

POSTURAL ERGONOMICS AND PSYCHOLOGICAL TREATMENT OF SEVERE COGNITIVE DELAY AND SERIOUS POSTURAL PROBLEMS¹³

Tiziano Pacini ul. D. Vatax, 30 -1510 Sofia,

Phone: +359878474304, +393355262723,

E-mail: tizianopacini@gmail.com

Stefania Mocali via Della Soterna, 18 – 50032,

Borgo San Lorenzo, Italia

Phone: +393500876319,

E-mail: stefania.mocali01@gmail.com

Abstract: *Idiopathic scoliosis in a 20-year-old female. The person is also affected by severe cognitive delay for which a precise etiopathogenesis is not known. The person had been treated in the past with psychotherapeutic and physiotherapeutic protocols which led to his current condition. The subject was treated with the B.A.E. method. for postural recovery and at the same time a psychotherapeutic path associated with the use of Universal Integrative Medicine method was started by Dr. Nader Butto and the 10 laws of R. Assagioli. The result was evaluated after thirty days of treatment and the results are very encouraging from both a postural and psychological point of view, so much so that questions arise about possible relationships between cognitive delays and posture. The girl was previously treated only with physiotherapy protocols with insufficient results for years. During medical, physiotherapeutic and psychological management. A new psychotherapeutic treatment associated with postural treatment with the Biomechanical Anthropometric Ergonomic method improved both posture and cognitive aspect in just thirty days.*

Keywords: Posture, Biomechanical Ergonomic Anthropometric Method, Scoliosis, Back Pain, Cognitive Delay.

INTRODUCTION

The young woman displays issues with the locomotor system caused by the presence of valgus knees together with a general postural situation visibly altered since birth and displays a severe cognitive delay since birth. The person has been followed with physiotherapeutic protocols and psychotherapy since infancy, the main difficulty in the locomotor system has manifested in the inability to climb or descend stairs without assistance. She manifests a severe cognitive delay that has been clinically certified. This article represents the first stage of a general inquiry into both the postural and the psycho-cognitive evolution. The correction of the postural aspect is an associative learning of many stimuli and as many responses. The whole is finalized towards the acquisition of schemes that are complex and integrated in the “Man System”, with all that come with it.

It is therefore the environmental stimuli that, by producing a change in the management of the gravitational field, create postural changes related to the variations of the postural recruitment, induced in fact by the different external stimuli, (Massara G., Pacini T., Vella G., 2008).

It comes from this that, in the absence of continuous external changes applied where the person gathers the anti-gravity body management (the feet for the upright position and the occlusal plane for neck and neck positioning), any method of gymnastics or re-education can only have temporary success and only during the time when the exercises are executed, with advantages that are lessened to the point of disappearing by the reinstatement of the initial posture that was the postural representation of singular subject in that determinated environment.

The big difference we find in the corrections made through the Biomechanical Anthropometric Ergonomic (B.A.E.) method lies precisely in the possibility of giving continuous external receptions that are able to bring about a stable postural change even in the positioning of

¹³ The research paper was presented on October 27, 2023, at the Health Promotion Section of the 2023 Online Scientific Conference co-organized by University of Ruse and Union of Scientists - Ruse. Its title in Bulgarian is: „ПОСТУРАЛНА ЕРГОНОМИКА И ПСИХОЛОГИЧНО ЛЕЧЕНИЕ НА ТЕЖКО КОГНИТИВНО ЗАБАВЯНЕ И СЕРИОЗНИ ПОСТУРАЛНИ ПРОБЛЕМИ“.

the skull and its internal organs, particularly of the pituitary gland and the hypothalamic-pituitary tract, which are fundamental to all matters endocrinological e for the production of neurotransmitters, and a stable and long-lasting change in their production, (Pacini T.,2012, Pacini T.,2015).

This new postural situation associated with periods of personalized physical exercise and kinesitherapy is stabilized in a short time with high profile results.

EXPOSITION

The ergonomic postural analysis executed with the B.A.E. method shows an antigravity behaviour outside of the protocol used, both in stationary position and during walking. A mistake in the use of the knees, strong valgus, both during walking and stationary position and differences in the management of the load on the podalic segments are all recorded.



Fig. 1



Fig. 2

The head is too forward compared to the torso and the spine is lacking the dorsal kyphosis that physiological. This particular situation leads to hyperlordosis of the cervical tract, which is almost entirely seen in the section between the first three vertebrae, with the occlusal plane being too inclined downwards. It is impossible at the moment to understand whether the occlusion is a consequence of the positioning of the dorsal and cervical spine, or if the occlusion is responsible for the rachis' positioning, but in both cases the occlusion puts such a heavy load on the posterior section of the mouth that almost prevents the mouth from opening, reducing the ability to even speak. All of this is coherent with the reported issues with phonation and deglutition. Such a strong pressure on the temporo-mandibular joints might also cause alterations in the physiological functions of the hypothalamic-pituitary tract, because of its anatomical positioning.

