

International Congress
of Osteopathic Medicine

"Towards an integrated Medicine"

6-9 APRIL 2011

FLORENCE - ITALY

Palazzo dei Congressi

Personality Behaviour in School and Osteopathy (PESO) trial: a new frontier for osteopathic treatment



**Gianluca Travaglini, Alessandra Delli Rocili, Chiara Tonizzo,
Francesco Cerritelli, Gina Barlafante**

Craig. AD.

- “Subjective awareness is based on homeostasis”
- Function of interoceptive information of lamina I of spinal cord on Anterior Insular Cortex
- Associative properties of neurons (Von Economo) (stratus 5)
- The ensemble of information creates the “global emotional moment”.

Damasio A.

Proto-self : it anticipates the sense of self and it is “a coherent collection of neural patterns which map, moment by moment, the state of physical structure of the organism in its many dimensions.

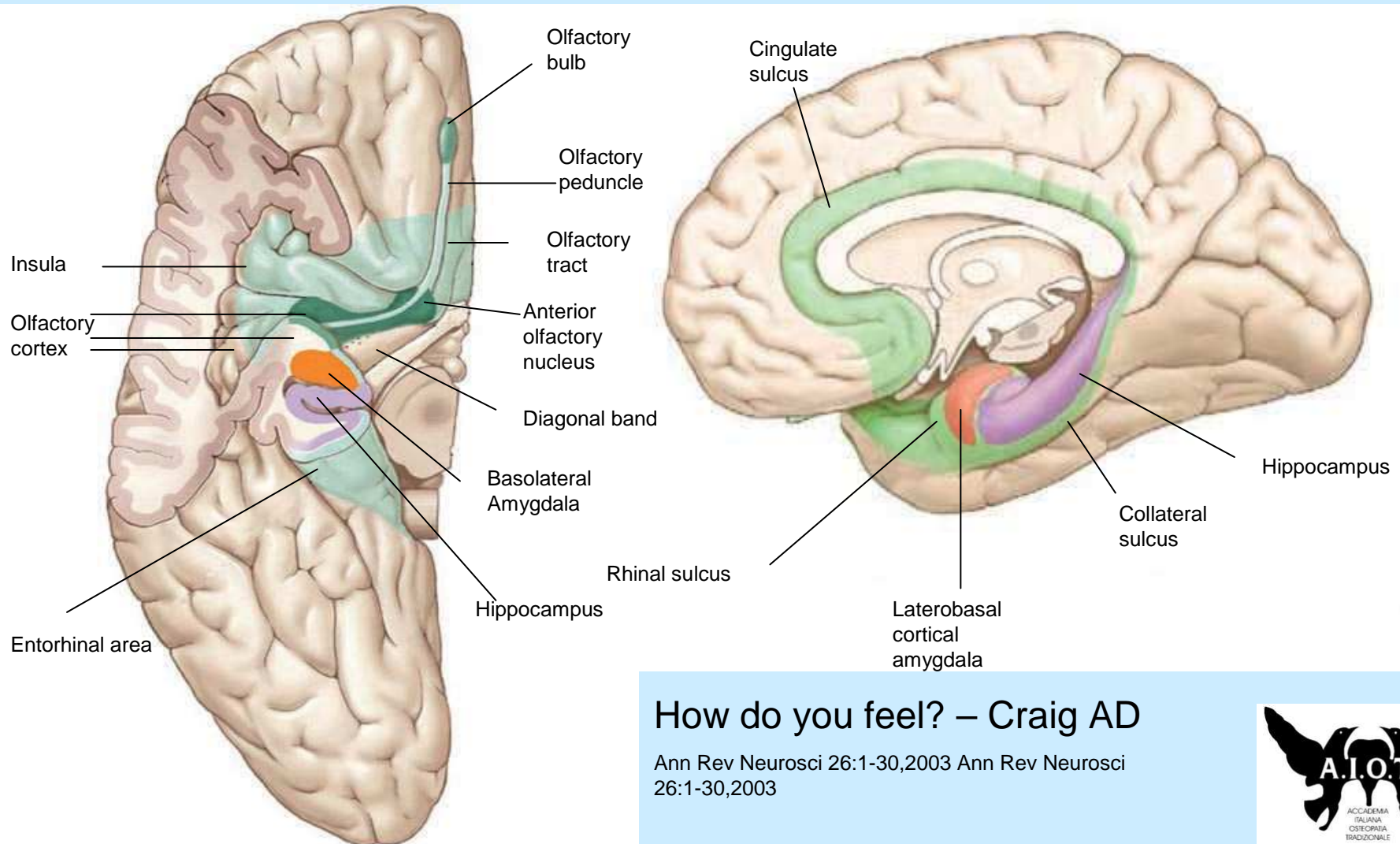
“Proto-self is non-perceptive and no-conscious”.

