

Guide Health, First aid and Injury prevention

Educational Material

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Introduction

“The welfare of athletes is the foremost concern to coaches in designing, implementing and evaluating appropriate practices and competitions.”

(International Sport Coaching Framework, 2013)

Purpose of this Educational Material is:

- To raise awareness about healthy development of the athletes
- To raise awareness about first aid and importance of injury prevention.
- To ensure better emergency response.
- To increase safety of players, reduce injuries and their severity

Learning Outcomes:

By using the information in this handbook, coaches will be able to:

- Understand and advocate for the healthy development and athletes’ welfare
- Understand and value the importance of the preparation and injury prevention
- Help athletes to understand the importance of the “healthy” training
- Address the important signs and introduce the preventive measures

Player's Rights

- The right to participate in sports competitions.
- The right to participate in competitions whose level is suitable to the abilities of each child.
- The right to have a qualified coach.
- The right to play as a child or teenager and not as an adult.
- The right to take part in making decisions about their sports activity.
- **The right to practice their activity in a safe and healthy environment.**
- **The right to receive appropriate preparation in order to be able to compete.**
- The right to be treated with dignity.
- The right to have fun while practicing sports.

From the perspective of the players' rights we can recognize four guiding principles, which the coaches must embrace in order to ensure appropriate athletes' behaviour and development in sport:



Image 1. Guiding principles in ensuring appropriate athletes' behaviour and development



Fairness require that the coach is open and “transparent” about **how** they make decisions.



Respect – the Coach must be a good role model and foster a culture of mutual respect and an attitude of solidarity among players through his/her own behaviour, respecting all players in spite of their differences (ability, social group, race, religion, ethnic group, country, city, etc.).



Responsibility-taking within a group is another important competence that players need to develop. Again, the coaches must be role models as it will help develop players to take responsibility if the coach focuses on the process and avoids placing focus on the end result of a game.



Safety plays a great role in athlete’s development. Coaches must prepare their plans considering the particular athletes they are working with. Activities must be suitable to each athlete.

Especially children are at risk for sports injuries because their bodies are still growing and their coordination is still developing. Many children ages 14 and under are treated for sports-related injuries each year (www.hopkinsmedicine.org).

Half of all of those injuries can be prevented with proper use of safety gear, changes to the playing environment, and by following sports rules that help prevent injuries.

Integrity, fairness and respect are the principles of fair play. With them, the spirit of competition thrives, fuelled by honest rivalry, courteous relations and a graceful acceptance of results (Fair Play).

Role of the Coach for the health and safety of the athletes



Coaches' main aim is to support athletes to achieve their goals, meet their needs, support their development, and help them grow physiologically, socially, and psychologically.

Some coaches may not fully understand the power of connecting, belonging, and relating with their athletes in the team.

Anecdotal and empirical evidence suggest that strong and healthy connections between coaches and athletes contribute to long-lasting and cumulative effects on coaches' and athletes' performances as well as mental health, safety and wellbeing (e.g., Jowett et al., 2017).

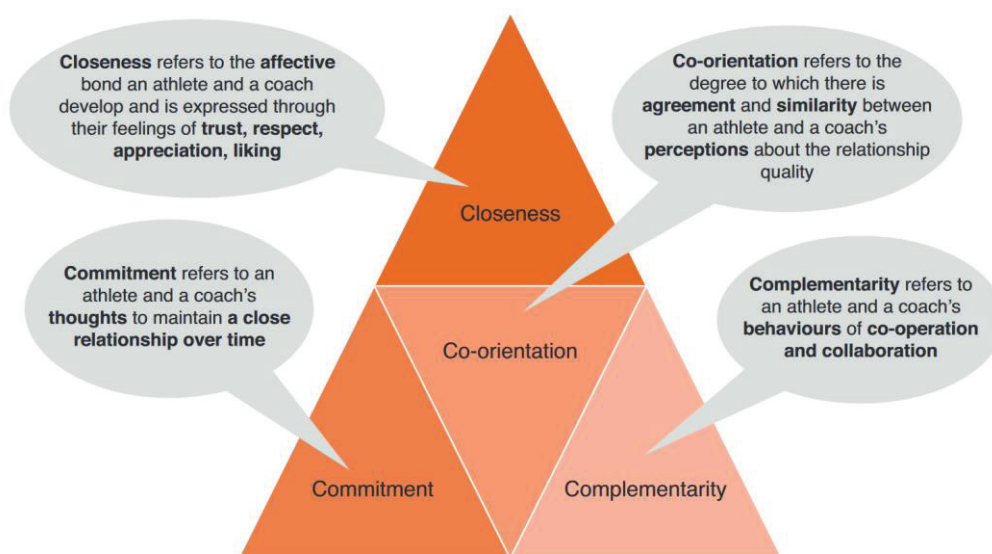


Image 2. The 3+1Cs model of quality coach-athlete relationships

Ability as a Coach



A primary responsibility for a coach is to perform the job with distinction and responsibility.