The occlusal issues are well apparent in Fig. 4, where we can see the X-ray image of the anterior-posterior cervical tract and an important asymmetry between left and right side is highlighted.

In Fig. 5 it is observed (highlighted in blue) the occlusal plane, where the posterior portion (molars) touches, while the anterior portion is rather open (incisors).

In Fig. 6 we can observe the misalignment of the molars of the lower and upper arches (antero-posterior projection).

Looking at the images in Fig. 1, Fig. 2, Fig. 3 on the left side we can observe the knee valgus, in Fig. 2 on the left side we can see that the head is protruded. The locomotor system has a higher energy waste because of this posture (Planas P, 2008, Pacini T. 2013).



Fig. 3

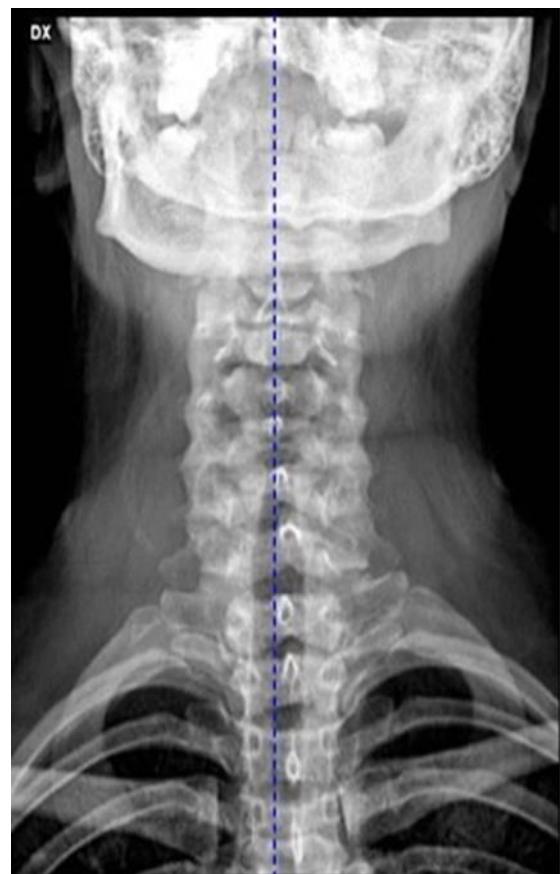


Fig. 4



Fig. 5

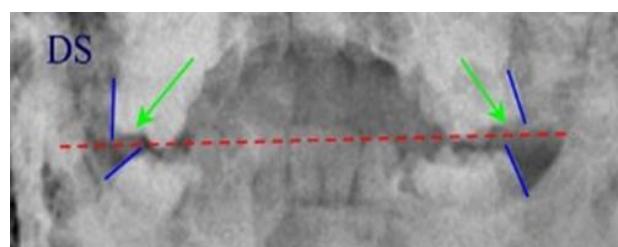


Fig. 6

The psychocognitive study is carried out by gathering and recording observations. The method that has been used is the first level visible recording observation.

Observations: speech, reading and verbal behaviour, (Roberto Assagioli, 1983, Nader Butto, 2004).

Start of observation period: 04/08/2023 End of observation period: 04/09/2023.

The therapist keeps in consideration Assagioli's 2nd law, according to which behaviours and actions tend to evoke corresponding images and ideas to observe whether the postural correction applied through the Biomechanical Anthropometric Ergonomic method could have repercussions on the girl's imaginative system so as to lead to cognitive improvement. Based on this, exercises in reading, drawing of shapes and movement for the bilateral synchronicity are repeatedly executed. Based also on Assagioli's 7th law, which indicates that the repetition of acts intensifies the tendency to understand them and make their execution easier and better.

Results: The data gathered in the 30-day period from the start of the treatment with B.A.E. method is represented in the photographs, which turn out to have better symmetry and upright position, verifying that the work of the locomotor system got better, giving the body a more harmonic shape. In particular we can see, in Fig.1 (right side) the head to be straighter and more centered, with an improvement of the knee valgus. In Fig.2 (right side) we can see more toned gluteal and abdominal muscles. In Fig.3 (right side) we can see a better symmetry in the arms' positioning with a lessened knee valgus. The difficulties in phonation and walking have lessened.

The girl climbs and descends stairs without assistance.

