

**Stimulating positioning on a horse and a human
– a form of Equine Assisted Therapy (EAT)
for children from the first months of life**

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BUDAPEST 2003 XI. HETI CONGRESS

- 20 years ago, here in Budapest, we first presented a new groundbreaking form of EAT for several-month-old babies - **Stimulating positioning on a horse (SPHo)**.
- 2003 it generated a heated discussion.
- Until then, **age under 4 years was a contraindication for EAT.**
- Since then we have been continuously developing SPHo and it is spreading all over the world.

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Slovak Republik	
Slovak Hippotherapeutic Association	

HIPPOTHERAPY WITH SEVERAL MONTHS OLD BABIES

VIDEO

The complex impact of therapeutic riding (TR) is caused also by the effect on several development levels of human being. In our opinion it affects besides phylogenetically old mechanisms - behavioral patterns and energoinformational processes (i.e. acupressure effect, assumed chacras and energoinformation field of the horse and therapist) also on ontogenetically old global postural locomotive pattern. We use its direct stimulation by Vojta's reflective locomotion in children suffering from cerebral palsy (CP) from the day they are born. We use hippotherapy (HT) in our working place with several months old babies - toddlers - as a part of complex treatment to influence global patterns of automatic body control. We believe that from the point of view of development is this early use of HT fully essential and indicated. This means, that the age limit of 3-4 years below which HT was contraindicated in children is overruled. It will enable more effective impact of HT on toddlers in a period when plasticity of its brain is greatest.

We apply HT by positioning babies on the belly, on the back and later when it's possible propped in elbows everything of course under strict safety rules.


From the ontogenetic aspect we prefer at first positioning against and then in the direction of the horse's gait. It is necessary by the older children suffering from CP unable of self-contained sitting or holding of the head from point of view of disability and development of the child to solve the question whether to continue in HT in form of positioning or to utilize assisted sitting position by the physiotherapist.

In our opinion and due to our experience the sensomotoric facilitation of posture during TR stimulates global postural-locomotive pattern through movement synergies of closed patterns type as well as co-activation of muscular groups and it is fully indicated to start with it as soon as with several months old babies suffering from CP.




XI.
International
Congress

2003



The Complex
Influence of
Therapeutic
Horse Riding

2003 June 11-14
Budapest, Hungary



Hungarian Riding for the
Disabled Federation

www.lovasterapia.hu



INTRADUCTION



- The term “**stimulating positioning (SP)**” manifests basic principle of this type of sensorimotor kinesiotherapy.
- **By positioning the children on this living unstable platform, we facilitate the individual phases of postural ontogenesis using positions adequate to their developmental age.**
- **Abdominal and back positioning, side lying, seating and later standing are used.**



STIMULATING POSITIONING ON A HORSE

At the same time we facilitate:

- **control centers** (central nervous system - CNS)
- **executive structures** (musculoskeletal system)



GOAL

- to add EAT - SP to the basic rehabilitation methods
- to bring EAT - SP closer to the evidence-based medicine
- to improve the quality of life for infants at high risk of cerebral palsy (CP)



METHODOLOGY

- **6 months old babies**
- **Control group** (20) had **monotherapy**:
Vojta's Reflex Locomotion (VRL) 4x daily
- **Experimental group** (15) had **combined therapy**:
SP 2x a week + VRL 3x daily
other 5 days VRL 4x daily

METHODOLOGY

We classified these patients in the locomotion phases according to Vojta (0-7).

Also, **we randomly paired**

10 infants from the experimental group with 10 infants from the control group according to their corresponding locomotion phases into:

- **a selected experimental group**
- **a selected control group**

METHODOLOGY

We evaluated 4 times every second month in all groups:

(in the beginning, after 2 and 4 months, at the end)

- **locomotion phases according to Vojta** (0-7)
- **spontaneous motor activities** (SMA)
- **primitive reflexology**
- **muscular tonus** (spasticity - modified Ashworth scale, hypotonia)
- **postural reactions**

METHODOLOGY

The results were processed with a **statistics software SPSS**.

We used:

- **Friedmann Test**
- **Mann-Whitney Test**
- **Wilcoxon Signed Ranks Test**



For statistical tests **the level of statistical significance $\alpha = 0,05$** was considered.

