



# *Osteopathy* *today*

7<sup>th</sup> International Congress of the  
German Osteopathic Association (VOD)

*30 September – 3 October 2004*  
*Schlungenbad / Wiesbaden / Germany*

First International *Symposium*  
on Advances in Osteopathic Research

*Saturday, 2 October 2004*

**Programme and Abstracts**

Presented by  
the German Academy of Osteopathy

**AFO** AKADEMIE  FÜR  
OSTEOPATHIE

# Programme

08.30 – 08.45 am

Opening *Marina Fuhrmann, President of the German Osteopathic Association (VOD)*  
*Florian Schwerla, German Academy of Osteopathy (AFO) Research Commission*

08.45 – 09.25 am

Keynote lecture *Edzard Ernst: Evidence in Complementary Medicine*

09.30 – 10.30 am

Presentations Chair: *Edzard Ernst, Michael Patterson*

A new look at Pelvis diagnosis  
*Alfonso Mandara, Istituto Superiore di Osteopatia, Milano, Italy*

Interexaminer Reliability for Assessing the Lumbar Spine by Diagnostic Palpation  
*Sonja Rivera-Martinez, New York College of Osteopathic Medicine, USA*

Osteopathic approach to treatment of disturbed nasal breathing in children with hyperplasia of lymphoid adenoid tissue  
*Larissa Lassovetskaia, Russian Academy of Osteopathic Medicine*

Influence of an osteopathic treatment on erectile function of men, even when erectile dysfunction is not the reason  
*Frank Aertgeerts, College Sutherland, Belgium*

Study to evaluate osteopathic treatment in late whiplash syndrome  
*Richard Gietz, Germany*

10.30 – 11.00 am

## Coffee break and poster sessions

11.00 – 11.30 am

Keynote lecture *Karl L. Resch: Science as a helpful tool in practice*

11.30 am – 0.30 pm

Presentations Chair: *Antony Chila, Karl L. Resch*

Osteopathic treatments in case of intramural hysteromyomas: a randomized clinical trial.  
*Gerald Kaschowitz, College Sutherland, Germany*

Squinting... viewed from a different angle. A study into the effectiveness of an osteopathic intervention on children with convergent / divergent strabismus.  
*Anton Isaak, College Sutherland, Netherlands*

Osteopathic treatment of chronic non-specific neck pain: a randomised controlled trial of efficacy.  
*Florian Schwerla, German Academy of Osteopathy (AFO)*

Idiopathic infantile asymmetry and osteopathic treatment: A randomized therapeutic trial.  
*Heike Philippi, Children's Hospital, Johannes Gutenberg University Mainz, Germany*

Osteopathy as a promising short-term strategy for irritable bowel syndrome: randomized controlled trial  
*Joachim Salomon, European College of Osteopathy, Germany*

0.30 – 1.30 pm

## Lunch and poster sessions

### Poster Presentations

Craniosacral treatment in cases of sagittal suture stenosis (a case study)  
*Olga Kalinovskaya, Osteopathic Medical Center "Health Newborn", St. Petersburg, Russia*

The relationship between pre- and per-natal mechanical constraints and Apgar score  
*Roselyne Lalauze-Pol, Academy of Osteopathy de France*

Osteopathic treatment of chronic sinusitis: a randomized controlled pilot trial  
*Sabine Häfner, European College of Osteopathy, Germany*

Are blink and masseter inhibitory reflexes changed after osteopathic intervention? (study protocol)  
*Rik Hoste (Commission for Osteopathic Research, Practice and Promotion, CORPP, Belgium)*

Study of the value of osteopathic therapy in the treatment of the irritable bowel syndrome. (study protocol) *Henri Hundscheid, College Sutherland, Netherlands*

Morphological and functional anatomical aspects of the human internal vertebral venous plexus. (study protocol) *Steven Provyn, Free University of Brussels, Belgium*

Inter- and intraexaminer Reliability in palpation of the "Primary Respiratory Mechanism" within the "Cranial Concept" *Peter Sommerfeld, Vienna School of Osteopathy, Austria*

Influence of a mobilization of the mesentery upon the capacity of the portal vein, reported by Echo-Doppler  
*Patrick van Dun, Commission for Osteopathic Research, Practice and Promotion, Belgium*



## A new look at pelvis diagnosis: The correlation between sacroiliac dysfunctions and weight distribution on the lower limbs

*Alfonso Mandara, Stefano Pisa (Istituto Superiore di Osteopatia, Italy)*

**Objective:** The aim of our research was to prove the hypothesis that uneven weight distribution in the body results in rigidity and alteration of mechanics, and that the sacroiliac dysfunction therefore is just a necessary accommodation for postural balance. Such dysfunctions, however, are often diagnosed as osteopathic somatic dysfunctions (osteo-lesions) through standard osteopathic mobility tests.

