

Introduction

A modular based Physical Education methodology of sport activities, sport games and exercising for children with intellectual disabilities

One of the greatest values of modern society is to provide equal opportunities for all children to get involved in education and other important social activities. The project Sport for Every Child: Fit Kids encourages social inclusion and equal opportunities for children and youngsters with intellectual disabilities in sport activities. One of the main objectives of the project is the development of a modular based Physical Education methodology of sport activities, sport games and exercising for children with intellectual disabilities.

The methodology can be seen as a guide for teachers, volunteers in sports clubs and others working with young people with intellectual disabilities. This guide includes a set of sport activities and games for the target group. A relevant set of sport activities and sport games has been identified, adapted, and elaborated to the needs of the diverse target group. This guide also contains physical activity guidelines for children and young people, recommended frequency of activities and minimum level of time spent being physically active.

The guide is intended to the following main target group: teachers, volunteers in sport clubs and physical coaches. Various individual, team sports and games have been identified as suitable for the target group children with intellectual disabilities of the Fit Kids projects. The elaborated sport programme is structured based on different types of intellectual disabilities also taking consideration on multiple disabilities and diagnosis.

The presented sport programme is specifically designed for younger children in primary education. However, depending on the abilities and development of the children and youths the sport programme can be used for adults as well. The final part of the present guide also contains some recommendations for motivation of children and their inclusion in sport. The guide is divided into different modules based on the most common intellectual disabilities and each module consists of a detailed description of 3-5 different sports which has been identified for the respective target group, meaning children and youngsters who have been diagnosed one of the intellectual disabilities. Each modules includes a description of equipment, detailed description of rules for the implementation and options for possible adjustments when it comes to the number of athletes/ players. Each step of the game, number of players, goal of the game/sport is carefully explained.

To bring the users of this guide to the same page a description of the identified intellectual disabilities is presented. The description of the four different levels of intellectual disabilities is given as well as the five most common intellectual disabilities. Thereafter the presentation of the modules and general recommendations are given.



- Introduction
- Intellectual Disabilities
- Degrees/Levels
- Common Diagnoses
- Description of the Modules
- What should you keep in mind when leading a sport activity for children with Intellectual Disability?

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Intellectual Disabilities

Intellectual disability (or ID) is the impairment of cognitive functioning, characterised by having an IQ of less than 70, given the average IQ is 100. It is also characterised by impairment in adaptive functioning where individuals experience difficulties carrying out daily activities such as communication, socialisation, and independent living. ID is a term used when a person has certain limitations in cognitive functioning and skills, including communication, social and self-care skills. These limitations can cause a child to develop and learn more slowly or differently than a typically developing child. Intellectual disability can happen any time before a child turns 18 years old, even before birth.

Intellectual disability is the most common developmental disability. According to the American Association of Intellectual and Developmental Disabilities, an individual has intellectual disability if he or she meets three criteria:

- a) IQ is below 70-75
- There are significant limitations in two or more adaptive areas (skills that are needed to live, work, and play in the community, such as communication or self-care)
- c) The condition manifests itself before the age of 18

Individuals diagnosed with intellectual disabilities tend to experience general learning challenges and may take a little longer to develop social and practical skills. Intellectual disabilities can be due to health problems, genetic conditions, environmental factors, and problems during pregnancy and birth.

Degrees/Levels

Intellectual disability is divided into the following four degrees/levels. The different severity degrees are described with typical ability levels in different ability areas in detail subsequently.

Mild

- About 85% of people with ID
- **Speech:** delayed acquisition of speech, good daily use active and passive speech competence
- Reading, writing, numeracy: main problem in school; problems in reading fluently, writing flawed; numeracy: adding and simple subtraction
- Self-determination: full autonomy in self-support in most cases, constraint through consequences of emotional and social immaturity, problems with speech could hinder autonomy
- Activities of daily living: delayed speed of development, control over bowel and bladder achieved, full independency with eating, hygiene, putting on clothes, practical and household duties can be reached, limitations in dealing with money
- Occupational skills: learnable, rather practical skills, handiworks
- Interpersonal skills: like average intelligent people, fewer problems in the sociocultural surrounding, that hardly values educational training





"Individuals diagnosed with intellectual disabilities tend to experience general learning challenges and may take a little longer to develop social and practical skills."



