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CHILDHOOD GAMES

ALTERNATIVE / ADDITIONAL METHOD OF THERAPY FOR CHILDREN
WITH AUTISM SPECTRUM DISORDERS



BOOKLET FOR PARENTS | February 2025

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“Childhood Games – Alternative methods for the integration
and recovery of children with Autism Spectrum Disorders”
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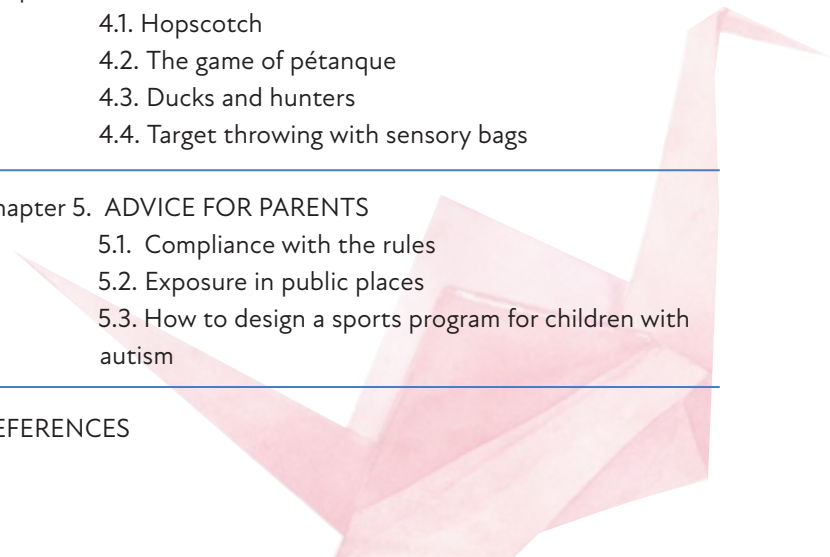
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Introduction:

The motivation of the project

The association ALL CHILDREN HAVE EQUAL RIGHTS was founded in 2022 from the desire of Ayan's parents, a boy now over 7 years old (born in 2017), with Autism Spectrum Disorders, to do something, to actively contribute to the recovery, progress and integration into society of their child. Ever since Ayan was diagnosed with ASD, his parents have dedicated their time to his recovery and wanted to find a way to help other children with autism as well.

Their experience as parents of a child with ASD confirmed to them the fact that early intervention and the major involvement of parents in the process of recovery and integration of autistic children are essential for a favorable outcome. Ayan's mother, in addition to the therapies carried out by specialists (ABA therapy, speech therapy, physical therapy, TOMATIS therapy) started from very early to gradually expose her child in public spaces, with a lot of crowding, on means of transport, in parks, trips on alternative routes so that the boy got used to being in public places and not feel overwhelmed by noises, and to help him develop a flexible thinking, etc.

Since one of the problems of these children, along with being hypotonic compared to neurotypical children and having motor control deficiencies, is a lack of social skills, so starting at the age of 4, Ayan was exposed to the childhood games practiced by same age typical children in public playgrounds, respectively "Catch me if you can" and "Hide-and-peek". Subsequently, from the age of 5, he was exposed to the games "Hopscotch" and "Ducks and hunters". These games have helped Ayan a lot on the social side, to understand certain rules and somehow anticipate what his playmate will do. They've also helped him in terms of physical coordination and executing movements aimed at muscle tone and balance.

The Szimbíózis Foundation in Miskolc is a professional organisation committed to the integration and development of children with autism. In addition to our permanent social and rehabilitation services, a prominent place is given to various therapeutic and developmental

activities. During sporting sessions, the Symbiosis Foundation offers different programme elements adapted to individual needs. Three years ago our organisation set up a special sports club for people from the target group. In our experience, sports programmes provide an excellent opportunity for young people with autism to practice social interaction in a safe, supportive environment. The Foundation treats sport not only as a physical activity, but also as a social experience, which helps to develop the social skills of children with autism. For children with autism, sporting activities often provide a sense of achievement, which contributes to self-confidence. The Symbiosis Foundation offers programmes where children can achieve results at their own pace, which can help to strengthen their motivation and self-esteem. The Foundation's staff and professionals are trained to address the special needs of children with autism and approach children with empathy and patience. The right support and understanding is motivating, as children feel safe and more willing to participate in the programmes. Through the Symbiosis Foundation's sport programmes, children can try different forms of physical activity, so they can easily find a sport that they enjoy and that develops them. The Foundation provides varied and fun programmes to keep children active and enjoying their activities. The sports programmes are often group activities, so the community experience helps them to feel that they can achieve not only individual but also group success. Sport programmes not only develop children with autism, but also provide opportunities for empowerment for their environment, their society and the community. The Foundation's work contributes to a more accepting society at large towards children with autism. The Foundation's sports programmes take specific account of the special needs of children with autism, whether they have sensitivity, motor difficulties or social challenges. This ensures that children receive the right support at every moment. The programmes not only support children's development but also involve families, helping them to better understand and support the needs of their child with autism. This can strengthen family cohesion and help parents to be better prepared for their child's development.

The participation of the Miskolc-based Symbiosis Foundation in special sports projects helps the organisation's autistic target group, family members and professional staff to learn new methods and get new impulses for development. Our common goal is to ensure that the children with autism we help are motivated and engaged in sporting

activities as a result of the projects. We believe that by showing the results, the wider society will get to know and accept autistic people better and see them as fully-fledged human beings. The sporting programmes of the Miskolc Symbiosis Foundation open up not only the joy of movement, but also a pathway to development and acceptance for children with autism, helping them to achieve their best!

This booklet represents the centralization of the experience and lessons learned during six practical demonstrations of the Childhood Games and two Job Shadowing activities carried out in Romania and Hungary and one public exercise exhibition held in Romania. Although it is the fruit of a year's work of a Romanian-Hungarian team made up of parents of a child with ASD, autism specialists, specialists in the coordination, organization and implementation of projects, in sports activities and people who have worked or are working with people with disabilities, the Booklet is not intended to be a guide or a specialist treatise. Rather, it is a practical guide for parents who want to know how they can adapt childhood games to be played by their child with autism. It contains practical advice and the adaptation of four games (hopscotch, pétanque, ducks and hunters and target shooting with sensory bags) to the specifics of children with ASD.

About us

The association "All children have equal rights" is a non-governmental, non-profit, apolitical and independent organization, established on September 12, 2022. The association is established for an indefinite period and is headquartered in the city of **Cluj-Napoca**, Cluj County, **Romania**. The founding members of the association, Sije Alina, president and Sije Iosif, vice-president, the parents of a boy with autism, created the association in order to ensure the implementation of educational-behavioral therapies, speech therapy, physical therapy, sports activities and sensory therapy for children diagnosed with autism to ensure recovery, progress and integration into society of children diagnosed with autism. In 2023, we took an important step in our activity, we designed a project and submitted it for financing under the Erasmus+ program, and starting from March 4, 2024, we implemented it.

