Outdoor Activities Curriculum for Children with Autism

Project Partners:

Sanliurfa Genclik ve Spor Il Mudurlugu

Asociatia Romana de Psihopedagogie Aplicata (ARPA)

European Platform for Rehabilitation (EPR)

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TIME 2 OUTDOOR

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Project Partnership

Şanlıurfa Gençlik ve Spor İl Müdürlüğü (Türkiye) - Coordinator

Youth And Sport Province Directory of Sanliurfa is a non-profit sports organization established in the 59th article of the Constitution of the Republic of Turkey to realize the purpose of the law "The state takes measures to improve the physical and mental health of Turkish citizens of all ages and encourages the dissemination of sport to masses". As Youth and Sport Province Directory of Sanliurfa, we are the basic institution responsible for the youth and sports activities in Sanliurfa. Our organization is a part body of the Ministry of Youth and Sport and General Directorate of Sport in its works. In addition to this, our organization has representatives in all districts in Sanliurfa. So, it is in collaboration with local governorships and municipalities in all districts of Sanliurfa. Youth And Sport Province Directory of Sanliurfa has recognized the importance of improving, maintaining all athletes' physical and mental health by trainers, sport psychologist and sport physiotherapists with strong educational background in terms of sports health as well as ensuring a healthy, peaceful, and happy life by increasing the quality of life of especially young athletes and all ages and genders and minors. Youth And Sport Province Directory of Sanliurfa administrates projects locally and recreative competitions all over Sanliurfa both of youth and sport. We have many kinds of youth courses all around Sanliurfa with 12 youth centers. We have experiment-do workshops many of them. In these workshops many students/youth people come together and try to realize their scientific dreams in terms of coding, designing, robotics and programming. Youth people also can participate in art and language classes. All course participation depends on their desires. We have youth leaders in our youth centers to guide youth people. Therefore, youth leaders prevent negative behaviors (e.g., smoking, slanging etc.) on youth people to guide them to positive development. Sports festivals held throughout the city by Sanliurfa GSİM, contains different sports branches. For example, Athletics, Basketball, Football, Gymnastics, Lifting, Canoe, Taekwondo, Volleyball etc. are our active sport branches in Sanliurfa. Youth And Sport Province Directory of Sanliurfa is reaching to people from individuals to families and special groups of the Sanliurfa society (the handicapped, the elderly, housewives and office workers, etc.) and making all kinds of opportunities with institutional facilities.

Asociatia Romana de Psihopedagogie Aplicata (Romania) - Partner

The Romanian Association of Special Education (ARPA) is a non-profit organization, consisting of experts in the field of psychology and educational sciences. The aim of the organisation is to support people from disadvantaged groups, families, teachers, and other specialists (vocational counsellors, occupational therapists, and psychotherapists) in order to reach the optimal potential of their personal and professional development and to reduce the risk of various difficulties with the help of psychotherapy and educational interventions that have proven effective for several decades worldwide.

ARPA's aim is to improve the situation of people with special needs who have social and educational disadvantages or disabilities (physical, sensory, and intellectual) in all areas of social, cultural, and educational life.

ARPA works and supports the integration of disadvantaged people (children and young people from Roma minorities, children at high risk of poverty) into social, educational, assistive, and physical environments by improving communication skills, social skills, and sharing experiences.

ARPA members and volunteers are cultivating democratic values, developing non-discriminatory civic attitudes and behaviours towards people from disadvantaged groups, and initiating and evaluating policies that promote respect, equal opportunities, and a positive approach.

For more information about us: https://psihopeda.ro/

European Platform for Rehabilitation (Belgium) - Partner

The European Platform for Rehabilitation (EPR) is a network of service providers to people with disabilities committed to high quality service delivery. It is active at the European level in the fields of employment, education and training, vocational rehabilitation, social care, medical rehabilitation with cross-cutting expertise on co-production, quality of services, quality of life and mental health. The main goal is to assist its member organisations to provide sustainable, high quality services through mutual learning and training activities. EPR has 30 members in 16 EU countries (and 2 non-EU).

EPR activities go beyond traditional mutual learning exchanges. Professionals from EPR members gather to benchmark and analyse effectiveness in service provision; improving quality of services and quality of life for clients, as well as positively impacting their daily work experience. EPR members co-create and pilot innovative products, tools and methods to better meet the needs of clients, employers and funders. EPR organizes online and in-person training sessions on innovative methodologies and tools in service provision to improve labour market integration and social inclusion. EPR has a focus on trends and innovation, allowing members to gain insight into how to address trends through briefings and expert input, take part in pilots of innovative approaches, apply theory from expert workshops on organisational development, learn about and apply the latest methodologies in service provision. EPR experts develop methods and models of delivery that directly innovate and improve service delivery systems and programmes for people with disabilities.

EPR supports members in developing projects, giving guidance in finding project partners, in writing EU applications and organizing training sessions on accessing EU funding opportunities. Members have also the possibility to join projects developed by EPR. It supports members' networking and strategic growth by helping them to build connections with leading service providers across Europe, be part of a community of like-minded professionals, take part in exchanges and training on strategic issues.

EPR is recognised as an important player on the European scene. It cooperates actively with all relevant stakeholders and is regularly . EPR is also a member of Social Services Europe. EPR also manages and promotes EQUASS (European Quality in Social Services), a tested system to promote quality and excellence in social services provision in Europe. The overall objective of EQUASS is to enhance the social services sector by engaging service providers in quality and continuous improvement, and by guaranteeing service-users quality of services throughout Europe.

Introduction

Time 2 outdoor project intend to provide information about a safe and enjoyable outdoor activities for children with autism.

The challenge of delivering a suitable physical education or recreational activities for children of various abilities falls on teachers or parents. Many teachers lack the training necessary to successfully include children with autism in their classrooms. They frequently have little expertise in curriculum adaptation, especially in adapting a recreation curriculum for children with disabilities. Most schools don't provide in-service training to help teachers successfully include all students. Teachers therefore have a relatively limited understanding of the factors that influence performance. The difficulty faced by physical educators is magnified by the fact that children with disabilities frequently lag behind in terms of their level of fitness and motor skills. The answer to this issue and the aim of this guide for outdoor activities is to inform and empower teachers and parents by exposing them to all the variables that can be modified to achieve adequate inclusion in physical education and recreational activities.

The guide contains detailed instructions for putting together an inclusive curriculum for outdoor activities. It offers the reader suggestions for possible recreation, games, and sports adaptations. The categories of environment, equipment, instruction, and regulations are used to group the adaptations.

Access to outdoor spaces

Changes of the childhood are mostly a result of broader social, cultural, and economic changes, however they can also be seen as a manifestation of risk aversion (Gill, 2007).

The decline of the play in the streets has been supported by factors such as rising road traffic, car-dependent lifestyles, parents working longer hours, a deterioration in the quantity and quality of public space, and an increase in indoor leisure activities.

Although there are play grounds on many estates, they are usually limited in size, activities are restricted, and even the noise made by children playing is typically disregarded by others. This shift in how kids engage in leisure activities needs to be viewed in the larger context of community change brought on by a growing emphasis on entertainment in the home, which is partially due to television, computers, and smartphones.

Children need to play both inside and outside, since play is essential for their overall development. The association between children's exposure to nature through leisure activities and their attentional functioning was investigated in the study of Taylor et al. (2001). They discovered that after engaging in activities in green settings (e.g. parks, farmyards, or the green backyard of neighborhood space) children performed better than usual.

When considering learning through play, Bruce (2001) reminds us that play is the highest form of learning and that it is influenced by culture, place, and mood.

Outdoor settings can provide opportunities for transformation. Children receive first-hand knowledge and awareness of cause and effect, how some things change forever and some return to their original forms through experiences in nature, much like our lived experiences and relationships do (Chown, 2014).

The games presented serve various goals:

- Physical education
- Leisure leisure time activities
- Drama classes

The games help to:

- Improve motor skills and physical fitness.
- Build social skills
- Foster creativity
- Develop awareness of the senses
- Foster emotional development

Risk and challenge

One of the risks we need to think about is that children'bodies are fragile, so they should not be forced to adopt any physical positions that may cause them pain or discomfort.

Children need a protective, loving and secure environment. Only when they benefit from these three conditions will their self-confidence and self-awareness improve.