"Intellectual disabilities can be due to health problems, genetic conditions, environmental factors, and problems during pregnancy and birth."



Moderate

- · About 10% of people with ID
- **Speech:** considerably delayed acquisition of speech (comprehension and use), limited and variable, active verbal or nonverbal
- Reading, writing, numeracy: perhaps basic knowledge available; reading very slowly, writing very deficient, single words; numeracy: room of ten with help of fingers at best
- Self-determination: fully independent adult life rarely achieved, lifelong supervision required for some activities of daily living: delayed learning and delayed motor development; fully mobile, physically active, mostly walkable; continuous need for support possible
- Occupational skills: simple practical activities, structured, possibly with supervision
- Interpersonal skills: able to establish contacts with others and to communicate, simple social activities

Severe

- About 5% of people with ID
- **Speech:** limited speech development, less active and passive speech use, limited comprehension
- Reading, writing, numeracy: not available
- Self-determination: rely on help in most areas and the specific needs and forms of articulation are to be known to the caring environment
- Activities of daily living: delayed learning; delayed motor development, continuous need for help in almost all areas (food, body hygiene, etc.); often motor weakness or motor failures and additional physical disabilities
- Occupational skills: most basic, the simplest of activities, e.g. sorting work, assignment possible
- Interpersonal skills: simple social activities

Profound

- About 1% of people with ID
- Speech: at most: formulation of simple requirements, minimal understanding of basic requirements
- Reading, writing, numeracy: not available
- Self-determination: comprehensive need for help, little or no ability to provide for one's own basic needs
- Activities of daily living: often immobile or severely restricted with mobility and includes physical deficits, incontinent, need of constant help and monitoring, satisfaction of basic needs (food, avoidance of pain) takes up most time, with guidance low participation in domestic and practical tasks possible
- Occupational skills: most basic, simplest activities, e.g., sorting and assigning possible
- Interpersonal skills: rudimentary forms of non-verbal communication possible

Common Diagnoses

The common types of intellectual disabilities include the following diagnoses:

- Autism Spectrum (ASD)
- Down Syndrome
- Developmental and other causes
- Fetal Alcohol Spectrum disorder (FASD)
- Fragile X Syndrome (FXS)
- Prader-Willi Syndrome



Autism Spectrum is an intellectual disability affecting the nervous system and the structure and function of the brain. The disability affects the way an individual communicates, acts, learns, and interacts with other people. An individual with autism has social skills challenges, including interacting with other people, communication, repetitive behaviours, and restricted interests. Different individuals with autism can show different symptoms, making the disability referred to as a spectrum disorder. A spectrum disorder is a group of disorders with a range of similar characteristics.

Down Syndrome

Down Syndrome is not a disease or illness, it is a genetic disorder which occurs when someone is born with a full, or partial, extra copy of chromosome 21 in their DNA. Down syndrome is the most common genetic chromosomal disorder and cause of learning disabilities in children. Research estimates that from 2011 to 2015, an average of 8 031 babies were born each year in European countries and that the population of people with Down syndrome in Europe in 2015 was 417 000. People with Down syndrome can have a range of common physical and developmental characteristics as well as a higher-than-normal incidence of respiratory and heart conditions. Physical characteristics associated with Down syndrome can include a slight upward slant of the eyes, a rounded face, and a short stature. People may also have some level of intellectual and learning disabilities, but this can be quite different from person to another.

Developmental and other causes

- Sometimes an intellectual disability is caused by an environmental factor or other causes. These causes can be quite varied but can include:
- Problems during pregnancy such as viral or bacterial infections
- Complications during birth
- Exposure to toxins such as lead or mercury
- Complications from illnesses such as meningitis, measles, or whooping cough
- Malnutrition
- Exposure to alcohol and other drugs
- Trauma
- Unknown causes



"Down syndrome is the most common genetic chromosomal disorder and cause of learning disabilities in children"









FASD

FASD refers to several conditions that are caused when an unborn foetus is exposed to alcohol. When a mother is pregnant, alcohol crosses the placenta from the mother's bloodstream into the baby's, exposing the baby to similar concentrations as the mother (Better Health Channel). The symptoms can vary however can include distinctive facial features, deformities of joints, damage to organs such as the heart and kidneys, slow physical growth, learning difficulties, poor memory and judgement, behavioural problems, and poor social skills. Many cases are also often misdiagnosed as autism or ADHD as they can have similarities.