RESULTS

Comparisons of **spontaneous motor activities** in the control (VRL) and experimental (VRL + SP) groups **after 6 months of therapy**

SMA	VRL	VRL + SP
rolling	0,000	0,000
creeping	0,000	0,000
quadrupedic position	0,000	0,000
crawling	0,004	0,000
sitting upright	0,003	0,000
standing upright	0,063	0,000
free walking	1,000	0,160





RESULTS



Comparisons of **spontaneous motor activities** **between** experimental (VRL + SP) and control (VRL) groups

SMA	eval.1	eval.2	eval.3	eval.4
rolling	0,230	0,033	0,008	0,048
creeping	1,000	0,045	0,000	0,001
quadrupedic position	1,000	0,429	0,087	0,001
crawling	1,000	1,000	0,070	0,017
sitting upright	1,000	1,000	0,032	0,017
standing upright	1,000	1,000	0,070	0,020
walking free	1,000	1,000	1,000	0,026

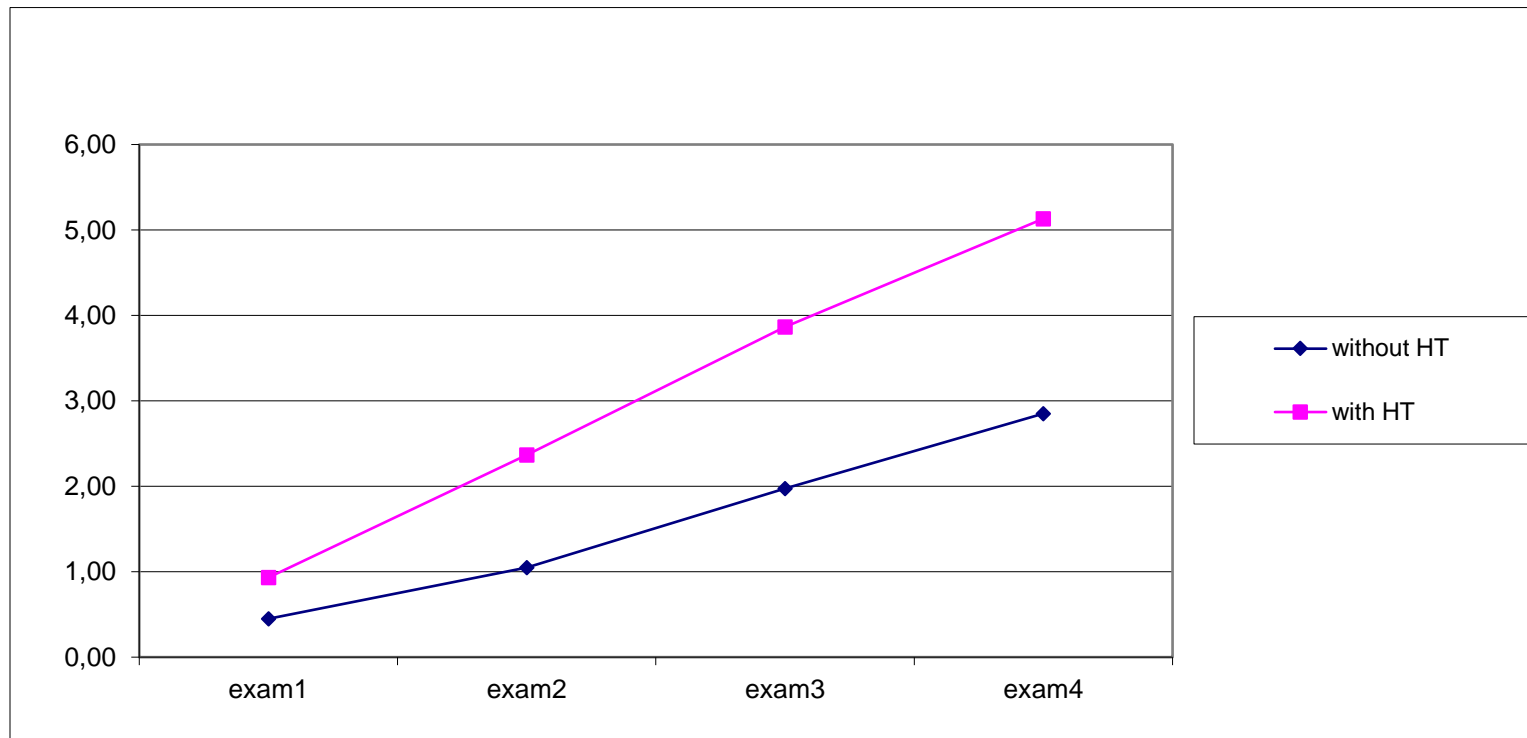
RESULTS

Comparisons of average values of **locomotion phases** in the experimental (VRL + SP) and control (VRL) groups **after 6 months of therapy**

group	P-value
RL	0 ,000
VRL + SP	0 ,000

RESULTS

Influence of therapies on the **locomotion phases** in the experimental (VRL + SP-HT) and control (VRL) groups **during 6 months**