At whatever level coaches operate and regardless of their skills, experiences, and qualifications, there is always room for further improvement.

As football coach Jurgen Klopp said:

“I try everything to be as successful as possible . . . confidence is very important for a leader...If I expect from myself that I know everything and I am the best at everything, I couldn't have confidence. I know I am good at a couple of things, really good at a few things . . . I need experts around me, having strong people around you with better knowledge in different departments than yourself...That's leadership.” (Shaw, 2019 in Oakley, 2021)

Intentions as a Coach

Athletes want to be treated fairly and directly by their coaches and want to know that their coaches have their best interests at heart.



There is no room for manipulation, intimidation, bullying, hostility, or exploitation in sports.

Such situations are unacceptable and damaging for the coaches and for the athletes.

Athletes want coaches who are reliable and responsible; they want to have coaches who would help them achieve their short- and long-term goals while being safe.

For that reason, it is important that coaches spell out their positive intentions while ensuring that athletes know and understand them.

As coach Mike Krzyzewski explained:

“In my relationships, I want you to believe me when I tell you that you are great and I want you to believe me when I tell you that you are not working hard enough”
(<https://sites.cs.ucsb.edu/~mikec/cs48/misc/quotes/trust.html>).

Integrity as a Coach

Coaches that know and understand their athletes including their values, strengths, ambitions, weaknesses, and fears - can speak and act in ways that make their athletes feel safe, valued, motivated, and inspired.

Coach Lisa Alexander said:

My job is all about communicating...Saying the right thing at the right time can really motivate someone to deliver a performance that is very special...There's always a line in the sand around how you are behaving toward the people you are caring for (Gray, 2018 in Oakley, 2021).

According to this one can conclude that the coaches have a direct impact on the healthy development of the athletes.

Athletic Development: A Holistic View



What Is Athletic Development?

Often when people use 'athletic' it denotes ideas around physical, sporting, or performance dimensions whilst 'development' invokes notions of growth, improvement, and learning.

To explore this the Image 3 is used to show how four different concepts that relate to athletic development are expressed, namely: physical literacy, long-term athletic development, talent development, and youth athletic development (Oakley, 2021).



Image 3. Four different perspectives that relate to athletic development (Oakley, 2021).

Long Term Athlete Development (LTAD)

LTAD is a system of training, competition and recovery based on developmental age or maturity level rather than the chronological age of an individual.

The implementation of LTAD within any sport programme will enable coaches to develop individualized programs based upon each individual and take advantage of the critical periods of accelerated adaptation to training.

It will also ensure that athletes develop to their full potential and promote safety.

LTAD model is a 9-stage process that considers two additional stages related to the late specialization nature of Athletics.

The 9 Stages of Long Term Athlete Development (www.athletics.ca):

Stage	Chronological Age	Objectives	Important
1. Active Start Stage	Males 0-6 Females 0-6	<ul style="list-style-type: none"> To make play and physical activity fun and exciting and a daily routine 	<ul style="list-style-type: none"> Parents as Influencer Education of Parents about Importance of: <ul style="list-style-type: none"> Healthy Nutrition Daily physical activity Playful exploration
2. Fundamental Stage	Males 6-9 Females 6-8	<ul style="list-style-type: none"> To begin teaching agility, balance, coordination and speed (ABC's) To promote the importance of daily play and physical activity 	<ul style="list-style-type: none"> developing and/or maintaining an optimal range of motion first window of trainability for speed development (girls: 6-8; boys: 7-9) focus on agility, quickness and segmental speed introduction to simple rules involving safety and etiquette.
3. Learning to Train Stage	Males 9-12 Females 8-11	<ul style="list-style-type: none"> To enhance ABC's - develop overall sports skills To begin integrating physical, mental, cognitive and emotional components within a well-structured program 	<ul style="list-style-type: none"> major Stage for trainability of motor learning focus should be to continue building a general base of FUNDamental motor skills awareness of individual physical changes ideal time to introduce testing and monitoring methods
4. Training to Train Stage	Males 12-16 Females 11-15	<ul style="list-style-type: none"> To develop endurance, strength and speed To develop athletics-specific skills and fitness 	<ul style="list-style-type: none"> most challenging and critical Stage encompasses opportunity and vulnerability! Great physical changes! supervision and monitoring become critical planned training and competition modeling is introduced at the end of this stage.
5. Learning to Compete	Males 16-18+, Females 15-17+	<ul style="list-style-type: none"> To develop event specific area physical preparation To introduce event specific protocols to identify strengths and weaknesses To implement event area specialization To integrate physical, mental, cognitive and emotional development 	<ul style="list-style-type: none"> more specialization and competition. Speed, strength, aerobic capacity and power are optimized as required The athlete is introduced to the concept of the Performance Enhancement Team towards the end of this stage.
6. Training to Compete	Males 18-21 +/- Females 17-21 +/-	<ul style="list-style-type: none"> To optimize event specific preparation for competition To refine event area specialization To continue with integration of physical, mental, cognitive and emotional development To conduct event-specific testing and monitoring 	<ul style="list-style-type: none"> all physical capabilities continue to be developed along with the advancement of mental preparation to deal with the stress of high-level competitions. lifestyle education is strictly athlete-directed
7. Learning to Win	Males 20-23 +/- Females 20-23 +/-	<ul style="list-style-type: none"> To maximize event specific preparation for high performance results To introduce a formal Performance Enhancement Team To continue with integration of physical, mental, cognitive and emotional development To learn to compete when it counts 	<ul style="list-style-type: none"> athlete becomes a "fulltime athlete" and all energy and resources are directed at supporting the athlete to excel at the highest levels. The enhancement of all tactical, technical, physical and mental capabilities is maximized as required.
8. Winning for a Living	Males 23+/- Females 23 +/-	<ul style="list-style-type: none"> To maximize event specific preparation for results at the Olympic and World level To maximize of training, competition and recovery activities in support of a professional athletics career To attain competitive repeatability, when it counts To work with a professional support team To plan for retirement from athletics competition 	<ul style="list-style-type: none"> all systems, including physical preparation, testing or monitoring and others which are supportive in nature, are fully maximized and refined to ensure excellence at the highest levels
9. Active for Life	Males any age Females any age	<ul style="list-style-type: none"> To make preparations for their integration into society 	<ul style="list-style-type: none"> this Stage relates to when athletes have fully withdrawn from mainstream competitive sport. it is a critical stage to consider as high-level performers adjust to life without the high-level competitions some athletes experience difficulties adjusting to this Stage of their lives.

