

Dolphin Assisted Therapy

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No. LLI-352
INTERPROF



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*The good life is a process,
not a state of being.
It is a direction not a
destination...*
Carl R. Rogers



Photo: Mikas Vitkauskas/Lithuanian Sea Museum

The content of the course

- 1. Dolphin Assisted Therapy: History/Theory/Research/Regulation
 - 1.1. Diverse approaches of the Dolphin Assisted Therapy
 - 1.2. Theoretical Framework of the Dolphin Assisted Therapy
 - 1.3. Scientific background of the Dolphin Assisted Therapy: Research and Case Studies
- 2. Patients with neuro sensomotor disorders/Interaction with dolphin
 - 2.1. Effects on Patient's motor system
 - 2.2. Effects on Patient's psychosocial and psychoemotional systems
 - 2.3. Effects on Patient's sensory dysfunction
 - 2.4. Effects on Patient's social network
- 3. Application of Dolphin Assisted Therapy Principles: Indications and Contraindications, Patient Evaluation, Treatment and Welfare of dolphins
- 4. An Introduction to Occupational Therapy, Physical Therapy, and Social Work Incorporating Dolphin Assisted Therapy in Clinical Practice

History of animal assisted therapy

- Animals have always been meaningful in people's lives (All and Loving, 1999; Hatch, 2007).
- Various legends and tales show the significance of various animals for people.
- Even in ancient Greece it was mentioned that contact with animals helps to improve the emotional and physical condition for people (Macauley, 2006; Nimer and Lundahl, 2007) despite this fact animals have only been used for therapeutic purposes since the end of 18th century (All and Loving, 1999; Heimlich, 2001; Velde *et al.*, 2005; Macauley, 2006).

The importance of animals in ancient times



Photo: Chris Johnson

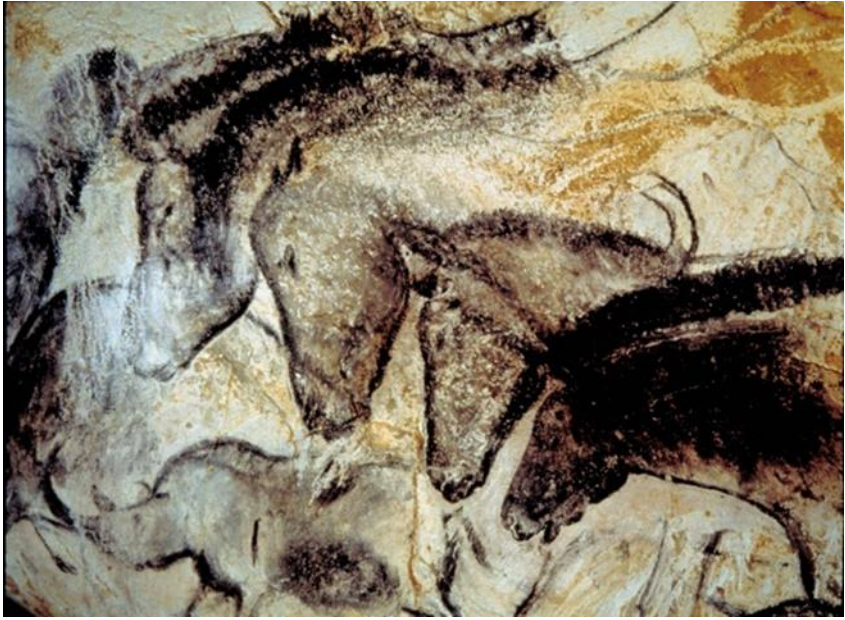
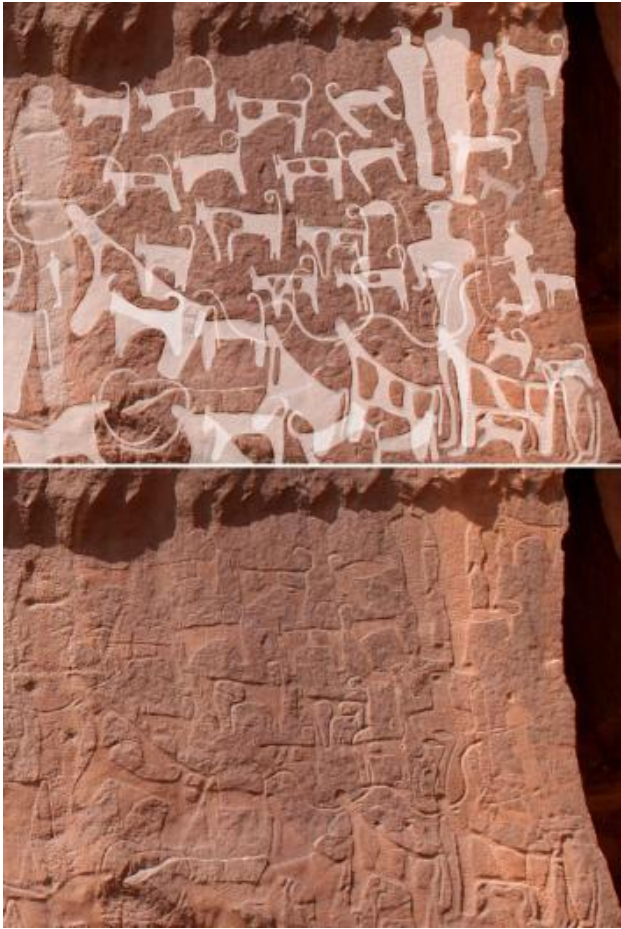