Fragile X Syndrome

Fragile X Syndrome is the most known cause of an inherited intellectual disability worldwide. It is a genetic condition caused by a mutation (a change in the DNA structure) in the X chromosome. People born with Fragile X syndrome may experience a wide range of physical, developmental, behavioural, and emotional difficulties, however, the severity can be very varied. Some common signs include a developmental delay, intellectual disability, communication difficulties, anxiety, ADHD, and behaviours like autism such as hand flapping, difficulty with social interactions, difficulty processing sensory information, and poor eye contact.

Prader-Willi Syndrome

Prader-Willi Syndrome is a genetic disorder occurring due to a problem with a part of chromosome 15. Babies born with the disability are poor feeders at infancy. Still, the feeding habit changes at the age of two, where the kids' hunger becomes insatiable, making them unable to control their appetite. The voracious hunger leads to problems such as diabetes and obesity.

Description of the Modules

Module 1

Ball sports

Basketball – Unified

- Suitable for: All kinds of kids with ID being able to independently walk.
- Goal of the sport: Basketball Unified intends to provide people with and without disabilities with the opportunity to do sports together on an institutional, structural, and personal level. All Unified Sports teams are made up of athletes and partners
- Number of players: Each 3-vs-3 Unified Basketball team will always have exactly two athletes and one partner on the court. Or you can play 5 players (A game will start with 4 players). (Accepted Athlete (A) to Unified Partner (UP) ratios: 3A/2UP, 2A/3UP, or 2A/2UP).
- Steps of the sport: During the game, a ball is dribbled and passed between teammates, to finally be thrown, pushed (dunk) or released into the raised goal basket in the opponent's half of the court.
- Each team tries to throw the ball into the basketball hoop of the other team.
- **Description of equipment:** Court measuring 28m x 15m, goals with basket-ball hoop, basketball size 3,5,6,7 depending on players age and knowledge level
- The purpose of the partners is to support the athletes and keep the game
 in the hands of the athletes as much as possible. The partner should offer
 visual and verbal cues to the athletes to keep them involved in gameplay.
 Partners cannot attempt to distract or confuse players on the other team.
 The amount of support each athlete needs from a partner will vary from athlete to athlete, so it is important that the athletes and the partners practice
 together to build this relationship beforehand. Partners are allowed to score
 points.
- The following rule modifications will be in play:
 - Running clock game time of 10-15 minutes.
 - The game may start with rock-paper-scissors for first possession (best of 1 gets the first ball).
 - One 30-second time out will be allowed per team per game.
 - An offensive player, including the shooter, may remain in the free throw area for no longer than three seconds. The penalty for this infraction is loss of possession.
 - After a team scores, the defensive team gets possession at the top of the key (three-point line).
 - If a foul is called, possession will be given to the other team.
- Detailed rules can be found here



"Basketball – Unified intends to provide people with and without disabilities with the opportunity to do sports together"





"Football is organised using simple, intuitive rules"



Floorball – Special Olympics version

- Suitable for: All kinds of kids with ID being able to independently walk
- Goal of the sport: Floorball is played with plastic sticks and a light ball and with a goalkeeper without a stick. Floorball has similarities with hockey sports and the main objective is to score more goals than the opposite team within the limits of the rules. The basic roles of the players are forwards, defenders, and goalkeepers.
- Number of players: teams of 3 3 or more players plus a goalkeeper in each team.
- Steps of the sport: Place the ball right in the centre of the court, equally spaced between both goals. I teammate from each team should approach the ball, placing their blades so that the ball is next to the centre of the blade without touching the ball yet. After the whistle, the 2 teammates go for the ball, trying to hit it back to their own teammates.
- Description of equipment: Floorball sticks, ball, goals, rink that measures 20 m long by 12 m wide, each player wears sport shoes and goggles to protect their eyes. The goalkeeper wears long pants, a long sleeve shirt, knee pads, gloves, and a mask.
- Description of rules for the implementation: Floorball is a sport which everybody can take part in, and the rules encourage quick and technical play.
 When offences are made, free hits are given for the opponents and if offences are bad enough penalties are given. Detailed rules can be found here.
- Options for possible adjustments: 4 v 4 teams competitions, 6 v 6 teams competitions, Unified teams competitions.