Youth Athletic Development

***“The goal is clear: Develop healthy, capable and resilient young athletes, while attaining widespread, inclusive, sustainable and enjoyable participation and success for all levels of individual athletic achievement. Yet, this is a considerable challenge for all stakeholders in youth sports—parents, coaches, administrators, sport governing bodies and, especially, youth athletes.”
(Bergeron et al., 2015)***

Athletic development is multidimensional and difficult to assess in youth due to the varying rates of progress and the fact that the chronological age is a poor marker of maturity status (Williams et al., 2013). In an effort to advance a more unified, evidence-informed approach to youth athlete development we are going to address all important aspects of youth development in this education material.

Growth, Maturation and Development

According to Williams, et al. (2013):



Growth refers to the increase in size of the body or its parts, measured by stature, body mass or composition.



Maturation refers to the tempo and timing of progress towards a mature biologic state and can be measured by secondary sex characteristics, skeletal maturation and age at peak height growth.

	Important Facts
Bone Growth	<ul style="list-style-type: none"> ○ As a child grows, more bone mineral mass accrual and less cartilage due to physal closure (Williams, et al., 2013; Malina, et al., 2004). ○ Accrual of bone mineral density (BMD) can be promoted by increased physical activity and reduced by excessive adiposity (Debar et al., 2006; Mughal, Khadikar, 1999). ○ Average age of peak height velocity (PHV) is 12 years old in girls and 14 years old in boys (Bexter-Jones, 2005). ○ The mean growth for children prior to the growth spurt is six cm/year and can increase to nine cm/year in girls and 10 cm/year in boys (Williams et al., 2013).
Muscle Growth	<ul style="list-style-type: none"> ○ Peak growth velocity of body mass occurs approximately one year after PHV (Jones et al., 2000). In girls, this tends to be fat mass in boys, muscle mass (Williams, et al., 2013; Malina, et al., 2004). ○ The delay in body mass development results in deferral of muscle length and mass relative to bone growth and size (McComas, 1996). ○ The increase in bone growth results in greater limb inertia, requiring more strength of the muscles to control the limb (Van Dam, Hallemans, Aerts, 2009) and a greater demand of muscles that are not fully developed. ○ Muscle length is stimulated by the growth of the bone, where sarcomeres are added in series at the musculotendinous junction and optimal fiber length remains relatively constant (McComas, 1996).
Tendon Growth	<ul style="list-style-type: none"> ○ Tendon length and cross-sectional area (CSA) increase by approximately 53% and 93%, respectively, throughout development (Radnor et al., 2018) ○ It is well known that musculoskeletal stiffness changes with high-intensity loading and unloading in adults (Kubo et al., 2000) ○ Resistance training increases musculotendinous stiffness, whereas unloading decreases stiffness (ibid).
Sensory Development	<ul style="list-style-type: none"> ○ At humans all sensory systems are developed to varying degrees already at birth. ○ Newborns are able to integrate different sensory modalities. ○ Humans require the ability to reweight sensory information appropriately, in order to refine postural control (Piek, 2013). <p>Appropriately and quickly reweighting the sensory information during a task increases with age (Quatman-Yates et al. 2012).</p>
Social Development	<ul style="list-style-type: none"> ○ An athlete does not develop in isolation—their sporting journey can be shaped by those around them (Hogg & Vaughan, 2018). ○ The importance of an athlete’s social environment is a feature in all the main psychological perspectives of athletic development (in Oakley, 2021).