Photo: National Geography

Photo: French Ministry of Culture and Communication, Regional Direction for Cultural Affairs, Rhône-Alpes region, Regional Department of Archeology.

History of Dolphin Assisted Therapy



Photo: Neringa Girdvainienė, Vidmantas Girdvainis/Lithuanian Sea Museum

Lilly around the nineteen sixties was the first in the world who hypothesized on communication between humans and dolphins as beneficial to human beings. This theory was referred to as the abilities of dolphins in teaching communication. Later on this basis, Smith

started various researches (cited in Humphries, 2003).

Three main theories:

- *Reinforcement theory.* The main idea of this theory is that dolphins may be used as motivator/reward for improving attention span. The content of this theory withholds the hypothesis of lack of attention and operant conditioning (Sokolov, 1963, Zeaman & House, 1963; Lewis & Harwitz, 1969, Moskowitz & Lohmann, 1970; Kurtz, 1996; Miller, 1980, Foxx, 1982; Tof, 1998 all cited in Nathanson *et al.*, 1997, Nathanson, 1998; 2007).
- *Theory of the impact on brain waves.* The main idea of this theory is that communication with dolphins may have a positive impact on brain waves (De Bergerac, 1998, Walter & Walter, 1949, De Bergerac, 1998, Robbins, 2002, cited in Brakes, Williamson, 2007 cited in Nathanson, 1989; 1998; Nathanson and deFaria, 1993; Nathanson *et al.*, 1997).
- *Sound impact theory.* The main idea is that dolphins emit high frequency sounds that are outside the human hearing range. Such sound emissions have a positive impact on the neurophysiologic hormones (Chengwei *et al.*, 2005; Vanderbilt, 2005; Verfuß, 1996, Au, 1993, Moore and Pawloski, 1990, Foot, 1980, cited in Brensing & Linke, 2003 and Brensing, 2004; Cole, 1995; 1996; Birch, 1995; 1996).

Beggining of DAT in Lithuania



Lithuanian Sea Museum is a complex

- The Lithuanian Sea Museum (LSM) was opened in the former Curonian Spit Fort in 1979. In 40 years of operation the museum became a multiple maritime complex.
- The Lithuanian Sea Museum is a complex of entertainment, resting and health services provided by the sea.
- Receiving up to 400 000 visitors per year the LSM is one of the most visited museums in Lithuania.

Opening a new historical page of DAT

- The very first client with somatodyspraxia and autism in 2001.
- First trials of DAT 2001-2003 and approaches.
- 2003-2006 biomedical research with children suffering from autism disorder.
- 2007-2011 social research with families raising children with complex disability.
- 2010-2011 measuring inner sense of coherence of families raising children with disabilities.
- From 2012 – practical development and conducted research of neurosensorymotor branch.