- Brainstem Nuclei
- Hypothalamus
- Insular Cortex
- Medial parietal cortices (Hippocampus, Prefrontal Cortex, Cerebellum...)

Kandel E.

The sensation produces a presynaptic facilitation of stimulus transmission.

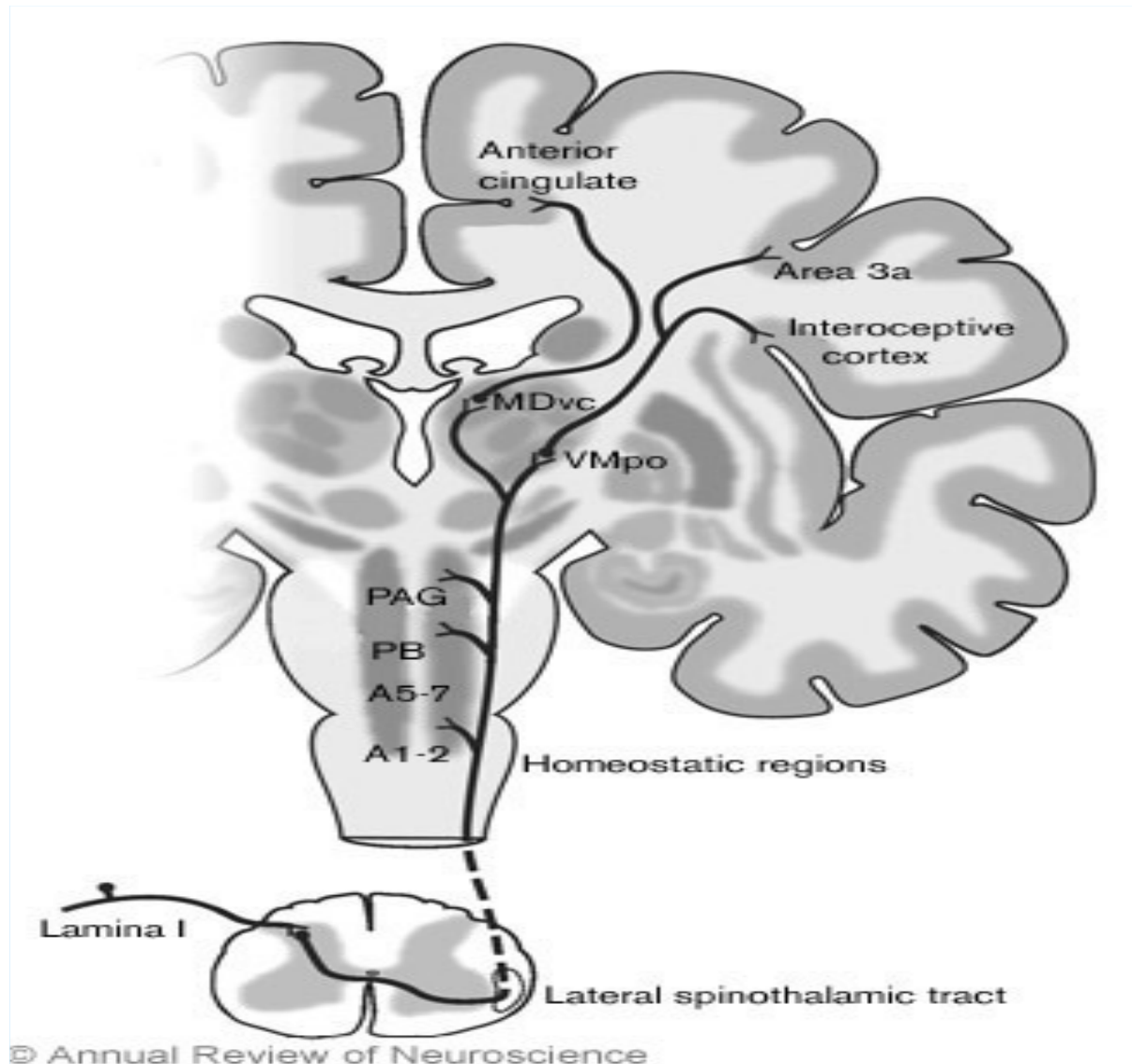
The sensation is a synaptic process and the increasing of synaptic strength is produced by the activity of interneurons activated by stimulation.