Main challenges for children with autism in practising physical activities

Children with autism (American Psychiatric Association, 2013) :

- Children with autism often struggle to connect with others.
- They can be more engaged in playing with an object or observing their hand than talking to a person.
- They may run around for no apparent reason or play by themselves in a corner.
- They might only communicate occasionally or not at all, or what they say not make much sense.
- They could excel at some things while failing at others.
- They might respond differently to light, sound, or touch. They occasionally perceive mild noises as being extremely loud, to the point where they cover their ears.
- They may cry from a soft touch or cover their eyes in low light.
- When there is a loud noise, they may act as if they are deaf, they may seek out intense pressure or emotions, or they may seek out very bright lights in order to stimulate themselves.

Fundamental motor skills are prerequisite for more advanced movements skills, sports and recreation. At the same time, recreational and leisure activities are imperative for the quality of life of children at any age.

Not all children with autism or other developmental disabilities can perform physical activities at the same level as the other children. The challenge that many physical educators face is that students with disabilities are often behind in their level of fitness (Lieberman and McHugh, 2001) and motor skills (Pender and Patterson, 1982). The adaptation of physical activities is necessary to ensure that all children can participate in the activities and develop those lateral competencies, besides physical activity.). Most common motor impairments can include limited visuo-motor, postural impairments both in static and dynamic positions and bilateral coordination (Srinivasan, 2014). This is accompanied by sensory impairments concerning challenges in adjusting to auditory, vestibular, visual and tactile inputs, accompanied by hyporesponsiveness and hyperresponsiveness to sensory stimuli (ibid.). Ultimately, poor social communication, preference for highly predictable environments and behavioural impairments can discourage them from joining sport teams. Given these sensibilities, many adults and children with autism perform no or very limited physical activities, indeed incidence of obesity and overweight is high within these people (ibid.). Therefore, the inclusion of children with autism in physical activities and sports is of the utmost importance since participating enhances behavioural, social skills, mental health and self-esteem, together with maintaining and improving our perceptual motor skills and fit, while reducing inattention problematic behaviours (Webster, 2015; Srinivasan, 2014). Keeping in mind the challenges faced by people with autism cited above, the most common sports practised are horseback riding, jogging, swimming, cycling, walking and weight training (Srinivasan, 2014).

However, it is noticeable that all the activities named above can be performed in solitude and are not practised in schools, therefore they offer a limited positive impact of social and soft skills for the practitioners. The adaptation of group physical activities is necessary to ensure that all children can participate in the activities and develop those lateral competencies, besides physical activity.

A solution to avoid segregation from their typically developing peers is to train and empower teachers of physical education in ways of adapting the curriculum, instruction, rules, and environment, so that children with disabilities have a chance of full participation. For example, people on the autism spectrum often suffer from oversensitivity, an element that can discourage them from participating in contact sports (Webster, 2015). Sessions should be adapted to individual children's needs by coaches and trainers. Also, educators should be aware that in the case of a child with autism and behavioural problems or challenging behaviour, it is better not to force any movement experience. The more you try, the more the child is likely to resist and to become distressed. It is better to change the activity.

Adaptations

There are many variables that can be adapted or changed to ensure that the child can participate in physical or movement activities: equipment, rules, environment, the way we instruct. Different types of adaptations can help them manipulate and control a number of variables.

Environmental modifications may be necessary to avoid problems. To know what should be changed in the environment according to the child's needs, the physical educators may ask the parents, other teachers, or the child. A child with autism may prefer to play in a corner by themselves or run around for no reason. There are situations in which they prefer to play with an object rather than play with another child. Environmental modifications may include decreasing distractions, increasing visual cues, limiting noise, changing lighting etc.

Rules modification is a natural thing if we think about the theory of normalisation. Rule modifications help the child with autism to become successfully included. These may include slowing down the pace of a game, allowing more chances, taking away rules, allowing for no defender, limiting or adding responsibility, utilising one-part commands (Lieberman, 1999).

Equipment modification is any modification that would make the participant more successful than when using the pre-existing equipment. Children with autism may need equipment adapted because of their lack of coordination, limited grip strength or cognitive dysfunctions. Examples of equipment modifications include softer balls, Velcro mitts, guide wires etc. Also, the equipment chosen must be age-appropriate.

Instructional modifications can vary from a more direct instructional approach, to a more indirect, student-controlled instructional approach (Rink et al., 1998). Teaching style in the case of children with autism can include: verbal cues, demonstration or meditation, physical assistance or guidance. When working with children with autism, teaching procedures should be based on the principles of operant conditioning. The training procedures are generic and may need to be modified to suit the child. For example, some games were proposed on the assumption that initially the child will need prompting to play correctly.

The Prompt (**The Help**). Prompt refers to any help given to the child to respond successfully. Prompts can be verbal ("Catch the ball"), physical (take the child's hand and put it on the ball), gestural (point to the ball), positional (put the ball closer to the child) or modelling (demonstrate the response so the child notices and imitates it).

When starting a game, you need to determine how much help (prompt) your child needs in order to play without mistakes. The prompt (help) should be gradually and systematically decreased throughout a outdoor session so that the child may be able to perform the game without any help.

Modeling (**Shaping**). The term modeling refers to the progressive rewarding of increasingly accurate approximations of the desired behaviour. The child is rewarded for behaviour that is close to target behavior. After the student consistently demonstrates this approximation, the reward gradually changes and the child is rewarded for a better approximation of the target behaviour. Over time, the reward criterion changes until the desired behaviour is rewarded exclusively.

Chain. Chaining refers to creation of a complex behaviour by combining several simple behaviours in a sequence, leading to the formation of a single behaviour of greater complexity.

Games experimented in the *Time 2 Outdoor* project are explained in a simple and straightforward manner. They also involve healthy doses of fun and pleasure.

Firstly, a cognitive evaluation of the game was conducted. This evaluation considered whether the game was individual or required collaboration, the use of materials and how these materials were utilized, and the presence of multiple stimuli (such as music, attention, and opposing players within the same game). To ensure a homogeneous distribution of children, grouping was carried out by an experienced physical education teacher and a coach. The groups were organized to include no more than six students, with a balance maintained such that each group consisted of either 2 regular and 2 children with special needs or 3 regular and 3 children with special needs.

In our piloting trainers have categorized children regarding their readiness and special educational background. Safety is first regarding all games for all children (with autism).

Dear reader, if your child is unable to perform the games included here, it does not imply that your child cannot engage in sports. Every child, whether on the autism spectrum or not, is valuable, unique, and exceptional.

GAME KEY

We've created keys for all the games included in the project and categorized them based on difficulty levels. This categorization will make it easier for players to choose games that suit their skill levels and experiences.

Difficulty Levels:

- **Low Difficulty:** Perfect for beginners and those who just want to have fun. These games have simple rules and mechanics. (**L**)
- **Medium Difficulty:** Suitable for players with a bit more experience. These games have more complex rules and mechanics. (**M**)
- **High Difficulty:** Designed for experienced players who are looking for a challenging **(H)**

SPORT GAMES (General)				
	Equipment	**Rules**	**Environment**	**Instruction**
Martial Arts L-M-H The game can be played at any level by changing the conditions or movements.	Floor mats, loose clothing, whistle, head gear, mouth guard, gloves, task cards, punching bags, props	NO physical contact NO kick below belt Right-left orientation Move at own pace Use freeze Talk through steps Switch partners	Indoors or outdoors, friendly, large space, flat, smooth surface, mirrors on walls, posters, low noise, decrease distractions	Shadowing Visual aids Demonstration Verbal cues Physical assistance Hand signs Emphasis on self-defense Peer tutor Task analyze Corrective feedback Explanation
Dancing L-M-H Given the possible reaction to the music, the level of the game is set to H. If the choreography is facilitated and music is not used, it can also be played at level L,M.	Music, floor mats, props, footprints, scarves, visual aids, task cards	Stay in own space Walk to the beat Change beat count Change movements Slow tempo Mirror partners Short steps	Indoors or outdoors, flat surface, mirror, decrease distractions	Peer tutor Task analyze Demonstration Physical assistance Verbal cues Shaping Explanation Hand signals Corrective feedback
Bowling M	Bumper bowling, plastic balls, rails, lighter balls, ramps, colored pins, lighter colored ball	More tires Two hands if needed Can cross line Use proper steps Throw many times Spare equals strike	Indoors or outdoors Directional arrow More pins Automatic scoring Guide rails Ramps to roll ball	Physical assistance Hand signals Verbal cues Modeling Peer tutor Shaping