RESULTS

Comparison of therapies on **the locomotion phases between selected** experimental (VRL + SP) and control (VRL) groups

Evaluations	eval.1	eval.2	eval.3	eval.4
P-value	0,595	0,201	0,066	0,028

RESULTS



Influence of therapies on **primitive reflexology** in the selected experimental (VRL + SP) and control (VRL) groups **after 6 months**

Reflexology	without SP	with SP
The Babinsky reflex	0,063	0,008
Galant reflex	0,002	0,000
The Mooro reflex involving the arms	0,001	0,000
Parachute function	0,001	0,000
Grasping reflex on the lower limbs	0,047	0,003
Grasping reflex on the upper limbs	0,042	0,008



RESULTS

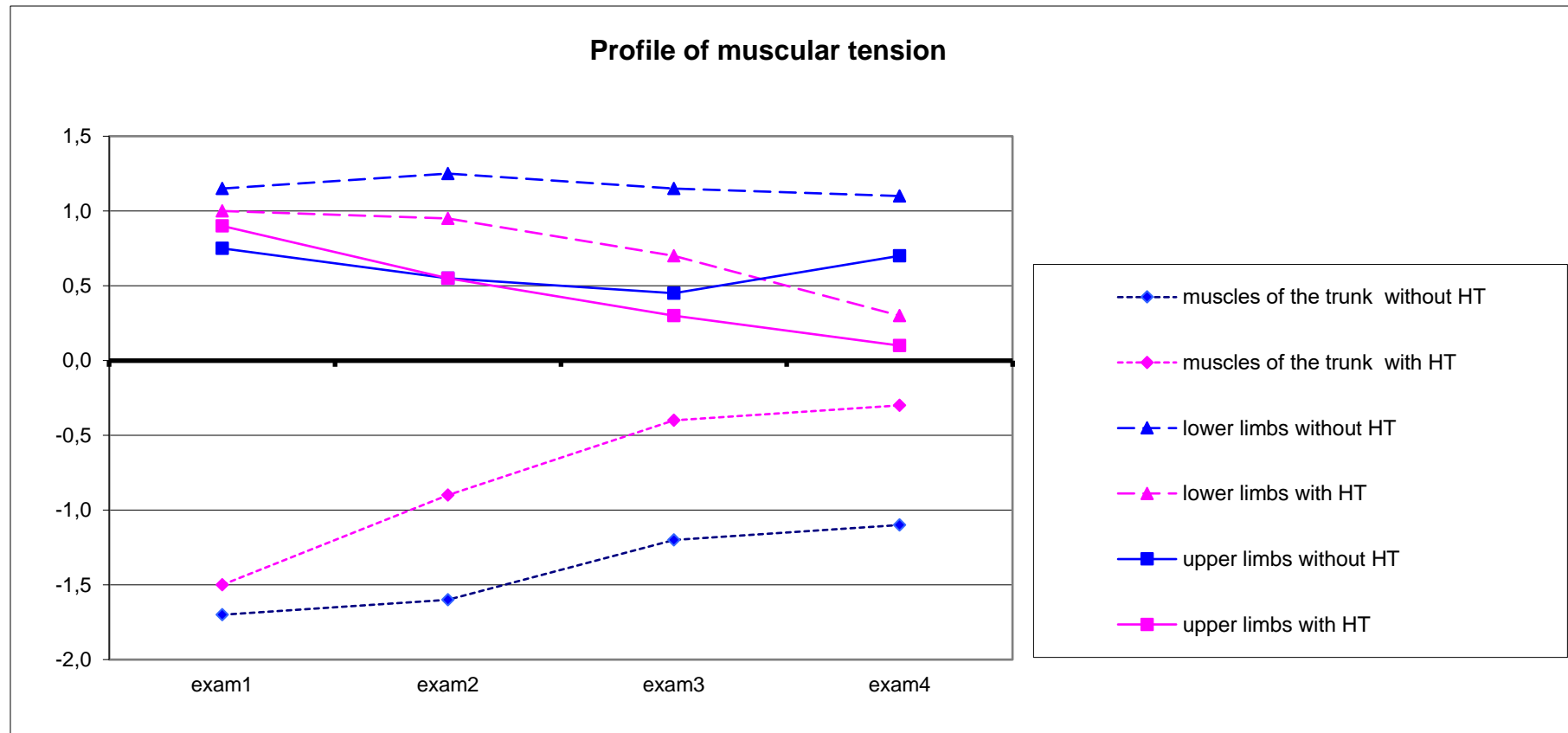


Comparisons of **primitive reflexology** **between** experimental and control groups

