



Osteopatia in ambito neonatologico e pediatrico: stato dell'arte

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- **Trattamento osteopatico in quali condizioni cliniche?**
- **Quali risultati?**
- **Cosa troviamo in letteratura?**

Revisione della letteratura in forma di 'racsegna narrativa'

- Condizioni cliniche più frequentemente trattate
- Risultati ottenuti

Ricerca bibliografica

ARGOMENTI	NUMERO DI STUDI	AUTORI
Disabilità/PCI	10	Bull, 2009 Wyatt, 2011 PCI (RCT)
Disturbi apparato respiratorio	11	Pepino, 2013 childhood respiratory disease: SR Guiney, 2005 asma: RCT
Disturbi apparato muscolo-scheletrico	9	Bolin, 2010 Sport injuries Andreoli, 2014 Piede torto Mason, 2009 Brachial plexus Lessard, 2011 Plagiocefalia Philippi, 2004
Prematurità	3	Cerritelli, 2013 Lund, 2011 Pizzolorusso, 2013

ARGOMENTI	NUMERO DI STUDI	AUTORI
Otite media	6	Degenhardt, 2006
Effetti collaterali	2	Hayes, 2006 Todd, 2014
Revisione sistematica	1	Posadzki, 2013 Osteopathic Manipulative Treatment for Pediatric Conditions: A Systematic Review

Wyatt K Cranial osteopathy for children with cerebral palsy: a randomised controlled trial. Arch Dis Child. 2011

142 children aged 5-12 years with cerebral palsy.

OUTCOME: Blind assessment of motor function by physiotherapists using the **Gross Motor Function Measure-66 (GMFM-66)** and quality of life using the **Child Health Questionnaire (CHQ) PF50** at 6 months. Parents' assessment of global health and sleep at 6 months, pain and sleep diaries at 10 weeks and 6 months, CHQ PF50 at 10 weeks and quality of life of main carer (Short Form 36) at 10 weeks and 6 months.

This trial found no statistically significant evidence that cranial osteopathy leads to sustained improvement in motor function, pain, sleep or quality of life in children aged 5-12 years with cerebral palsy nor in quality of life of their carers.

Pepino “Manual therapy for childhood respiratory disease: a systematic review” J Man Physiol Ther. 2013

Of the 1147 relevant titles, 103 titles were selected for abstract assessment, and of these, 24 were selected for a full-text review. After critical analysis, **8 studies were included in the review** and 16 were excluded for the following reasons: 1 covered only conventional therapy, 7 were not about the studied theme, and 8 included adults. Of the 8 studies included in the present review, 5 consisted of asthmatic children and the others of children with the following conditions: cystic fibrosis, bronchiolitis, recurrent respiratory infections, among others. **Only 2 studies did not identify positive results** with the use of manual therapy. **The other 6 studies found some benefit, specifically in spirometric parameters, immunologic tests, anxiety questionnaire, or level of salivary cortisol.**

CONCLUSION:

The use of manual techniques on children with respiratory diseases seems to be beneficial. Chiropractic, osteopathic medicine, and massage are the most common interventions. The lack of standardized procedures and limited variety of methods used evidenced the **need for more studies on the subject.**

Guiney, “Effects of osteopathic manipulative treatment on pediatric patients with asthma: a randomized controlled trial” J Am Osteopath Assoc. 2005

The authors conducted a randomized controlled trial attempting to demonstrate the therapeutic relevance of OMT in the pediatric asthma population. With a confidence level of 95%, results for the **OMT group showed a statistically significant improvement of 7 L per minute to 9 L per minute for peak expiratory flow rates.** These results suggest that OMT has a therapeutic effect among this patient population. The authors suggest that **more clinical trials are required to better demonstrate the effectiveness of OMT in patients with asthma.**

Bolin, “The application of osteopathic treatments to pediatric sports injuries” *Pediatr Clin North Am.* 2010