		2-hand roll Stand at line 1-step approach		Demonstration

LEISURE-TIME ACTIVITIES				
	Equipment	**Rules**	**Environment**	**Instruction**
Spatial awareness • Personal Space / Lying on Back / Sitting and Standing Task description: explore space above and to the side, using arms and legs. • General Space Task description: Walking, running – stop, start	Mats, balls, ropes, tunnels, hoops, tires, balloons, sponge balls, beach balls, whistle, carpet squares, mirrors	Personal space Right Left Up Down Don't touch others Stay in boundaries Mirror child's action Run around boundaries Crawling Dribble Jump rope Changing direction	Indoors or outdoors Visual boundaries Large space Bars Steps Tires Lines on floor	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Rhythms Task description: Student will march and clap to a beat, clap and side-step to a beat L	Music Scarves Balls Balloons Sticks Footprints Tambourines Maracas Drums	Animal walks Start/stop signal Mimicking Movements to music Create own steps Hand clap on beats	Indoors or outdoors Mirrors Lines Flat surface Boundaries Mats Dance area Well lit Acoustic Colorful	Visual aids Verbal cues Task analyze Peer tutor Feedback Demonstration Physical assistance Mirroring Counting beats
Parachute Task description:	Large parachute Small parachute	All balls in parachute Keep parachute moving	Indoors or outdoors Open area	Explanation Physical assistance

Student will handle the parachute during the proposed games L	Foam balls Rag balls Beach balls Tennis balls Bean bags Ping-Pong balls Whistle Music Mirrors	Big waves Name game Animal game Call out names while changing positions Don't let go	Limit distractions	Demonstration Peer tutor Feedback Verbal cues Visual aids
Object control skills Task description: Student will throw underhand to peer L-M-H The game can be played at any level by changing the conditions or movements.	Large balls Small balls Heavy ball Light balls Basketballs Volleyball Football Beach ball Balloons	Varied distance Against a wall With 1 hand With 2 hands Dominant hand Non-dominant hand Dominant foot Non-dominant foot Underhand Overhand Pass balls Catch balls Keep eye on ball	Indoors or outdoors Give and get Flat surface	Explanation Physical assistance Demonstrate Peer tutor Feedback Verbal cues Guided discovery

Sport Games				
	Equipment	**Rules**	**Environment**	**Instruction**
Running L	No equipment needed	Children with run from one side of the playground to the other.	Indoors or outdoors Use music / No music	Physical assistance Mirroring Peer tutor
Jump rope L-M-H The game can be played at any level by changing the conditions or movements.	Light rope Heavier rope Shorter rope Longer rope	Children can cross a rope that is suspended or swinging up to one foot above the ground by stepping, jumping, or walking over it.	Indoors or outdoors Use music / No music	Physical assistance Peer tutor Demonstrate
Hula Hoops M -H The game can be played at M and H level by changing the conditions or movements.	Hula Hoops	Children can sustain rhythm for predetermined lengths of time by hula hooping around their hips, legs, wrists, arms, or feet. As a rule of play, children should keep the following in mind: 1. Don't hit with hoops 2. Do what everyone is doing 3. Stay in own space.	Indoors or outdoors Each child has own boundaries Work on accuracy Mirrors	Physical assistance Use whole body
Balance L-M-H The game can be	Balance beam Bench Lines	On a typical high beam, kids can walk forth and backward while maintaining their balance. They may: 1. Have their hands free.	Indoors or outdoors Playground	Physical assistance Verbal command Peer tutor

played at any level by changing the conditions or movements.		2. Holding objects 3. Go forward. 4. Go backward.		
Hiding place L	no equipment needed	1 child counts until an agreed number, and the other players go hide. After, the one that was counting goes to find the others. The mission of the game is to reach a safe place without being found.	outside or/and inside	Physical assistance Peer tutor Verbal cues Explanation Small groups Shaping
Pull on the rope L	a rope	Children are divided in two groups and they position on opposite sides of the rope, holding it in their hands. The moment the game starts, both groups start pulling the rope. the group that succeed in moving the center of the rope to their side wins	outside or in a big space inside (e.g., gym)	Physical assistance Peer tutor Demonstrate
Blind chicken M	a scarf	One child positions the scarf onto their eyes. Their goal is to catch the other players without seeing. The other children make noises or poke the "blind chicken" in order to distract them.	outside or in a big space inside (e.g., gym) or any location without too many objects/furniture	Physical assistance Peer tutor Demonstrate Slow down 1:1 Guided discovery
Skipping rope** A. H B. M	a rope	There are multiple ways to play this game. (A) child can hold the individual rope, or two other children can hold it for them. The goal is to jump the rope the longest. (B) Children can position themselves as a clock, with one child at the centre. The one at the centre, keeping the rope close to the pavement, starts rolling it. The other players have to jump at the right moment avoiding being touched or getting stuck in the rope. the one that lasts the longest, wins.	outside or in a medium/big space inside	Physical assistance Peer tutor Peer holds one side Slow down Demonstrate

Top H	A wooden or plastic toy that is wrapped around a string.	Children have to throw the spinning top by unrolling it and spinning it on the ground.	outside and in medium/big spaces inside	Physical assistance Peer tutor Demonstrate Explanation
Game of chairs L	Chairs and a stereo/speaker	In the middle of the room , there are as many chairs as the number of children playing minus one. The chairs are positioned in a circle and when the music starts, the players have to move, run or dance around the chairs. When the music stops, they have to sit on a chair. Who does not succeed in sitting, is out. The last one standing wins.	outside and in medium/big spaces inside	Physical assistance Peer tutor Demonstrate Small groups Mirroring Auditory cues Explanation
I SELL OIL I SELL Honey Game L	A handkerchief	Players sit on the ground in a circle. One player is chosen. This player walks around this circle singing the song below. At the same time, the people in the circle sing the song. “I sell oil, I sell honey. My master left, I sell it. My master's fur is yellow. If I sell it, it is 15 lira. Zum-bak Zum-bak. Go back, take care!” The player leaves the handkerchief behind someone without anyone noticing, and when the player behind whom the handkerchief was left notices the handkerchief, he gets up and starts chasing the player. If the escaping player is caught, the caught player continues the game. If the escaping player takes a full turn and sits down before the other player catches him, the same person continues.	This game can be played in outdoor or indoor sports halls. Game the surface of the area can be parquet, grass or soil, provided that it is flat.	Physical assistance Peer tutor Demonstrate Small groups Explanation
Handkerchief Grabbing Game L	A handkerchief	The players of both teams are on the opposite side of the sideline of the referee. Behind them, they wait in the area designated for them and are determined by the game leader. They have to make an exit according to the list of positions they	1. Playground: This game can be played in outdoor or indoor sports halls. Game the surface of the area can	Physical assistance Peer tutor Demonstrate Small groups Mirroring

		are in. With the handkerchief referee blowing his whistle and tapping his foot on the ground at the same time the players exit. The one who gets the handkerchief first wins.	be parquet, grass or soil, provided that it is flat.	Auditory cues Explanation
Dodgeball Game M	A volleyball ball	The game starts after being divided into 2 groups. While there is a group of shooters in the game; The other group becomes the one running away. The shooting group stands outside the line. The other side remains within the line. After the game placement is done correctly, the outside side tries to hit the inside players with the help of the ball. Each player hit is out of the game. If the inside player catches the ball from the air before it touches the ground, he gains +1 life. It gives new life to grip in any weather. If the person wishes, he can bring the hit players back into the game with the lives he has gained. When there is only one player left in the middle, the shooting group tries to hit the player in the middle in shots.	It can be played in outdoor or indoor sports halls. The playground it can be parquet, grass or soil, provided that the surface is flat. All lines on the playing field are included in the area they limit.	Physical assistance Peer tutor Demonstrate Small groups Mirroring Auditory cues Explanation

EDUCATIONAL GAMES				
	Equipment	**Rules**	**Environment**	**Instruction**
Ball Collecting Game L	Small balls (different colours) A basket	The children disperse freely on the playground, and a basket containing fifteen small balls is placed on the ground. The teacher distributes the balls to various places, and the children take turns collecting the balls and placing them in the basket. The game can also be played competitively by dividing the children into two separate groups with balls of different colors.	Free playground	Peer tutor Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Do The Same L	No equipment required	One child is selected to be the midwife, while the other children are lined up in a row. Each child should do the same movements that the midwife does, such as walking backwards, jumping, leaning forward, or bouncing on one leg. Any child who cannot perform the same movements as the midwife is eliminated from the game. The game continues until only three players are left.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Sculptor Game L	No equipment required	The teacher takes on the role of a sculptor, while the children become "mud" waiting to be shaped. The children listen to the commands of the teacher and take shape accordingly. The teacher makes movements such as standing on one leg, jumping, squatting, rising on tiptoe, etc. and the children imitate these movements to become sculpted into different shapes.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation

				Verbal command
On The Rope L-M-H The game can be played at any level by changing the conditions or movements.	Ropes and Markers	Children are lined up side by side and the same distance away from the rope (usually about 1 meter). The teacher demonstrates various balance movements on the rope, such as walking forward/backward, walking side by side, rising on tiptoe, lifting leg forward-backward or right-left, and walking with heel-toe contact on the rope. The children then imitate these movements while walking on the rope.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Object Transport L-M-H The game can be played at any level by changing the conditions or movements.	Various objects and Bags of beans	A long starting line and a destination line are drawn, with enough space for all the children to stand side by side. The teacher instructs the children to carry various toys from the classroom between the two lines, using different carrying techniques and following the teacher's instructions. The children are encouraged to lift and carry objects of different weights, carry objects on their fingertip above their head, carry objects with diagonal steps, carry objects at chest level by jumping with both feet, and carry bags of beans of a certain weight by changing hands.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Passing The Ball Under The Bridge L	No equipment required	Children stand in a circle and spread their feet so that they do not touch each other. They bend their waists and put their hands on their knees. The child selected by the midwife's goal is to roll the ball out between the feet of their friends. The other children in the circle try to catch the ball	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues

		with their hands without moving their feet.		Demonstration Explanation Verbal command
Camel Dwarf L	No equipment required	The children are asked to form a group and the rules of the game are explained: “When I say camel, you should stand up, and when I say dwarf, you should sit down. If anyone makes a mistake, they will leave the game and we will continue until the last person remains.” The game is started by giving an example. Additionally, the game can be enriched by adding instructions like “let those with brown eyes stand up”, “let those wearing blue stand up”, or “let those who like to play ball stand up”.	Free playground	Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Parkour L	Different soft and non-edible objects	Children take turns starting from a specific point, navigate through obstacles in the course area while touching the funnels placed at certain points, and reach the end point. The purpose is to improve physical coordination and perform balance movements that require motor skills.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Fishing Net M	No equipment required	Children scatter freely in the playground. 2 people (midwives) hold hands and try to reach the other children who are scattered in the field by acting together. The children they reach join the group of two and hold hands.	Free playground	Peer support Guided discovery Feedback Physical assistance Orientation Verbal cues

		The game continues until there are no idle children and all children are included in the network. Suggestion; In order to control the students, the game can be started with one teacher and one student midwife.		Demonstration Explanation Verbal command
Slip On Rope L	Ropes and balls	One end of the ropes is knotted to form a center. Each child holds the free end of his own string, stretches the strings and forms a circle around the centre. Passes the balls they take from the basket through the free end of the rope, lifts the rope up and slides it up to the central knot. The game ends when the balls in the basket run out. Suggestion; Concept learning can also be included during the game by changing the colors, shapes, etc. of the beads , and the game can be revised according to the level of the students.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Sack Race M	Balance board, circle funnel, cushion	Children move to the starting line. They enter the sack and hold the sack with their hands and grasp it. They start jumping with the whistle and they jump to the finish line. Suggestion; The game requires very high balance and coordination skills. Before playing, the level of the students should be considered.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command

Color Stop M	Ball and bands	Children line up in a circle. The teacher defines a color for each student. He throws the ball into the air and tells the students one of the colors he has identified. Whichever color he has said, the student who has defined that color should come forward and catch the ball before the ball falls to the ground. Suggestion: The game can also be played by saying the names of the students.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command
Rope Pulling Gains L	3m long and 1 cm diameter rope (as much as the number of children) A ring, ball or bead with a hole in the middle for stringing. Basket, box, etc. to put rings, balls or beads.	The children are divided into 2 teams equally, and they hold the rope by lining up one after the other so that the boundary line is in the middle. After all players on both teams have grasped the rope, the rope is stretched so that the first player of both teams is equidistant from the boundary line. With the sound of the whistle, the teams pull the rope with all their strength, forcing the other team to cross the boundary line.	Free playground	Peer tutor Guided discovery Feedback Physical assistance Orientation Verbal cues Demonstration Explanation Verbal command

ENERGIZERS

An energizer is an activity that can be done in the first part of a training session. The goal of the activity is to (re)energize participants and encourage them to actively participate until the end of the session. Usually, the purpose of an energizer is to energize individuals both physically and psychologically. For instance, in the beginning of the session, when everyone is still relatively light, a physical energizer can be picked to infuse the group with enthusiasm and allow for the introduction of new members. Also, the facilitator can utilize an energizer to mentally stimulate the participants, introduce a topic, and encourage them to share their opinions on it in order to boost participation when the training topic is mentally demanding.

The facilitator must take into account the time. For instance, if the training includes a lunch break, it would be wise to avoid very physical energizers after the lunch break, but choose mental ones instead.

An energizer can be a fantastic way to help participants relax and get to know each other.

Fruit salad - M

Instructions: The participants are split up into random groups (the size and number of groups are irrelevant), and they are told to select a fruit for their group. All of them find a position to freeze in the circle. The facilitator issues the following directives:

1. When the person in the middle says, "I would like to eat (name of the fruit selected by the groups)," everyone in that group is required to get up and find a different place to freeze.
2. The facilitator becomes a member of the first group.
3. The last person remaining then declares which fruit they would want to consume. Multiple fruits may be selected.
4. Once more, everyone is required to up and quickly find a place to freeze.
5. All participants must get up and move to a new place when a fruit salad is called.

Rolling Ring L

Instructions: Players form a ring with one player standing in the center. The children in the ring roll a volleyball towards the child in the middle, attempting to hit them. The game continues by swapping places between the player who was hit and the player who made the hit.

Garden Race L

Instructions: All players, with a designated leader, line up together. The leader holds a ball. Other children are brought closer to the group and assigned the names of 3-4 vegetables (such as pepper, cabbage, tomato, carrot). While the leader rolls the ball into the field, they call out the name of one of the assigned vegetables. The players associated with that vegetable's name race to catch the ball. The player who catches the ball first swaps places with the leader. The game then repeats with the new leader.

Guess the person, animal or thing! M-H (Depending on the object to be guessed and the part to be covered, the game can become more difficult or easier)

Instructions:

- Using a picture of an animal, children's character or personality, cover the entire picture with puzzle pieces to hide identifying features.
- Take one piece off at a time; children guess who/what is underneath.
- This can be done as a group game, individual or team play. It could also be set up in a special daily spot–with guesses being made as removed pieces reveal who/what it is!
- Depending on how you play this-points can be added or subtracted. The most points of course going to the individual or team who correctly guesses with the least amount of puzzle pieces removed!

Icebreakers

An icebreaker is a game, exercise, or activity that is intended to break the 'ice' that ordinarily limits or inhibits interactions of a group of participants who may or may not know each other.

A group is showing "ice" if there is little or no communication, reluctance to establish physical touch, and poor eye contact.

An successful icebreaker requires thefollowing conditions:

- A pleasant setting with a relaxed vibe.
- Participants should dress comfortably.
- A great facilitator or leader who is familiar with the icebreakers.
- Directions that are simple to follow and are concise and clear.

Clear explanations must be given, and group growth must be encouraged. An identical icebreaker exercise may result in a wide range of experiences and outcomes when it is performed with various groups.

Start Accelerate Slow down L

Aim: The purpose of this warm-up exercise is to increase children's movement skills and focus their attention through movement when starting an activity.

Age: 6-8 or 9-13 years old.

Duration: The game lasts for 20 minutes.

Instructions:

1. Stand up and form a circle.

2. Give the instruction: Now I will give you some movements. First, we will perform these movements at normal speed, then very fast, and finally in slow motion.

3. Application: Let's run. Let's run very fast. Let's run in slow motion. / Let's jump. Let's jump very fast. Let's jump in slow motion. / Let's walk. Let's walk very fast. Let's walk in slow motion. / Let's flap our wings like a bird. Let's flap them very fast. Let's flap them in slow motion. / Let's swing left and right. Let's swing very fast. Let's swing in slow motion. / Let's stamp our feet. Let's stamp them very fast. Let's stamp them in slow motion.

