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## Early Intensive Behavioral Intervention (EIBI) for children with autism – theory and research

### Wczesna intensywna terapia behawioralna u dzieci z autyzmem – teoria i badania

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#### Summary

Autism is a pervasive developmental disorder that is a life-long disability. Although autism is called an “enigma” because many questions still remain unresolved, more than 50 years of treatment research resulted in a substantial body of knowledge on effective methods of therapy. Scholarly work shows that Early Intensive Behavioral Intervention (EIBI) can lead to significant and clinically important changes in an autistic child’s cognitive, social and emotional functioning. In the present article, we will describe tenets of behavioral approach to autism, characterize therapy based on applied behavior analysis, summarize research on EIBI, and conclude with guidelines for health care providers as well as a list of institutions in Poland that offer behavioral intervention to children with autism.

Key words: autism, pervasive developmental disorders, applied behavior analysis, early intensive behavioral intervention

#### Streszczenie

Autyzm jest jednym z najpoważniejszych zaburzeń rozwoju. Mimo iż schorzenie to jest cały czas określane jako „enigma” ze względu na brak jednoznacznych odpowiedzi na wiele pytań z nim związanych, to jednak ponad 50 lat badań klinicznych zaowocowało pokaźnym zasobem wiedzy nt. oddziaływań terapeutycznych. Wiemy już, że wczesna intensywna terapia behawioralna prowadzi do znaczących pozytywnych zmian w funkcjonowaniu poznawczym, społecznym i emocjonalnym dzieci z autyzmem. W obecnym artykule opiszemy główne założenia behawioralnej teorii autyzmu, scharakteryzujemy wczesną intensywną terapię behawioralną i przytoczymy wyniki badań nad jej efektywnością oraz podamy wytyczne dla pracowników służby medycznej, którzy mogą w swojej praktyce mieć do czynienia z dziećmi z autyzmem.

Słowa kluczowe: autyzm, całościowe zaburzenia rozwoju, stosowana analiza zachowania, wczesna intensywna interwencja behawioralna

Autism is a pervasive developmental disorder defined behaviorally and characterized by impairments in three areas: social interaction, reciprocal verbal and nonverbal communication and the range of interests and activities (1). Although recognition of this disorder may have its origins in Jean-Marc Gaspard Itard’s description of the “wild boy of Aveyron” from 1801 (2), the first formal account of autistic individuals was published by Leo Kanner in 1943. The current definition of autism, although consistent with the deficits observed in Kanner’s original group of children, has been refined and broadened. Nowadays, persons with autism are considered to have one of the neurodevelopmental disorders that have such wide range of behavioral consequences and severity that they are collectively referred

to as pervasive developmental disorders (PDDs) in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, Revised Text (1).

Autism is one of the most severe developmental disorders. It is also often called an “enigma” due to the fact that so far scientists have found no answers to many questions related to the disorder. Nevertheless, nearly 70 years which have passed since the first systematic description of children with autism, and over 50 years devoted to the application of behavioral techniques to solving human problems, have brought forth a substantial body of knowledge about effective methods of helping autistic people. This knowledge is well grounded thanks to, among other factors, the fact that the theory of autism and behavioral therapy is en-

trenched in empirical research, while the combination of theory and research reflects clinical practice.

Scholarly research shows that early intensive behavioral therapy can lead to significant and clinically important changes in an autistic child's cognitive, social and emotional functioning (3-5). A survey of about 500 publications on the use of methods based on the applied behavior analysis (ABA) has shown that behavioral techniques are effective in teaching children with autism as well as in their adaptation to independent life (6). What is more, behavioral therapy is recommended by government organizations in the USA and Europe (7, 8) as the leading form of treatment administered to children with autism. The behavioral approach includes a few different "variants" which differ in the techniques they use and in the logistics of the services they offer (9-11). However, what the programs offering behavioral therapy have in common is the fact that they view autism not as a hypothetical construct but as a set of behavioral deficits and excesses, and that they apply the learning theory to their therapeutic work (12).

Ivar Lovaas and Tristram Smith (13) have described four tenets of their theory in the article „A comprehensive behavioral theory of autistic children: Paradigm for research and treatment”. First, behavior of people with autism does not differ from behavior of other people, and it obeys the basic principles of behavior. When reinforcement and extinction are applied, the learning curves of people with autism are very similar to those of other people. The range of reinforcers, which is at first very scanty for autistic people, can be effectively broadened by the application of procedures which combine initially neutral stimuli (such as praise) with primary reinforcers (such as food) or with other, already established reinforcers (such as toys). Learning difficulties can be lessened by discrimination training, especially during imitation and match-to-sample exercises in the educational programs.