Innovative health biotechnology in EU

- Lithuanian Sea Museum together with Kurtuvėnai Regional Park Directorate has launched an innovative scientific health biotechnology project co-financed by Structural Funds of the European Union (Project Nr. 01.2.1-LVPA-V-835-01-0008), title: "Developing the Methodology of Animal Assisted Therapy Based on Scientific Research and Integrating It into the Concept of Holistic Medicine".
- The main goal of the project is to systemize the existing scientific knowledge and practices in order to develop a concept of both-sided welfare aspects of humans and animals during intervention programs.
- Project will consist of three stages: in the first stage, systemic meta-analysis and conceptual framework of welfare evaluation will be created. In the second stage, a prototype of therapeutic effects on humans and animals will be designed basing on the research results. The third stage will cover collaborative work with national institutions and ministries. Project is covering three-kinds of animal assisted intervention programmes: dolphin assisted, hippo, and canine therapy.
- Three multidisciplinary research groups collaborating with foreign scientists are working on this project: Vilnius University, Klaipėda University, and Public Enterprise "Vaiko raida".
- Project duration: July 2018- December 2021.
- The total value of the project - 895 146,09 Eur.

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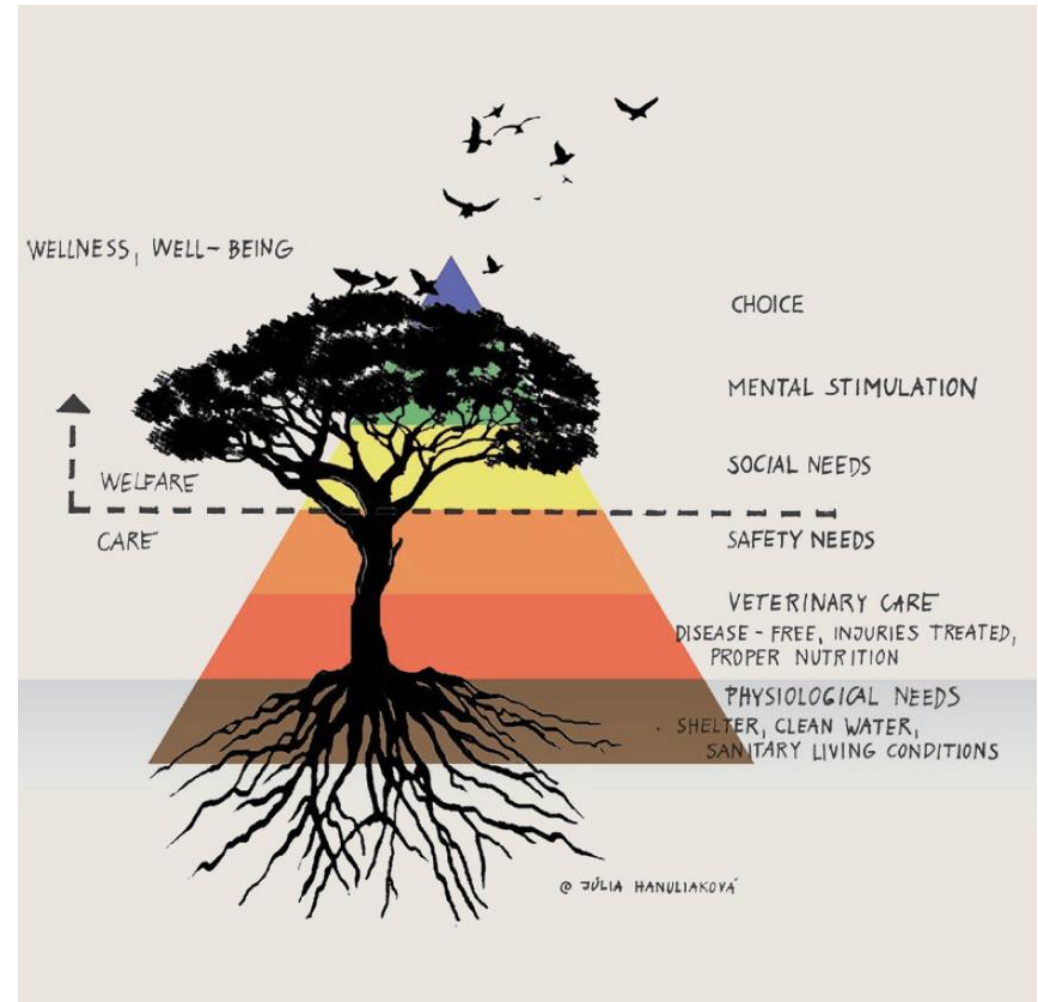


Principles of DAT:

- *Welfare of dolphins.* First, and foremost, dolphins are equal partners in dolphin assisted therapy. The interaction time and behaviour are monitored to ensure the dolphins are healthy and happy.
- *Holistic Approach to the family.* The family is meaningful to the therapeutic process. Therefore, a full program of intervention is created for the whole family.
- *Ethical aspects.* Humans and dolphins are always treated with the utmost compassion and respect (Kreivinienė, B., Kirkutis, A., 2018, 57).