Note: The movements in the warm-up exercise can be varied by the facilitator. Before giving a new instruction (from one movement to the next or from slow to fast), children should be given some time to perform each movement.

Play musical statues L

Instructions:

Players stand in an area, usually a dance hall and wait for music to start to play (controlled by the game master / judge). When the music starts the players should dance to the music, the more spirited the better. The game master will then stop the music at a random point. When the music has stopped all players should freeze. The judge then walks among the players and watches to see who is still moving or doesn't stop fast enough, those people are called out of the game. Play continues until there is only one person left (the winner).

Team-building activities

Team-building activities bring the group together, help control group dynamics, and teach participants to work together as a unit.

Problem-solving as a team is another skill that can be developed through team building activities. Team members can decide when an issue arises and how to solve it together. They are also known as group-dynamic activities, and they focus on the dynamics of interpersonal relationships.

The Numbers Game M

Duration: The game lasts for approximately 10 minutes.

Instructions:

1. Participants are paired in groups of two, and each pair positions themselves face to face.

2. They are asked to count with the numbers 1-2-3 in a way that each person says one number in turn. After the number 3, they start again with the number 1. This is played for an average of two minutes.

3. Participants are then asked to clap their hands and count the numbers 2 and 3 verbally instead of 1 while counting. This is played for an average of two minutes.

4. Next, participants are asked to clap their hands for 1, snap their fingers for 2, and speak the number 3 while counting. This is played for an average of two minutes.

5. Participants are asked to clasp their hands for 1, snap their fingers for 2, and hold their noses for 3. This is played for an average of two minutes.

6. At the end of the game, participants are asked to applaud all the groups.

Bed sheet ping pong L

Instructions: Players stand and hold a bed sheet on opposite ends.

A ping pong ball is placed onto the sheet.

The sheet is then raised or lowered.

The object of the game is to get the ping pong ball to fall off the other team's side of the sheet.

Role playing

Role-playing games are activities that can be utilized for a variety of goals, including energizing, introducing topics that are challenging to address if they are approached individually by the participants, and creating engagement using game-like features.

In role playing game participants are asked to put themselves in another person's shoes rather than being constrained by their own experiences. This has several benefits, including increased freedom of speech, the ability to see challenging situations objectively, and also it fosters more empathetic behaviors toward those who may not be members of the group. Role playing games are a popular way of engaging participants more, and introducing them to topics and situations that might not be possible for them in real life.

Fruit Eater Wolf L

Wolf Eats Fruit is an outdoor game to play with kids. In the game, a child will play the wolf while the others choose a fruit, without telling the wolf. The aim of the game is not to get caught by the wolf.

Instructions:

One child plays the wolf and stands to one side. The other children play fruits and stand in a line in front of him. The fruit think of the name of a fruit. The wolf says "toc toc" (to indicate knocking). The fruits answer "who is it?" The wolf names himself "I am the Fruit eater wolf!" Children ask him what fruit he wants. The wolf then names a fruit and the children who were that fruit run around the line of "fruits" to get back to their spot in line without being eaten by the wolf. If the wolf catches one of the fruits, that child becomes the new wolf.

Variants:

A variant of the game can be to say the word "fruit salad": in this case all the children will have to run to save themselves from the wolf.

Witch says colour L

Witch commands colors is a famous game suitable for children that can be played in two versions, one suitable for outdoors, one that is also suitable for execution indoors.

Players:

The number of players required can vary from a minimum of five participants to a maximum of thirty.

What you need:

To play the outdoor version, no tools are required except a large space full of things or objects that can be indicated. In the version that can also be played indoors, a card or sheet of paper and a pen with which to write on it are needed.

Instructions:

In the first version, the outdoor one, it is decided which of the children will play the role of the witch. He will have to indicate to the rest of the participants a color of his choice and they will run in search of this specific color represented by any object or garment (their own clothes are not valid). For example, if the witch commands the color red, the children will have to run and indicate, for example, a red watering can, a red flower, another child's shirt, etc. Anyone who can't find any object of the corresponding color is captured by the witch who makes him sit in her prison. The last child remaining in the race wins. The second version is instead also suitable for closed rooms. Also in this case a witch will be chosen who will have to command a color. After the command, each child, who has previously been given a sheet of paper and a pen, will have to write, within a set time, a list of objects of the color or representing the color chosen by the witch. For example, if the witch commands the color blue, they will be able to write sky, sea, smurfs, etc. on the sheet. Each exact name matching the color is worth one point. After scoring, a new one begins for each run. Whoever has the most points wins.

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Children with Disabilities (i.e. autism) and Sport Psychology

According to World Health Organization (WHO) autism spectrum disorders (ASD) encompass a range of conditions marked by challenges in social interaction and communication, alongside distinctive patterns of activities and behaviors. These may include difficulties in transitioning between activities, a tendency to focus on details, and unconventional reactions to sensations. Characteristics of autism may be detected in early childhood, but autism is often not diagnosed until much later(World Health Organization, 2023).

It is estimated that worldwide about 1 in 100 children has autism (Zeidan et al., 2022). According to WHO, Collaboration between the health sector and other sectors, particularly education, employment, and social care, is important. Interventions for people with autism and other developmental disabilities need to be designed and delivered with the participation of people living with these conditions. Care needs to be accompanied by actions at community and societal levels for greater accessibility, inclusivity, and support. All people, including people with autism, have the right to the enjoyment of the highest attainable standard of physical and mental health. Nevertheless, autistic people have higher rates of unmet health-care needs compared with the general population. They are also more vulnerable during humanitarian emergencies.(World Health Organization, 2023).

In our project, we take into account pandemic and its effect on children with disabilities(cwd). Regarding pandemic, it has created serious challenges for cwd community, especially for parents. Cwd(s) not only largely deprived of educational opportunities, but also found their access to indoor and outdoor venues for physical, social and sports activities suddenly restricted. Indeed, outdoor spaces play a crucial role in the social and physical adaptation of cwd(s)(Yazıcı et al., 2023).

Numerous children with autism spectrum disorder (ASD) encounter difficulties in mastering the social and communication skills essential for active participation in a group setting. These challenges may manifest in various forms.

- Could struggle with understanding and employing language in suitable ways.
- Might face challenges in choosing and concentrating on pertinent or crucial information, particularly when instructions are given in a group.
- Could encounter issues in processing unfamiliar or novel information.
- Might feel disoriented during group activities that lack predictability or a routine.

According to movement specialists (Lee and Schmidt, 1999), there are three stages to motor learning: (1) the cognitive phase; (2) the associative phase; and (3) the autonomous phase(Lee & Schmidt, 1999).

The cognitive phase involves students who are in the early stages of understanding the steps necessary to accomplish a specific objective, such as striking a ball with a racket or using the inside of the foot to tap a ball, or maintaining balance on a bike. Through thoughtful consideration and experimentation, motor strategies are formulated to attain these goals, and children test them out. Successful strategies are integrated into the child's repertoire, while unsuccessful ones are discarded.

The associative phase, which constitutes the lengthiest stage, involves children honing their movements to enhance efficiency and effectiveness in attaining their goals. This period is particularly crucial for the benefits of effective coaching to become evident. Many novice athletes may not be cognizant of the subtle adjustments needed in body positions or the timing of movements for skill mastery. A perceptive coach can identify these instances and provide relevant guidance to assist students in developing self-monitoring skills, expediting the improvement of motor skills.

The autonomous phase marks the ultimate stage in which children attain a level of autonomy. This implies that they can execute a task automatically, requiring minimal cognitive focus on their body movements. Accomplished athletes may encounter this state when, for example, kicking a soccer ball or swimming in a pool. Achieving this final stage of development often demands years of consistent and repeated practice to refine a skill. In many sports, athletes typically revisit all three stages or transition between them as they persist in enhancing their performance.

In order to encourage children to participate to sport, sport psychologist also designed environment for the children(Dalrymple, 1995). This design is consisted with Darlymple's temporal procedural, spatial and assertion design.

For temporal section we used "timers and schedules" for activities. This helped the start and end of each activity. We also used "First, Then" in order to verally and/or visually indicate to be activity to be done.

For procedural, we also followed structured schedules like a difficult skill into smaller pieces. Then, we provide caregivers and children to "rule or behavior scripts" to help to manage their behaviors.

For spatial, we divided spaces like using a column in all field. We also create a space for children who feel anxious during games.

For assertion, we encourage children to independence realize their desired sport activities like basic ones.