Football - Special Olympics version

- Suitable for: All kinds of kids with ID being able to independently walk.
- Goal of the sport: The object of football is to manoeuvre the ball into the opposing team's goal, using any part of the body except the hands and arms.
- Number of players: teams of 5-5, 7-7 or 11-11 players.
- Steps of the sport: Football is the process of four key components: Attacking, transitioning to defence; defending and transitioning to attack. Attacking is carried out with the intention of scoring goals, if the ball is turned over it requires teams to regain their defensive shape e.g., transition to defence.
- **Description of equipment:** football, goal, clothes including shoes, and shin guards. Shin guards, or shin pads, are required. They help protect the front of the leg, or shin, from getting injured and bruised. Goalkeepers often wear gloves as well.
- Description of rules for the implementation: Football is organised using simple, intuitive rules. Special Olympics Football during traditional 11-aside and Unified Football matches follow FIFA rules. However, the length of halves, substitution and overtime rules are defined by each local or national Special Olympics organisation. In 5-Aside and 7-Aside Football matches, some rule variations are: kick-ins from the touch line, throw-ins by the goalie, throw-ins by goalies cannot touch the other side of the half field until touched by a player first, and there are no off-sides. Detailed rules can be found here.
- Options for possible adjustments: E.g.: 5-a-side teams, 7-a-side teams, 11-a-side teams according to FIBA rules, Futsal teams according to FIBA rules, Unified Sports 5-a-side teams, Unified Sports 7-a-side teams, Unified Sports 11-a-side teams.

Handball – Unified

- Suitable for: All kinds of kids with ID being able to independently walk.
- Goal of the sport: Handball Unified intends to provide people with and without disabilities with the opportunity to do sports together on an institutional, structural, and personal level.
- Number of players: 7 players (1 goalkeeper + 6 court).
- Steps of the sport: Each team tries to throw the ball into the net of the other team. In Unified Handball, players with ID (called athletes) and players without disabilities (called partners) play handball together. Defenders may use their body to contact attackers to prevent them from having a clear shot at goal. Attackers attempt to break through the defence or shoot over the top of them to score a goal.
- Description of equipment: Court measuring 40m x 20m, goals with D-shaped net, handball which is small enough so that players can hold and throw it with one hand, clothes, handball wax, optionally: knee and elbow pads, ankle supports, finger tape.
- Description of rules for the implementation: The ball is almost always played with the hands. A player may stop, catch, throw, bounce, or strike the ball in any manner and in any direction, using hands, fists, arms, head, body, thighs, or knees. The player may not intentionally touch the ball with any part of the body below the knee. Detailed rules can be found here.
- Options for possible adjustments: the length of the Handball court may be modified, e.g., the length of a basketball court. Beginners and lower ability players might use a foam, air-filled ball. F5-a-side Handball, teams competition, individual skills competition.



"In Unified Handball, players with ID and players without disabilities play handball together"









Module 2

Other sports

Athletics

- Suitable for: All kinds of kids with ID.
- Goal of the sport: The most obvious objective of athletics is the development and maintenance of physical fitness. The athlete who participates in athletics will improve physically and mentally while learning activities that will maintain a high level of physical fitness.
- Number of athletes: At least 1, up to a large group of kids
- Steps of the sport: Firstly, get started with easy-to learn disciplines as running (sprint), throwing, long jump.
- **Description of equipment:** Depending on the discipline, mostly no more than suitable clothes are needed to get started.
- Description of rules for the implementation: Depending on the discipline, the athlete's ability and experience, size of the training group, various rules can apply.
- Options for possible adjustments: Each training should be adjusted to the athlete.