Second, people with autism have several behavioral deficits and excesses rather than one central dysfunction whose correction would lead to general and extensive improvement. This assumption is based mainly on the results of research on generalization, which demonstrates clearly that people with autism show the high specificity of their behavior rather than its generalization. Transfer of skills from one kind of behavior to another or from one stimulus to another is possible, but only after the teaching procedures have been planned carefully and generalization has been included in the therapy. This assumption is reflected in clinical work very clearly: therapists should build for a given child a "pyramid of skills", beginning at the base – one brick after another – teaching more complicated skills on top of what has already been learnt.

Third, people with autism can learn in an environment which is specifically adjusted to their needs. This environment should only differ so far from normal surroundings as to be "functional", i.e. understood and

predictable for an autistic person. Often the modifications include making certain stimuli more distinct (for instance by uttering simpler statements to the child), making use of motivational systems and of visual stimuli (such as pictures) supplementing auditory stimuli.

Fourth, the difficulty autistic people have with functioning in the normal environment and their success in the special environment show that autism ought to be regarded as a disorder consisting of maladjustment of the neural system to the typical living conditions, rather than as a disease which can be cured. Therefore, therapeutic work should rely primarily on creating special conditions for a child with autism, where they shall be able to function well and learn, and only secondarily on gradually accustoming them to life in the typical environment, where they may also support themselves with certain assistive technology (such as using a communication board while shopping).

To sum up, Lovaas & Smith (13) propose that autistic people ought to be regarded, especially when it comes to therapeutic work, not as "different, abnormal, and standing out", but rather as being on the same continuum of functioning as other people, only at its end. Therefore the task of behavioral therapists is to "move" autistic people in the direction of the center of this continuum, by working systematically on individual deficits and excesses.

Effective intervention is an even more urgent issue, when one takes into consideration the epidemiological reports concerning the frequency of pervasive developmental disorders. The review of the range of prevalence estimates for autism and other PDDs comes from a series of publications by Fombonne (14-18). In the last article, Fombonne reports the occurrence of PDDs in children under the age of 8 years to be of the order of 60 to 70 per 10,000 children. Several factors could have contributed to an increased prevalence of autism, but most likely this change is probably attributable to improved detection and changes in diagnostic criteria. Regardless of the underlying reasons, the issue of early identification of and intervention in autism is of paramount importance.

Early Intensive Behavioral Intervention (EIBI) is a form a comprehensive treatment based on principles of applied behavior analysis and administered to children with autism. According to Green, Brennan & Fein (19) it is characterized by: 1) individualized and comprehensive programming of educational goals, 2) use of behavioral techniques, 3) close supervision of service delivery by individuals trained in the ABA, 4) programming of therapeutic goals based on knowledge of developmental milestones, 5) close collaboration with the parents in planning and conducting the therapy, 6) initially teaching the child on a one-to-one basis in a natural environment, with a gradual transition to a group setting, 7) intensive teaching (i.e., 20-30 hours per week, all year round), 8) extended duration (i.e., at least 2 years in most cases), and 9) early start of intervention (i.e., before the child turns 3 years old).

EIBI has been shown to be effective and has been classified by Rogers and Vismara (20) as a “well established” treatment based on the criteria for empirically-validated treatments (21). Below, we present three publications that provide evidence for the recommendation that EIBI should be a treatment of choice for children with autism. Two of them are meta-analyses and one is an experimental study.

In the last 30 years meta-analysis has been accepted in the social and health sciences as a very useful and helpful research methodology to quantitatively integrate the results from different studies. In a meta-analysis results of every study are quantified by means of an effect-size index (e.g. standardized mean difference), enabling us to give the study results in the same metric (22, 23). Typically, in meta-analysis two tests are conducted: test of homogeneity (using the Q-statistic and  $I^2$ ) and effect size (using e.g. Hedges’s  $g$ ) (22). The Q-statistic test only informs us about the presence or absence of heterogeneity. The  $I^2$  reports on the extent of such heterogeneity (between-study variance).