What we also did regarding academic advice on above;

Regarding children's special situation, we mainly worked with families and trainers. For families we offered them to psychological counselling, if they need. We also shared mobile numbers of in any case of emergency. Furthermore, in our city (Şanlıurfa), there are many transportation vehicles for people. On the other hand, they need to use 2 buses to reach sport facility. When they start to their journey from their homes it takes 2 hours to arrive. They also need 2 more hours, when they go back to their homes. In order to shorter this period, we offered them a shared service car for all children and their caregivers.

In Şanlıurfa culture, families generally have at least 3-4 kids. They don't have other caregiver (e.g. parent, father, etc.) except mother in home; so caregiver (i.e. mother) should take ordinary siblings to each session. In some of interviews with families, they told that ordinary (s)he couldn't understand his/her sibling disability. Cwd need to be socialize regarding their

developmental process. In order to realize this, we included their one sibling to project. Therefore, we prompt cwd with their sibling.

In our project file, we set 40 children up to take each piloting. When we are implementing project, we decided to divide them to group from 4 to 6 children. Therefore, each children have opportunity to reach socializing and playing together opportunity. When we're dividing them to groups sport psychologist, sport physiotherapist and physical education teacher assigned them to groups. Each participant was assigned a same/closest group with their situation.

Regarding Turkish culture, cwd goes everywhere with their caregivers. The begininnin of the implementation, their caregivers stayed so close to children and watched them. They didn't cut eye contact with their children. So, sport psychologist suggested them to stay another place in facility, therefore, trainer just focused on the training. Even, cwd can focus on their training and socialization process.

Beyond, we realized each piloting in two sections. In first we started them inside. Because we have no idea about cwd's reactions and readiness of sport. Because last summer was hottest summer in the world. First piloting started in summer, too. (Because Turkish applicant have experienced earthquakes and need to find a safe place. Schools were closed and people goes other provinces to save their lives.) Then, we implemented games outside. We did this, due to our project is first sport project for cwd in Sanlıurfa under Erasmus+ Sport Programme.

While engaging in sports activities, children were provided with T-shirts, shorts, shoes, hats, bags, and socks as they appear in the project file, with the aim of enhancing their commitment and ensuring access to resources. This indirect commitment has contributed to promoting both commitment and the promotion of EU projects. The provision of these items also emphasizes equality among athletes.

Trainers

We employed two trainers for sport activities. In order to, realize activities we divided children as groups and from 4-6 people.

They have experiences about children with autism. One of them is has 5-year experience about children with disabilities. Other one is also having experience about children with autism experience. In Sanliurfa local, it's too limited to find a well-trained sport trainer/physical education teacher for children. We have job announcements about children with disabilities during years, however no one applied. So, we have found our trainers difficulty.

We have talked with caregivers of cwd. Its normal for them because in our local because this kind of sport project targeting cwd have never realized.

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Physiotherapy In Children with Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) is a neuro-developmental disorder characterized by developmental retardation, decreased coordination, balance, strength and postural control, as well as impaired social interaction and communication skills (Fombonne, 2003). Autism can manifest very differently for different people, it is important for families to support the child's development with appropriate therapies, specialists for therapeutic intervention (Rinehart et al., 2001)

Daily movement (lying down, holding, walking, eating), activity (running, jumping, throwing) and play are a complex interaction of neurocognitive processes, sensory processes and reflexes (John et al.,2018) Autism (ASD) often affects these areas and results in motor difficulties, which can lead to reduced participation with peers, reduced opportunities for social interaction, social development, motor development retardation (MacDonald et al.,2013). A recent study states that subtle motor control deficiencies limit normal cognitive and social development due to a reduced opportunity to explore and interact with others and the environment (John et al.,2018).

Studies have shown that children with autism often experience anxiety problems, which can be exacerbated if children experience difficulties with balance skills, as this condition is associated with increased anxiety and stress levels (Kim et al., 2000). This leads to avoidance of activities and reduced opportunities to develop motor skills. It has been shown that anxiety changes sensory processes, which reduces social and communication skills and limits the child's ability to interact with peers. Therefore, the development of balance and gross motor skills provides an opportunity to improve emotional regulation and increase participation (Horslen et al.,2011)

Children with autism participate less in physical activities than their peers of the same age, their physical activity levels are usually low. There are various reasons for this;

Hypotonia (Low Muscle Tone): This can cause increased fatigue with physical activity, games and sports, which can reduce the desire to participate in activity and limit opportunities for development, skill acquisition and development of gross motor strength, endurance and gross motor skills (Paquet et al. Nov., 2017).

Motor Planning Problems (Planning, Sequencing and Dyspraxia): Motor planning is a skill that allows us to coordinate our body to complete physical activity, it is necessary to complete movement, there are usually problems with the "quality of movement" or the movement seems "clumsy". it may be a sign of problems with engine planning. Motor planning is necessary for the fulfillment of daily tasks such as tying shoelaces, eating, brushing teeth, wearing clothes, and participating in sports, running, playing, and activities (Fournier et al.,2010).

Decaying Balance and Postural Reactions: Balance control is a complex interaction between information processing, motor planning, timing and sequencing of movement. Problems

with balance and postural control/reactions limit a child's sense of self, confidence, and ability to participate in activities and sports (John et al.,2018).

Pediatric Physiotherapy may include:

Exercises, activities and games that target specific muscle groups, control, motor endurance, balance, coordination and postural control.

Sensory feedback aimed at improving neuromuscular development, body control and confidence.

Gross motor skill training, which uses techniques such as trackwork to break down a movement into more accessible parts and then improve the movement as a whole.

Spatial awareness and orientation exercises

Using various environments to improve social trust and sensory regulation.

Activities that can increase confidence, self-esteem and enjoyment of movement and activity

(Rinehart et al.,2001; John et al.,2018).

Autism or autistic disorder is just one of the categories that define developmental disability under the heading of “Autism Spectrum Disorders” or “Pervasive Developmental Disorders”. Autism is characterized by communication problems, social interaction problems, and limited/repetitive interests and behaviors that occur during the first three years of life (Emmons et al.,2005). Social and behavioral deficiencies may be a risk factor in children with autism spectrum disorders whose activity level is low. Children without autism play games with their peers, go to school, or participate in team games, but children with autism may show difficulties in making eye contact, showing interest in social games, communicating, making friends, and participating in physical activity (Reid et al., 2005). Successful participation of children with autism in general physical activity programs causes them to be physically inactive due to the above-mentioned characteristics (Sandt et al.,2005). Individuals with autism usually have difficulty participating in physical activity due to difficulties in self-control, generalization and planning, low motivation and poor motor functions. Individuals with autism spectrum disorder may exhibit significant deficiencies in gross and fine motor skills. These motor difficulties may be related to motor planning problem, muscle weakness or sensory functioning (Yanardag et al., 2009).

Physical activities, games that include adapted exercise programs, may be more interesting for individuals with autism. Many benefits of participating in physical activity of individuals with autism spectrum disorders are shown, such as reducing self-stimulating behaviors, increasing appropriate responses, and having potential opportunities for social interaction (Todd et al., 2006).

Children complete their motor development and learning processes with the stimuli they receive from the physical and social environments they are in. But it is argued that the

physical activity levels of children with autism are low due to the fact that their needs, such as social organization, cannot be adequately and correctly provided by society. Rather than the usual inadequacies of individuals with autism, there are limitations in supporting opportunities for physical activity and lack of interaction with society (Pan et al.,2006). It is stated in the literature that children with autism in developmental periods experience sensory and motor difficulties (Baranek, 2002). Reid (2005) stated that individuals with autism have difficulty in self-observation, difficulties in planning and generalization, and often do not want to participate in physical activity due to reluctance and poor motor functions.

As a result of a planned study to determine the effects of different adapted exercise programs on the physical fitness levels of children with autism, it was found that a long-term and adapted exercise program improves physical fitness (Yanardag et al., 2009).

Developmental delays can affect the gross and fine motor skills of children with autism. The goals of physiotherapy are to create teamwork with parents, clinical physicians and other multidisciplinary team members. The role of the physiotherapist is to take care of children with autism who have motor disorders in the body (for example, problems with respiratory control and coordination level, posture disorders, musculoskeletal problems, etc.) (Novakumar, 2017).

Physical therapists also deal with rehabilitation after injuries, when a child may be injured due to an injury. However, physiotherapists need to take the diagnosis of autism into account when designing treatment sessions. This is because most of the physiotherapy sessions are very structured by nature. Teaching them to be comfortable and competent in their bodies is an important part of the treatment (Jebakumar,2017).