How do you feel? – Craig AD

Ann Rev Neurosci 26:1-30,2003 Ann Rev Neurosci
26:1-30,2003





Ann Rev Neurosci 26:1-30,2003
Ann Rev Neurosci 26:1-30,2003.

For kind permission of Bud Craig

Emerging concept of ascending pathways from the spinal cord that transmit feelings from the body to subjective awareness. MDvc = ventral caudal part of medial dorsal nucleus, VMpo = posterior ventromedial nucleus, PAG = periaqueductal gray, PB = parabrachial nucleus, IML = intermediolateral column, STT = spinothalamic tract. From Craig ADB: Pain mechanisms: Labeled lines versus convergence in central processing.

- Aim of the study: investigate and eventually measure the correlation between afferent dysfunction and personality disorder among young adolescents

Some clinical experience:

- **Effect of osteopathic medical management on neurologic development in children.**

[Frymann VM](#), [Carney RE](#), [Springall P](#).

- **Characteristics of pediatric patients seen in medical school-based osteopathic manipulative medicine clinics.**

[Lund G](#), [Carreiro JE](#).

Method

- 26 children from 8 to 10 years were divided in two randomized groups.
- All the children were valuated by Big Five Questionnaire – Children

Big Five Question - Children

- The method adopted through BFQ-C shows five main models of the personality description (they are just different from the standard ones):
 - - Energy/Extraversion (E)
 - Agreeableness (A)
 - Consciousness (C) *
 - Emotional Stability (N)
 - Mind openness /Openness to experience/Intellect (M).

Factors	Traits
ENERGY/EXTRAVERSION	<ul style="list-style-type: none">- Dynamism- Dominance
AGREEABLENESS	<ul style="list-style-type: none">- Cooperativeness/Empathy- Cordiality/Friendliness
CONSCIENTIOUSNESS	<ul style="list-style-type: none">- Dutifully- Perseverance
EMOTIONAL STABILITY	<ul style="list-style-type: none">- Emotion control- Impulse control
MIND OPENNESS/ OPENNESS TO EXPERIENCE	<ul style="list-style-type: none">- Openness to culture- Openness to experience

FOGLIO DI PROFILO

Questo modulo è stampato con inchiostro azzurro. Ogni altra versione è da considerarsi contraffatta.