**Materials and methods:** In order to realize this research project we examined 60 patients. Inclusion criteria: male and female patients aged  $\geq 18$  years. Exclusion criteria: patients with ankylosing spondylitis, sacroiliac arthritises, sacrum or ilium fractures.

To assess the sacroiliac joint function we used the correlation between two palpatory tests: the spring test and the compression test.

To evaluate the body weight of the patient and its distribution on the lower limbs, we used two seca 884 balances.

**Results:** This research project demonstrated, with high statistical significance, that asymmetrical distribution of a patient's weight (caused by body mass displacements) produces sacroiliac rigidity in relation to the load on the joint.

**Conclusion:** Our research project proved that most detected rigidities in the sacroiliac joint are the result of the ascending and descending postural forces in the body that maintain the balance and the functional scheme of the patient.

This can help the operator to determine the fundamental role of the sacroiliac joint function or dysfunction in a patient and to plan on the basis of this a more effective treatment.

## A new look at pelvis diagnosis: Extension Dynamic Test vs. Standing Test: Validity, and intra-/inter-examiner reproducibility in simulated leg length difference assessment

*Alfonso Mandara, Annalisa Fanni (Istituto Superiore di Osteopatia, Italy)*

**Objective:** Demonstrate the Extension Dynamic Test (EDT) validity in comparison with the Standing Test (ST) in inter/intra examiner measurements of simulated leg length differences, with a view to devise a more reliable diagnostic methodology. The specific feature of that test is lumbar spine extension, while eliminating the 'trochanteric effect' (defined as the set of pelvic girdle rotation, translation, and sidebending ranges), and fixing lower extremity positional defects.

**Materials and methods:**

Research was carried out on a 20-people sample (average age 24 years), selected among students of the Istituto Superiore di Osteopatia (I.S.O.), Milan. Only people with no significant leg length difference ( $\geq 0.5$  cm) were included. The examiners were:

an expert examiner, and two inexperienced examiners, who made blind assessments.

**Results:** The reproducibility of intra/inter-observer assessments was measured using the statistical k, whose reference values are:  $\leq 30\%$ , not significant, between  $30\%$  and  $60\%$ , not significant, but can be improved, and  $\geq 60\%$ , significant. The achieved results were always over  $60\%$ , except for the inter-observer agreement between the expert examiner, and one of the two inexperienced examiners.

**Conclusion:** The data obtained are significant in terms of good consistency, indicating the reproducible nature of both tests. However, the study highlighted a greater sensitivity, specificity, and reproducibility, of the EDT in comparison to the ST.

## A new look at pelvis diagnosis: Lower Extremity Extension Dynamic Test: Sensitivity and specificity in diagnosing a leg length inequality (LLI)

*Alfonso Mandara, Andrea Mazzocchi (Istituto Superiore di Osteopatia, Italy)*

**Objective:** Estimate the sensibility of Extension Dynamic Test (EDT), a derivation of Standing Test, in the evaluation of a LLI. The EDT, while eliminating compensations factors from the lower limbs and lumbar extension, applies osteopathic principles and utilises sensitive palpation skills.

**Materials and methods:** 102 subjects underwent a weight-bearing orthoradiography and the EDT after signing the permission for treatment; standing with feet parallel, level to the perpendicular & 15cm apart. The operator manually evaluates the height differences between the trochanters, the patient then extends the back and the operator re-evaluates the trochanters.

**Results:** Radiographically none of the patients had the same leg length, 65% showed a difference  $>5$  mm, while 52% had a diffe-

rence  $> 7$  mm Results for EDT showed 49 patients had no LLI; however these subjects had values of dysmetrias at lower levels in comparison to those of the study group ( $p < 0,001$ ). In comparison of EDT/Radiography, we established a threshold of 5 & 7mm to value the influence of the dysmetria on the reliability of the test. In both cases EDT showed 58,3% of sensibility and 100% of specificity with a 100% positive predictive value and 68,3% negative predictive value.

**Conclusion:** Results illustrate EDT is well justified as a screening test in LLI showing the same efficacy in recognising  $>5$ mm &  $>7$ mm dysmetrias as radiographic evaluations with predictive values of 90,5% & 97,5% respectively.

## Interexaminer Reliability for Assessing the Lumbar Spine by Diagnostic Palpation: Part I

*Sonia Rivera-Martinez (Long Beach Medical Center, Dept. Of Family Practice, New York, USA)*

*John D. Capobianco (New York College of Osteopathic Medicine, New York Institute of Technology, USA)*

**Background:** Osteopathic physicians employ diagnostic palpation of the vertebral segments as a method to evaluate problems of the lumbar spine. Nevertheless, studies on the interexaminer reliability of palpation have obtained poor to marginal concordance among observers.

**Objective:** Determine if training the examiners in a specific methodology of palpatory diagnosis has an impact on the outcome of interexaminer agreement.