First meta-analysis was conducted by Edelvik et al. (24). The selection of studies for this meta-analysis involved eight inclusion criteria:

- the participants received behavioral intervention,
- the participants receiving EIBI were on average between 2 and 7 years old when the treatment started,
- the participants were diagnosed with autism or PDD-NOS,
- a full-scale measure of intelligence (IQ) and/or a standardized measure of adaptive behavior such as the Vineland Adaptive Behavior Scales (VABS) were used,
- the duration of intervention was between 12 and 36 months,
- the study was a group study, not a case study,
- the study included either a control or a comparison group,
- the results were published in a peer-reviewed journal.

Nine research reports met all inclusion criteria, so additional detailed information was obtained by contacting the authors of each study (provide the age, IQ, and adaptive behavior scores for the participants). Not all authors collected both IQ and Adaptive Behavior Composite (ABC) data. Additionally, the authors measured intelligence with various tests (e.g. Bayley Scales of Infant Development, Wechsler Preschool and Primary Scale Intelligence-Revised etc.). If the participant scored on a test below the norm, researchers calculated a ratio IQ score by dividing the obtained mental age with chronological age and multiplying by 100. All of the tests have been validated for children with pervasive developmental disorders. All studies used the VABS (Vineland Adaptive Behavior Scale) for measuring the adaptive behavior. The content and scales of the VABS were organized within a four domain structure: communication, daily life, socialization and, for children younger than 6 years old, motor skills (24, 25).

The VABS is the best available instrument for assessing adaptive behavior in children with pervasive developmental disorders and/or mental retardation.

Results. The Q-statistic was not statistically significant for either the IQ or the ABC score (24). This result suggested that all of the studies could be combined into one common effect measure (the studies’ results are homogeneous). Edelvik et al. also calculated the between-study variance for the IQ and for the ABC score. The score for either the IQ and the ABC score have a very low rate of heterogeneity (10.66% and 17.65%), and these data suggest that relatively small proportions of variance were explained by between-study variance. Then the authors were able to use a fixed effects model for computing the overall effect size. One study (26) included a control group and a comparison group. Edelvik et al. (24) thus calculated a separate effect size for these groups and the total number of effect sizes for IQ was ten (from the nine studies included) and for the ABC it was eight (from the seven studies included).

The range of the standardized mean change effect size for IQ was  $g = 0.69$  to  $g = 1.74$ . The overall effect size for the IQ change was large ( $g = 1.103$ ) and suggests EIBI is a very effective intervention method for increasing the IQ scores for young children with autism. For the ABC change the range of the effect sizes was  $g = 0.13$  to  $g = 1.22$ . The overall mean effect size for the ABC change was medium ( $g = 0.66$ ), and suggests the EIBI is a moderately effective intervention method for increasing the ABC in young children with autism. All of these estimates of the effect size were statistically significant.

Another meta-analysis was computed by Reichow & Wolery (27) and included both descriptive and statistical analyses (effect size analyses and a meta-analysis). The authors used seven inclusion criteria:

- the study was based on the University of California at Los Angeles Young Autism Project (UCLA YAP) model,
- the participants receiving EIBI were less than 84 months old at the beginning of the treatment,
- the children were diagnosed with pervasive developmental disorders,
- the duration of the intervention was greater than or equal to 12 months,
- at least one child outcome measure was reported,
- experimental research designs or quasi-experimental research designs was utilized,
- results were published in English in a peer-reviewed journal.

In summary, 13 research reports (14 samples – one study compared two arrangements of EIBI: clinic-coordinated EIBI and parent-coordinated EIBI) met all inclusion criteria and were analyzed by the authors.

Results. Descriptive analyses (academic placement, psychopathology and diagnostic reclassification) were conducted on the sample data. The data for academic placement were analyzed by reporting only the post-intervention range of the percentage of

participants from each sample in regular education classrooms and other educational settings (e.g. special education settings). At post-intervention, the percentage of participants learning in a regular educational classroom was 23% to 100%. The overall percentage of participants receiving EIBI and being placed in a regular educational classroom was 65%, and 35% had a class placement at post-intervention in the “other” category (i.e. all kinds of placement other than regular education). The data for psychopathology were analyzed by comparing the mean scores of pre- and post-intervention assessment for each sample. Comparison between the two scores demonstrated that the participants showed less severe symptoms of autism after intervention. The data for diagnostic classification were analyzed by reporting the percentage of participants who lost their diagnostic label. Across all samples 18% of the participants receiving EIBI were reported of diagnostic reclassification.

