Autism Spectrum Disorder (ASD)

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In Spain, ***Lovaas Foundation****(FL) partipates as an* ***active memeber*** *of the UCLA/Lovaas Project* ***and meets all the training and supervision*** *criteria required by the clinical and research protocol. In addition, he participates in the* ***updatind and clinical and scientific*** *follow-up sessions of the UCLA/Lovaas group.*

Autism Spectrum Disorder (ASD)

1.What is Autism Spectrum Disorder?

Diagnostic and Statiscal Manual of Mental Disorders-5 (DSM-5) (APA, 2013) classifies Autism Spectrum Disorder (ASD) within neurodevelopmental disorders. Alterations are characterized, generally, by difficulties in social interactions, in verbal and non-verbal communication, and in the existence of inappropriate behaviours such as, for example, self-stimulation.

ASD has a neurological basis, which is why an impairment of brain function would be present. It seems to begin in very early stages of brain development. However, *the most obvious signs tend to emerge between 2 and 3 years* of age. In addition, the ASD shows different manifestations for each person, both at the level of severity and in combination of symptoms. There is such a large repertoire of skills and characteristics that no two people behave in the same way. This variability makes it difficult to generalize about the symptomatology and, in many cases, prevents the diagnosis from being early if the professional who performs it is not an expert in this matter.

Epidemiological evidence until now indicates, according to studies and reference websites, that in Europe there would be **1 case of ASD per 100 births, and that it is more frequent in men than in women (4: 1).**

The DSM-5 establishes that the main characteristics of autism are: a clearly deficient development of social interaction and communication, and a very restricted repertoire of activities and interests. In addition, Intellectual Disability (ID) and ASD are frequently connected. On the other hand, people with the DSM-IV (previous version of the current manual of diagnostic criteria) were diagnosed with ASD, Asperger or Pervasive Developmental Disorder not specified, they will be diagnosed with ASD.

On the other hand, ASD can be associated with alterations in intellectual functioning, difficulties in motor coordination, attention and some aspects of health, such as sleep and gastrointestinal disorders.

According to research to date, the variables that cause a repertoire of behaviors compatible with a diagnosis of ASD remain unclear. Probably, **many factors contribute to the development and appearance of ASD:** the child's own birth (genetic factors) and / or environmental factors. On the other hand, it has been observed that the risk of having ASD increases if a family member had this diagnosis. It should also be mentioned that the results of the investigations have shown that **neither parental style nor the application of vaccines cause ASD.**

2. Diagnostic and evaluation.

Diagnosis and **early intervention** are crucial elements in reducing symptoms and beginning to improve the quality of life of these people and their families. There is no

medical test for the ASD and the evaluations that are made for the diagnosis are based on the observation of the child's behaviours in comparison with others of the same chronological age.

It is important to emphasize that **there is no exclusive behaviour that denotes autism**. In other words, there is not a single behavior that by the fact of presenting itself indicates that the child presents an ASD. Moreover, it does not imply that a child who does not show a specific behavior of the ASD indicates that he does not have an ASD. The main characteristics of ASD include:

- **Difficulties in communication**: difficulties in using and understanding the language. Some children with ASD have a very limited language, others do not develop language, others focus their attention on certain topics and others almost exclusively repeat meaningless sounds that are in their repertoire (palilalia) or repeat things they have heard before (echolalia).
- **Difficulties in the interaction with other people**: they are observed in the relations of mutual friendship, difficulty to read facial expressions and there can be no visual contact.
- **Behaviors or repetitive body movements:** behaviors such as flapping, spinning objects, spinning oneself or repeating sounds or phrases.

Many children with ASD show excessive interest and attention for routines, for the invariable permanence of daily aspects and difficulties to adapt to changes. Some do not show differences in cognitive abilities with people with normal functioning, while others have significant intellectual difficulties.

Currently, we do not have an exclusive medical test or test that can diagnose ASD. However, specifically trained professionals, doctors and psychologists can administer specific tests to diagnose the indicators of ASD. Some of these tests are:

- **Autism Diagnostic Observation Scale** (ADOS).
- **Autism Diagnostic Interview-Revised** (ADI-R).
- **Chilhood Autism Rating Scale** (CARS).
- **Autism Behavior Checklist** (ABC).

There are **three screening instruments** for very young ages that have been published and validated:

- **Checklist for Autism in Toddlers** (CHAT) (Baron-Cohen, et al. 1992; 1996).
- **Autism Screening Questionnaire** (Berument, et al, 1999).
- **Screening test for Autism in Two Year Olds** (Stone et al, 2000).

An appropriate evaluation should include direct **clinical observations, interviews** with parents and teachers, and an extensive **psychological evaluation** using

psychometric tests that include cognitive functioning, communication, adaptive functioning, motor and viso-motor skills, play skills and social cognition. In some cases, consultations may be indicated to professionals in the medical field, such as development pediatricians, geneticists, neuropediatricians and otologists.