**Materials and methods:** A total of sixty subjects and four examiners were recruited. The study was comprised of three sessions: pre-training, training and post-training. At each session, the examiners independently diagnosed rotational asymmetry by static palpation and rated the asymmetry by motion-based palpation for spinal segments of L1 to L5. Baseline examiner concordance was obtained on thirty subjects in the pre-training session. To standardize the examination methodology the examiners were trained

by an expert in diagnostic palpation. In the post-training session, the examiners diagnosed another thirty subjects utilizing the methods demonstrated by the expert during the training sessions. **Results:** Poor interexaminer concordance was demonstrated in the pre-training session with Kappa coefficients of 0.087 for static asymmetry and 0.082 for the motion-based severity rating. In contrast, the post-training session had acceptable concordance with kappa values of 0.52 and 0.50 for static and motion-based palpation respectively.

**Conclusion:** Kappa scores indicating statistically acceptable inter-examiner concordance was obtained after training the observers on specific palpatory procedures. The results of this study suggest that standardization of the method used by the examiners when determining a diagnosis with palpation may have a positive influence on observer agreement.

## Interexaminer Reliability for Evaluation of the Thoracic Spine by Static and Motion-Based Palpation: Part II

*Sonia Rivera-Martinez (Long Beach Medical Center, Dept. Of Family Practice, New York, USA)*

*John D. Capobianco (New York College of Osteopathic Medicine, New York Institute of Technology, USA)*

**Background:** A crucial component in establishing the efficacy of any diagnostic procedure is investigating its reliability. The study of the reliability of palpation largely depends on the ability to test and retest the methods utilized in the evaluation process.

**Objective:** Determine if calibrating the approach utilized by examiners to diagnose the thoracic spine would influence the degree of observer agreement as demonstrated in our lumbar spine study (Part I).

**Materials and methods:** Four examiners independently assessed the T3 to T7 spinal segments of sixty asymptomatic subjects for rotational asymmetry by static palpation and rated the asymmetry by motion-based palpation. The location of the transverse processes of the spinal segments being assessed was marked. Initial examiner concordance was obtained on thirty subjects in the pre-training session. Afterward a specialist in diagnostic palpation

trained the examiners on specific methods of determining a diagnosis. In the post training session the examiners utilized the standardized diagnostic procedure to diagnose another thirty subjects.

**Results:** As observed in the lumbar study, poor interexaminer concordance was obtained in the pre-training session with kappa scores of 0.068 and 0.006 for static and motion-based palpation respectively. The post-training session demonstrated acceptable agreement with kappa values of 0.53 for static palpation and 0.48 for motion-based palpation.

**Conclusion:** Both palpatory studies (thoracic and lumbar) obtained kappa scores in the acceptable range and therefore established outcome reproducibility. These results demonstrate that standardization of the methods utilized to test the reliability of palpation may be the key to obtaining acceptable interexaminer concordance.

## Osteopathic approach to treatment of disturbed nasal breathing in children with hyperplasia of lymphoid adenoid tissue

*Larissa Lassovetskaia (Russian Academy of Osteopathic Medicine, St.-Petersburg, Russia)*

**Objective:** The research was designed to define the cause of the above-named pathology and to elaborate its treatment strategy.

**Materials and methods:** The study was based on 310 children with the II-III degree of adenoid tissue hyperplasia assigned for surgery by ENT specialists.

Roentgenologic, osteopathic and clinical methods of examination were used.

**Results:** The primary lesion was found in C0 – C1 spinal segment with compensatory involvement of the articulation between the vomer and the sphenoid, the latter affection in its turn being the reason of nasal breathing problems, insufficient inferior pathway utilization resulting in adenoid tissue hyperplasia. Thus, compression in C0 – C1 potentiated the dysfunction in the sphenoid-vomer articulation, and deficient nasal breathing favored compression in C0 – C1 segment.

Osteopathic treatment (six procedures on weekly basis) consisted mainly in elimination of compression in C0 – C1 segment and normalization of sphenoid–vomer relationship.

The majority of children recovered good nasal breathing. New episodes of rhinitis were less frequent and lasted for 3–5 days. Only four patients (1,3%) needed surgery.

**Conclusion:** Hyperplasia of adenoid tissue is secondary to breathing pattern disturbances.

The key osteopathic lesion consists in C0 – C1 compression with compensatory involvement of the articulation between the sphenoid and the vomer.

Osteopathic treatment decreases rhinitis frequency, shortens the period of recovery and as a rule saves the child from unnecessary surgery.

## Influence of an osteopathic treatment on erectile function of men, even when erectile dysfunction is not the reason for consultation

*Frank Aertgeerts (College Sutherland, Belgium)*

**Objective:** Some male patients report improved erectile function after osteopathic treatment, while their reason for consultation is different. This study tries to find out if these findings are just coincidence or not.