Although there are few high-quality studies available, most available literature reports effectiveness of manual techniques in combination with therapeutic exercise for common pediatric motion restrictions

Mason, “Brachial plexus injuries in neonates: an osteopathic approach” *J Am Osteopath Assoc.* 2009

Neonates and infants with brachial plexus injuries are typically treated using splinting, range-of-motion exercise, and, in more severe cases, nerve reconstruction. However, myofascial release, a common osteopathic manipulative treatment technique that has been used to manage thoracic outlet syndrome in adults, may provide effective, noninvasive management of brachial plexus injuries in neonates and infants

Piede torto congenito



Clubfoot syndrome: an osteopathic treatment case report and literature review

Andreoli E, Troiani A, Tucci V, Barlafante G, Cerritelli F, Pizzolorusso G, Renzetti C, Vanni D, Pantalone A, Salini V. J Bodyw Mov Ther. 2014

Plagiocefalia

Evidence-Based Care of the Child With Deformational Plagiocephaly, Part I: Assessment and Diagnosis- Jpehc 2012

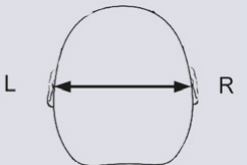
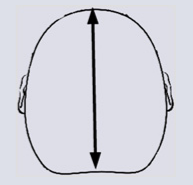
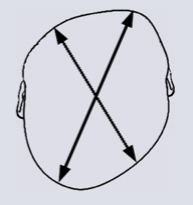
Lessard S, Gagnon I, Trottier N. Exploring the impact of osteopathic treatment on cranial asymmetries associated with nonsynostotic plagiocephaly in infants. Complement Ther Clin Pract. 2011

TABLE 3. Diagnostic guide for determining type and severity of lateral and posterior deformational plagiocephaly

Clinical findings	Lateral deformational plagiocephaly		Posterior deformational plagiocephaly (brachycephaly)	
	Occiput (vertex view)	Ipsilateral occipital flattening Contralateral occipital bossing		Uniform occipital flattening
Ear position (vertex view)	Ipsilateral ear may be anteriorly displaced		Normal	
Face, forehead (anterior, lateral, and vertex views)	May be normal; more severe cases may present with the following: mandibular asymmetry, ipsilateral frontal bossing, contralateral forehead flattening, ipsilateral cheek anteriorly displaced		Temporal bossing, increase in vertical height in severe cases	
Other	Torticollis, head position preference		Large size, history of limited activity or limited mobility	
Severity ^a				
Mild	TDD ^b 3-10 mm	Flattening restricted to the back of the skull (type I) ^c	CI ^d : 82%-90%	Central posterior deformity ("ping-pong ball depression") ^c
Moderate	TDD ^b 10-12 mm	Malposition of ear (type II), forehead deformity (type III) ^c	CI ^d : 90%-100%	Central posterior deformity and widening of posterior skull ^c
Severe	TDD ^b > 12 mm	Malar deformity (type IV), vertical or temporal skull growth (type V) ^c	CI ^d : > 100%	Vertical head, head growth, or temporal bossing ^c

Note: CI, Cephalic index (or cranial index); TDD, transcranial diameter difference.
^aThere is no firm professional consensus on the best way to subjectively or objectively classify severity of plagiocephaly; these severity categories are based on our review of published reports. The clinician's rating of severity should be used as part of a holistic assessment and to guide the practitioner in decision-making with the algorithm provided with this article.
^bBased on Hutchison et al. (2005).
^cBased on Argenta et al. (2004).
^dBased on Hutchison et al. (2010).

TABLE 2. Cranial measurements used in documenting deformational plagiocephaly

Parameter	Measurement	Example (vertex view)
Cranial width (breadth)	The greatest transverse diameter of the head, on a horizontal plane	
Cranial length	The distance from the forehead to most posterior point of the head, in the same plane as measured in head circumference	
Cephalic index (cranial index) Occipital-frontal transcranial diameter	The ratio of the cranial width to the cranial length Determine the sites on the left and right sides of the head where the deformation is the most prominent; measure the diagonal distances between these sites	
Transdiagonal difference (transcranial diagonal difference)	The difference between two transcranial diameters	

Note: Measurements are taken with sliding or spreading calipers.