The detection, diagnosis and evaluation of autism requires specialized professionals, given the characteristics of the disorder and the diagnostic instruments currently available. In the field of early detection, the training of physicians, nurses and teachers to identify warning indicators and refer specialists is of high importance. A selection of appropriate assessment instruments and extensive clinical experience with ASD are essential elements for early detection and diagnosis.

3.Families

On many occasions, the parents are the first to realize that their child shows unusual behaviors such as the absence of eye contact, not answering to his/her name, playing in an unusual way and presence of some repetitive behaviors.

The following list contains some behaviors that may be presented. If a family observes some of these behaviors, it would be better to contact to a pediatrician for a more specific development evaluation that allows to dismiss or not a possible diagnosis of ASD. Some of these **behaviors from 6 months of age** could be:

- Not to show a great laugh or other expressions of fun over 6 months or later.
- Not to share with other people sounds, laughs or facial expressions towards 9 months or later.
- The child does not babble at 12 months.
- Do not exchange gestures such as pointing, showing things, or greeting around 12 months.
- Not to speak any word at 16 months.
- Not to say two-word phrases with meaning (without being imitated or in repetition) by 24 months.
- Some loss of speech or babbling at any age.
- Not to turn around when you call him/her or not seem to listen when someone speak to.
- Not to perform symbolic play from 18-24 months.
- Not to express "yes" and "no" neither verbally nor with conventional gestures.
- He or she gets angry frequently and can have strong tantrums for his or her age.
- To show inappropriate behaviors when routines change.
- To show self-stimulation behaviors (stare at objects or repetitive noises, for example).

4.Intervention programs.

There is a wide variety of intervention options for the ASD. However, **not all approaches are good choices from a scientific point of view**. On the other hand, at the pharmacological level, there is no medication to treat ASD as an entity of its own.

Applied Behavior Analysis (ABA) is the application of all the principles and procedures of Behavioral Science. It goal is to improve socially significant behavior, and uses current research to identify variables responsible for behavior change (Cooper, 2014). ABA has contributed a large number of quality studies, published in journals with methodological review criteria, demonstrating over **more than 30 years the effectiveness** of various procedures and behavioral techniques in the reduction of challenging behaviors, as well as teaching and increase of abilities.

5.UCLA/Lovaas Program

At the University of California in Los Angeles (UCLA), Lovaas and his collaborators carried out a controlled study of a psychosocial intervention, based on techniques and procedures of Applied Behavioral Analysis, known generically as **Intensive and Early Behavioral Therapy** (EIBI). Nineteen children with autism were treated intensively with behavioral therapy for an average of 2 years and were compared with two control groups.

The follow-up to the end of the treatment showed that almost half of the participants (47%) in the experimental group acquired a normalized intellectual functioning with an average of Intellectual Quotient (IQ) of 107, with increases of IQ of 37 points in average and independent regular schooling. In addition, 40% obtained IQ scores in the range of mild disability (mean CI = 70) and school placement for children with delayed language development. Only two children from the experimental group (10%) maintained an IQ in the range of severe disability (mean CI = 30) and were assigned to classes for children with ASD or with intellectual disability. In contrast, of the two control groups (40 children) only one of them (0.04%) obtained an independent and normalized performance result. 48% of the participants in the control groups obtained an IQ in the range of mild disability and 51% maintained a CI of severe disability and had to attend schools for children with ASD.

In conclusion, **47% of the children who received intensive and early behavioral intervention achieved ordinary schooling and normalized intellectual functioning** at the end of the intervention, while only one child (0.04%) of the control groups obtained the same result.

The Lovaas research group is the one who has also provided the longest follow-up studies of children with ASD who had received early behavioral intervention. At the age

of 13, eight of the nine children in the Lovaas study with the best results continued to maintain high intellectual quotients and were integrated into ordinary education without any assistance. In addition, they scored within normality on psychometric personality evaluations, without presenting any psychopathological trait.

The Lovaas studies aroused a strong interest in the scientific community and their results have been subjected to important debates, mainly focused on methodological aspects such as, for example, the impossibility - by ethical criteria - of a completely random assignment of the participants in the groups

Reviews by other authors have not been able to deny the highly impressive and significant results. The most controversial aspect, on the part of the scientific community, is the qualification that Lovaas assigned to the participants with better results as "recovered" or with "normalized functioning".

The study of Lovaas is recognized by the different organisms of maximum authority in mental health and education of the United States as the most rigorous controlled study that has been published to date and that has obtained the best results.

6.Replication of UCLA/Lovaas Project.

Lovaas led a replication project of the UCLA intervention model with the support of the **National Institute of Mental Health** of the United States, to test the replicability of the results. The replication project is allowing an important extension of the assistance services to children with ASD in other geographical areas, which can receive **quality treatment with empirical basis** as a result of the training and clinical supervision requirements required by this protocol of the UCLA/Lovaas project.

There are **23 centers**, mostly North American, that participate in the replication project of the therapy developed by Lovaas. In Spain, **Fundación Lovaas** (FL) participates as an active member of the UCLA / Lovaas project and meets all the training and supervision criteria required by the clinical and research protocol. In addition, Fundación Lovaas participates in the updating and clinical and scientific follow-up sessions of the UCLA / Lovaas group.