**Materials and methods:** After the preliminary investigation it turned out that osteopathic treatment of the male with erectile dysfunction can be very successful.

18 osteopaths cooperated in the investigation about what happens to erectile function in every day osteopathic practice. The results on 131 male patients could be analysed statistically, along with the results on the 12 men of the preliminary study. Their erectile function was determined, before and after treatment, by

using multiple-choice questionnaires including the International Index for Erectile Function (IIEF).

**Results:** The statistical analysis of these non-parametrical findings shows that there is a significant, positive improvement of erectile function after osteopathic treatment, even when erectile dysfunction is not the reason for consultation.

The cases of severe erectile disorder before treatment lead to the best improvement.

**Conclusion:** Osteopathic treatment shows a significant positive influence on erectile function, even when erectile dysfunction is not the reason for consultation.

## Study to evaluate osteopathic treatment in late whiplash syndrome

*Richard Gietz, Albrecht Kaiser, Ralf Kastner (Osteopaths, Germany)*

**Objective:** In Germany ca.18% to 25% of patients with whiplash injury are also developing chronic symptoms, i.e. the late whiplash syndrome (LWS) which obviously cannot be treated adequately by conventional therapies. This study was to investigate whether osteopathic intervention improves the general life quality of patients suffering from late whiplash syndrome.

**Materials and methods:** The study was a controlled clinical intervention study in waiting list design conducted over 12 weeks.

Forty-two volunteers suffering from late whiplash syndrome due to car rear-end collisions underwent examination and osteopathic treatment. Six weeks following initial interviews there was a six weeks' intervention period including five osteopathic treatments at one week intervals. It was assessed how target parameters such as general and neck pain-related quality of life, pain and stress

felt subjectively and post-traumatic stress disorder (PTSD) had changed by osteopathic intervention as compared to the preceding six weeks' waiting period.

**Results:** Neck pain-related quality of life was improved by 41% on average and also general quality of life regarding physical complaints by 13%. With respect to the general quality of life regarding psychic symptoms differential effects were seen in patients with and without diagnosed PTSD. With an improvement of 22% PTSD-diagnosed patients benefited somewhat more from treatment in this respect.

**Conclusion:** As osteopathic treatment has a positive effect on both physical and psychic symptoms of LWS it is recommendable as an effective acute and long-term treatment in patients suffering from late whiplash syndrome.

## Osteopathic treatment of intramural myomas of the uterus. A randomized controlled trial.

*Gerald Kaschowitz, Jean-Pierre Besse, Georg Schwering (College Sutherland, Germany)*

**Objective:** The incidence of intramural hysteromyomas in the group of women of childbearing age is about 20 – 25%. At present surgical interventions or highly dosed hormone therapies are the most common treatments. In the course of a randomised clinical trial it was examined whether osteopathic treatments affect the size of intramural hysteromyomas.

**Material and methods:** The cooperating gynaecologists selected 71 patients who met all predefined criteria for inclusion into the study. After the initial gynaecological examination the patients of the treatment group received four sessions of diagnosis-oriented osteopathic treatment at intervals of three weeks. The patients of the control group were not treated during the study. The size of the hysteromyomas was recorded by vaginal sonography (main outcome parameter).

**Results:** 6 patients were excluded from the study on account of the protocol analysis. 65 participants finished the study, 38 of them in the treatment group and 27 in the control group. The size of the myomas in the treatment group decreased by an average of 18% whereas it increased by an average of 1% in the control group. The result is statistically highly significant ( $p=0.001$ ).

**Conclusion:** Osteopathic treatments applied to women suffering from intramural hysteromyomas have a highly significant positive influence on the size of the myomas.

As most of the myomas nowadays are not treated at all, but are only observed until a surgical intervention or a hormone therapy becomes necessary, the results of this study are of high clinical relevance.

## "Squinting... viewed from a different angle." A study into the effectiveness of an osteopathic intervention on children with convergent / divergent strabismus.

*Evert Jan ten Ham, Gery van der Heijden, Anton Isaak (College Sutherland, Amsterdam, Netherlands)*

**Objective:** This study was designed to test the effectiveness of an osteopathic intervention on children with convergent / divergent strabismus. The research model used for this purpose was from a single-blind, randomised, prospective pilot study using a control group.

This study has the necessary approval through the M.E.T.C, comes up to all requirements of "Good Clinical Practice", and took 4, 5 years.

**Materials and methods:** A group of 36 children (age 3 -10) was divided at random into four test groups:

A control group (T0), and three treatment groups.

Group (T1) received a treatment of sphenoid bone.

Group (T2), received a (partial osteopathic) treatment of the cranium.

Group (T3) in which a total osteopathic treatment was given.