Lessard S, Gagnon I, Trottier N. Exploring the impact of osteopathic treatment on cranial asymmetries associated with nonsynostotic plagiocephaly in infants. Complement Ther Clin Pract. 2011

Pilot clinical standardization project using pre-post design in which 12 infants participated. Ten infants presented an initial Oblique Diameter Difference Index (ODDI) over 104% and five of them had an initial moderate to severe Cranial Vault Asymmetry (CVA) (over 12mm).

Anthropometric, plagiocephalometric as well as qualitative measures were administered pre-intervention (T1), during the third treatment (T2) and two weeks after the fourth treatment (T3). Participants showed a significant decrease in CVA ($p=0.02$), Skull Base Asymmetry (SBA) ($p=0.01$), Trans-Cranial Vault Asymmetry (TCVA) ($p<0.003$) between the first and third evaluations.

These clinical findings support the hypothesis that osteopathic treatments contribute to the improvement of cranial asymmetries in infants younger than 6.5 months old presenting with NSOP characteristics.

Lund, “Osteopathic manipulative treatment for the treatment of hospitalized premature infants with nipple feeding dysfunction” J Am Osteopath Assoc. 2011

The authors **describe a case of hospitalized premature twins** who had considerable delays in attaining nipple-feeding skills. Because of their inability to take all feedings by nipple, preparation for surgical placement of gastrostomy tubes was initiated. Before the surgeries were scheduled, the inpatient osteopathic manipulative medicine service was consulted, and **the twins received a series of evaluations and osteopathic manipulative treatment (OMT) sessions.** During the OMT course, the twins' nipple feeding skills progressed to full oral feeding, which allowed them to be discharged to home without placement of gastrostomy tubes.