Neurodevelopmental Disorders and Intellectual Disabilities

A neurodevelopmental disorder is a genetic or acquired biological process that occurs before adulthood and disrupts one or more of the expected functions of the brain, resulting in one or more common complications (Reynolds, Goldstein, 1999).

The five most common complications of a neurodevelopmental disorder include:

- 1) intellectual disability,
- 2) neuromotor dysfunction,
- 3) sensory impairment,
- 4) seizure disorder, and
- 5) challenging behaviour.

Neurodevelopmental disorders, depending upon their cause, can be associated with various syndrome-specific conditions, for example, cardiac or spinal abnormalities. Both the common complications and syndrome specific conditions can, and often do, lead to secondary health consequences.

These secondary health consequences are often preventable with the proper health screening and preventive care. But most of all those have to be taken into consideration in relation to participation in sport activities.

Intellectual disability is characterized by an IQ of less than 70 with significant limitations in both intellectual functioning and adaptive behaviour as expressed in conceptual, social, and practical skills and originates before the age of 18 (www.aaid.org)

According to current neurobiological theory, all intellectual disability is a result of some kind of underlying biological process that disrupts the expected neurological development of the individual in question. These biological processes, as a group, are called neurodevelopmental disorders.

Some athletes will have neuromotor impairment, sensory impairment, epilepsy and/or behavioural concerns. An athlete with intellectual disability has about a 25% chance of having at least one of these other four characteristics as well.

There are thousands of neurodevelopmental disorders and causes of ID. While some athletes with ID may not know what the cause of their intellectual disability is, there are some medical diagnoses that are very commonly found in athletes with ID.

The six most common medical diagnoses found in athletes with ID are (www.specialolympics.org):

- 1) Down syndrome,
- 2) Fragile X syndrome,
- 3) Fetal alcohol syndrome,
- 4) Autism,
- 5) Cerebral palsy and
- 6) Epilepsy.

Important to know

- ✓ Athletes with ID are also likely to have neuromotor dysfunction, sensory impairment, seizure disorders, behavioural disabilities and syndrome specific physical conditions.
- ✓ The most common diagnoses associated with ID include: Down syndrome, Fragile X syndrome, Fetal Alcohol syndrome, Autism, Cerebral Palsy and Epilepsy.

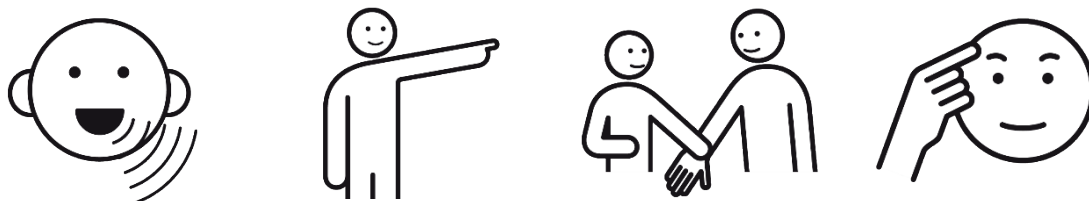
Coaching an Athlete with Intellectual Disability



Never forget: Athletes are athletes; coaching is coaching; teaching is teaching and learning is Learning!

When it comes to instructing athletes with ID, no single strategy works for every learner.

An often used strategy, however, is to "**tell, show, help and remind**".



Icon source: Metacom - Copyright © 2022 Annette Kitinger

Some athletes learn best through **visual cues**, some through **hearing instructions**, and yet others may need to feel what it is like to do something before they can truly learn it.

Regardless of the teaching method, it is proven that **repetition** is an effective strategy for everyone as well as the **motivation**. Everyone learns faster when they want to, so it is important to keep athletes be motivated.





Regardless of the type of skill being taught, the basic levels of instruction are:

- verbal presentation,
- physical demonstration,
- physical prompting and
- physical assistance.

Athletes may require a single method or a combination of these methods to learn a new skill.



It is important to identify the methods that work best for individual athletes.

Verbal presentation	Physical demonstration	Physical Prompting	Physical Assistance
			
<ul style="list-style-type: none"> ○ Coaches explain very clearly to athletes the skills they are to be learning. ○ The language is clear and consistent throughout the lesson. 	<ul style="list-style-type: none"> ○ The basic visual methods in teaching simple skills are imitation and demonstration. ○ Athletes copy what you show them. ○ If the imitation is accurate, give an immediate and positive feedback. ○ When the skill becomes too difficult for the athlete to verbally understand, demonstration should be used. ○ Linking demonstration with verbal presentation is the most effective way of learning. 	<ul style="list-style-type: none"> ○ Guidance by touch to prompt an athlete into proper position is an example of a physical prompt. ○ It is best used when verbal and demonstration methods are not working. 	<ul style="list-style-type: none"> ○ Coach physically move the athlete into position and physically assist the athlete to complete the skill. ○ It is used when all other levels of instruction are not working.