The angles of the squint were measured with the help of a synoptophore. Over three months the children in groups T1, T2 and T3 underwent three osteopathic interventions. Children from the control group (T0) received no osteopathic treatment.

**Results:** A significant difference was found to exist among the four study groups (T0, T1, T2 and T3). T0, T1 and T2 showed no significant difference, but T3 differed significantly from the other groups.

An average reduction of 4.1 degrees in the angle of the squint had taken place in group T3. There is a 95% certainty that the actual reduction is between 2.5 and 5.6 degrees.

**Conclusion:** Osteopathic interventions seems to induce positive changes on the eye position deviation in children aged between 3 and 10 who have convergent / divergent strabismus.

## Osteopathic treatment of chronic non-specific neck pain: a randomised controlled trial of efficacy

*Anne Bischoff, Andrea Nürnberger, Pia Voigt (European College of Osteopathy, Germany)*

*Florian Schwerla (German Academy of Osteopathy, Research Commission)*

*Karl L. Resch (Saxon Balneology and Rehabilitation Research Institute, Bad Elster, Germany)*

**Objective:** Chronic non-specific neck pain (CNP) is a common, often disabling condition which still lacks a reliable therapeutic standard. Empiric evidence suggests that osteopathic interventions might be effective in alleviating CNP symptoms. A randomised sham-controlled clinical trial was performed to test this hypothesis.

**Materials and methods:** One hundred and thirty-five CNP sufferers were identified through advertisements, and 49 patients meeting all relevant predefined criteria were recruited. All participants received a 12 minutes session of sham ultrasound once a week for an average of 10 weeks. In addition, 45 minutes of a test-dependent osteopathic intervention was given to 24 participants every other week. Forty participants could be followed up 12 weeks after the end of therapy.

**Results:** There were one dropout in the intervention group and 6 in the sham group. On a numeric rating scale (NRS, range: 0 to 10) average pain intensity decreased from 4.7 to 2.2 in the osteopathic group ( $p<0.0005$ ), and from 4.8 to 4.0 in the sham group ( $p=0.09$ ). The inter-group difference was highly significant ( $p=0.002$ ). Comparable slight further reductions were observed during follow-up (0.3 and 0.4 NRS points, respectively). These changes seem to have a positive impact on quality of life, as measured by means of the SF-36 and the Northwick Park Pain Questionnaire.

**Conclusion:** A series of osteopathic interventions seems a promising therapeutic regimen for CNP sufferers. Further studies will have to demonstrate a) whether these findings are reproducible, and b) whether positive long term outcomes can be achieved.

## Idiopathic infantile asymmetry and osteopathic treatment: A randomized therapeutic trial.

*Heike Philippi, Tatjana Jung, Holger Bergmann, Imke Bieber, Christine Kaemmerer, Bernd Reitter (University Children's Hospital, Johannes Gutenberg-University, Mainz, Germany)  
Angela Schleupen, Bianka Pabst, Piet Dijks (Center of Osteopathy, Mainz, Germany)  
Andreas Faldum (Institute for Medical Biostatistics, Epidemiology and Informatics, Johannes Gutenberg-University, Mainz, Germany)*

**Objective:** To assess the therapeutic efficacy of osteopathic treatment in infants with idiopathic infantile asymmetry.

**Materials and methods:** A double blind (two parallel groups), randomized clinical trial of efficacy with blinded videoscoring was performed. Based on a minimal mean difference of 4 points on a 20 point-scale and a 80% power to detect a significant difference, 16 patients were required for each study group. Sixty-one asymmetric infants aged 6 to 12 weeks (median 10 weeks) were recruited. Thirty-two infants were found to be eligible and randomly assigned to the intervention groups. Sixteen infants received osteopathic treatment and 16 sham therapy. Handling according to the Bobath concept was performed by all parents. After a treatment period of 4 weeks the outcome was measured using a standardized infantile asymmetry scale (4 to 24 points)<sup>1</sup>.

**Results:** All participants completed the study protocol. In the control group, five infants improved ( $\geq 3$  points), eight infants were unchanged ( $+/- < 3$  points) and three infants deteriorated ( $\leq -3$  points). In the treatment group thirteen infants improved and three remained unchanged. The mean improvement was 1.2 points (SD  $+/- 3.5$ ) in the control group and 5.9 points (SD  $+/- 3.8$ ) in the treatment group ( $p=0.001$ ).

**Conclusion:** Osteopathic treatment in the first months of life significantly improves the degree of asymmetry in infants with idiopathic asymmetry.