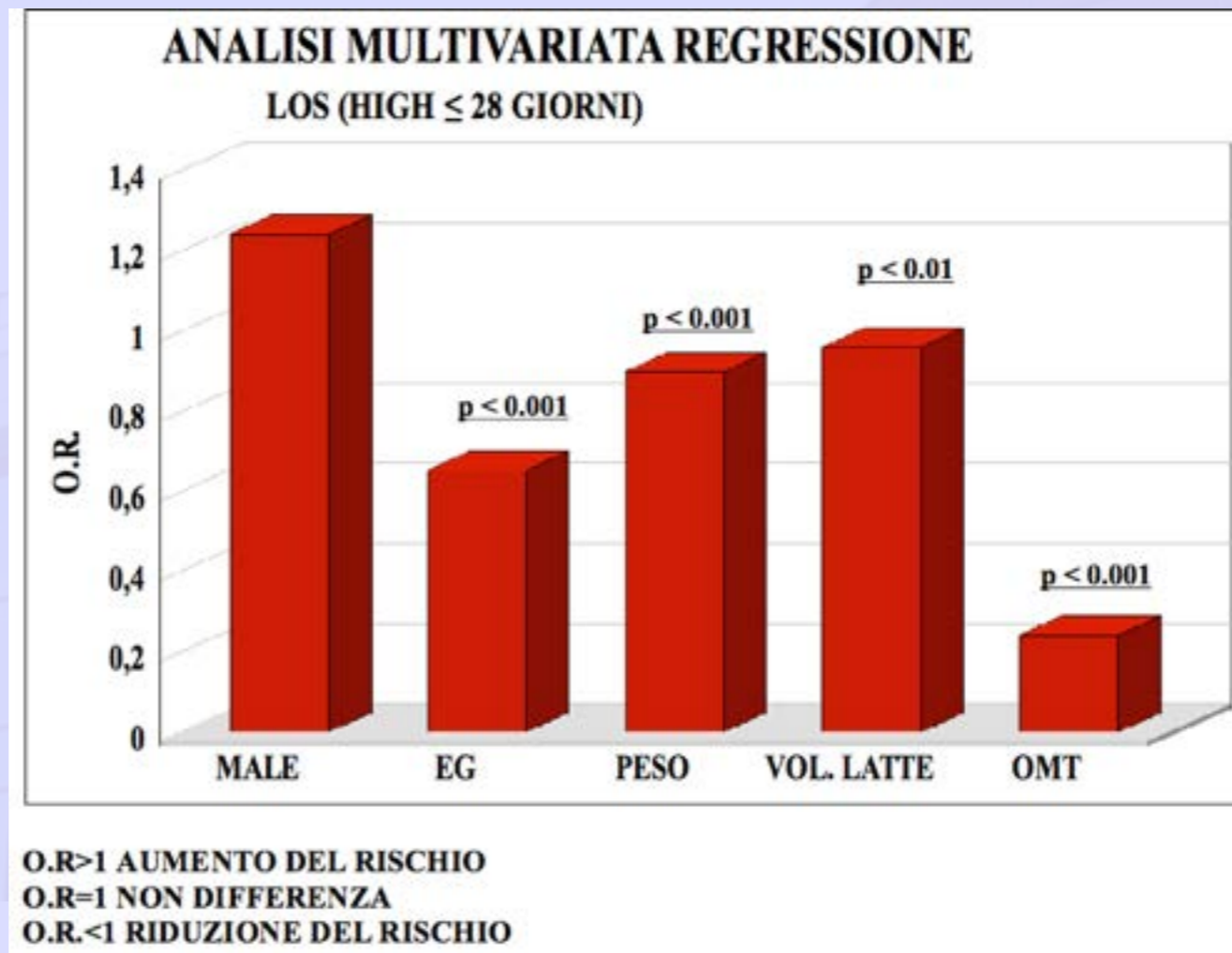
Cerritelli F, Pizzolorusso G, Ciardelli F, La Mola E, Cozzolino V, Renzetti C, D'Incecco C, Fusilli P, Sabatino G, Barlafante G. **Effect of osteopathic manipulative treatment on length of stay in a population of preterm infants: a randomized controlled trial.** BMC Pediatr. 2013

A randomized controlled trial was conducted on preterm newborns admitted to a single NICU between 2008-2009. N=110 subjects free of medical complications and with gestational age >28 and < 38 weeks were enrolled and randomized in two groups: study group (N=55) and control group (N=55). All subjects received routine pediatric care and OMT was performed to the study group for the entire period of hospitalization. Endpoints of the study included differences in LOS and daily weight gain.

Results showed a significant association between OMT and LOS reduction (mean difference between treated and control group: -5.906; 95% C.I. -7.944, -3.869; $p < 0.001$). OMT was not associated to any change in daily weight gain.

The present study suggests that OMT may have an important role in the management of preterm infants hospitalization.