Cognome _____ Nome _____

Data e luogo di nascita _____ Sesso _____

Scuola _____ Classe _____ Sezione _____

Professione del padre _____

Titolo di studio del padre _____

Professione della madre _____

Titolo di studio della madre _____

Data del test _____ Valutatore _____

	basso	medio	alto
	30 40	50	60 70
— E			
— A			
— C			
— I			
— M			
	30 40	50	60 70
	basso	medio	alto

LEGENDA

- E = Energia
- A = Amicalità
- C = Coscienziosità
- I = Instabilità emotiva
- M = Apertura mentale

	basso	medio	alto
	30 40	50	60 70
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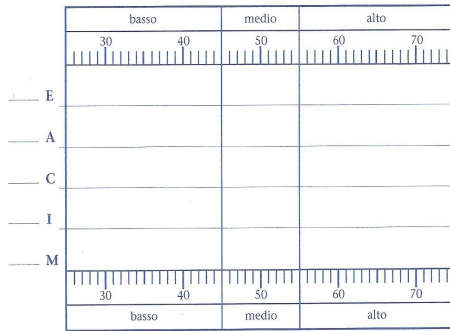
- Tests results weren't communicated to the osteopath
- An identified code was assigned to each patient. Psychological evaluation was made preserving the anonymity of individuals.
- The first group received median 4 (range 1-11) of osteopathic treatments, the second group didn't receive any treatment.

- 16 weeks later all the subjects received a second self-report measure by BFQ-C.
- A new code was assigned to each individual
- Psychological evaluations weren't communicated to the osteopath

	Study Group	Control Group	p value
AGE	9,07 ± 0,76	9.38 ± 0,65	0.27
WEIGHT	39,84 ± 12,35	35,53 ± 6,45	0.27
HEIGHT	145,38 ± 8,98	143,84 ± 10,28	0.68

		Study group	Control group
Parents' Marital status	Married	9 (45%)	11 (55%)
	Separated	4 (66,67%)	2 (33,33%)
Mother's educational level	Secondary education (GCSE)	2 (40%)	3 (60%)
	High school diploma	3 (37,5%)	5 (62,5%)
	Academic Degree	8 (61,54%)	5 (38,46%)
Father's educational level	Secondary education (GCSE)	1 (50%)	1 (50%)
	High school diploma	6 (46,15%)	7 (53,85%)
	Academic Degree	6 (54,55%)	5 (45,85%)
Parents' smoking	No smokers	9 (56,25%)	7 (43,75%)
	At least a smoker in family	4 (40%)	6 (60%)

		Study Group	Control Group
Sex	Males	3 (30 %)	7 (70%)
	Females	10 (62,5%)	6 (37,5%)
Weeks of pregnancy	38-40	9 (50%)	9 (50%)
	<38	4 (57,14%)	3 (42,86%)
	>40	0 (0%)	1 (100%)
Delivery presentations	Cephalic	12 (48%)	13 (52%)
	Breech	1 (100%)	0 (0%)
Duration of labour	Absent (for programmed childbirth)	6 (50%)	6 (50%)
	Up to 4 hours	3 (42,86%)	4 (57,14%)
	Over 4 hours	4 (57,14%)	3 (42,86%)
First pregnancy	First son	10 (62,5%)	6 (37,5%)
	No first-son	3 (30%)	7 (70%)
Use of Isoxsuprine	No	5 (35,71%)	9 (64,29%)
	Yes	8 (66,67%)	4 (33,33%)
Use of oxytocin	No	9 (50%)	9 (50%)
	Yes	4 (50%)	4 (50%)
Type of birth	Vaginal	6 (46,15%)	7 (53,85%)
	Caesarean	7 (53,85%)	6 (46,15%)

