

## What is ABR ?

ABR Belgium teaches parents and providers the ABR technique. This therapy is for people with brain damage.

It is based on a conscientious long-term revalidation strategy, during which daily progress is built up so that gradually the strength grows, necessary for a radical improvement.

ABR means Advanced Biomechanical Rehabilitation.

ABR is a new breakthrough within the treatment of persons with a brain injury or a brain abnormality and is developed by Leonid Blyum.

ABR offers a new range of revolutionary options for the structural, permanent recovery of the musculoskeletal system, so that the motor functions happen in a normal spontaneous way.

The core of ABR is that the parent is trained to become the provider (person who applies the method) for his child (recipient).

## What makes ABR different ?

That's the fundamental question all parents have when they visit our website: What's the different between the ABR approach and the other therapies? ABR looks at the problem with different eyes

For example:

Looking at our children, we see the deformities at the arms and legs. Our first choice is then obviously to look for a method, which brings progress in these areas of the body.

The options are then training (stretching, equilibrium...) or operations (botox, muscle elongation....) or resources as splints, standing frames...

Most methods try to achieve the best functional result possible from the existent structure. Let's have a look at our children.

Is it realistic to address the arms and legs when we clearly see that the structure of the body is not the same as from a normal child? How can a deformed structure be the base for normal movements or normal functions? As long as the musculoskeletal structure is not normal, the functional progress will be limited and unpredictable. Then we can only "try" to get some better functions starting from a poor deformed structure with a lot of restrictions.

**Purpose of ABR is a complete recovery of the musculoskeletal structure so that the functional changes (head control, trunk control, sitting, crawling, walking....) happen spontaneously. Only after recovery of the structure, the functional results will become visible.**

## **For who is ABR ?**

ABR is for parents who want to see more progress en who are willing to work hard themselves.

ABR is for parents who are not satisfied with the child's present condition (respiration problems, digestion, motor...) ABR is for parents who want to free their child from the armour in which he/she has to live at present.

Mostly children and young people with brain damage and brain deviations such as:

- Cerebral palsy
- Speech disorders
- Microcephaly
- Spasms
- Retarded development
- Autism
- Down Syndrome
- Damage caused by injections
- Epilepsy
- Behaviour disorders
- Head injuries
- Stroke
- Scoliosis
- Rett Syndrome
- ...

## **ABR training and the costs**

The ABR program contains assessments and elaborated trainings sessions.

### **Assessment**

During an assessment, Leonid Blyum examines your child. He carries out some biomechanical tests. He projects the ideal picture of a human body on your child. He demonstrates the visible differences based on structure, volume en mobility.

Leonid Blyum explains broadly speaking what the structural and functional differences are. He tells you what you can expect in the future.

### **ABR-Session.**

Our sessions exist of 4 consecutive days of 2h30. The first two days, the theory and technique are explained only to the parents (and/or providers). The third and last day you bring your child with you.

After those 4 days, you will be able to apply the ABR technique on your child at home.

These sessions will happen 4 times a year, during 3 days in Beringen. New techniques and exercises will be learned then. Leonid Blyum decides the strategy of which exercises will be applied, during the assessment.

You will have an assessment twice a year.

The cost is 1.200 Euro for the 4 days of training. Every assessment costs 250 Euro.

(These prices are only maintained in Belgium )

## **Leonid Blyum**

Graduated in 1992 from Novosibirsk State University with a degree in Mathematics (specialized in mathematical models of complex systems).

From 1992 started to work in the field of biomechanical research. At first his research interests were in the theoretical field – modeling of the structure and performance of the musculoskeletal system depending on the variable parameters of external biomechanical inputs.

The main practical focus of that research was the study of the disorders of the spine (such as scoliosis) and deformities of the peripheral joints (such as hip subluxation and dislocation). Such a choice of subject had been inspired by working together with his father who was a Medical Doctor specializing in the manipulative treatment of these disorders. His quest was to find out and to justify the optimal parameters of the external biomechanical inputs that would provide the reversal of established structural deformities of the musculoskeletal system.

Quite soon he realized the fact, that for research in the field of applied biomechanics to be the most effective, it had to combine quality theoretical grounds with personal hands-on skills. To achieve that he studied and practiced extensively different fields of hands-on applications (manipulations and mobilizations in physical therapy, osteopathy, massage etc.)

Gradually the central idea of his research crystallized – the quasi-static hands-on mobilizations as the optimal way of achieving reversibility of musculoskeletal deformities.

From 1996 until 2000 he taught applied biomechanics and manual therapy as a course in postgraduate medical education for the medical doctors in Moscow.

In the meantime his personal work on the cases of scoliosis and other musculoskeletal deformities kept bringing quite spectacular results proving the efficiency of quasi-static principles.

The next step was a transition to further levels of biomechanical complexity – physical rehabilitation of patients with neurological impairments (mostly brain injury) suffering from generalized motor disorders and musculoskeletal deformities.

But achieving significant motor recovery at this level of complexity proved to be a very labor intensive process. The scale of time involved (hundreds of hours a year for each child) proved necessary to change the strategy – from relying on personal hands-on skills as a professional to teaching the parents the skills to work hands-on on their own children.

These principles (quasi-static technique and specific training of parents to perform it on their children) made the foundation of the system known as ABR (Advanced Biomechanical Rehabilitation) which until late 2002 was known as ANR (Advance Neuromotor Rehabilitation).

The biomechanics behind today's mainstream physical rehabilitation of motor disorders and musculoskeletal deformities, are very much the same as they were centuries ago – mobility aids, stretching, application of casts.

His main challenge is to establish new standards of musculoskeletal structure and motor function recovery by bringing a radical change to the applied biomechanics behind strategies and techniques of physical rehabilitation. Leonid Blyum considers that in order to achieve this goal no less than a paradigm shift is necessary. Such a shift is the essence of ABR, (Advanced Biomechanical Rehabilitation) which represents the radical overhaul of applied biomechanics based on the ideas of non-linear geometry, topology and relativity physics. The result of this radical overhaul is a completely new strategy of physical rehabilitation (targeting the smooth muscles) and a new class of hands-on techniques (based on quasi-static principles).

At a pivotal point of his professional career, Leonid Blyum sees his discovery that eccentric modes of muscle activity corresponds with the quasi-static principle of transferring the kinetic energy of external input, into the «structurally bound» increase of internal potential energy. That discovery allowed him to make a practical link between sophisticated but abstract areas of advanced physics and non-linear geometry and hands-on applications, setting the biomechanical criteria for the new class of movements capable of reversing long established structural deformities and deficiencies of the musculoskeletal system.

Every new working day kept bringing further refinement of the techniques and strategies based on these principles, which finally formed the system of ABR.

Today ABR has developed into a highly efficient physical rehabilitation protocol which is capable of providing predictable stage by stage structural and functional recovery. This protocol is taught to the parents of the children suffering from motor impairments and delivers results through their hands-on work.

Leonid Blyum's ultimate goal is to bring ABR to such a level of quality and recognition that it would become a natural choice for parents who are prepared to put their own time and effort into the treatment of their children.

The mere magnitude of that goal means that there many more challenges and obstacles to be met – improving the protocols of ABR training for the parents, creating a school for ABR trainers, meeting the requirements of academic standards in the descriptions of ABR, conducting the studies on comparative efficiency of ABR, etc.

But the main thing is – ABR delivers the musculoskeletal recovery unparalleled by other rehabilitation methods because of new level of advance at applied biomechanics that it represents.

There are currently two centers, one in Belgium and one in Canada, run by dedicated ABR professionals and supervised by Leonid Blyum himself.