Additional information about us and the project's activities can be found on the website <https://toticopiiiudrepturiegale.ro/>

"Szimbíózis" A Harmónikus Együtt-Létért Alapítvány Miskolc, Hungary

The Symbiosis Foundation was created in 1999 to provide a modern solution for the social-employment and care of people with disabilities. We support families with children with disabilities (transport, day care, temporary relief, special camps, development) and the independent living aspirations of adults with disabilities (living and residential homes, supported housing) training, therapies, sports, leisure activities, development programme). In recent years, we have received several national and international awards (e.g. European Integration Award, Good Service Award, Innovative Social Service Award, Value or Award, and PRO URBE in Miskolc). 25 years ago, our organisation sought to answer the question posed by parents, "What will happen to my child when I am gone?" This is how we created our family homes, our employment units. More than 550 families with children with disabilities use our services. The Foundation and its non-profit company employ 330 people, three quarters of whom are with special needs. Symbiosis Foundation, which is primarily aimed at people with autism spectrum disorder, intellectual disabilities and multiple disabilities.

Additional information about us: www.szimbiozis.net

20 years ago, our organisation established the Baráthegy (Monkshill) Manor in Miskolc-Diósgyőr, where monks were already farming in the 1300s. Building on these traditions, we created the diverse, self-sustaining eco-park and cultural scene. Located at the eastern gateway to the Bükk National Park, the 7-hectare farm has a windmill that draws water from the well, a garden pond, a greenhouse, a mushroom-growing cellar and stables (goat, donkey, horse, pig, rabbits, a colourful poultry yard) and various workshops (cheese dairy, oven, carpentry and handicraft workshops), where people with disabilities and people with reduced working capacities work. In addition to the farm and social service buildings, there is a kitchen that cooks 300 meals/ day and a day care & therapy center centre. Guests are welcomed by our Forest School and Family Friendly Pension. Here we have built a wooden replica of the nearby Diósgyőr Castle (400 m² with 8 m high towers). Our guests can try their hand at chess, goat milking, cheese making, butter churning, bread baking, candle making, paper dipping, soap making, felting, archery,

making wooden bird feeders, making their own special herbal tea and experience the current folk tradition with us.

We have several complete production processes: from goat's head to cheese making, from wheat cleaning to hand-milling and kneading to baking in the oven, or from fruit picking to jam cooking and drying. Our workers with disabilities are the "masters" of visitors, making us a national pioneer of transformational tourism.

The Barátheagy Manor is a "Village in the City", where 36 people with disabilities live in three houses and around 100 people from the target group work every day (a significant number of them young people with autism).

Chapter 1.

General information

Autism Spectrum Disorder (ASD) is a developmental neurological condition that affects the way a person interacts and communicates with others and how that person behaves, it is characterized by limitations in social interaction, communicational skills and repetitive behaviors. It is called a „spectrum” because the manifestations and severity of symptoms can greatly vary from one person to another.

The child with ASD has difficulties in social interaction and communication, exhibits repetitive behaviors and restricted interests, and may be hypersensitive or hyposensitive to sensory stimuli (noises, lights, textures, smells). Unlike the typical child who points to something he wants in order to get that thing, and can later use words to name the object he wants, the child with ASD does not point to show what he wants, does not verbalize, he usually resorts to crying fits when he is not understood by those around him and does not get what he wants.

Another worrying sign that parents notice in their little one is the presence of repetitive behaviors: lining up toys, repetitively and obsessively closing furniture drawers, room doors, light switches,

repetitively and obsessively spinning car wheels toy, repetitive hand waving, tiptoeing, etc. And when parents take their child to the park, they notice that the child is not at all interested in the other children, as if he/she does not even notice them, does not approach them, but rather is interested in the objects in the park, or the vegetation.

The exact cause of autism is not completely known, but it is known that there is a combination of genetic and environmental factors that contribute to it. There is no evidence that vaccines cause autism, an idea that has been scientifically disproven.

Diagnosis is usually given during childhood through behavioral assessments and clinical observations. Physicians, psychologists, and specialist therapists use criteria established by medical textbooks or guidelines (eg DSM-5 or ICD-11) to assess signs and symptoms.

There are no medical tests to confirm the diagnosis. The first signs of autism can be seen around the age of 12-18 months, but the diagnosis is usually given between 2 and 4 years, when the developmental differences become clearer, especially in the social and communicational context.

Although autism has no „treatment“ in the classical sense, many therapies or interventions can help children develop their skills and lead as independent a life as possible: Applied Behavior Analysis (ABA Therapy), Speech Therapy, Musical/Animal Therapy, Occupational Therapy, Reward Treatment, PECS Imagery Communication, Social Groups, Neurofeedback for Autism, Play Therapy.

Without therapy, the symptoms of autism get worse over time!

Sports and physical movement

2.1. WHY PHYSICAL MOVEMENT AND SPORTS ARE IMPORTANT FOR A CHILD WITH AUTISM

Through sports and physical activities, children with ASD can make progress that is closely related to the improvement of motor skills, cognitive development, emotional regulation and social interaction resulting in the fact that they no longer resort to stereotyped behaviors as often. And what is very important is the fact that there is no contraindication for any physical activity, although some of them may require specific step-by-step preparation. The effects of playing sports and physical movement in children with autism can be:

- Muscle growth and body balance;
- From the point of view of mental development, children respond more healthily and promptly to commands;
- It increases their understanding and awareness of the environment, a very important condition for their adaptation to different environments;
- They begin to do daily tasks independently, which they could not do by themselves before (such as dressing themselves, eating by themselves);
- Problem behaviors decrease in frequency.

A physical activity that brings joy and pleasure to children is Play. Through play, children develop physically, discover their emotional skills and learn how to process the world around them. Children with ASD have difficulty building social relationships and playing with other children, so it is important to provide specific instructions for social behaviors in different play situations. Playing games provides moments of fun and can lead to the formation of friendships and create opportunities for imitation, negotiation, cooperation, etc.

The benefits of play for children with autism can be:

- The child learns to listen to the instructions given by others and follow them, to wait his turn, to negotiate with others, to answer questions, to ask simple questions in turn;

- Constant and active participation of the autistic child in games that involve sports, group activities, develops his/her interpersonal skills, and contributes to his/her mental and psychosocial well-being;
- It helps regulate emotions, alleviates mental health problems such as anxiety, stress, depression, autism, schizophrenia and post-traumatic stress symptoms;
- The child can acquire/learn skills that can trigger positive emotions, which can help him improve his way of thinking and acting;
- Negative emotions triggered during the game can allow him to identify coping strategies;
- Play can improve mood and positively influence a child's intrinsic motivation.