Boccia

- · Suitable for: All kinds of kids with ID.
- Goal of the game/sport: Boccia or Bocce provides people with ID the opportunity to have social contact, develop physically and to gain self-confidence.
- Number of players: At least 1, up to a large group of kids.
- Steps of the sport/game: Every boccia game consists of throws and end. The no. of ends depends on the no. of participating players. E.g., 2 players = 4 ends as each player gets 6 balls per end. To begin and end one team/ player throws the jack, followed by the first ball, followed by the opposing team/person.
- Description of equipment: A court measuring 12,5 x 6 m with 2m surrounding this area. The playing surface should be smooth and flat preferably made of wood, concrete, or rubber. 1 jack, 6 balls of colour, 6 balls of a different colour, if needed: gloves, ramps, and pointers.
- Description of rules for the implementation: <u>Detailed rules can be found</u> here.
- Options for possible adjustments: The rules can be adjusted to the size of the group and the abilities of the players.

Swimming

- Suitable for: All kinds of kids with ID.
- Goal of the sport: To develop the body, builds endurance, muscle strength and cardiovascular fitness.
- Number of athletes: At least 1, up to a large group of kids.
- Steps of the sport: Firstly, the athlete needs to get acquainted with water and needs to learn to swim.
- **Description of equipment:** Swimsuit, goggles, towel, optionally: arm floaties, noodles, kickboards, life vests etc.

- Description of rules for the implementation: Depending on the swimming category/technique (Butterfly, Backstroke, Breaststroke and Freestyle), abilities, experiences, size of the arena and training group, various rules can apply.
- Options for possible adjustments: Each training should be adjusted to the swimmer.

Module 3

Games

Line Dance

- Suitable for: All kinds of kids with ID
- Goal of the sport: To encourage the dancers to enjoy dance, to learn simple
 dances steps, to develop some body awareness and to move to the beat of
 the music.
- Number of athletes: 1-15 kids.
- Steps of the sport: The strongest dancer should be closest to each of the 4 walls. This ensures that the group will have a strong leader to follow.
- **Description of equipment:** A sport hall, music. Clothes: there is no dress code, dancers can wear costumes or simply come in jeans and a t-shirt.
- Description of rules for the implementation: In Line dance there are different characters of dances. In all characters, the basic steps are the same, but you dance them in different ways. The dancer needs to make sure to always stay within her/his line and be a modest elbow apart to the person next to her/him so the dancer will be respectful to all dancers on the floor.
- Options for possible adjustments: Adjust the training to the size of the group and the abilities of the dancers.
- Inspirational film

Swing Ping Pong & Volley

- Suitable for: All kinds of kids with ID.
- Goal of the game/sport: To strengthen and create new connections between nerve synapses, a voluntary, repetitive training situation is required. This means that the action will be experienced as rewarding and fun to be performed. The athlete experiences that she/he can succeed with what she/he does.
- Number of players: At least 1, up to a large group of kids.
- Steps of the sport/game: Pull down the ball and play.
- **Description of equipment:** A string, up to 240cm long will be attached onto a doorframe, roof, or gymnastic bar with a velcro.
- Description of rules for the implementation: With Bolley and Swing Ping Pong, you train and succeed according to your own conditions. The educational tools provide a repetitive and fun training where everyone gets a lot of time with a ball. The children practice their motor skills, coordination, balance, reaction, and concentration.
- Options for possible adjustments: Different strokes and various heights can be options.



"Linedance encourages the dancers to enjoy dance, to learn simple dances steps, to develop some body awareness and to move to the beat of the music."





Physical literacy

– both indoor and
outdoor – inspires
the kids to move



Physical Literacy – Indoor

- Suitable for: All kinds of kids with ID.
- Goal of the exercise: To inspire the kids to move.
- Number of players: At least 1, up to a large group of kids
- Steps of the game: The exercises should contain some of the following fundamental movement skills:
 - Body control
 - Agility
 - Balance
 - Coordination Speed
 - Rhythm
 - Locomotor
 - Running
 - Jumping
 - 5 Jumping
 - SwimmingWheeling
 - Skating
 - Okating
 - Object Control
 - Sending/Throwing
 - Receiving/Catching
 - Dribbling
 - Striking
 - Kicking
- Description of equipment: Think of any tools/obstacle that are available in the given sport hall/classroom. E.g., hurdle, bench and other gymnastics equipment, balls
- **Description of rules for the implementation:** Divide the participants into groups and let them do the parkour.
- Options for possible adjustments: Adjust depending on the abilities of the individuals and size of the group.