Children with autism may experience retardations in their motor skills and movements. Many of these coordination problems, combined with communication, social skills and behavioral problems, can lead to more complex learning difficulties in later development, such as playground and sports skills (Jebakumar, 2017).

Exercise-based physiotherapy treatments include age-appropriate physical and motor skills such as jumping, hand clapping, skipping, jumping and throwing, kicking or catching balls (Huang et al., 2020).

Research conducted by Kopp indicates that children with ASD have more motor coordination problems than girls in society. Motor coordination problems have also been associated with a decrease in daily living skills. These results confirm that poor adaptive daily skills are associated not only with social, communicative and attention disorders, but also with motor difficulties (Kopp et al.,2010) Cairney et al (2005) found that children with autism are less likely to be physically active.

It has been suggested that a better designed Physical Education curriculum is needed for children with neuropsychiatric disorders that promotes the development of motor skills, a sense of self-efficacy and physical fitness (Chann et al.,2009).

The United Nations Sustainable Development Goals (2007) state the importance of early childhood development to ensure that children reach their full potential, physical development is a top priority and is a critical component of growth. It is widely accepted that children should perform basic motor skills such as locomotor (running and jumping), balance (standing on one leg), object control (catching, throwing and kicking) and fine motor tasks (Robinson et al.,2015). For example, motor skills are said to form the basis of sports-specific skills, predict physical activity participation, and are linked to cognitive outcomes. (Robinson et al.,2015). Also, a deficiency in motor skills can lead to the presence of a developmental or medical condition that requires special interventions (Poon et al.,2010).

Children with autism have poor motor performance, so it is recommended that early intervention programs focus on their motor development. Physiotherapists can encourage the learning of functional motor skills to help the child compensate for motor skill disorders (Johnson, 2007).

Physiotherapy treatments and education for children with autism are important because of the motor-related difficulties they face during their developmental period. Treatments have been successful in improving and reducing the severity level of poor muscle controls, which leads to many other consequences when they grow up if left untreated.

Physiotherapists should conduct play-based therapy/exercise interventions in which they can teach children about postural control, balance and November development. This will lead to better outcomes for many children with autism in the future (Johnson, 2007).

Figure 1: https://australian.physio/

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Nutritional Approaches In The Treatment Of Autism Spectrum Disorders

Autism Spectrum Disorder (ASD), originally termed 'infantile autism' by Leo Kanner in 1943, is characterized by permanent deficiencies in understanding or self-expression, negatively impacting social life. This disorder includes deficiencies in verbal communication behaviors and indicates a difficulty comprehending and analyzing complex events. It is defined as a Spectrum disorder. The basic physiopathology of autism has not been resolved, but it is the subject of many theories related to genetics, psychology, neurology, the immune system, and the biological system (Özlü Fazlıoğlu, 2004).

Symptoms of Autism Spectrum Disorder can generally be observed before the age of 3 and persist throughout a person's life (Biçer et al., 2013).

Feeding problems are common in children with autism, and behaviors such as difficulty chewing, food selectivity, and obsessive eating are frequently observed. Nutritional searches for solutions to these problems continue, with nutrition being just one aspect of the challenges experienced by parents.

While nutritional problems, such as eating less or making specific food choices, can be resolved over time in children undergoing normal development, addressing these issues in children diagnosed with autism spectrum disorder (ASD) may require a challenging and exhausting process. Nutritional problems, such as excessive food consumption, incomplete physical digestion (not adhering to the ideal number of chews, i.e., 40 times), and avoidance of new foods by staying away from food variety, are not considered part of normal development. Research indicates that these feeding problems are seen in 25% of progressing children (Lindberg et al., 1991) and in 89% of children diagnosed with ASD (Ledford and Gast, 2006).

The most common feeding problems in children diagnosed with Autism Spectrum Disorder (ASD) include resistance to variety and innovation in food consumption, consumption of a limited number of food items, creating the impression of vomiting during food consumption, throwing food items out of the mouth without a pathological or medical reason, rejection of some food items due to hypersensitivity to sensory stimuli, and undesirable food consumption associated with color, size, and food structure (Marshall et al., 2014).

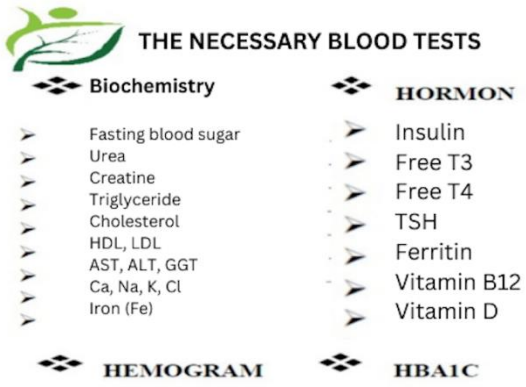
Various techniques are employed to help children overcome feeding problems, and one of them involves starving the child until they become willing to eat. However, it's crucial to note that this technique may have dangerous consequences in children diagnosed with Autism Spectrum Disorder (ASD) because feeding problems in these children may have pathological, medical, or behavioral roots. Some situations trigger feeding problems in children diagnosed with Autism Spectrum Disorder (ASD), leading to these issues becoming permanent. Children with ASD may exhibit behaviors such as heightened or diminished interest in sensory areas (temperature, taste, touch, smell, and sound), which may cause them to refuse certain nutritional items.

It would be useful to find answers to some questions to understand whether children diagnosed with autism spectrum disorder (ASD) experience feeding problems and to make decisions about the appropriate course of action. These questions can be listed as follows:

1. Does eating less for an autistic child cause nutritional problem?
2. Are there any medical conditions that may affect nutrition?
3. Are there behavioral or developmental conditions that may affect nutrition?
4. What should be done in case of medical and behavioral problems?

Considering the answers to the questions above, decisions can be made about seeking support for the nutrition of children diagnosed with autism spectrum disorder (ASD).

The Relationship Between Autism and Nutrition



When organizing the nutrition system for children diagnosed with Autism Spectrum Disorder (ASD), it is crucial to strive to create a program that supports their living standards and physical development to the maximum extent, taking into account the specific characteristics of each child. For this reason, obtaining detailed information about their metabolism through a blood test becomes a fundamental necessity. The figure indicates the necessary blood tests to obtain clear data that will guide us regarding the metabolism of children diagnosed with ASD.

To determine the ideal nutrition method for a child diagnosed with Autism Spectrum Disorder (ASD), current data on blood values is obtained, and a diet program is created under the guidance of the parent.

Extra attention should be paid to the consumption of certain food groups during the nutrition of children diagnosed with Autism Spectrum Disorder (ASD). Here are some things to know about cooking, serving, and the frequency of consumption:

- **Meat:** It should not be too lean and should not be overcooked.
- Red Meat: Grazing animal meat, traditional sausages, roasted meat, pastrami, etc., are consumable. Salami and sausages should be avoided due to their additives.
- **Offal:** Very useful, but attention should be paid to nutritional safety when consuming.
- **White Meat:** Village chicken and other poultry should be consumed.
- **Egg:** It is the highest quality protein source. Prefer village eggs, and 1-4 pieces can be eaten per day.
- **Vegetables and Green Leafs:** All types are edible; they should be consumed mostly raw. Dark green leaves are rich in vitamin K, calcium, and magnesium and also contain Omega-3 fatty acids. Wild herbs (mallow, sorrel, nettle, purslane, labada,

etc.) can be consumed as they grow naturally. Purslane is the most important source of Omega-3 among vegetables.