Understanding the welfare

*World Association of Zoos and
Aquarriums / WAZA United for
Conservation. The World Zoo and
Aquarrium Animal Welfare Strategy,
2015:8.*



Living and dolphin performance pools



Photo: Alfonsas Mažūnas/ Lithuanian Sea Museum

Sun bay – an open air pool for education



Photo: Alfonsas Mažūnas/ Lithuanian Sea Museum

Welfare of dolphins

- Physiological needs of dolphins under human care.
- Veterinary care and zoonosis.
- Safety needs.
- Social needs.
- Practices of mental stimulation of dolphins under human care in other dolphinariums.
- Choice as the utermost important welfare element.

Pilot research results in the LSM

- Mammalian brain: how it works?
- Gender differences.
- Biophysiological parameters.
- Behavioural parameters.
- Environmental enrichment.
- Therapeutic activities as one of environmental enrichment branch.
- General welfare vs. Situational welfare.

Understanding disABILITY

- Brief historical overview.
- Situation of neurosensorymotor clients: shift paradigm.
- Holistic approach: is it possible in practice?
- A concept of health: insights of World Health Organization.
- Teamwork in construction social support for family in disability situation.
- Dolphin Assisted Therapy as complementary and alternative medicine.

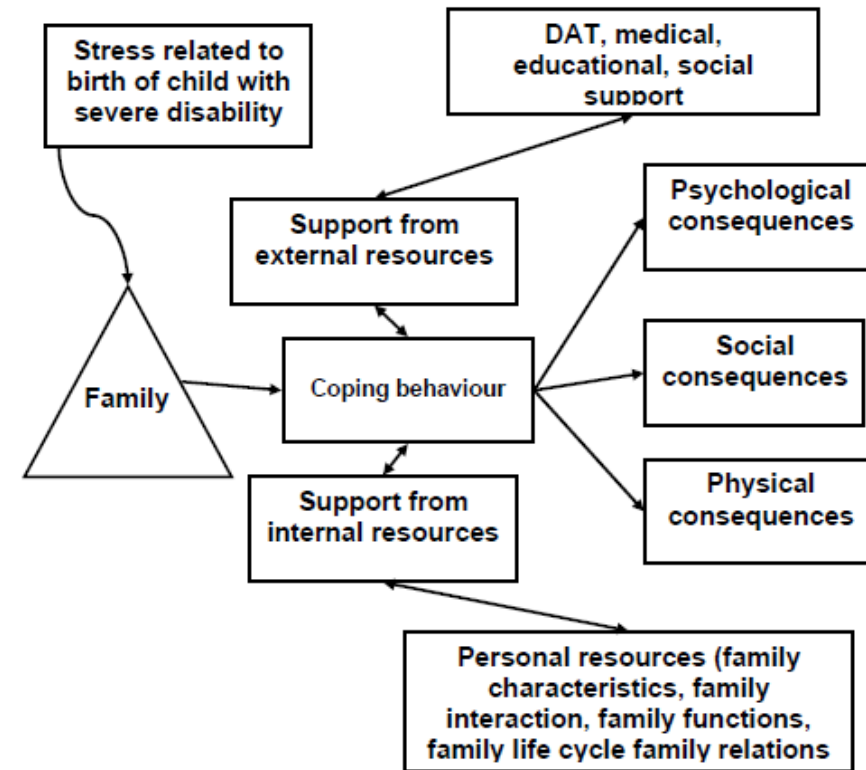
Understanding social support

- Each family in disability situation is in need of social support!
- Social support based on the theory of Lazarus & Folkman (1984, cited in Martz *et al.*, 2010, 334) is seen as *the perception of the value of social interactions*.
- Theory of Tobin and Tippins (1993, cited in Jones & Brader-Araje, 2002) states that *the reality in which a family interacts is known in their personal and subjective way*, therefore, the stress experience is understood as an individual family process.
- Sarason & Sarason (1985, cited in Heiman, 2006, 463) state that the social support concept refers to an individual's perception that he or she can be helped.
- Personal perceptions are not measured as a quantity of social network members, but as the quality of relationship within a concrete social support provider.