Group games have positive effects on children with autism, helping to increase opportunities for social interaction and to develop positive character traits such as cooperation and teamwork. Play allows them to be independent, creative, to experiment and think.

And very importantly, play is an activity that can be done at home, with parents, family or friends. Although they require certain adaptations to the specifics of ASD, as a rule, the games do not involve large expenses or special spaces.

2.2. WHAT TYPES OF SPORTS ACTIVITIES ARE RECOMMENDED FOR CHILDREN WITH AUTISM

The choice of sports and toys for children with autism should take into account their individual characteristics, such as motor skills, social interaction and sensory sensitivities. Appropriate sports and games can help develop movement, improve social skills and create positive experiences. Some suggested sports and games that are particularly recommended for children with autism:

1. INDIVIDUAL SPORTS

Individual sports that require less social interaction may be ideal, especially for those who require closer attention or who have difficulty adapting to group situations.

- **Swimming:**

Swimming not only improves physical fitness but also helps children to

experience control over their bodies. The water can also have a calming effect and the rules are simple.

- Cycling:

cycling is a great way to develop motor coordination and can also help improve motor skills. Doing the activity alone can help build independence.

- Yoga:

Yoga is also great for improving posture, breathing and attention. The simpler exercises can be done gradually as the child develops.

- Running:

Running can help to release energy and is good for motor skills. Simple running races or free running can give children a great opportunity to exercise.

2. GROUP SPORTS AND GAMES

Group sports can help develop social skills if children can manage team dynamics and interactions.

- Basketball (simplified version):

Simple games of basketball, such as approaching the basket and passing or shooting the ball, can help develop movement while teaching children team spirit.

- Ball games (e.g. soccer):

These types of games help develop fine motor skills while encouraging fun and lighthearted interactions. The rules can be simplified to make them easier to understand.

- Feather ball or ping-pong:

Simpler ball games, such as badminton, can help children develop concentration and dexterity while also providing social interactions.

3. COOPERATIVE AND REGULAR GAMES

Cooperative games can help develop social skills as children work together to achieve a goal.

- Pair games (e.g. card games, puzzles).

- Board games:

simpler, cooperative board games (e.g. memory games, simpler strategy

games) can promote shared thinking and help to develop social rules.

- Regulated outdoor play (e.g. hide and seek, ball throwing, target shooting): this type of play develops social interaction and attention.

4. SENSORY GAMES

Children with autism can often be more sensitive to sensory stimuli, so sensory play can help stimulate the senses and improve concentration.

- Swinging or rocking can have a calming effect on children, while also helping to develop a sense of balance.

- Sensory boxes:

using different textures, shapes, colours and materials can help develop fine motor skills and sensory processing.

- Sand play, water play:

sand or water play provides opportunities to develop fine motor skills while helping to calm children.

5. OUTDOOR ACTIVITIES

Outdoor activities in nature can help children develop attention and social skills.

- Walking, hiking.
- Frisbee, outdoor ball games: outdoor ball games help develop cooperation and motor skills.

Key considerations:

- A good quality and supportive environment, as children with autism may be more sensitive to distraction or too much stimulation, it is important that the environment is calm and safe.
- Repetition and routine: for children with autism, routine and repetition can help them to develop a sense of achievement.
- A personalised approach: as each child with autism has different needs, it is important to take into account their individual preferences and needs.

When designing and delivering sport and play activities for children with autism, a number of important factors need to be taken into account to

ensure that the activities are both developmental and enjoyable. Here are some key aspects to pay particular attention to:

1. Taking into account sensory sensitivities

Sounds and noises: children with autism may be more sensitive to noise, so it is important to ensure that sport or play activities are not too loud or, if they are, to provide opportunities to reduce noise (for example by using ear protection).

Lights: bright lights or flashing lights can be distracting. If possible, choose a location where the lights are pleasant and calm.

Materials and textures: sensitivity can also apply to different surfaces and materials (e.g. touching clothes, sports equipment). It is advisable to work with softer, comfortable materials and avoid surfaces that are too rough.

2. Avoid overloading

Small groups: too large groups can cause confusion and many children may find it difficult to maintain attention and manage social interactions. It is advisable to work in smaller groups to help children focus.

Simplifying rules: for children with autism, overly complex or rapidly changing rules can cause confusion. Rules should be simplified and they should be prepared for changes in advance.

3. Routine and predictability

Repetition: children with autism often prefer familiar, repetitive activities. This gives them security and helps them to achieve a sense of achievement. Frequently repeated movements or games develop motor skills and confidence.

Planning: at the beginning of the session, the plan should be explained so that children know what is going to happen and what is expected of them. This can reduce anxiety and help them adapt better to the situation.

Spatial structure: during each sport or game, ensure that the space is clear, orderly and easy to navigate. A well-organized environment helps children cope with less clutter and stimuli.

4. Developing initial social skills

Encourage social interactions: although social interaction can be difficult for many children with autism, sports and games provide a great

opportunity to gradually develop social skills. Simpler team games, such as passing or reaching a common goal, can help build social skills.

Positive reinforcement: it is important to always give supportive and positive feedback during social interactions. Praise and recognition help build children's self-confidence and encourage them to participate in social activities.

5. A tailored approach

Taking individual needs into account: as each child with autism has different needs, it is worth creating an individual development plan that takes into account the child's strengths and difficulties. Some children may need a gradual introduction to movement, while others may require more attention to dealing with social situations.

Different levels: programmes should provide opportunities for participation at different levels, so that each child can find an activity that suits his or her own abilities and comfort zone.

6. Physical and emotional safety

Attention should be paid to respecting personal space: children with autism may be more sensitive to physical contact, so coaches should always ensure that children feel comfortable.

Calming devices: if necessary, use devices such as a calming swing or various sensory toys to help manage emotional overload.

7. Patience and flexibility

Flexibility in the programme: it is important not to be rigid in the way sessions are conducted, but to allow children sufficient room for manoeuvre. If someone has difficulty adapting, try to find other ways to gradually bring them into the activity.

A patient approach: children with autism often develop at their own pace, so patience is of paramount importance. Their development and learning does not always follow a straight line, but they can make great progress in small steps.

8. Trained and supportive staff

Professional skills: it is essential that professionals running sports activities have the knowledge that enables them to understand the

specific needs and behavioural patterns of children with autism.

Communication support: if necessary, various communication aids (such as pictures, symbols or communication tools) should be provided to children to help them understand instructions.

It is essential that the sport or game of choice provides children with a sense of enjoyment and achievement while helping them to develop. The most important factors for the success of sport activities for children with autism are a relaxed environment, maintaining the right stimulus level, taking into account individual needs and a gradual introduction to the different activities. Patience, empathy and professionalism are key to fostering a positive experience and progress.