Physical Literacy - Outdoor

- Suitable for: All kinds of kids with ID.
- Goal of the exercise: To inspire the kids to move.
- Number of players: At least 1, up to a large group of kids, compete one on one or in teams.
- Steps of the game:
 - Make two tracks, one for kids in wheelchairs and one for walking.
 - Additional difficulties can be added, for example by having to touch two surfaces at the same time, with a wheelchair you ride with the wheels on two planks, the walking kids must have one hand and one foot in contact with both planks to move forward.
 - An additional alternative on the track is to follow a drawn line that can be crooked and with the wheels on each side of the line you navigate forward. The walking kid has a string tied between the feet which should be always stretched when walking with the feet on each side of line.
 - Other obstacles may be climbed over, for people using wheelchairs driving under obstacles in instead.
 - In the traditional shipwreck game, the person using the wheelchair may be instructed to do not touch anything other than the floor. Obstacles can be carpets, ropes etc.

- Description of equipment: obstacles that you find in your environment. Think of tools / obstacles that are in the schoolyard. E.g., shrubs, trees, rocks, fences, planks, rock rings, ropes.
- **Description of rules for the implementation:** Divide the participants into groups and let them do the parkour.
- Options for possible adjustments: Adjust depending on the abilities of the individuals and size of the group.

Disc Golf

- Suitable for: All kinds of kids with ID.
- Goal of the game: To throw the disc into the goal (a basket or some other object as a ring) and to play each hole in the fewest strokes possible. The player with the lowest total strokes for the entire course wins.
- Number of players: At least 1, up to a large group of kids.
- Steps of the game: Agree on the course, the number of holes/baskets and start to play.
- **Description of equipment:** Disc golf set consisting of various types of discs/ frisbees namely a putter, a midrange and a fairway or distance driver, a disc golf basket or some other object as a ring.
- Description of rules for the implementation: A standard round of disc golf consists of 18 holes. Most courses have 18 holes, with some courses having only 9 holes. Par 3 courses can have either 9 or 18 holes, but 18 holes is the average and is the number of holes used in professional disc golf tournaments. Detailed rules can be found here.
- Options for possible adjustments: Adjust the number of holes to your equipment and environment.

Gymnastics

- Suitable for: All kinds of kids with ID.
- Goal of the sport: To promote balance and co-ordination. Developing strength, improving flexibility. Another goal is to improve body posture. But also, the development of social skills is tightly connected with the goals.
- Number of athletes: At least 1, up to a large group of kids.
- Steps of the sport: Agree on the exercises, the number of moves and start to activate the kids.
- Description of equipment: Almost anything in a sports hall could work. However, the main apparatus used gymnastics are the floor, vault, balance beam, bars (uneven, high, and parallel), rings, and pommel horse.
- Description of rules for the implementation:
 - Have fun.
 - Be confident.
 - Understand the scoring rules if you wish to apply a scoring system.
 - Wear appropriate clothes.
 - Respect your teammates and opponents.
 - Wear not any jewellery (injury risk).
 - · Avoid deductions.
- Detailed rules can be found here.

Adjust the number of moves and exercises to your kids, equipment, environment.



Gymnastics promotes balance and coordination. Another goal is to improve body posture. The development of social skills is tightly connected with the goals.





See everyone as an individual – collect answers to simple questions that create a picture of the individual background and needs



What should you keep in mind when leading a sport activity for children with Intellectual Disability?

- To start with see everyone as an individual collect answers to some simple questions that create a picture of the individual background and needs.
- Create an understanding in the group of each other's different conditions, for example by yourself get to experience what it can be like to have a visual, hearing or movement impairment. Try to always provide options and choices.
- Create clear structure and clear routines and communicate them to the group.
- Use various simple instruments to support stability during body movements, localisation of sound and light and clarify time and pauses.
- People-first approach: get to know your participants and what works for them
- Focus on the kid's abilities and what they CAN do.
- Know their limitations and yours.
- Adaptations are for everyone and don't forget the environment.