(<sup>1</sup>Philippi H et al. Idiopathic infantile asymmetry – a proposal of a measurement scale. 2004 Early Hum Dev; in press)

## Osteopathy as a promising short-term strategy for irritable bowel syndrome: randomized controlled trial

*Joachim Salomon, Michaela Stiedl, Axel Müller (European College of Osteopathy, Germany)  
Karl L. Resch (Saxon Balneology and Rehabilitation Research Institute, Bad Elster, Germany)*

**Objective:** The "irritable bowel syndrome" (IBS), as defined by the so called "Rome criteria", is a highly prevalent chronic condition, for which no causal therapeutic strategy is available to date. Based on promising results of previous studies a randomized controlled trial was carried out to test the assumption that a custom-tailored osteopathic therapy can relevantly and sustainably alleviate IBS associated symptoms.

**Materials and methods:** Sixty one patients were randomized to receive 5 sessions of either a defined fake osteopathic ("sham") treatment or real osteopathic treatment applied by one of three professional osteopaths once every fortnight. Visual analogue scales were used to assess pain intensity (main outcome) and other aspects related to the Rome criteria.

**Results:** Starting from baselines of about 63 points (maximum: 100), pain intensity improved only slightly (-10 points) and none significantly in the sham group, but dramatically (about 50 points) in the osteopathic group. Differences reached the level of significance already after the second session and increased continuously ( $p$  for trend  $< 0.0001$ ). Similar kinetics were observed for other variables like incidence and/or intensity of distension, constipation, and diarrhoea.

**Conclusion:** A custom-tailored osteopathic treatment series (every other week for ten weeks) focussing on the patients' actual dysfunctions can induce an almost complete short term relief of typical symptoms. Whether observed effects may last will have to be shown.

## Craniosacral treatment in cases of sagittal suture stenosis (a case study)

*Olga Kalinovskaya (Osteopathic Medical Center "Healthy Newborn", St.-Petersburg, Russia)*

*Larissa Lassovetskaia (Russian Academy of Osteopathic Medicine, St.-Petersburg, Russia)*

**Objective:** This case study was designed to prove the efficacy of craniosacral therapy in treatment of CSF circulation disturbances caused by inborn cranial pathology and in promotion of psychological development.

**Materials and methods:** The study is based on one case of congenital sagittal craniostenosis accompanied by cranial deformity, external hydrocephalus and moderate intracranial hypertension with favorable outcome. Methods of examination: cranial roentgenography, CT scans, EEG, neuro-monitoring, osteopathic examination. Methods of treatment: medicinal agents, 3 courses of osteopathic therapy (CV4, fluid drive, lateral fluctuations, sub-occipital muscle inhibition, etc.) – 8 treatments on weekly basis every 8 months.

**Results:** Repeated courses of osteopathic treatment accompanied by drug therapy helped to deal with external hydrocephalus and

intracranial hypertension. Despite the presence of craniostenosis the conflict between the growing brain and the lagging in growth cranial bowl was successfully resolved. During the last examination at the age of three years marked neurological disturbances were not found, EEG revealed no pathology, psychological and speech development corresponded to age-dependant standards. X-rays and CT scans demonstrated restoration of normal subarachnoid fissures with widening of diploid vein channels and normalization of frontal head dimensions at the level of frontal and parietal eminencies.

**Conclusion:** Osteopathic therapy is a pathogenically based method of treatment of CSF circulation disturbances and promotion of psychological development in children with sagittal craniostenosis.

## The relationship between pre- and per-natal mechanical constraints and Apgar score

*Roselyne Lalauze-Pol (Academy of Osteopathy de France, Research Commission)*

*Hélène Mendizabal (Department of Information Technology, Conception Hospital, Marseille, France)*

*Jean Gaudart (Department of Biomathematics, Marseille School of Medicine, France)*

*Nguyen Thi Ngoc Phuong (Obstetrician Tu Du Hospital, HCMcity, Vietnam)*

**Objective:** This clinical study demonstrated the relationships between certain suture and cranial synchondrosis deformations and the development of transitory or vital trauma during delivery and submits physiopathologic osteopathic-hypotheses that could explain these relationships.

**Materials and methods:** Asphyxia of the newborn can be subtly linked to foetal environmental factors and obstetric trauma. The aim of this study was to compare the frequency of suture and/or cranial synchondrosis impactions and the positioning of the occipitoatlodaxoid articulation in 104 newborns presenting transitory or vital trauma (Apgar-score 1-7 at 3 minutes) with a control group (104 newborns with Apgar-score 9-10 at 1 minute). A osteopathic clinical examination with standardized grading (1-3) of the cranial structures was performed. The study was carried out in the Tu-Du Maternity Ward in Ho-Chi-Minh-City, Vietnam where there are a high percentage of dystocic-deliveries.

**Results:** The results showed a higher prevalence of basiocranial deformations and atypical positioning of C0-C1-C2 in the patient group. When the pathology was pre-natal, sphenobasilar-synchondrosis was more specifically the site of strong compression. When the pathology was per-natal, basiocranial-structures presented major deformities.