Coping schema for family raising child with disability

The need of social support:

- *Primary deficiencies* (term used by Vygotski 1984 cited in Alifanovienė and Kepalaitė, 2008, 30) and disability understanding.
- Change of family patterns (Carpenter, 2007): risks, uncertainties, single parenthood, lack of supportive family networks, social life full of tensions, economical unstability, power conflicts, responsibilities.



Developed by B.Kreivinienė, on Lazarus & Folkman, 1984 Hartley *et al.*, 2005, 169; Snell, Brown, 2006, 40–41.

Programms applied in DAT center:

- Sensory Integration
- Movement therapy
- Arts, clay and sandplay activities
- Sherborne movement therapy
- HOP intensive interaction and video analysis
- TEACCH structured learning
- WATSU/TANTSU
- Counseling

Motor aspects of DAT program

- Improvement of coordination and balance.
- Independent movement and positioning of body.
- Increase in muscle strength.
- Increasing passive and active range of motion of the limbs.
- The positive influence of cold water to the respiratory and cardiovascular systems.
- Improvement of physical activity.

Sensory Integration

- Safe environment that includes equipment that provides vestibular, proprioceptive and tactile sensations and opportunities for praxis
- Activities rich in sensation especially those that provide vestibular, tactile and proprioceptive sensations and opportunities for integrating that information with other sensations such as visual and auditory
- Just the right challenge!

Understanding sensory systems

- Primary sensory systems
- Vestibular system
- Proprioceptive system
- Tactile system
- Gustatory system
- Olfactory system
- Auditory system
- Visual system



Photo: Neringa Girdvainienė, Vidmantas Girdvainis/ Lithuanian Sea Museum

Symptoms of sensory issues:

- Eating problems.
- Trouble falling asleep or staying asleep.
- High irritation in ordinary situations.
- Does not respond to pain or slows with response.
- Has a „floppy“ body, poor balance and bumps into things.
- Extremely active.
- Delays in walking, crawling, sitting.
- Others.

Sensory concepts

- Sensitization and Habituation.
- Sensory modulation.
- Praxis.
- Sensory integration with different age clients:
 - Meaningfulness of early intervention.
 - School – age children.
 - Youth.
 - Elderly care and sensory issues.



*Photo: Neringa Girdvainienė,
Vidmantas Girdvainis / Lithuanian
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Communication possibilities for people with complex disability (Sh. Forster):

- HOP is Hanging Out Program.
- It is about spending time with a person.
- HOP is a way of spending time with a person and a way of thinking about the person.
- HOP is both an approach and an attitude.
- The approach is simple: spend 10 minutes interacting with a person, giving them 100 percent of your attention.
- The attitude is simple: all people need interaction with other people.

Holistic approach and re-thinking

- Some people are missing out on interactions:
 - They cannot start interactions with other people.
 - They have difficulties keeping the interactions going.
 - They have very unique interaction style.
 - Environment does not make sense.
 - Effective communication: less is more.
 - Dolphins: how/when/why?

Application of structured teaching

- Is an evidence-based service, training, and research program for individuals of all ages and skill levels with autism spectrum disorders.
- Mission is to create and cultivate the development of exemplary community-based services across the lifespan.
- The core of structured teaching is comprised of 3 components: physical organization, scheduling, and teaching methods, this means they should set up the classroom so that students understand where to be, what to do, and how to do it, all as independently as possible (TEACCH training material, North Carolina University).