The standardized mean change effect sizes (statistical analyses) were estimated for the outcome data of IQ, adaptive behavior, expressive language, and receptive language (27). For the IQ, 12 out of 14 samples had enough data to compute the effect sizes. The range of the effect sizes for IQ was  $g = -0.19$  to  $g = 1.58$ . The overall effect size for IQ change was medium ( $g = 0.69$ ) and suggests EIBI is a moderately effective intervention for increasing the IQ scores in young children with autism. Nine studies had the standardized mean change effect size for IQ equal to or greater than 0.50, only one study had negative effect size for IQ ( $g = -0.19$ ). Ten samples provided enough data to calculate the effect sizes for adaptive behavior. The range of standardized mean change effect size for adaptive behavior was  $g = -0.25$  to  $g = 0.86$ . Four studies had a negative effect size for adaptive behavior equal to or lower than pre-intervention, one was positive but less than 0.50, and five studies were equal to or greater than 0.50. These results suggested that for some children with autism EIBI is an effective intervention for increasing their adaptive behavior. The effect sizes for the expressive and receptive language measures were calculated for six samples, with a range of  $g = 0.23$  to  $g = 1.72$  and  $g = 0.45$  to  $g = 1.79$ . For both measures, five out of six samples had an effect size greater than 0.50. These results suggested that EIBI is a moderately effective intervention increasing competence of expressive and receptive language in young children with autism.

The authors also compared EIBI to other treatments. Six studies had enough data to compute the difference effect sizes for IQ and it was  $g = 0.27$  to  $g = 1.12$ . All these effects favored EIBI. Five studies comparing EIBI to other treatments had adaptive behavior data. The standardized mean difference effect size was  $g = -0.15$  to  $g = 1.17$ . Four studies had higher scores than the comparison groups. Only one study had a negative difference effect size, signifying that the other treatment had scores equal or slightly higher than the EIBI group. Four treatment comparison studies had

enough data to calculate the difference effect sizes for expressive and receptive language. The group receiving EIBI had higher scores for both types of language than the group receiving other treatments. The range of the difference effect size for expressive language was  $g = 0.17$  to  $g = 0.56$ , and for receptive language it was  $g = 0.38$  to  $0.56$ . Those results suggest children with pervasive developmental disorders receiving EIBI usually made larger gains and larger progress than children with pervasive developmental disorders who received other treatments.

Reichow and Wolery (27) also computed the Q-statistic and  $I^2$  index. The Q-statistic test was statistically significant, which means that there was greater variability within the effect sizes than it was expected from the sampling error alone (studies' results were heterogeneous). Next, authors calculated the  $I^2$  index, and it was 51.2% (large between-study variance). If the study results differ by more than the sampling error (as measured by  $I^2$ ), then the meta-analyst can decide about searching for moderate variables from a fixed-effects model (22, 27). Reichow and Wolery (27) analyzed six possible continuous variables (model of supervisor training; density; duration; total hours of treatment; pre-treatment chronological age; pre-treatment IQ) as moderators of effects. The only one variable with a statistically significant relation to change the IQ was the supervisor training model. These results suggested that where the supervisory personnel were trained according to the UCLA model, larger change in the IQ was more likely to be produced. However, this result may be reviewed by further study.

The last research paper of the present review comes from Howard et al.'s study (26). The authors compared the effects of three treatment approaches on preschool-age children with autism. For this research the participants were screened for the following five eligibility criteria:

- diagnosis of an autistic disorder or PDD-NOS (pervasive developmental disorder – not otherwise specified) before the child was 48 months old,
- the intervention program begun before the age of 48 months,
- English as the primary language,
- no significant medical condition,
- no prior treatment of more than 100 hours.