Chapter 3.

Therapy through play – a therapy method at parents' reach

During childhood, play is the basis for learning different forms of socialization with other children or adults. When children are small, they learn new things through play, about the environment around them, and also through play they learn how to make friends, to discover each other, or how to solve a problem that may arise.

In neurotypical children, play develops naturally, spontaneously and helps them develop language, learning, independent interaction, social inclusion. They get their rewards and reinforcements from the environment, such as appreciation and attention from others, or, the rewards that motivate them can be internal in nature: the pride they feel when they win, the boost in self-esteem when they experience success.

On the other hand, in children with autism spectrum disorder, play is characterized by deficiencies in communication and social relations, by repetitive and restrictive games that do not include diversity, flexibility, creativity and may take place without social engagement. Neurodivergent children must be taught to engage in functionally appropriate play and how to socialize with other children. Once they

have learned simple social rules, such as listening to and following directions from others, waiting their turn, negotiating with others, answering questions, and being able to ask simple questions in turn , we can involve these children in fun, team games that help their harmonious development.

The experience of playing in a community can be challenging for children with ASD, but at the same time it can be extremely valuable for the development of social skills, communication and understanding of interactions with others around them. And this experience can be perceived differently by each child depending on the severity of the impairment. Autism Spectrum Disorder can come in many forms and levels, so it's important to focus on a child's individual sensitivities, preferences and abilities when selecting games to play.

Children with autism often prefer games that are simple, predictable, easy to understand and follow, and do not require much social interaction, especially if the child has difficulty managing social situations.

Many children with autism need sensory stimulation, so it is important to provide opportunities to experience different sensory stimuli such as touch, sight and hearing. These include, for example, tactile toys, stress balls, sand, water toys or various materials to help the child explore sensations. Children with autism often need movement games to develop gross motor skills and to release excess stored energy, many of them also suffer from hyperkinetic syndrome. Swings, ball games, obstacle courses or balance equipment are great ways to move, run or jump, work on balance, muscle strength and body coordination.

And because children with autism function and respond very well within predefined and well-structured activities, other games that can be well-organized and structured, predictable and planned in advance, are Hopscotch and Pétanque, the Toss game with sensory bags , Ducks and Hunters.

A fundamental condition for the inclusion and development of children with autism is the creation and thorough preparation of a play environment in which the child is protected, to avoid noise and crowding, and the chosen sport or game matches the interests and abilities of the child, supports communication between players, such as group or pair

games.

It is also important to customize the games chosen, taking into account the individual strengths, interests and developmental goals of the children involved. For example, choose games that motivate the child and develop social skills, motor coordination or problem-solving skills. And during play use Positive Reinforcement, clear and positive feedback to help children feel safe and motivated to participate, use praise, visual supports and rewards to build self-confidence and a sense of achievement in these children.

3.1. COMMUNICATION WITH CHILDREN WITH ASD

Autism affects the communication and socialization of children with this disorder with the people around them. There are high-functioning autistic children who can speak in full sentences, have self-autonomy skills, but who have difficulties in the area of socialization. And there are non-verbal autistic children who cannot acquire the ability to speak.

To help them communicate with those around them, the PECS system is used, a picture communication system, namely to teach the non-verbal child to use pictures to ask the person next to him for an object, an activity, food, to communicate a personal need that he has at a given moment, etc. Sentences can be formed using several cards in sequence to communicate what you want, children who cannot speak can be taught in therapy classes how to use this picture communication system.

Another very useful form of communication for non-verbal children is visual timetables that can be made either for the activities that the child will do throughout the day or we can design a visual timetable for a single activity that we can divide into different steps that the child must go through to complete that activity.

Visual timetables are very effective tools in working with autistic children, they can be used both by therapists during therapy hours and by parents or other people who interact with the non-verbal child, because it will give him a feeling of security, the child knows what he has to do, when he will play, when he will eat, etc., it practically anchors him in reality. When we want to teach a non-verbal autistic child a new game or we want to play with them a game they have participated in before, we can apply the

same method. We divide the activity into small steps and sequentially teach each one separately, a technique that in Applied Behavioral Analysis is called Chaining.

3.2. SUPPORT AND GUIDANCE TECHNIQUES TO FACILITATE GAMELEARNING/ASSISTED LEARNING TECHNIQUES

Children with ASD have difficulty building social relationships and also playing with other children, so it is important to provide specific instructions for social behaviors in different play situations. Teaching a game to a child has consequences beyond the game itself: in addition to providing moments of fun, it can lead to the formation of friendships and create abundant opportunities for imitation, negotiation, cooperation, etc.

But teaching new games to children with autism often involves many challenges:

- The game activity itself may not be motivating for the child
- Some children need intrusive prompts all the time
- Emergence of problematic behaviors

Some of these challenges can be overcome using certain techniques.

We ensure that the child with autism understands what to do before being placed in the social play situation and has adequate help to avoid unpleasant social experiences that will decrease long-term interest in the activity. We can use **Modeling** – a technique where we give the child opportunities to observe others playing the game. At this stage, the only requirement is that the child stays in the play area for a few minutes and observes how others play. We can then even show the child a video of other children playing the same game as preparation for the real experience. After, we engage the child only in play actions that he can do independently. Later, harder actions can be modeled and expected from the child as well.

Prompting – After being given a few opportunities to observe others playing the game, some prompting may be necessary for the child to engage in the game. At first we use less intrusive prompts (e.g. verbal or gestural prompt). More intrusive prompts, such as the physical prompt,

are provided only if the expected behavior does not occur at the current prompt level. After that the prompt is gradually dropped to facilitate independent performance.

Positive reinforcement – another technique is to use naturally occurring reinforcers as much as possible, such as praise, hugs, making funny noises or funny facial expressions, we could use all of these to make the activity more enjoyable. Natural reinforcers are more recommended than edible/tangible reinforcers because they can be easily transferred into the natural environment during play with typical children. Also when we want to play a game with our children we have to ask ourselves: "How interesting does the child like the proposed game? How motivated is he to play it?"

If we see that the child is not very interested in playing the game that we presented to him, then we try to incorporate in that game things, objects, characters that he likes to make the game more attractive so that he wants to participate with us at the game. We must not insist from the beginning on teaching the child all the rules of the game and insist on following them strictly because this can be very aversive for the child and can lead to tantrums.

We as adults must reward any play initiative the child has, any attempt he makes is appreciated and help him when necessary so that he can continue the game. It is very important to make everything fun for the child, not to feel that the game is a pressure or an obligation and to respect his decision when he wants to stop playing, because in this way he will want to play with us again some other time.