Photo: Vida Miškinė



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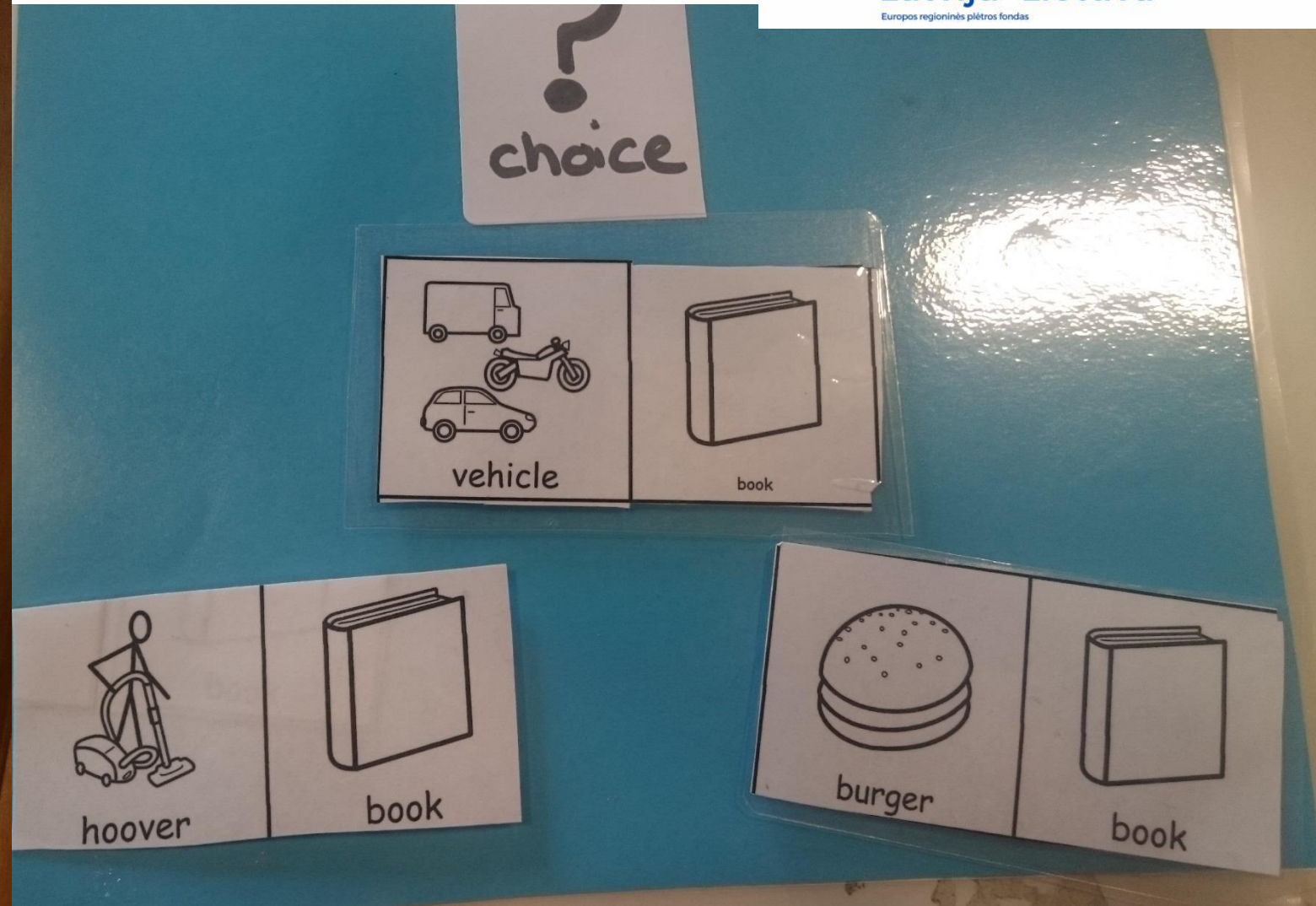
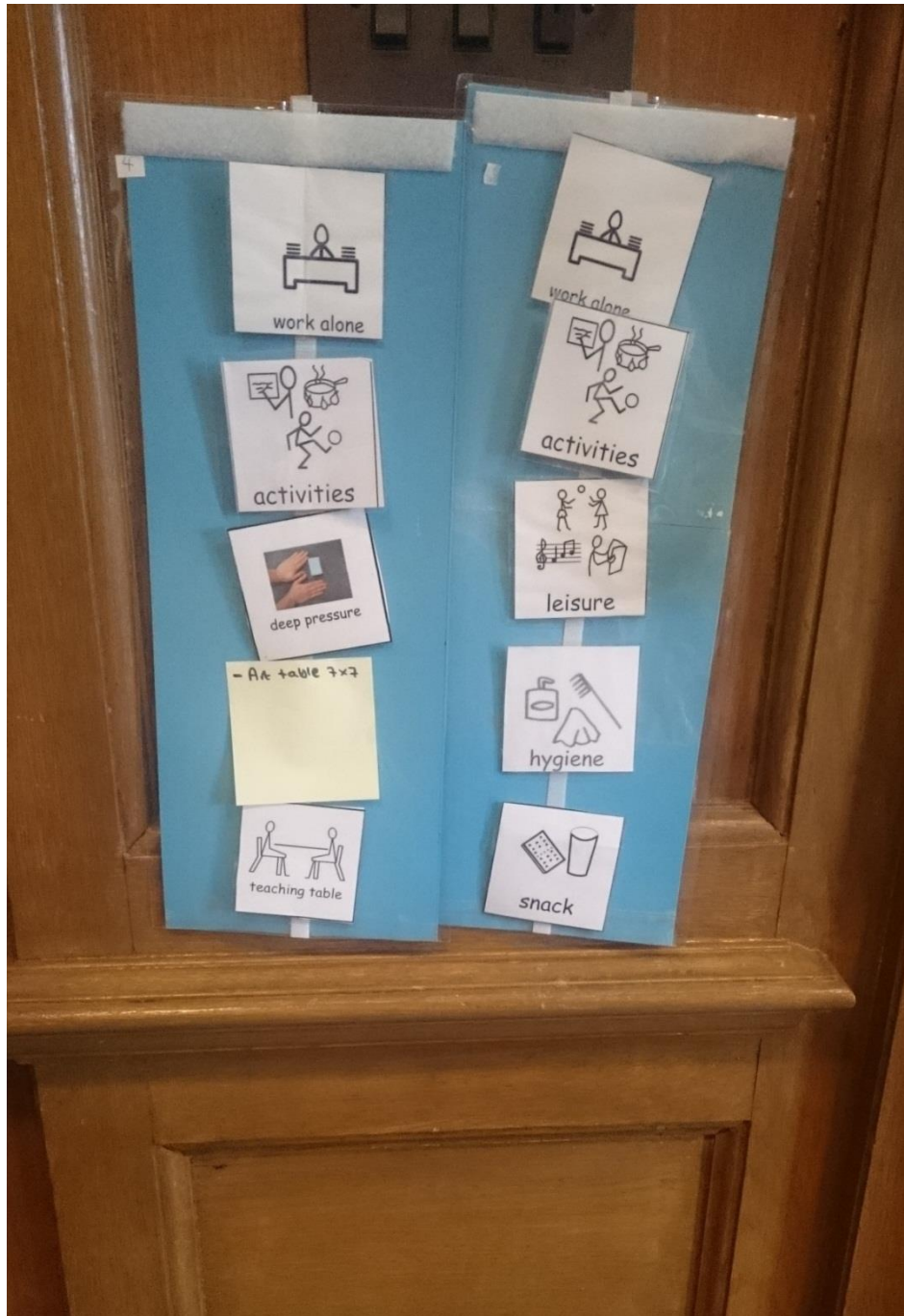