Important to know

- ✓ Athletes with ID are capable of learning and integrating new information
- ✓ It is often necessary to present in a simple way, demonstrate, and repeat periodically
- ✓ When presenting new information or skills combine different techniques (visual presentation, physical demonstration, physical prompting and physical assistance).
- ✓ These techniques should be used in teaching athletes about their health.

Sport Injury

Definition

Risk factors for sport injury

Most common parts of the body injured

Most common sports injuries



Sports injury involves damage to part of your body due to sports, exercise or athletic activities (www.hopkinsmedicine.org). A sports injury can be acute (sudden) or chronic (develop over time).

The changes occurring throughout development (lower energy and force absorption of the bones; soft tissues changes; strength imbalances and uncoordinated biomechanics) place considerable risk for certain injuries.

Any increase in training around this time could increase injury susceptibility.

Considering maturation is an important aspect of injury prevention, as this varies between individual athletes.



What are the risk factors for sport injury?

- sport specializing at a young age,
- training errors,
- imbalance of strength or joint range of motion,
- anatomic misalignment,
- improper footwear,
- pre-existing condition (especially in athletes with ID),
- growth cartilage less resistant to repetitive microtrauma, and intense repetitive training during periods of growth.
- Immature bones, insufficient rest after an injury, and poor training and conditioning also may contribute to overuse injuries.

Youth sports related injury severity also increases with age. Children who are less developed than a more mature child of the same age and weight are at increased risk for injury. Before puberty, girls suffer more sports injuries than boys, whereas during puberty, boys suffer injuries more severely than girls.










Sports injuries can affect any part of the body.

Most common parts of the body injured		Symptoms	Diagnose
Achilles tendon	A thick cord that connects the back of the lower leg (calf) to the heel	<ul style="list-style-type: none"> ○ Swelling ○ Inflammation ○ Stiffness ○ Rupture 	Achilles tendinitis Achilles tendon rupture
Ankle	Contains three joints, as well as several bones, cartilage, ligaments, muscles and tendons.	<ul style="list-style-type: none"> ○ Sprained ankle 	Ankle pain
Elbow	A hinge between the upper and lower arm.	<ul style="list-style-type: none"> ○ Pain from repeating motions and overuse 	Tennis elbow
Head	Face, skull and brain	<ul style="list-style-type: none"> ○ Pain, ○ Nausea 	Concussion
Knee	A hinge between the thigh and lower leg. It contains bones, cartilage, ligaments and tendons.	<ul style="list-style-type: none"> ○ Knee pain 	Jumper's knee or runner's knee. Meniscus tear ligament (ACL) tear
Shoulder	Connects the upper arm to the trunk of the body. It contains rotator cuff, a group of muscles and tendons that keep the upper arm in the shoulder socket.	<ul style="list-style-type: none"> ○ Shoulder pain 	Rotator cuff tendinitis Rotator cuff tears



What are the most common sports injuries?

There are many types of sports injuries. Some of the most common are:

- Concussion 
- Broken Bone 
- Cartilage Tear 
- Dislocation 
- Tendonitis 
- Sprains 
- Strains 

Images source: pngwing.com

Important to know

- ✓ Injury rates of youth and adolescent athletes is on the rise (especially in females)
- ✓ Injuries are often preventable and caused by puberty, development, sport specific training and overuse.
- ✓ Understanding how the body develops and reacts to physical activity is paramount to keeping youth athletes injury free and performing at a high level.
- ✓ Sprains, strains, contusions and fractures are the most common types of sports injuries.

Symptoms and causes of sports injury

Causes of sport injuries
Symptoms of sport injuries
Symptoms and management of the most common sport injuries
Special considerations regarding the athletes with ID



What causes sport injuries?

Sports injuries have many causes:

- Accidents while exercising (such as a fall).
- Bad habits with exercise (not warming up or stretching enough).
- Lack of safety equipment
- Equipment that is damaged or worn incorrectly.
- Shoes that do not fit well or do not provide enough support.
- Sudden start to an exercise program or significant increase in physical activity that the body is not used to.




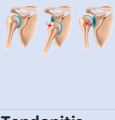





What are the Symptoms of a sport injury?

The signs and symptoms of a sports injury depend on the type of injury. Common symptoms include:

- Aches, pain or tenderness.
- Bruising.
- Deformity, such as a bone or joint looking out of place.
- Decreased range of motion.
- Grinding, cracking, clicking or popping noise.
- Inability to bear weight on the hip, leg or foot.
- Skin that is warm to the touch.
- Stiffness or weakness.
- Swelling.
- Trouble moving a body part normally