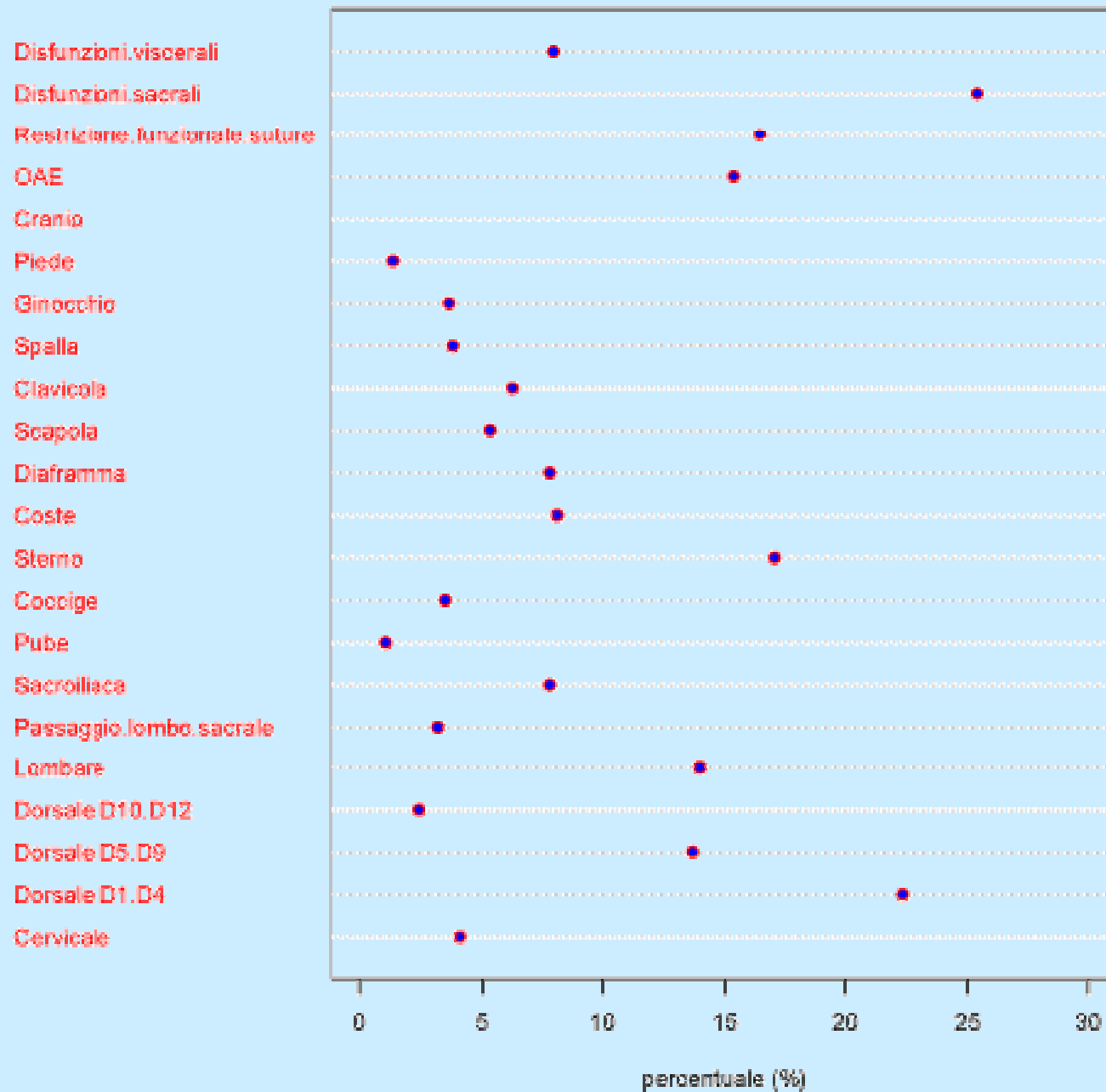


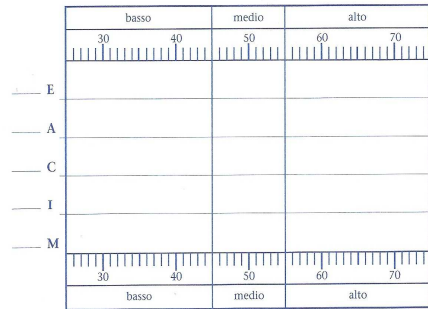
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BASELINE CLINICAL PARAMETERS

	Study Group	Control Group	p value
Energy/Extraversion	46,07 ± 8,79	45,38 ± 9,97	0,85
Agreeableness	56,38 ± 8,19	51,61 ± 8,05	0,14
Cousciousness	49,38 ±	48,00 ±	0,69
Neuroticism	47,61 ± 8,04	54,69 ± 7,12	0,02
Mind openness/ Intellect	45,84 ± 13,38	43,69 ± 8,32	0,62