From the audio and video recordings we can observe an improvement in reading, imaginative ability and speech. By listening to the recordings, we can observe an improvement in reading, imaginative and emotional expression, even if the intervening time is brief (30 days).

CONCLUSION

The psychocognitive study is carried out by gathering and recording observations. The method that has been used is the first level visible recording observation.

Observations: speech, reading and verbal behaviour.

Start of observation period: 04/08/2023 End of observation period: 04/09/2023.

The therapist keeps in consideration Assagioli's 2nd law, according to which behaviors and actions tend to evoke corresponding images and ideas to observe whether the postural correction applied through the Biomechanical Anthropometric Ergonomic method could have repercussions on the girl's imaginative system so as to lead to cognitive improvement. Based on this, exercises in reading, drawing of shapes and movement for the bilateral synchronicity are repeatedly executed. Based also on Assagioli's 7th law, which indicates that the repetition of acts intensifies the tendency to understand them and make their execution easier and better.

Results: The data gathered in the 30-day period from the start of the treatment with B.A.E. method is represented in the photographs, which turn out to have better symmetry and upright position, verifying that the work of the locomotor system got better, giving the body a more harmonic shape. In particular we can see, in Fig.1 (right side) the head to be straighter and more centered, with an improvement of the knee valgus. In Fig.2 (right side) we can see more toned gluteal and abdominal muscles. In Fig.3 (right side) we can see a better symmetry in the arms' positioning with a lessened knee valgus. The difficulties in phonation and walking have lessened.

The girl climbs and descends stairs without assistance.

From the audio and video recordings we can observe an improvement in reading, imaginative ability and speech. By listening to the recordings we can observe an improvement in reading, imaginative and emotional expression, even if the intervening time is brief (30 days).

REFERENCES

Pacini T., Biomechanical Anthropometric Ergonomic Method for Assessment and Correction of the Human Posture, PhD Thesis, University of Ruse "Angel Kanchev", 2015.

Massara G., Pacini T., Vella G. Ergonomia del sistema posturale, Fabrica del 3º millennio, Marrapese Ed. S.R.L. Roma, 2008.

Planas P., Rehabilitacio Neuro – Occlusal (2ed.), Amolca 2008.

Rocabado M., Annette Z.I. Musculoskeletal Approach to Maxillofacial Pain, Lillincott Williams and Wilkins, 1991.

Pacini T., Biomechanical, anthropometric and ergonomic method of controlling the posture of the human body. Science and Sport, 4, 2012 (*Оригинално заглавие: Пачини Т., Биомеханичен, антропометричен и ергономичен метод за контрол на стойката на човешкото тяло. Наука и спорт, 4, 2012*).

Pacini T., Deiulis E., Coli E. Interaction between lumbar lordosis and m iliopsoas. Science and Sport, 6, 2013 (*Оригинално заглавие: Пачини Т., Деюлис Е., Коли Е. Взаимодействие между лумбална лордоза и m iliopsoas. Наука и спорт, 6, 2013*).

Pacini T., Neck posture, cervical spine problems, temporomandibular joints and the Anthropometric Ergonomic Biomechanical (A.E.B.) Method, University of Ruse "Angel Kanchev", 2013.

Tiziano Pacini, Ferdinando Pivetta, Elisabetta de Juliis, Neck's posture: woman 54 years old suffering from Dizziness, Labyrinthitis, Headache, Neck Pain, Shoulder Pain, Carpal Tunnel Syndrome, treated with Biomechanical Anthropometric, University of Ruse "Angel Kanchev", 2013.

Tiziano Pacini, Elisabetta de Juliis, Andrea Pacini: Thermography and Posture: The thermography allows to see the change of muscular muscles of the various body parts in real time. A person shows at the thermography investigation a muscular surface that is detectable as an image proportional to the quantity of heat emitted by the muscles and by their work. Its usage can be studied in association with the B.A.E. method, University of Ruse "Angel Kanchev", 2019.

Tiziano Pacini, Elisabetta de Juliis, Ferdinando Pivetta, Implications of the Posture and of the gravitational field management in the Fibromyalgia and in its symptoms of pain and panic: progress test in the treatment of a 48 fibromyalgic man with the Biomechanic Anthropometric Ergonomic Method B.A.E. for 18 months, University of Ruse "Angel Kanchev", 2019.

Tiziano Pacini, Loredana Granata, Elisabetta De Juliis, Scoliosis reduction with B.A.E. method on a 21 years old female with checkup after a year and a half, University of Ruse "Angel Kanchev", 2022.

Roberto Assagioli, Pscosintesi, armonia della vita, edizioni Mediterranee, Roma, 1983.

Nader Butto, Medicinauniversale e il settimo senso, edizioni Mediterranee, Roma, 2004.