**Conclusion:** Several physiopathological hypotheses could explain the occurrence of trauma. The constraints could be the cause of primary hypoxia and hypercapnia in the upper medullary and pontobulbar regions: reduction of vertebral artery flow owing to the non-concordance of the medullary foramen magnum; upstream jugular vein stasis and pneumogastric nerve sideration by shrinking of the jugular hole. By 10 minutes in 92 cases, osteopathic examinations permit to recover Apgar-score around 8-10 pt.

## Morphological and functional anatomical aspects of the human internal vertebral venous plexus (study protocol)

*Steven Provyn, Hans Schallier (Free University Brussels, Belgium)*

*Patrick van Dun (Commission for Osteopathic Research, Practice and Promotion, CORPP, Belgium)*

**Objective:** With this study we wanted to update the morphological characteristics of the human internal vertebral venous plexus (IVVP).

**Materials and methods:** 12 human cadavers (between de 67 and 93 years old ) were injected with Odongel® following the injection technique of Dr. Groen R. (1997).

After the gel was hardened the cadavers were dissected to visualize and to study in detail the anterior part of the IVVP.

**Preliminary results:** We didn't have the opportunity to study the medical history of the dissected cadavers. By this reason it was impossible to exclude any vascular problem that could influence

the injection and the results (= preliminary results).

We've studied the relations and anatomical variants of the anterior part of the IVVP. The IVVP appears to be very prominent in the area of OAA, thoracal segment and foramen intervertebrale. No anatomical valves are found.

**Conclusion:** Is it possible that the IVVP plays a role in the volumeregulation by preventing compression of the dural sac?

Is it possible that the IVVP plays a role in the thermoregulation by heating the CNS? The IVVP can be seen as a important venous system in relation to other great venous systems as there are the caval, portal and azygos system.



## Osteopathic treatment of chronic sinusitis: a randomized controlled pilot trial

*Sabine Häfner, Martina Stadler (European College of Osteopathy, Germany)*

*Karl L. Resch (Saxon Balneology and Rehabilitation Research Institute, Bad Elster, Germany)*

**Objective:** Chronic sinusitis (CS) is a very common condition, and may significantly affect a patient's quality of life. The etiology is typically not clear. Many conservative as well as invasive therapeutic strategies have been suggested, none of them, however, seems close to a golden standard. Osteopathic interventions have repeatedly been considered helpful. This study was designed as a pilot trial to a) test in a semi-quantitative way whether osteopathic interventions may in fact have a therapeutic potential for CS, and b) serve as a feasibility study for a future, rigorous RCT.

**Materials and methods:** Forty-three patients with defined features of CS were recruited by two professional osteopaths and randomized (external randomization) into one of three groups: A) test-dependent osteopathic treatments once weekly, B) daily isotonic saline nasal irrigation, and C) a combination of both. Treatment period was set to 4 weeks with a follow-up 6 weeks

thereafter. Main outcome parameters were nasal breathing, headache and tension, and changes in perceived quality of life.

**Results:** Headache and tension improved most in group A, and remained essentially unchanged in group B. There was a clinically relevant further improvement in group A during follow-up, as opposed to a certain rebound in symptoms in the other two groups. The impact on quality of life was inconsistent.

**Conclusion:** Osteopathic interventions seem to induce positive changes in the symptomatology of CS with further improvement after cessation of therapy. Most aspects of the study protocol proved feasible, while likert scales used to assess aspects of quality of life should probably be replaced by a more sensitive instrument, taking into account generic as well as condition specific criteria.

## Are blink and masseter inhibitory reflexes changed after osteopathic intervention? (study protocol)

*Rik Hoste (Commission for Osteopathic Research, Practice and Promotion, CORPP, Belgium)*

*Gert van Damme (College Sutherland, Belgium), P. Santens (Neurologist, AZ Ghent, Belgium)*

**Objective:** The excitatory and inhibitory interneuronal pathways in the brainstem are perturbed in dystonia. These pathways are tested by examining the blink and the masseter inhibitory reflexes. There is a well known relationship between dystonia and changes in muscle tone of the craniocervical segment. The influence of osteopathic treatment upon these interneuronal pathways in the brainstem has not been studied before.

The aim of this study is to evaluate the situation in case of pain and other complaints originating in the craniocervical area. We want to find out if there is a correlation between clinical and fundamental results.

**Materials and methods:** Patients with defined features of headaches, migraines, neckaches, vertigo and temporomandibular problems will be tested by examining the R1 and R2 component of

the blink and the SP1 and SP2 component of the masseter inhibitory reflex before and after osteopathic treatment. The same reflexes will be examined by healthy subjects for control.

The electrophysiological reflex recordings will be made by a blinded neurologist. The blink reflex will be tested by electrical stimulation of the supraorbital nerve. The masseter inhibitory reflex will be evoked by electrical stimulation of the mental nerve, during maximum voluntary contraction of the masseter muscle. Further literature search and power analysis will give us more precise information about sample size, inclusion and exclusion criteria, number of treatments, study design, outcome measures, ... The exact protocol will be finished by August 2004.