Prevalenza disfunzioni somatiche





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UNIVARIATE STATISTICAL TEST AT THE END OF FOLLOW-UP

	Study Group	Control Group	p value
E before and after the treatments	49,25 ± 9,47	49,75 ± 10,16	0,90
A before and after the treatments	53,00 ± 9,01	53,50 ± 9,26	0,89
C before and after the treatments	46,75 ± 11,83	50,67 ± 8,43	0.36
I before and after the treatments	47,08 ± 8,24	50,92 ± 9,19	0,29
M before and after the treatments	47,5 ± 9,09	49,00 ± 10,82	0,71

GENERALIZED LINEAR MODEL

Outcome: difference E

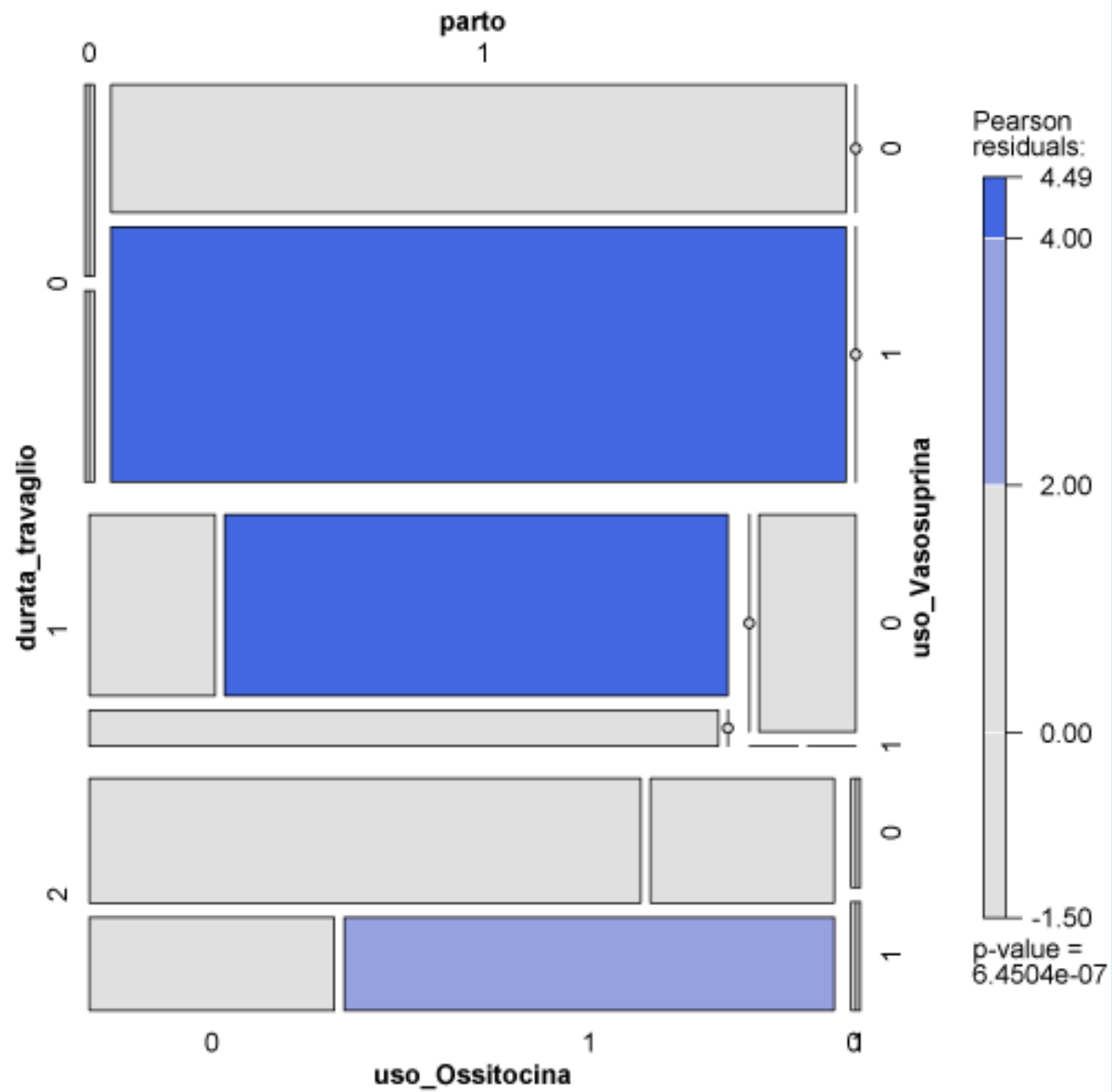
Parameters: OMT.x+diff_a+diff_c+diff_i+diff_m+Age+sex+childbirth+father's educational level+mother's educational level