Reflexology	eval.1	eval. 2	eval. 3	eval. 4
The Babinsky reflex	1,000	1,000	0,176	0,020
Galant reflex	0,179	0,013	0,000	0,048
The Moro reflex	0,485	0,013	0,008	0,093
Parachute function	1,000	0,179	0,001	0,002
Grasping reflex on the lower limbs	1,000	0,571	0,200	0,045
Grasping reflex on the upper limbs	0,174	0,024	0,026	0,479

RESULTS

Influence of therapies on **the muscular tonus** of muscles of the trunk, upper and lower limbs **in the selective** control and experimental groups **during 6 months**



RESULTS

Influence of therapies on **the muscular tonus in the selected** experimental (VRL + SP) and control groups (VRL) **after 6 months**

Muscular tonus	Muscles of the trunk	Muscles of the lower limbs	Muscles of the upper limbs
VRL	0,002	0,544	0,594
VRL + SP	0,000	0,028	0,051

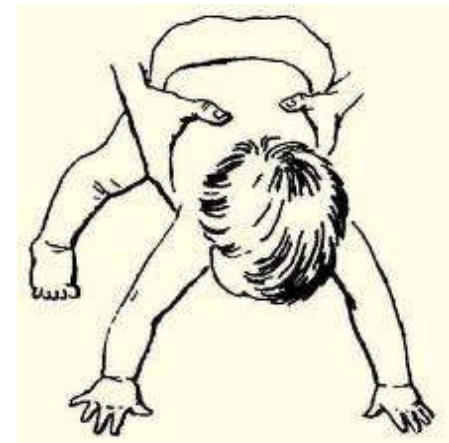
RESULTS

Comparisons of therapies on **the muscular tonus** between the experimental (VRL + SP) and control (VRL) groups

Muscular tonus	eval. 1	eval. 2	eval. 3	eval. 4
Muscles of the trunk	0,214	0,000	0,001	0,001
Muscles of the lower limbs	0,479	0,333	0,064	0,008
Muscles of the upper limbs	0,507	0,241	0,063	0,012



RESULTS



Influence of therapies on **postural reactions** in the selected experimental (VRL + SP) and control (VRL) groups **after 6 months**

Postural reaction	group	P - value
horizontal Collis reaction	VRL	0,000
	VRL + SP	0,000
vertical Collis reaction	VRL	0,002
	VRL + SP	0,000
Landau reaction	VRL	0,000
	VRL + SP	0,000
Peiper and Isbert reaction	VRL	0,000
	VRL + SP	0,000



RESULTS



Influence of therapies on **postural reactions** in the selected experimental (VRL + SP) and control (VRL) groups **after 6 months**

Postural reaction	Group	P - value
Axillary suspension	VRL	0,000
	VRL + SP	0,000
Traction test by upper limbs	VRL	0,000
	VRL + SP	0,000
Vojta reaction	VRL	0,000
	VRL + SP	0,000



RESULTS



Comparisons of **postural reactions** **between** experimental and control groups

Postural reaction	eval. 1	eval. 2	eval. 3	eval. 4
Axillary suspension	0,306	0,000	0,003	0,001
Traction test by upper limbs	0,473	0,040	0,008	0,000
Vojta reaction	0,610	0,019	0,000	0,000
vertical Collis reaction	0,306	0,002	0,004	0,009
horizontal Collis reaction	1,000	0,046	0,076	0,003
Landau reaction	0,159	0,001	0,006	0,002
Peiper and Isbert reaction	0,306	0,003	0,000	0,001

SUMMARY

- **Reflex locomotion** according to Vojta **is effective** for infants at high risk of CP
- **Combination of VRL and SP is more effective** than monotherapy of VRL
- **Combination of VRL and SP** applied to infants at high risk of CP **improves the psychomotor progress** after 6 months, **even after 2 months**
 - spontaneous motor activity
 - postural reactions
 - the primitive reflexology
 - muscular tonus (hypotonia, spasticity)
 - the locomotion phases according to Vojta (0-7)



