism re-establishes by itself in a better way, because we offer enough space for it. However, we have to be careful in a certain way using this kind of direct approach, and I think it is a very traditional

Ida Rolf approach. When I was working on you, intervening as I did, I certainly had to use three to four kilograms of pressure inside your mouth to “suggest” an inner correction to that maxillary system.

We always have to go indirect!, It would be a big mistake if one tried to widen the restricted side of the maxilla directly. In the cranium, which is different from other parts of the body, we always have to go in the direction of the restriction first and wait until what we touch with our hands starts to flow further into the direction of the fixation. As soon as we feel the moment approaching, when it starts to stumble around and wants to get out of the fixation, at that moment we can encourage the system to move into the right direction, and we can actually go much further. Thus we not only encourage it, we can actually add a lot of pressure and make it move further.

CS: Thank you for this interview, Peter. I was just thinking that we didn’t really talk about the TMJ as such.

PS: I am not sure whether it was Ida Rolf or Hans Flury who said that a joint is everything that crosses it. And I would add: The joint is everything that acts around it.

CS: Thank you very much.