Symptoms and the management of the most common sport injuries

Injury	How?	Symptoms	Emergency Management
 <p>Broken bone</p>	When sudden force is applied to a bone.	<ul style="list-style-type: none"> ○ A visibly out-of-place or misshapen limb or joint ○ Swelling, bruising, or bleeding ○ Intense pain ○ Numbness and tingling ○ Broken skin with bone protruding ○ Limited mobility or inability to move a limb 	<ol style="list-style-type: none"> 1. Check the athletes' airway and breathing. 2. Call emergency personal 3. Keep the person still and calm. 4. Examine the person closely for other injuries. 5. If the skin is broken, it should be treated right away to prevent infection. 6. DO NOT breathe on the wound - try to cover the wound to avoid further contamination. 7. If needed, immobilize the broken bone with a splint or sling. 8. Apply ice packs to reduce pain and swelling. 9. Elevating the limb can also help to reduce swelling. 10. Take steps to prevent shock. Lay the person flat, elevate the feet about 12 inches (30 centimeters) above the head, and cover the person with a coat or blanket. 11. DO NOT move the person if a head, neck, or back injury is suspected.
 <p>Cartilage tear</p>	Sudden twisting movements mostly by playing the contact sports.	<ul style="list-style-type: none"> ○ A popping sensation ○ Swelling or stiffness ○ Pain, especially when twisting or rotating your knee ○ Difficulty straightening your knee fully ○ Feeling as though your knee is locked in place when you try to move it ○ Feeling of your knee giving way 	<ol style="list-style-type: none"> 1. Stop all the activities and rest the knee. 2. Ice the knee to reduce pain and swelling. 3. Compress the knee. 4. Elevate the knee with a pillow under the heel 5. Avoid impact activities such as running and jumping.
 <p>Concussion</p>	A brain injury caused by a bump or blow to the head.	<ul style="list-style-type: none"> ○ Headache ○ Ringing in the ears ○ Nausea ○ Vomiting ○ Fatigue or drowsiness ○ Blurry vision <p>Other signs and symptoms of a concussion include:</p> <ul style="list-style-type: none"> ○ Confusion or feeling as if in a fog ○ Amnesia surrounding the traumatic event ○ Dizziness or "seeing stars" 	<ol style="list-style-type: none"> 1. Stop all activities 2. Keep the person still - (limit cognitive and physical activities) 3. Watch for changes in breathing and alertness 4. Get a medical professional
 <p>Dislocation</p>	When the end of a bone moves out of its normal position in a joint due to the sudden and strong pull (for example, if the shoulder pops out of its socket).	<ul style="list-style-type: none"> ○ A visibly deformed or out-of-place joint ○ Swelling or bruising ○ Intense pain ○ Inability to move the joint 	<ol style="list-style-type: none"> 1. Get medical help immediately 2. Don't move the joint 3. Put ice on the injured joint
 <p>Tendonitis</p>	When the tissues that connect muscles to bones (tendons) become swollen and inflamed. It's caused by repetitive movements over time. An example is jumper's knee (patellar tendonitis).	<ul style="list-style-type: none"> ○ Pain in a tendon that gets worse through movements. ○ Difficulty moving the joint. ○ Feeling a grating or crackling sensation when you move the tendon. ○ Swelling, sometimes with heat or redness. 	Follow the RICE method (Rest, Ice, Compression, Elevation)
 <p>Sprains</p>	When a ligament stretches too much or tears (common in the ankle, knee and wrist).	<ul style="list-style-type: none"> ○ Pain. ○ Swelling. ○ Bruising. ○ Limited ability to move the affected joint. ○ Hearing or feeling a "pop" in your joint at the time of injury 	Follow the RICE method (Rest, Ice, Compression, Elevation)
 <p>Strains</p>	When a muscle is overextended and it stretches or tears (hamstring strain, back strain and abdominal strain).	<ul style="list-style-type: none"> ○ Pain or tenderness. ○ Redness or bruising. ○ Limited motion. ○ Muscle spasms. ○ Swelling. ○ Muscle weakness. 	Follow the RICE method (Rest, Ice, Compression, Elevation)

Overheating and Dehydration

As sport practices, competitions, and activities are often conducted outdoors another serious problem can occur. Heat problems often occur when athletes play too long and hard, and stay in the sun too long. Because sunlight reflects off shiny surfaces, being around water can increase exposure. When athletes are in the sun, they need to wear a water-resistant sunscreen lotion which provides maximum protection. Symptoms of Overheating and Dehydration are: Increased thirst; Headache; Dry mouth and swollen tongue; Weakness; Dizziness; Confusion; Sluggishness; Vomiting; Inability to sweat. In case of experiencing any of these symptoms it is needed to seek medical attention immediately (www.specialolympic.org).

Special considerations regarding the athletes with ID

While the types of injury discussed in this section should be concerning to every coach and while athletes with ID are at a greater risk of certain types of injury than other athletes, it should be noted that these injuries are a relatively rare phenomenon.

Still, it is of the utmost importance for coaches to familiarize themselves with these particular risks.