GUIDELINE FOR CEREBRAL PALSY

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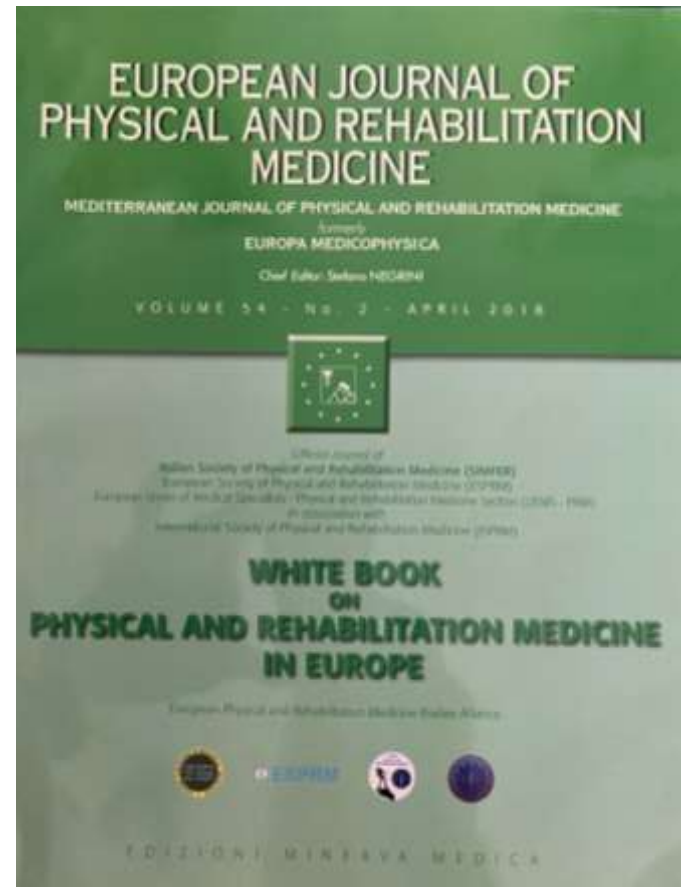
Evidence-based position paper on the professional practice of Physical and Rehabilitation Medicine for persons with cerebral palsy. The European PRM position (UEMS PRM section)

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RECOMMENDATIONS

It is recommended that, when prescribing rehabilitation interventions, PRM physicians consider that neurodevelopmental techniques (NDT), the Vojta reflex locomotion, robotic-assisted gait training, virtual reality training, suit therapy, **therapeutic riding**, etc. **can be used to improve gross motor functions**, especially standing and walking.

Neurodevelopmental techniques, the Vojta reflex locomotion, constraint-induced movement therapy, biofeedback, **animal assisted therapy**, etc. **should be administered to improve motor control and sensorimotor function of the affected limbs and fine motor function** for eligible patients with CP.



STIMULATING POSITIONING ON A HUMAN

is optimal

- to use for the youngest, just a **few weeks old infants** where **the CNS can be affected in the easiest and the most effective way**
- to **start as soon as possible**



STIMULATING POSITIONING ON A HUMAN

can be used **with older children** (6 - 10 years), as well



STIMULATING POSITIONING ON A HUMAN

facilitates step by step the development of the postural ontogenesis.

Positions:

by the end of 1st trimenon



by the end 2nd trimenon



sitting



STIMULATING POSITIONING ON A HUMAN

- The development of triflextion of both lower extremities.
- The end of the first trimester.



STIMULATING POSITIONING ON A HUMAN

The support on the left upper limb.
The activity of the right upper limb.



SPHu offers a wide spectrum of positives

- possibility to repeat the procedure several times a day
- closer movement biomechanics of the human body than the horse's body
- crossed movement pattern of quadripedal and bipedal mechanics of an adult
- playful form of therapy
- saving time and money because there is no need to commute
- a sense of security for the child while is on a parent
- emotional fixation on parents, etc.

THERAPEUTIC GAMES WITH HORSE MOTIFS

Within SPHo and SPHu we can play various forms of games with a horse motif.



TAKE HOME MESSAGE

- **EAT is recommended in UEMS PRM guideline for CP**
Scientific acceptance of EAT: Eur Jour of Phys Reh Med 2021 Dec;57(6):1020-35
- **SPHo and SPHu are effective methods**
(for babies at high risk of CP and with CP)
- **SPHu is suitable for younger and SPHo for older children**
(since it becomes technically unfeasible for their parents to carry them)
- **A combination of different forms of kinesiotherapy is better**
(Vojta – Bobath - SPHo – SPHu)

THANK YOU FOR YOUR ATENTION

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