29 children at the age of about 2.5 years were subjected to intensive behavioral intervention (IB) (1 teacher: 1 child; 25-40 hours of therapy per week). The first comparative group of 16 children at the age of 3 years 3 months received intensive eclectic therapy (ET) (a combination of different methods, among others discrete trial training, PECS (Picture Exchange Communication System) alternative communication system, sensory integration, the TEACCH model; 1 teacher: 1 child or 1 teacher: 2 children; 30 hours of therapy per week), offered in class at special schools. The second comparative group of 16 children at the age of 2 years 10 months received a non-intensive therapy (NT)

(a combination of different methods, among others speech therapy, learning through play, and different sensory interaction; small groups; 15 hours of therapy per week), offered by public programs of early intervention. Independent psychologists conducted a battery of tests assessing cognitive functioning as well as communicative and adaptive skills for the children from all three groups. The assessments were made before commencing the intervention and about 14 months after their introduction. At the beginning of therapy the groups did not differ in sex (the number of boys and girls), race (a similar ethnic combination), diagnosis (the number of children diagnosed with autism and PDD-NOS), the intensity of symptoms of autism (determined on the basis of the number of fulfilled diagnostic criteria according to the DSM-IV) and family status (nuclear families vs. single-parent families). The IB group consisted of children younger than those in the other two groups, while their parents had completed more years of education than the parents of the children from the other groups. These differences were statistically significant and were taken into consideration for the results analysis.

After more than half a year of therapy, the IB group obtained higher results than the ET and NT groups in all domains (i.e. cognitive, non-verbal, passive speech, active speech, communicative skills, self-help skills, social and motor skills). The results were statistically significant for all skills, except for motor skills. The ET and NT groups did not differ in their results. Moreover, the IB group obtained normal results for cognitive, non-verbal, communicative and motor skills, while the other two groups only for motor skills. When the results of each child were been analyzed, it turned out that in the IB group the IQ result of 13 children (44%) changed from below 85 or less (at least one standard deviation below the norm) to 86 or more (within one standard deviation from the norm). What is more, the IQ of the 3 children who obtained a normal IQ result before intervention (84, 89, and 97) rose to 122, 114, and 102, respectively, 14 months after intervention. In the ET group only 2 children (12%) obtained an IQ rise from the level of at least one standard deviation below the norm to one that would fit within one standard deviation from the norm. In the NT group such results were obtained by 3 children (18%). The increase in the rate of learning was also much larger in the IB group than in the comparative groups. The IB group obtained the typical or nearly typical rate of learning in all categories, while the other two groups obtained such results only in non-verbal skills. The results differentiating the IB group from the other two groups are the most visible in the rate of language skills acquisition, i.e. passive speech (receptive language) and active speech (expressive language). As far as passive speech is concerned, before the intervention 93% of the children in the IB group and 100% in the

ET and NT groups showed rate of learning which was below the norm in this domain. After 14 months of intervention 72% of the children in the IB group were acquiring receptive language skills at a normal rate, while in the other two groups such results were obtained by 18% and 12%, respectively. As far as active speech is concerned, before intervention 100% of children in each group showed rate of learning below the norm. After intervention, 68% of the children in the IB group were acquiring expressive language skills at a normal rate, while in the other two groups such results were obtained by 12% and 6%, respectively. Taking into consideration all the data, young children with autism or PDD-NOS who received the intensive behavioral therapy for 14 months obtained better results in all domains examined than children with similar diagnoses and a similar level of functioning who received the eclectic therapy. The results of the conducted research are consistent with other studies (28), which demonstrate higher effectiveness of behavioral therapy in comparison to the eclectic therapy.

Summing up, autism is a developmental disorder which cannot be „cured”. Many young patients can however – thanks to effective intervention – have their autism symptoms reduced to such a degree that they will be able to function independently at preschool and school. Family physicians and pediatricians cannot accomplish this results on their own because if the child is to achieve the expected progress, they need special, effective and comprehensive psychological help. However, doctors play a very important role because most often they are the first specialists visited by parents/guardians worrying about the development of their child. Hence they ought to have, apart from strictly medical knowledge, information which can help the parents find effective help quickly. Such information includes: 1) the intervention for children with autism should be based on the results of scientific research, while its effectiveness ought to be verified empirically – children with autism are no “guinea pigs” to be subjected to unchecked methods, 2) the early intensive behavioral therapy should be the treatment of choice for children with autism, but it should not be regarded as the ultimate treatment for autism, because the heterogeneity of the disorder causes different children to obtain different results even if they are administered with the same kind of intervention, 3) the meta-analyses’ results show that EIBI is a more effective method than the eclectic method, which is so popular in special education – “more” does not necessarily mean “better” in autism therapy. To help the willing doctors in informing parents about the specific places where they can obtain therapy for their children which shall be consistent with the guidelines set above, we list several Polish institutions which specialize in employing behavioral methods to their work with children with developmental disorders (tab. 1).