Games tested within the project

4.1. HOPSCOTCH

Hopscotch is an excellent game for developing physical coordination, cognitive skills and balance. Hopping on one foot or two feet to designated squares helps develop midline, muscle strength, and body control. This game can be adapted for children with autism. This way more colors can be used when drawing the game squares, this serves as a visual cue.

- We can draw bigger squares so that it is easier for the children when they jump in them or when they throw a stone in one of these squares.
- If the child with whom we are playing Hopscotch cannot yet jump on only one leg, there is no problem, in the first phase he can jump on both legs, and gradually we can practice jumping on one leg which is more difficult to learn.
- Additionally, we can focus on one skill for them to learn at a time. For example, we can practice throwing the stone into a square and then, instead of jumping after it, tell the child to go get the stone and then throw it into the next square. This way, the child will only have to focus on throwing the stone at the target.
- What is essential for the parent is to find out what the child likes, what preferences he has so that we can then use them, integrate them into our game so that we can motivate him to stay in the game with us as much as possible.
- Maybe the child with whom we want to play Hopscotch prefers numbers, or letters, then we will use these to number the squares.
- There are children who have preferences for geometric shapes or animals, that's very good, since we know this, we can help ourselves to make the game more interesting for the child by numbering the squares with his preference, so we manage to present him with a more attractive game that he wants to participate in.

When played in a group, Hopscotch is also great for developing social skills, because in children with ASD, social skills are impaired, they don't know how to interact with those around them and they don't know how

to play, so they have to be taught by adults these skills.

Game Description

Number of players:
there is no limit to the number of participants

Venue:
inside or outside



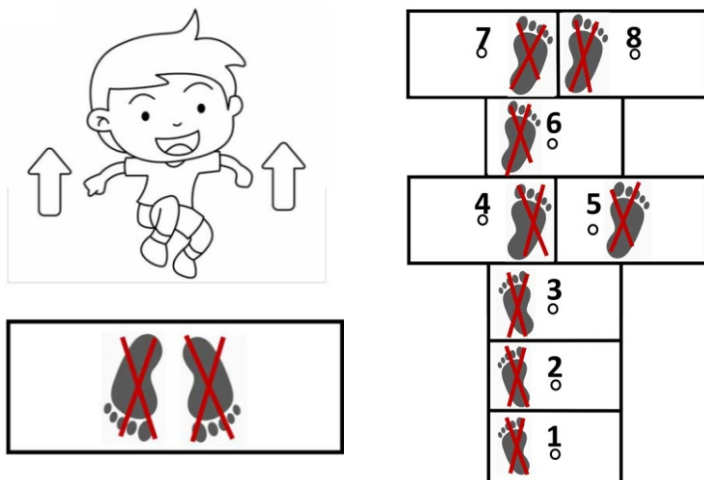
Components of the game:
the game can be drawn with chalk on asphalt or purchased from the store. It is composed of 7-10 squares arranged in a certain order that suits the players and usually corresponds to the age and abilities of the participants.

Rules:

- Each child who will participate in the game will have an object that he will have to throw in one of the squares of the game (start with number 1).
- If the thrown object will stay inside number 1 (without leaving that frame), the child will perform the jumps specified above from number 1 to number 10 and back.
- When the child turns back, he will stop at the square where the object is and try to retrieve it without becoming unbalanced.
- If a child in his attempt to retrieve the object loses his balance and steps outside the square, he cannot pass to the next level (another child will enter the game).
- When a child succeeds in completing the complete round trip (including picking up the object) they will continue the game with moving on to the next level.
- A child is eliminated from that round if:
 - The thrown object does not stop on the corresponding square;
 - If he loses his balance when performing the jumps;
 - If he fails to pick up the thrown object on his return.
- That child is eliminated from that round, and he waits his turn to re-enter the game from the stage he left;
- Whoever reaches the number 10, is the winner.

Sequential visual instructions

Visual representation of the game activity process. It should be printed, displayed in a prominent place so that the child can see the instructions (see the process of the game) during the play activity.



4.2. THE GAME OF PÉTANQUE

Participating in a game of pétanque for children with autism can initiate a number of developmental activities as they develop fine motor skills, spatial awareness, attention and social skills in a playful way. The success of the game of Pétanque was achieved by using the following techniques:



- Visual support: using pictures and cards to show the basic steps and rules of the game. This helped the children to understand the process of the game.
- Structuring the playing field: marking the starting line (cones were used to close the playing area, but this was not justified by the composition of the participants).

- Step by step teaching : the rules of the game were stated in simple sentences and clear, unambiguous instructions were given and used during the game. The correct technique of throwing the ball was demonstrated, thus demonstrating the game
- Flexible game: if any of the children involved were tired or overworked, they could use the specially designed rest corner

Description of the game – adapted version

The game requires:

- a flat terrain of at least 2m x 5m
- a starting line is drawn at one of the shorter edges of the field, from here the players will throw the balls
- 1 target ball (small size)
- 8 pétanque balls of four colors (2 blue, 2 green, 2 yellow, 2 red), one colour per child,
- maximum 4 players and 1 referee
- 1 scoreboard



How the game works: simplified, adapted game rules

- Each player chooses a color and chooses the corresponding pétanque balls
- The referee throws the small target ball onto the court
- Players in order of age throw the first pétanque ball from the starting line
- The goal is to throw the colored ball as close as possible to the small target ball
- Players throw the second pétanque ball from the starting line in order of their age
- The player whose petanque ball is closest to the small target ball scores 1 point
- The referee writes the point on the scoreboard
- After scoring, the pétanque balls are collected and a new pitching circle is created
- The game continues until one player scores 3 points
- The player with three points is the winner

The photo rows below are a flowchart of the petanq game rules for the adapted autism specific game, You should line up the pictures vertically or horizontally in a clearly visible place and mark the current picture with a marker arrow or coloured dot.

The following table shows the autism-specific adapted petanq game rules. In a frame above each step instruction, you are required to draw a picture of a specific game element, based on the sample picture below.



1 The pitch and the players	2 Target ball	3 Target ball ejection	4 Target ball on the track
5 First player with the red ball	6 First player to drop the red ball	7 Red ball in place	8 Second player with the blue ball
9 Second player discards the blue ball	10 Blue ball in place	11 The first player throws a second time	12 The second player throws a second time
13 All five balls in place	14 Distance measurement to the red ball	15 Distance measurement to the blue ball	16 The closest ball to the target ball scores 1 point

4.3. DUCKS AND HUNTERS

The third game tested during the project's Practical Demonstrations was Ducks and Hunters. The testing of this game was not as successful as the children with autism were afraid of the ball and had difficulty throwing it at their peers. It is a game that can be played by autistic children provided they are not severely impaired and with proper adaptation and training. For our demonstrations we came up with two adaptations of the game: Handball and Kickball.