The major risk factors for catastrophic injuries are (www.specialolympic.org):

Injury	Symptoms	Management
Cardiac abnormalities	<ul style="list-style-type: none"> ○ Dizziness during exercise ○ Headache during exercise ○ Chest pain during exercise ○ Shortness of breath during exercise ○ Irregular heart beat ○ Racing heartbeat ○ Skipping heart beat 	<ol style="list-style-type: none"> 1. Send the fastest person available to RUN for the AED and bring it to the athlete to initiate treatment 2. Send another person to call for emergency medical personnel 3. Confirm that the athlete has no pulse and/or is not breathing 4. Confirm that the airway is not blocked or that the athlete has not choked on something. If so, remove the obstruction! 5. Begin CPR immediately
Spinal abnormalities	<ul style="list-style-type: none"> ○ Loss of consciousness ○ Cardiac arrest - pulseless and not breathing. ○ Numbness or tingling in the hands, feet, arms or legs ○ Weakness in the hands, feet, arms or legs ○ Abnormal gait changes ○ Changes in coordination ○ Spasticity ○ Paralysis ○ Difficulty controlling bowels or bladder ○ Head Tilting ○ Pain Burners, stingers, or pinched nerves in the arms, neck, should, hands or back. 	<ol style="list-style-type: none"> 1. Call emergency services immediately. 2. If the athlete is pulseless and not breathing, initiate CPR while taking care not to move the athlete.
Active infection	<ul style="list-style-type: none"> ○ Fever, coughing, sneezing, congestion, sore throat, mucus production, and bronchoconstriction 	<ol style="list-style-type: none"> 1. Stop all the activities during an infection as infectious diseases can be prolonged or aggravated by continuing physical activity and athletes also risk having other acute or chronic complications!
Organ enlargement (Heart)	<ul style="list-style-type: none"> ○ Shortness of breath, especially while lying flat ○ Waking up short of breath ○ Irregular heart rhythm (arrhythmia) ○ Swelling (edema) in the belly or in the legs ○ Chest pain ○ Fainting 	See Cardiac abnormalities
Significant hypertension	<ul style="list-style-type: none"> ○ Headaches ○ Light-headedness ○ Vertigo ○ Tinnitus (buzzing or hissing in the ears), ○ Confusion ○ Seizure ○ Altered vision or fainting episodes 	See cardiac abnormalities
Low blood oxygenation	<ul style="list-style-type: none"> ○ <u>Headache</u> ○ Shortness of breath ○ Fast heartbeat 	<ol style="list-style-type: none"> 1. Raise the head of the ground 2. Deep breathing and coughing techniques 3. Frequent rests in between activities

	<ul style="list-style-type: none"> o Coughing o <u>Wheezing</u> o Confusion o Bluish color in skin, fingernails, and lips 	<ol style="list-style-type: none"> 4. Pain relief 5. Oxygen therapy and equipment
Uncontrolled seizures	<ul style="list-style-type: none"> o Temporary confusion. o A staring spell. o Uncontrollable jerking movements of the arms and legs. o Loss of consciousness or awareness. o Cognitive or emotional symptoms, such as fear, anxiety or déjà vu. 	<ol style="list-style-type: none"> 1. Stay calm and remain with the person. 2. If they have food or fluid in their mouth, roll them onto their side immediately. 3. Keep them safe and protect them from injury. 4. Place something soft under their head and loosen any tight clothing. 5. Reassure the person until they recover. 6. Time the seizure, if you can. 7. Gently roll the person onto their side after the jerking stops. <p>If a seizure lasts for more than 5 minutes, emergency medical personnel should be contacted!</p>

Important to know

When responding to any injury situation, it is generally good to remember the following principles:

- 1) Remain calm (it also keeps the athlete and others calm!)
- 2) Assess the situation as quickly as possible after an incident has occurred.
- 3) Quickly check the athlete's airway, breathing, circulation and consciousness.
- 4) Check the seriousness of all other injuries.
- 5) Assess the incident right where it occurred to determine whether the athlete can be safely moved.
- 6) Know the athlete's baseline personality and capabilities before an injury occurs.
- 7) Listen to the athlete describe what happened (if possible!).
- 8) Ask simple, clarifying questions.
- 9) Observe the athlete's face and eyes while talking.
- 10) Observe for any asymmetry, trauma, general body alignment and functional abilities.
- 11) Survey the area where the injury occurred for any unsafe articles or terrain.
- 12) If no medical personnel are available, the coach may need to be prepared to take action alone.
- 13) When in doubt, do not put the athlete back into play.
- 14) Always refer to a health care professional for additional follow up.

Prevention

Definition
Preparation for Prevention
Coach Preparation
Athlete Preparation
Field Preparation
Developing an Emergency Management Plan
First Aid Kit



Prevention, according to Cambridge Dictionary, is the act of stopping something from happening or of stopping someone from doing something. In relation to our topic - prevention means avoiding the sports injuries by educating athletes about healthy development; healthy eating; mindful exercising; proper hydration and rest.

Sports are a fundamental part of health and development and should be a positive experience rather than riddled by (avoidable) injuries.



Many youth sports injuries are avoidable.

With education, prevention, and common sense, coaches can help athletes enjoy the process of growing up playing sports.

Preparation for Prevention

The best type of sports injury is the sports injury that has been prevented from occurring.