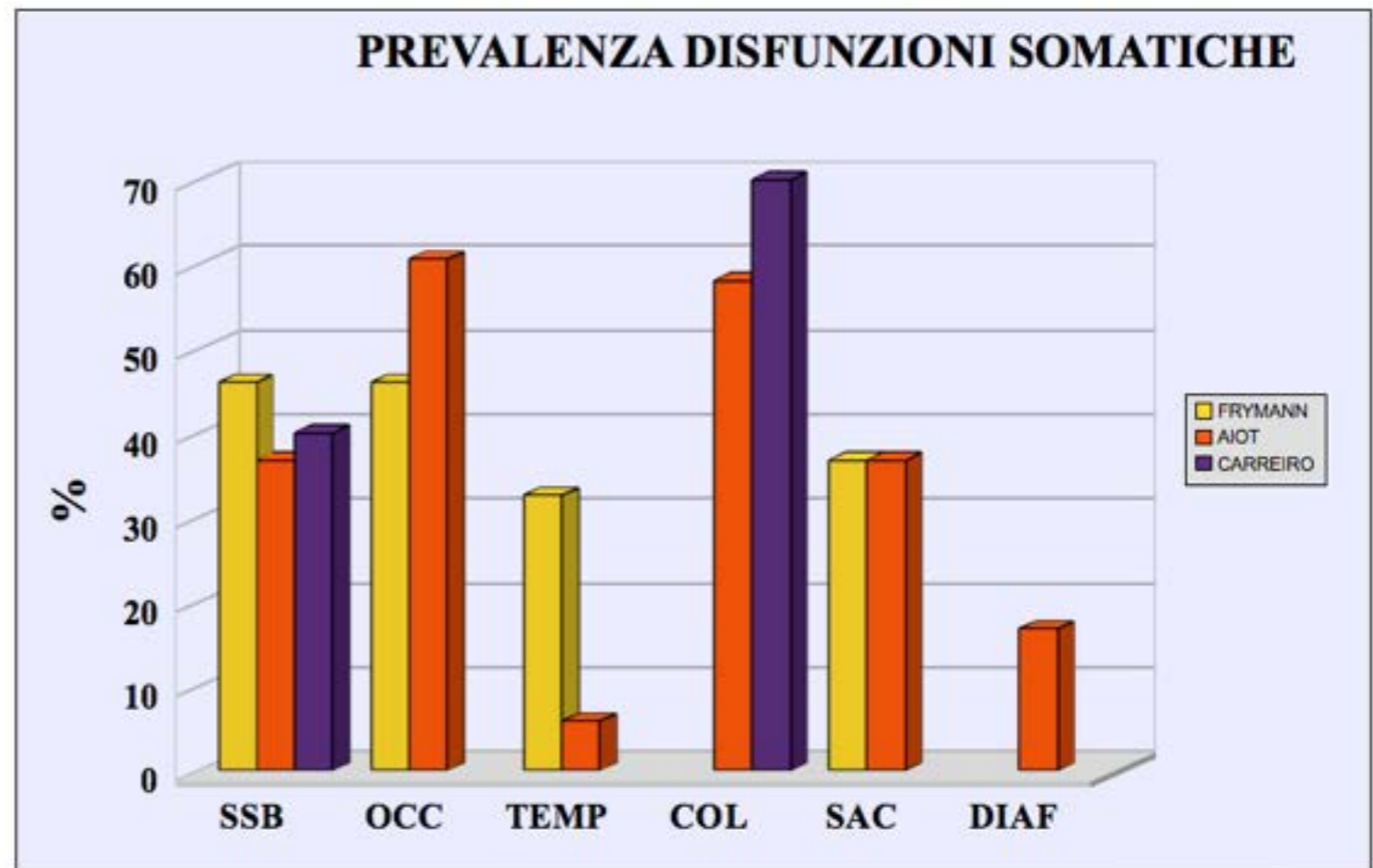
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Pizzolorusso G, Cerritelli F,
D'Orazio M, Cozzolino V,
Turi P, Renzetti C, Barlafante
G, D'Incecco C.

**Osteopathic evaluation
of somatic dysfunction
and craniosacral strain
pattern among preterm
and term newborns. J
Am Osteopath Assoc. 2013**

One hundred fifty-five preterm and
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Prevalenza Disfunzioni somatiche

Regione	Frymann	Carreiro	AIOT
SSB Torsione Compressione	28.5 % 17.49 %	40 %	36.77 %
Occipite Condili	45.97 %		60.65 %
Temporale	32.58 %		5.79 %
Colonna Tratto dorsale Tratto L/S		70 %	18.71 % 39.35 %
Sacro Estensione Intraossea	36.76 %		36.77 %
Diaframma			16.77 %

Degenhardt “Osteopathic evaluation and manipulative treatment in reducing the morbidity of otitis media: a pilot study” J Am Osteopath Assoc. 2006

A referred and volunteer sample of pediatric patients ranging in age from 7 months to 35 months with a history of recurrent otitis media (**N=8**).