Description of the game

The game „Ducks and hunters” is a game that is played outside, in any available space (parks, playgrounds, between buildings or in their yards, on sports fields or vacant lots). Preferably outdoor spaces.

Age of participants: over 5 years old

Number of participants: at least 4 players

Materials needed: A ball

Two players will be the Hunters who stand face to face and throw the ball and try to hit the Ducks standing in the middle. Each duck when hit with the ball loses a life and is out of the game. The game continues until all the Ducks are out of the game one by one and in the next game the Hunters will be the first Ducks out of the previous game.

When playing with children with ASD, a soft foam ball can be used so that the impact when they are touched by it, is not strong. To begin with, we can show the children a video of other children playing "Ducks and Hunters" so they can see how others play it, then the parents will model the game to provide as many examples as possible to the children watching from the sidelines.

Finally, it is the neurodivergent children's turn with their parents to play "Ducks and Hunters" and they will be rewarded after each round either with food rewards that we know work as reinforcers for them or with favorite toys that have the same reinforcing function or through praise and hugs.

It should be noted that the Hunters will not throw the ball towards the

Ducks at the speed with which the game is usually played, but more slowly, more moderately, and too large gestures will be avoided, so that our children do not perceive them as a kind of threat.



It will also be a good thing to avoid unnecessary, background noise, disturbing for the children and so that they can concentrate on escaping the ball.

We will also divide the Game into small successive steps that link to each other and then teach each one and help the children to complete all the steps until they are finished, a procedure that in Applied Behavioral Analysis is called Chaining.

Variants adapted for children with autism

Variant 1. BALL KICKED WITH THE FOOT

- The playing field is drawn.
- Players are divided into 2 teams: ducks and hunters.
- The rules of the game are explained. The hunters will stand outside the playing field and the ducks inside.
- Team formation: 2 hunters and the rest of the players (3-5 players) will be the ducks
- A larger sized ball is used which will be used by hunters to knock ducks out of game
- Instead of the ball being thrown by hand it will be kicked/pushed from one hunter to another hunter with the aim of hitting the ducks
- Targeted ducks exit the game
- The last duck left in the game is the winner

- The game resumes and the first ducks out of the previous game will now be the hunters.
- The game ends when the players are bored.

Variant 2. BALL THROWN BY HAND

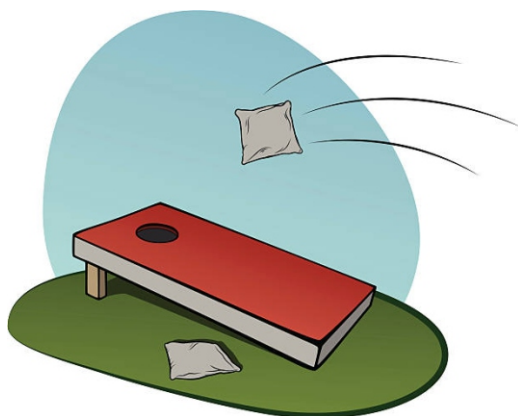
- The playing field is drawn.
- Players are divided into 2 teams: ducks and hunters.
- The rules of the game are explained. The hunters will stand outside the playing field and the ducks inside.
- Team formation: 2 hunters and the rest of the players (3-5 players) will be the ducks
- A ball of suitable size will be used by the hunters to get the ducks down
- The ball will be thrown by hand from one hunter to the other.
- The ducks will have to catch the ball, hold it for a few seconds and then pass it to one of the hunters.
- If the ball is caught but dropped on the ground, the duck is out of play.
- The duck that manages to retrieve the ball the most times is the winner.
- The game resumes and the first ducks out of the game will now be the hunters.
- The game ends when the players get bored.



4.4. TARGET THROWING WITH SENSORY BAGS

Target shooting with sensory bags is a multi-skill activity for children and adults with autism.

- This activity can be particularly effective because it has simple, easy-to-understand rules, and the repetitive, structured tasks are comfortable for many people with autism.
- It develops fine motor skills, i.e. fine movements of the hands and fingers, which is especially important because many people with autism have motor difficulties.
- Throwing, holding and controlling objects strengthens hand muscles and improves motor coordination.
- Throwing and aiming helps develop hand-eye coordination, which is especially important because it is challenging for people with autism to perform these types of complex movements.
- It is also important that as the child aims and throws in a certain direction, body awareness occurs and their balance develops.
- Target shooting also provides an opportunity to develop a sense of distance and direction, which improves spatial orientation skills that can help in everyday life, such as using objects or getting around.
- During the game, children with autism must focus on the task and keep their eyes on the target. This develops attention, especially if the task is repetitive.
- Since hitting the target is not always achieved on the first try, this game provides an opportunity to practice patience. Children with autism can learn how to manage frustration when they don't get the desired result right away.



- As they shoot at the target in groups, the game also helps develop social/team skills. Taking turns, working with others, and experiencing shared success or failure help build and strengthen social relationships.
- Throwing at the target gives immediate feedback: did you hit the target or not? This provides immediate confirmation of successful experience, which can motivate children with autism to continue to improve their performance. Problem solving, strategic thinking, and planning are part of the player's decision about how and with what force to throw the object. It develops cognitive skills such as problem solving and decision making.



Sensory bags are an excellent tool for the development of children with autism, especially when used in a playful, structured way. They are simple to use and can be used for a variety of activities that develop both physical and cognitive skills:

- The texture and weight of the sensory bag can provide a pleasant sensory experience that can soothe children with sensory hypersensitivity. Playing with sensory bags of different textures and sizes can promote the development of sensory integration.
- Beyond the tried and tested game: Sensory bags can be placed on different parts of the body (eg head, shoulders) to help develop body awareness. Maintaining balance while carrying the bag helps children with autism better understand their body position and movement in space.
- Playing together with sensory bags (for example, throwing them at each other) can help children with autism practice social interactions. Such games can teach them to stand in line and how to communicate with

their peers.

- Sensory bags can be of different colors and shapes and can be used for educational purposes, for example to recognize and name colors or shapes.

Game description

Target throwing with sensory bags is a skill game that develops attention, throwing and aiming, strength and speed and improves hand-eye coordination. It can be played anywhere indoors or outdoors where the target can be placed. It is recommended for any age. Its purpose is to score as many points as possible by throwing sensory bags at a target.