- **French Fries:** Should definitely not be consumed. A small amount of potatoes can be added to vegetable dishes (high sugar content).
- **Garlic:** One of the most important foods that protect cells from rust (antioxidant). Since it contains sulfur compounds, it also helps excrete heavy metals.
- **Fruits:** Fruits containing phenols such as apples, grapes, and strawberries should not be consumed in excess. Fruits with high sugar content, such as apricots, grapes, and bananas, should also be eaten in moderation. Fruits with less sugar are more edible (prefer fresh ones). Care should be taken to ensure that dried fruits are not moldy.
- **Milk and Dairy Products:** Cow and sheep milk and products (yogurt, cheese, etc.) should not be consumed. Kefir or yogurt juice made with these milks can be eaten. Goat milk and its products are allowed (yogurt, cheese, kefir).
- **Legumes** (chickpeas, beans, lentils, peas, black-eyed peas, etc.) should not be consumed more than 2-3 times a week.
- **Soy:** Reduces protein digestion and absorption of calcium, iron, and zinc from the intestine. It disrupts thyroid hormone synthesis and can lead to early puberty symptoms, infertility, and menstrual irregularities. Individuals with autism should not consume soy.
- **Nuts** (walnuts, hazelnuts, peanuts, sunflower seeds, pumpkin seeds, almonds, etc.): They contain rich amino acids (tyrosine, tryptophan, phenylalanine, etc.) and minerals (zinc, selenium, magnesium, etc.). Consuming 1-2 handfuls (about 25-50 grams) per day will be very beneficial.
- **Fats:** Fat restriction is harmful to the body. Contrary to popular belief, foods that are low in fat and therefore high in sugar make people hungrier and fatter.
- **Margarine:** Absolutely prohibited!
- **Olive Oil:** It should be the first choice when consuming or using oil.
- **Butter:** It should be the first choice when consuming or using oil. If possible, the oil of free-grazing animals (village butter) should be preferred.
- **Urfa Oil:** Like butter.
- **Tail and Tallow:** Useful like butter.
- **Fish Oil:** Contains a large amount of Omega-3 fatty acids. Omega-3 fatty acids (EPA+DHA) are very low in children with autism, and they should use 1500-3000 mg of active fish oil (EPA+DHA) per day. Fish oil does not make you fat. It can be used in summer and winter. Cod liver oil should not be used in summer because it contains vitamin D. Otherwise, vitamin D deficiency may occur.
- **Flaxseed:** The second important source of Omega-3 after fish oil.
- **Cereals and Flour Foods:** Three-quarters of children with autism have high levels of morphine compounds related to gluten, a wheat protein. For this reason, grains such as wheat, rye, and oats containing gluten and their products (bread, cake, cookies, bulgur, pasta, noodles, tarhana, flour soups) should not be consumed. Products made from corn and rice and gluten-free flour are allowed. Genetically modified corn should not be eaten. Rice, gluten-free flour, and corn should not be consumed

excessively as they increase insulin resistance due to their high amounts of rapidly absorbed sugar.

- **Salt:** The salt naturally found in foods meets our body's needs. A small amount of salt can be added to casserole dishes.
- **Spices:** They are very useful in terms of the vitamins, minerals, and antioxidants they contain.
- **Probiotics** (Beneficial microbes):
  - The flora is disrupted in most children with autism.
  - In these individuals, pathogenic bacteria (especially clostridia), fungi (especially Candida, the thrush fungus), and parasites reproduce excessively. These pathogenic microorganisms disrupt the digestion of food and cause the formation of various toxins.
  - A diet that is low in flour and sugar and rich in natural foods such as vegetables, fruits, meat, and eggs will not disrupt the protection of the intestinal flora.
  - Fermentation products (pickles, kefir, cheese, wine, boza, vinegar) increase the probiotics in the intestinal flora.
  - Probiotics in non-sour market yogurts and pasteurized milk have been largely destroyed.
- **Sugars:** Refined sugars (tea sugar, fructose, etc.) and foods made with them (cake, biscuits, wafers, baklava, revani, kadayıf, etc.) should be greatly reduced.
- **Chocolate:** Chocolate consumption should be reduced in those with high copper levels. Medium-sized, dairy-free (dark), and high-quality chocolate can be eaten once a week. Those with normal or low copper levels can consume more chocolate. One of the most important positive features of chocolate is that it is rich in magnesium.
- **Honey:** One or two teaspoons can be eaten a day. Ordinary honey, all kinds of honey, and jam should not be eaten as they contain excessive sugar. At least 95% of honey on the market is unnatural. Molasses made with the fruit's own sugar can be eat.

- **Sweeteners:** Diet products made with these should not be eaten. Particularly, aspartame (found in Canderel®, Sanpa®, Aspartyl®, Diyet-Tat®, Nutra-tat®, diet cola, sugar-free gum, many diet foods) can lead to many side effects, including depression.

Particularly Recommended Nutrients (Antioxidants)

- Lentils, beans, chickpeas, green beans, peas, etc.
- Walnuts, hazelnuts, peanuts, almonds, etc.
- Citrus fruits, apricots, black mulberries, cranberries, cherries, sour cherries, currants, red and black grapes, and other fruits.
- Cabbages, cauliflower, spinach, chard, radish and beet leaves, turnips, mustard leaves, mint, parsley, etc., as well as wild edible herbs.
- Garlic, onion, leek.

Cooking Method

- Food should be cooked slowly in its own juices; In addition to traditional methods (steaming, steaming), turbo ovens can also be used. Thus, nutrients are not damaged much.
- Fast cooking methods (such as microwave) cause nutritional losses; They can also be carcinogenic.
- Do not consume too much frozen food.
- If possible, do not eat canned foods (except home canned foods).
- Do not wrap hot foods in aluminum foil.
- Cooking Utensils
    - Prefer clay casserole, glass or copper pots.
    - Enamelled and steel cookware are the next choices.
    - Teflon and aluminum should never be used.
- **Frequency of Eating:** At the beginning of the diet, one should eat more frequently as blood sugar may drop. Within 1-2 weeks, your insulin will be corrected and 3 meals a day (4-5 meals for children) will be sufficient. Chew the bite thoroughly!
  Have a strong breakfast in the morning; Let the dinner be light. Divide meal amounts approximately as follows. Morning (3), noon: (2), evening: (1) or morning (2), mid-morning (1). Noon (1), afternoon (1), evening: (1). If possible, do not eat after 19.00-20.00 and do not sleep on a full stomach.
- **Movement:** You should walk fast or run slowly for at least half an hour a day and climb the stairs in pairs . Physical exercises should be done for at least 3-5 minutes a day . Movements that make you tired should be avoided. Exercise weight should be increased gradually. Do the exercises you can every day. Increase the oxygen in your cells by breathing deep fresh air. Movement and deep breathing increase the blood supply and functions of the brain.
- **Sunbathing:** Vitamin D protects against bone diseases, rheumatic diseases, cancer (including skin cancer !) and various chronic diseases. When sunbathing in a swimsuit in summer, do not stay in the sun for too long at first (especially between 11.00-13.00). Sunbathe properly. Blood vitamin D levels (Normal: 40-100 ng / mL) are usually low in autistic children. After blood levels are normalized, 2000 Units of vitamin D should be used per day.
- **Sleep:** If possible, go to bed before 22.00. Do not sleep less than 5 hours and more than 9 hours. Remember that your stomach must be empty for a good sleep.

Sources of Mercury

- Exhaust gases
- Pesticides
- Amalgam dental fillings
- Drinking water
- Felt
- Ear and nose drops
- Some vaccines (mixed, hepatitis, flu)
- Contact lens solutions

- Fabric softeners
- Sea products
- Talcum powder
- Cosmetics (Mascara)
- Wood protectors
- Floor polishes and waxes

Lead Sources:

- Exhaust gases emitted by motor vehicles
- Water delivered to our homes through lead pipes
- Persistent lipsticks
- Vinyl school bags
- School supplies
- Wall paints
- Textile dyes
- Toys
- Selenium Sources
- Nuts in shell
- Meat
- Egg
- Liver

Forbıdden foods

- Foods containing milk and its derivatives (yogurt, cheese, etc.). Those made with goat's milk are edible.
- Soybeans, wheat, barley. Breads, noodles, pasta, noodles, tarhana, flour soups made from oats, rye, and flours (wheat, barley, oat, rye flours).
- All kinds of desserts made from wheat flour and cut phyllo (baklava, flour and semolina halva, kadayif, tulumba dessert, etc.).
- Meatballs stuffed with stale bread and minced meat dishes filled with bulgur.
- Vegetable wraps and stuffing with bulgur, dried fruits.
- All seafood (including those grown in the pond). Sea bean, chlorella, and spirulina can be used.
- Chips.
- Do not consume soybean oil and margarine; reduce sunflower and corn oil.

Free foods:

- Goat milk and products (yogurt)
- Butter, cream
- Red meat, poultry, traditional pastrami, sausage
- Egg
- Rice pilaf, breads, cakes, buns, etc., made from rice flour, gluten-free flour, or corn flour.

- Dry beans, including potatoes, soups made from free grains (plain and with broth)
- All kinds of vegetables and fruits
- Molasses, honey, jam, marmalade
- Animal fats, olive oil
- Nuts [URL 1].

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