	Estimate	Int. Of confidance	Pr(> t)
OMT	3,81	-4.82 12.44	0,35
Diff. A	0,32	-0.24 0.89	0,24
Diff. C	0,44	-0.19 1.09	0,15
Diff. I	0,19	-0.43 0.82	0,51
Diff. M	-0,004	-0.41 0.40	0,98
Age	-5,63	-11.28 0.01	0,05
Sex	-1,21	-9.02 6.60	0,74
Childbirth	-3,67	-11.19 3.83	0,30
Father's educational level	2,12	-4.65 8.89	0,51
Mother's educational level	-4,52	-10.10 1.04	0,10

Outcome. Diff. C

~OMT.x+diff_a+diff_e+diff_i+diff_m+Age+sex+mother's educational level

	Estimate	Int. of confidence	Pr(> t)
OMT	-6,40	-12.31 -0.50	0,03
Diff. A	0,03	-0.40 0.47	0,87
Diff. E	0,32	-0.08 0.72	0,10
Diff. I	0,17	-0.29 0.64	0,45
Diff. M	0,03	-0.28 0.35	0,80
Age	0,90	-0.52 8.33	0,07
Sex	3,13	-2.68 8.95	0,26
Mother's educational level	1,94	-1.64 5.54	0,26



Conclusion

Outcome: difference *Energy/Extraversion*

- **Age:** importance of early treatment
- **Mother's educational level:** a very important social element

Outcome: difference conscientiousness (Dutifully/Perseverance)

- **OMT** : a new frontier for Osteopathic treatment
- **Age**

It has been found several dysfunctions in high thoracic area both in study group and Control group.

Pescara is the 24^o most polluted city in Europe caused by dust particles (font: Istat / Arta)

Does it exist a correlation?

A glance at the future

"Let a certain holy ambition invade our souls, so that, not content with the mediocre, we shall pant after the highest and (since we may if we wish) toil with all our strength to obtain it".

"Ci afferri l'animo una santa ambizione di non contentarci delle cose mediocri, ma di anelare alle più alte e di sforzarci con ogni vigore di raggiungerle, dal momento che, volendo, è possibile".

Oratio de hominis dignitate, 1486. Giovanni Pico della Mirandola



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This work is considered an observational scheme because of the few patients of the study; to have a statistically significant result we need to consider at least 78 patients per group.

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- **Principles of Neural Science** [Eric Kandel](#) (Author), [James Schwartz](#) (Author), [Thomas Jessell](#) (Author)

- **Self comes to mind: Constructing the Conscious Brain, Pantheon, 2010**
Antonio Damasio

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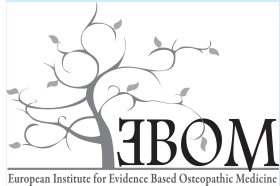
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Acknowledgements



**AIOT : Accademia Italiana di Osteopatia Tradizionale -
Pescara, Italy**



**EBOM: European Institute for Evidence Based
Osteopathic Medicine**



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THANK YOU FOR YOUR KIND ATTENTION