Materials needed:

- A target with several holes of different sizes and patterns. Preferably the target and the holes are large.
- 4 sensory bags, of 2 colors.
- A scoreboard or any other way to keep track of points earned

Description of game steps:

1. Children are shown the target to throw the sensory bags at.
2. The distance from which to throw to the target is determined.
3. The rules of the game are explained.
4. Teams of two players are chosen and the order in which they play is determined.
5. Their names are written on a scoreboard where everyone's points will be recorded.
6. The first player aims and throws the first bag towards any of the target holes, if he hits the target (if the bag passes through the hole) he will win a point. The point is marked on the scoreboard and will take the second roll. If he misses, he will let the second player roll.
7. The second player enters the game and throws at the target.
8. After both players throw twice at the target and the points obtained are marked on the scoreboard, the next team enters the game.
9. Multiple rounds can be played.
10. After all the children have thrown at the target, the points are counted. Whoever has more points wins.
11. If there are teams with an equal number of points, they will play an extra round.

Advice for parents

5.1. COMPLIANCE WITH THE RULES

Why?

- Children with ASD need RULES and ROUTINES. They hold them very strictly.
- Through sports/movement/play, children with ASD understand the rules → the rules in sports/games can then be transferred at school;
- Any new rule learned on the playground can then be transferred and generalized by the child in his natural environment, such as at school, while shopping, at home with the family;

How?

- The parent must teach the child the rules and the game → this will be a foundation on which to build;
- Games should be simple and broken down into small steps;
- The first step is to delimit the playing field and show the child where and with what he will play (he gets scared if it is too big);
- Then the rules of the game are explained to him in simple steps; Rules translated into images (rules explained using pictures) are most easily understood;
- The parent shows the child how to play (that is, the parent actually plays the game), then helps the child play;
- Children with ASD have a lot of strength, they aim/hit/throw with force; slow movements are not developed in them, so it takes several repetitions of a game to calm them down and adapt to the game;
- The child should not be given too many instructions, but rather encouraged to play as best he can;
- It is important to reward children so that they want to participate in the game in the future.

5.2. EXPOSURE IN PUBLIC PLACES

- Accommodation in public spaces is done gradually and must be done progressively;

- The process must be started early along with therapy;
- The child must be exposed in all environments: park, playgrounds, public transport, Mall, etc;
- If at first the child will stay less in the public space where we've wanted to take him, gradually we will want to increase the time of staying;
- Parks and playgrounds are a good opportunity to teach them to socialize with other children. At first we will have to focus only on staying with the children in the park as much as possible and then teaching them to interact with others. At first, they will not want to play with other children, but we adults can try, first, to socialize with the children in the park, then these children will go to our child and interact with him, we facilitate thus the interaction. We will have to sit and play with them, to lead the game, to prompt our child how to play with the other child, and gradually withdraw to leave space for them to be able to play and interact on their own. ; We will try to help the child to gradually interact with as many children as possible, both girls and boys, to stay with them as much as possible, and to reward any proper attempts of the child to interact with other children.
- Going outside to the park is a good way to help your child get rid of fixations when they exist. For example, if the child has a fixation to only go to a certain park, or only on a certain route to the park: we will gradually try to change the route, we will say something like: Look, today we're going this way to the park! or, Today we will go to Park X! , Today we will go with the Bus no. 6 and tomorrow we will go with the Bus no. 25 for example ! And so we try to introduce variety into the child's routine to help him develop a flexible thinking. When we help them get rid of their fixations, there will be tantrums, crying spells, but it is important that we, the adults, do not give in, no matter how long it takes, we tell him the requirement in a calm tone and wait for him to calm down. We do not negotiate!
- We parents need to take our neurodivergent children regularly to public spaces, parks, supermarkets, everywhere, because this will help them integrate in kindergarten and then in school.

5.3. HOW TO DESIGN A SPORTS PROGRAM FOR CHILDREN WITH AUTISM

When designing sports programmes for children with autism, it is important to take into account the individual needs, skills and interests of the child. Sports activities may require a specific approach and patience, but they can be successfully implemented with the right strategies.

Below we share some considerations and tips to help you design a sports program for children with autism spectrum disorders:

1. Taking individual needs into account

As autism spectrum disorders span a wide spectrum, each child has different needs and strengths. It is important that programmes are personalised to ensure that children have an enjoyable and developmental experience. Some children may need more time to master tasks, while others may learn more quickly.

2. Make a plan

Steps needed: Develop a clear plan for exercise that includes a daily routine, times and step-by-step progress. Approach to the child: every child moves at a different pace, so it is important to remain patient and adapt to the child's pace.

3. A structured and predictable environment

Children with autism may benefit from structured and predictable sports programmes. This can help reduce anxiety and increase a sense of security. Programmes should be designed with the following in mind: Establishing a fixed daily schedule Clear communication of each step of the programme in advance (e.g. through a visual agenda) Clear explanation and gradual introduction of tasks

4. Facilitating social interactions

Children with autism may find it more difficult to build and maintain social relationships. Sports programmes should provide a supportive environment where cooperation, teamwork and shared experiences can help develop social skills. Where possible, small group sessions should be organised so that each child feels supported individually.

5. Create visual and verbal support

Visual aids (e.g. cards or pictograms) can help children with autism to better understand movements and tasks. Visual calendars and pictures: use visual aids such as picture guides that show the steps to use toys. These can help the child understand the process and become more relaxed.

Visual timers: use timers or clocks that remind your child when it's time to play and indicate time intervals. They should also be supported verbally, but care should be taken to ensure that communication is clear and simple.

6. Establish a routine

Regular Times: Set regular times when you schedule your exercise sessions around your weekly routine. Gradual transition: start individual sports and gradually involve other children.

7. Reward and positive reinforcement

Children with autism are often more motivated when they receive positive feedback for successful performance. It is important to encourage them and celebrate progress, even if it comes in small steps. Rewards can be simple verbal recognition, or even some small gifts or special times that they prefer.

Positive reinforcement: praise your child when he uses the rules successfully and use rewards that can be motivating for him, such as stickers or extra play time.

Avoid Punishment: Positive reinforcement is more effective than punishment. If an accident occurs, do not react negatively. Instead, try to reassure and encourage the child to continue playing.

8. Practice and flexibility

Stick to practice: Practice the rules and make sure your child knows the steps in the play session.

Flexibility: if the child does not respond well to the previous methods, do not hesitate to change the strategy and try other approaches.

9. Clear and simple communication

Simple instructions: Use simple, easy-to-understand language when explaining the steps to use the toy. Visual instructions such as pictures or drawings can be more effective.

Social Stories: Use social stories that illustrate how to use the game in the context of a story. These can help the child understand the situation and reduce anxiety.

10. Environment and tools

Appropriate tools: make sure the game elements are easily accessible to the child. Simplifying a single tool can be a good solution.

Comfortable clothing: Make sure the child can easily remove their clothes. Children with autism may be prone to inattentive or impulsive behaviour, it is particularly important to provide a safe environment during sports programmes. Coaches or assistants should constantly monitor children's reactions and needs so that they can intervene quickly if necessary.