For 3 weeks, all subjects received weekly osteopathic structural examinations and osteopathic manipulative treatment. This intervention was performed concurrently with traditional medical management.

Five (62.5%) subjects had no recurrence of symptoms. Of the three remaining subjects in this cohort, one had a bulging tympanic membrane, another had four episodes of otitis media, and the last underwent surgery after recurrence at 6 weeks posttreatment. Closer analysis of the posttreatment course of the last two subjects indicates that there may have been a clinically significant decrease in morbidity for a period of time after intervention.

The present study indicates that osteopathic manipulative treatment may change the progression of recurrent otitis media, a finding that supports the **need for additional research** in this area.

Todd AJ, Adverse Events Due to Chiropractic and Other Manual Therapies for Infants and Children: A Review of the Literature. J Manipulative Physiol Ther. 2014

Thirty-one articles met the selection criteria. A total of 12 articles reporting 15 serious adverse events were found. Three deaths occurred under the care of various providers (1 physical therapist, 1 unknown practitioner, and 1 craniosacral therapist) and 12 serious injuries were reported (7 chiropractors/doctors of chiropractic, 1 medical practitioner, 1 osteopath, 2 physical therapists, and 1 unknown practitioner). **High-velocity, extension, and rotational spinal manipulation was reported in most cases**, with 1 case involving forcibly applied craniosacral dural tension and another involving use of an adjusting instrument. Underlying preexisting pathology was identified in a majority of the cases.

Paul Posadzki Osteopathic Manipulative Treatment for Pediatric Conditions: A Systematic Review PEDIATRICS Volume 132, Number 1, July 2013

Eleven databases were searched from their respective inceptions to November 2012. Only randomized clinical trials (RCTs) were included
Seventeen trials met the inclusion criteria

The evidence of the effectiveness of OMT for pediatric conditions remains unproven due to the paucity and low methodological quality of the primary studies

Collaborazioni Osteopatia - Reparti Ospedalieri Neonatologia/Pediatria

Ospedale pediatrico
Meyer di Firenze

Ospedale "S. Spirito" di
Pescara

Ospedale di Macerata
reparto Neuropsichiatria
infantile

Ospedale di Macerata
reparto Neonatologia

Ospedale pediatrico
"Bambin Gesù" Roma

Ospedale "S. Chiara di
Pisa"

Ospedale Carate Brianza



Fonte: Tuttosteopatia

Utilizzo dell'osteopatia in ambito neonatologico e pediatrico possibile grazie ad un incremento delle collaborazioni con centri ospedalieri e clinici...MA..

Pochi risultati documentati a fronte di un elevato numero di collaborazioni

Probabile mancanza di una chiara, univoca e comunicabile idea di quale sia il razionale del trattamento osteopatico in generale e in ambito pediatrico in particolare

Necessità di approfondire il linguaggio comune tra osteopati e con i clinici sui meccanismi patogenetici associando una adeguata semeiotica osteopatica

Probabile inadeguatezza dei sistemi di misurazione standardizzati e utilizzati in medicina tradizionale

Necessità di ricercare nuovi metodi di valutazione e di misurazione più adatti ai principi della semeiotica osteopatica che osserva la funzione piuttosto che la malattia....

**GRAZIE
DELL'ATTENZIONE!**

4th INTERNATIONAL CONFERENCE
OF OSTEOPATHIC MEDICINE

**OSTEOPATIA
IN AMBITO
NEONATOLOGICO
PEDIATRICO**

**STATO DELL'ARTE,
RAZIONALE E
PROSPETTIVE
FUTURE**

A.I.O.T.
Accademia Italiana
Osteopatia Tradizionale

**PESCARA
20-21-22 MAGGIO 2016**

SAVE THE DATE

The fetus in the womb, c.1511
Royal Collection Trust / (C) Her Majesty Queen Elizabeth II 2013