**Results / conclusion:** This study will be finished by January 2006.

## Inter- and intraexaminer reliability in palpation of the "primary respiratory mechanism" within the "cranial concept"

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**Objectives:** The reproach of high subjectivity makes interexaminer reliability of manual assessment procedures a special matter of concern. The Primary Respiratory Mechanism (PRM) is hypothesized to be a palpable physiological phenomenon that occurs in rhythmic cycles, which are independent from cardiac and respiratory rates. Palpation of the PRM is one of the first steps in assessment within the Cranial Concept (CC). The CC can be seen as an integral part of Osteopathy.

**Materials and methods:** An inter- and intraexaminer reliability study design for repeated measures has been used. 49 healthy subjects have been palpated simultaneously twice, once at the head and once at the pelvis. PRM-frequency (f), the mean duration of the flexion phase and the mean ratio of flexion- to extension-phase have been described as the main outcome-measures.

Inter- and intraexaminer reliability and correlations to the respiratory rates were analysed for all three parameters.

**Results:** Inter- and intraexaminer agreement could not be described beyond chance agreement. The range within the 95%-limits-of-agreement (e.g. for  $f = 6.6$  cycles/90 sec) for all cases resembled the total range of values (e.g. for  $f = 7$  cycles/90 sec) that has been produced. A significant effect of the examiners' respiration could be found. No correlation for the subjects' respiratory rates could be described.

**Conclusion:** These results do not support the hypotheses behind the PRM. The role of PRM palpation for clinical decision making and the models explaining the PRM should therefore be thought over.

## Study of the value of osteopathic therapy in the treatment of the irritable bowel syndrome (study protocol)

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**Objective:** The irritable bowel syndrome is a very common and annoying gastrointestinal disorder for which effective treatment is not available. Medical treatment options appear to be only marginally better than placebo. A study was designed to determine whether osteopathic intervention can be helpful in the treatment of IBS patients.

**Materials and methods:** The study is designed as a randomized controlled pilot trial among a population of forty patients attending the gastroenterologic out-patient clinic of a general hospital in the Netherlands. All patients suffer from IBS, as diagnosed by the hospital gastroenterologist according to the international Manning and/or Rome II criteria. Participants are randomly assigned in two groups. One group of twenty patients receiving five osteopathic treatments and one group of twenty receiving standard care. This consists of explanation, reassurance, life-style

advice and if appropriate drug treatment. Osteopathic treatment is administered according to the black box method, meaning an individualised therapy based upon osteopathic examination findings. Total trial duration for each patient is six months. The endpoint is the symptom score at six months of follow-up. Symptom diaries and a validated IBS-specific quality of life questionnaire are used as primary trial endpoints. Global assessment of improvement is considered secondary outcome measure. The whole protocol is well documented in a specially designed case record form. The research project was approved by a recognized Research Ethics Committee.

**Results and conclusion:** The research is still ongoing. At first sight osteopathic intervention induces positive changes. However, statistic analysis of the results will take place at a later time.

## Influence of a mobilization of the mesentery upon the capacity of the portal vein, reported by Echo-Doppler

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**Objective:** In this study we wanted to examine if physiological changes can be perceived after the normalisation of a viscus; more specifically: if a mobilisation of the mesentery has an influence upon the capacity of the portal vein.

**Materials and methods:** Thirty healthy adults (n = 30; age: 20–45) have been selected according to specific inclusion and exclusion criteria, and we placed them at random in two equal groups, a mobilization technique group and a non-specific technique group. In this research we inserted three measuring moments: a first measurement before the beginning of the mobilisation technique or the non-specific technique, a second one immediately after having applied a technique, and a third one 60 minutes later. At each of these three moments, the diameter of the portal vein, the velocity of the blood flow and the capacity of the portal vein were established. The patients and the radiologists as well

have been blinded. With the 15 probants of the mobilization group, the mesentery had been mobilized with regard to its radix. With the 15 subjects of the non-specific technique group, the iliopsoas muscle had been stretched.

**Results:** The mean portal flow of both groups before interference was 755,71 ml/min; SD = 176,57 (non-specific group) and 764,38; SD = 359,53 (mobilization group), immediately after intervention 878,05 ml/min; SD = 227,07 (non-specific group) and 1079,04 ml/min; SD = 374,24 (mobilization group). ± 1 hour after intervention, the mean portal flow was 751,51 ml/min; SD = 246,40 (non-specific group) and 1039,87 ml/min; SD = 281,43 (mobilization group).

**Conclusion:** A multivariate analysis shows a significantly higher capacity ( $F(1,28) = 4,726$ ;  $p = 0,038$ ) of the portal vein after the mobilization of the mesentery.

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