Photo: Vida Miškinė

Indications of DAT:

- Psychiatric and behavioural disorders
- Nervous system diseases
- Stigmas
- Psychoemotional/psychosocial traumas and severe situations
- Coping life situations
- Loss
- Other traumatic life experiences requiring social support

Contraindications of DAT:

- Fragile bones disorder
- Epilepsy
- Stomas
- Oncological diseases
- Psychiatric and behavioural disorders: active periods
- Elder age
- Others

The importance of DAT for social network:

- Being a sibling
- Being a mother
- Being a father
- Family as unique system: rules, roles, coping, stress, secrets, re-thinking
- A person with disability: strength vs. weaknesses
- What do we get in the dolphin assisted therapy?



*Photo: Neringa Girdvainienė,
Vidmantas Girdvainis / Lithuanian Sea
Museum*



DAT and other professions:

- Common understanding and profesionalization.
- A context of professional transparency.
- Occupational therapy in dolphin assisted therapy program.
- Physiotherapy and its various applications.
- The importance of counseling and social work.
- Medical system and dolphin assisted therapy.

Further thinkings...

- Social projects with rear neurosensorymotor diseases
- A common work: movement-emotion-sensory-support
- Systemic approach: FROM – TO
- Everything matters
- Less is more
- Partnership, relationship, trust and respect is beyond: human-dolphin interaction



Photo: Neringa Girdvainienė, Vidmantas Girdvainis / Lithuanian Sea Museum

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