Table 1. Selected institutions which serve children with disabilities and use applied behavior analytic methods (based on: Suchowierska, Ostaszewski, Bąbel, 2012).

In Poland there are over 20 institutions/clinics in which behavioral therapy for children with developmental disabilities is utilized. Below we enlist the largest ones		
Institution/Clinic	Address	Services
Specjalny Ośrodek Rewalidacyjno-Wychowawczy dla Dzieci i Młodzieży z Autyzmem	ul. Dąbrowszczaków 28 80-365 Gdańsk tel./fax.: 58 553 40 32 e-mail: osrodek@autyzm.net.pl www.autyzm.net.pl	<ul style="list-style-type: none"> <li>• Therapy for children and adolescents with autism</li> </ul>
Filia nr 1 Szkoły Podstawowej Specjalnej nr 6 w Specjalnym Ośrodku Szkolno-Wychowawczym nr 4	os. Zielone 28 31-971 Kraków tel./fax.: 12 642 27 90 e-mail: biuro@aba-autyzm.org www.aba-autyzm.org	<ul style="list-style-type: none"> <li>• Therapy for children with autism and related disorders in a preschool setting as well as at school</li> </ul>
Przedszkole i Szkoła Podstawowa dla Dzieci z Autyzmem w Ośrodku Szkolno-Wychowawczym dla Dzieci i Młodzieży Niepełnosprawnej im. Z. Tylewicza	ul. Szamarzewskiego 78/82 60-569 Poznań tel./fax.: 61 8473 095 e-mail: autyzm.poznan@onet.eu www.sosw.poznan.pl/autyzm	<ul style="list-style-type: none"> <li>• Therapy for children with autism in a preschool setting as well as at school</li> </ul>
Centrum Wczesnej Interwencji „Krok po Kroku”	ul. Zaściankowa 92 lok. 4 02-989 Warszawa tel.: 697 114 453/22 885 12 48 e-mail: biuro@cwikropokroku.pl www.cwikropokroku.pl	<ul style="list-style-type: none"> <li>• Therapy for children with autism and other developmental disabilities, behavior disorders, communication deficits, and ADHD</li> </ul>
Centrum Diagnostyki i Terapii Zaburzeń Rozwojowych	Gdańsk tel.: 692 489 013 e-mail: mzielinska@swps.edu.pl cdit.pl	<ul style="list-style-type: none"> <li>• Diagnosis and therapy for children with developmental disabilities and behavior disorders, in particular teaching verbal behavior and reducing problem behavior</li> </ul>
Fundacja – Instytut Wspomagania Rozwoju Dziecka	ul. Malczewskiego 139 80-114 Gdańsk tel.: 58 341 44 41 tel./fax.: 58 341 44 40 e-mail: biuro@iwr.pl www.iwr.pl	<ul style="list-style-type: none"> <li>• Therapy for children with autism in a preschool setting</li> <li>• Diagnosis, consultations for parents of children with autism, home visits, consultations in preschools and at schools, supervision of professionals working with children with autism</li> </ul>
Polskie Stowarzyszenie Terapii Behawioralnej	os. Zielone 28 31-971 Kraków tel./fax.: 12 642 27 90 e-mail: biuro@pstb.org pstb.org/atb.htm Filia Ambulatorium Terapii Behawioralnej we Wrocławiu – kontakt j.w.	<ul style="list-style-type: none"> <li>• Diagnosis and individual therapy for children with autism (in Cracow)</li> <li>• Consultations for children with autism spectrum disorders (in Wrocław)</li> <li>• Short-term and intensive intervention for individuals with autism or related disorders in a crisis situation</li> <li>• Social Skills Training for individuals with Asperger’s Syndrome or high functioning autism</li> <li>• Group therapy for children with autism</li> <li>• Information center (800 155 221; poradnictwo@pstb.org)</li> </ul>
Centrum Terapii Behawioralnej	Gliwice ul. Młyńska 3 tel.: 511 213 687 www.autyzm.edu.pl	<ul style="list-style-type: none"> <li>• Diagnosis and therapy</li> <li>• Consultations</li> <li>• Trainings</li> <li>• Practica</li> <li>• Rehabilitation camps</li> </ul>

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