11. Balance physical and mental challenges

In sports programmes, it is important that the form of movement is appropriate to the children's motor skills. Tasks that are too hard or too easy can cause frustration. Examples of good choices include yoga, gymnastics or ball games, which are designed to develop both physical and mental skills.

12. Consult a professional

Seek professional help: If you are having difficulty, you may want to seek the help of a professional, such as a child psychologist or special needs teacher, who has experience teaching children with autism spectrum disorders.

Every child is different and what works for one may not be effective for another. It is important to be flexible to the child's needs and try to be as supportive and understanding as possible throughout the process.



Teaching group games

For children with autism, understanding rules and cooperation in group games is important as it helps them to develop social interactions. Some suggested methods for teaching a set of rules:

1. Using visual aids:

- Picture cards or charts
- Using colour symbols or numbers
- Figures in a row
- Cards or symbols

2. Modelling and simulation

- Showing by example
- Simplified exercise
- Patience exercises

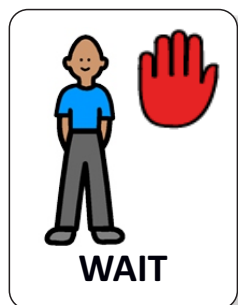
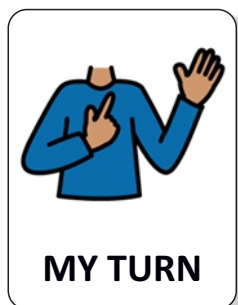
3. Verbal signals

- Simple sentences
- Counting
- Social stories

4. Positive reinforcement

- Rewards
- Collecting points

Basic cards for group play:



Game: „Who's next?"

1. Tools:

- A "My turn" and "Your turn"
- An hourglass or timer.

2. Steps:

- Show the "Your turn!" Show the "It's your turn" card when the child comes.
- When it's your turn, show the "Wait!" card.
- Use the timer to show when the wait is over.

Simple games to practice:

Use of sequenced figures game

The "line up figures" method is a visual and tangible way to help children with autism understand the concept of order. This approach can be particularly useful because affected children often respond better to concrete, visual stimuli than to abstract explanations. It is a playful exercise in which different figures (e.g. dolls, cars, animal figures, LEGO figures) are placed in a sequence so that the child can visually see and understand when it is next.

How to use the exercise?

1. Selection of figures

- Use figures that are interesting for the child (e.g. favourite fairy tale characters, animals, etc.).
- If more than one child is playing, each child should have a figure to represent him or her.

2. Map of the sequence

- Place the figures in a visible place, such as a table or play mat.
- You could also name the figures after the children (e.g. "This is Anna's doll, she's in first place")

3. Visual cues needed

- Place numbers or coloured cards under the figures to show who is in what position.
- Also use accessories such as small coloured arrows to give a definite direction.

4. Involve a child

- Ask the child to place the pieces in the line.
- Together you can name the positions of the figures, "This is the first figure, this is the second."

5. Action modelling

- Act out a simple scene where the figures move in a line (e.g. waiting for the slide, receiving a gift).
- Example: "Now it's this car's turn, then the red one, then the blue one."

6. Repetition and practice

- Repeat the sequence several times in different situations (e.g. "Now the first figure gets a ball, then the second").
- Switch the order so that the child learns what it is like when there is a new situation.

Advantages of this method:

- Concrete and tangible
- Learning through play
- Opportunity for repetition
- Developing social interaction


Figures on the slide game application

Application of play with object communication:

1. Place a small slide on the table.
2. Each child gets a figure
3. Line up the figures in front of the slide.
4. Lower the figures one by one, saying "Now this one, then that one."

This exercise is easily adapted to the level of the children and helps to make abstract concepts understandable.































The game can be applied to communication:

		Game rules for using the slide Children stand in a line and the next in line always slides down.		
Peter	Anna	John	Me	Eva
1	2	3	4	5



You can take this with you to the playground. Print out the base sheet of the sliding rules separately. Print the pictures of the children (names can be omitted) and the numbers separately, cut them out and fix them with Velcro or adhesive tape according to the persons involved. Practise in a kindergarten, school or familiar friends' environment first! The arrow pointing backwards indicates the continuity of the game. It is important to agree in advance how many laps everyone will slide or how long the slide will last.









For children with autism, informal play activities can be difficult because of inflexible thinking. However, this can be made easier for them with visual support and a structure of space and time (e.g. a daily schedule). First, for example, we can introduce 'guided' sports and leisure activities in the afternoon into the school timetable.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
				
Home	Home	Home	Home	Home
				
Transport	Transport	Transport	Transport	Transport
				
School	School	School	School	School
				
Playground	Playground	Playground	Playground	Playground
				
Sport activity	Sport activity	Sport activity	Sport activity	Sport activity
				
Home	Home	Home	Home	Home

Once they are comfortable using the tool, the next step is to add a visual tool (a whiteboard) to the afternoon programme, with several cards from play activities that the child knows. He can choose from these, or if there are several games, he can decide which ones he wants to play and in which order by arranging them in order. This can be supplemented with a timer (time timer, hourglass, etc.) to ensure that the playing time is clear and easy to understand.



Example: the following cards are placed on a selection board and the child can choose two or three of them according to the time allowed for the play activity. It is important to determine the time and the order.

			
play ball	ride bike	football	basketball
			
jump rope	sensory bag	run	playground

* the pictures were made with Boardmaker and Falticon.

Concluding thoughts

Designing sports activities for children with autism requires special attention and expertise, as their needs, developmental pace and behavioural patterns differ from those of neurotypical children. The success of this type of activity is closely linked to the supportive nature of the environment, the appropriate equipment and well-designed, personalised programmes.

A key factor in the choice of sports activities is that they should develop children not only physically but also mentally and emotionally. Sports and games can help to develop motor coordination, attention, social relationships and social skills. In addition, the sporting experience can provide children with a sense of achievement and can be a confidence booster, which can help them to thrive in everyday life in the long term.

When planning, it is important to take into account the individual characteristics and needs of children and to integrate these into the programme in an appropriate way. Children with autism are often sensitive to environmental stimuli, so parents and professionals need to take care to ensure a calm and supportive atmosphere. In addition, incorporating routines and routines can help to create a sense of security.

Empathy and patience are key during sessions, as each child develops at a different pace. The results are not always immediate, but continued attention and positive reinforcement can ensure that children reap the long-term benefits of sport.

Overall, therefore, sports activities designed for children with autism not only aim to improve physical health, but also contribute to the development of social and communication skills, increase independence and boost self-confidence. The right professional background, the right environment and a personalised approach are all essential to ensure that sporting activities have a real positive impact on children's lives.

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"People with disabilities are among us so that we can learn
to listen to each other better,
and so that the world can be a better place."