Not all sports injuries are preventable, therefore is the preparation of coaches, athletes and the playing environment of the utmost importance as it can drastically reduce the amount of and severity of sports injuries.

Coach Preparation



One of the tasks of the coaches is to maintain as safe an environment as possible.

It is strongly recommended that coaches have certification in CPR¹ and First Aid or that volunteers be recruited who already have first-aid training, medical athletic training or emergency care certification.



A coach should always know if an **automatic electronic defibrillator (AED)** is available at the sports venue.

The coach should know AED location at the sports venue prior to practice and make sure that there are no temporary or permanent obstacles that could slow down the retrieval of the AED.

This knowledge should be communicated to all the assistants prior to commencement of practice in preparation for the unlikely event of an athletic cardiac arrest.

Coaches should also familiarize themselves with the most common and most severe types of sports injuries and there should be an **emergency action plan**² for how to deal with each type of injury.



Athlete medical forms should be reviewed prior to the start of practice and be available at all training and competitions.

This information could be invaluable to emergency medical personnel in the event of an emergency.

Using the **Coach's Safety Checklist**³ will help to prevent injury by assuring adequate supervision, equipment, facility, warm-up and stretching.

¹ 1 CPR - Cardiopulmonary Resuscitation is an emergency procedure consisting of chest compressions often combined with artificial ventilation in an effort to manually preserve intact brain function until further measures are taken to restore spontaneous blood circulation and breathing in a person who is in cardiac arrest. It is recommended in those who are unresponsive with no breathing or abnormal breathing, for example, agonal respirations (Atkins et al. 2015).

² See Attachment

³ See Attachment



When an injury does occur, coach should stay calm, and administer **basic first aid**.

When in doubt, or when more care is needed, coach should consult the athlete’s family and a physician.

Athlete Preparation



While most athletes will regulate the intensity of their activity naturally to avoid injury, athletes with ID are still athletes. They are competitive by nature and they want to win!


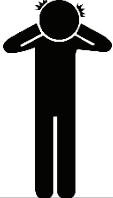



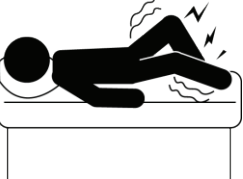



The drive to win may overpower an athlete’s natural self-protective abilities and cause them to ignore warning signs of potential injury.



Many medications that Athletes with ID take may mask warning signs such that they are not readily apparent to the athlete until they have become more serious.

The most serious warning signs to consider are as follows:

	Chest pain
	Shortness of breath or difficulty breathing

	<p>Dizziness or light-headedness</p>
	<p>Headache</p>
	<p>Fatigue</p>
	<p>Pain</p>
	<p>Rash</p>
	<p>Muscle soreness</p>
	<p>Numbness</p>
	<p>Tingling</p>
	<p>Changes in coordination</p>



Coaches should make sure that athletes know what these warning signs are.



If an athlete experiences any of these warning signs, they should stop what they are doing and tell the coach immediately.

In some situations, such as in an open-water swim, the athlete may not be able to completely stop their activity. In that case - the athlete should reduce their activity to the greatest extent possible and communicate their concerns to the nearest available person who can help them.



Coaches must periodically review these and other physical warning signs with their athletes.

Field Preparation



The field of play should be checked beforehand and in aftermath all practices and events for any obstacles.

Following preparations should be made:

- The actual playing surface should be clear, safe and dry.
- All lines should be clearly visible.
- Any indoor facility must have proper ventilation, especially in warm climates.
- Outdoor facilities should be checked for uneven playing surfaces, including holes, uneven grade, or moisture.
- The playing area should be also checked for additional obstacles.
- Out-of-bounds areas should be clear of obstructions.
- All boundaries should be clearly marked.
- Locker rooms and showers and other areas being used by players, should be reviewed for safety and accessibility.
- Floors should not be slippery.
- Areas utilized by spectators, families and other nonparticipating players should be assessed for safety and accessibility.

Developing an Emergency Management Plan



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To have an **emergency management plan**, that can be activated when an athlete injury or emergency has occurred, is very important for all coaches.

Following questions should be considered when developing an emergency management plan:

- Who are the members of the Emergency Management Team (coach, physician, emergency medical technician, athletic trainer, physical therapist, etc.)?
- Who can quickly provide athletes' medical forms and any special instructions to medical personnel?
- How can the coaching staff manage different injuries until appropriate medical personnel are available?
- What is needed in the time before the appropriate medical personnel are available?
- What are the roles of each member of the team in the event of an emergency?
- Who is responsible for coordinating the response to the emergency?
- Who is responsible for contacting medical personnel?
- Who is responsible for assessing and attending to the athlete's injuries (including CPR and finding an AED)?
- Who is responsible for communicating to parents or caregivers?
- Who is responsible for communicating with and managing the other players on the team during the emergency?



Establishing the roles as responsibilities of the various members of the emergency management team before a serious injury occurs will not only ensure that your team is as well prepared as it can be, it will also significantly decrease the time the athlete will face between the occurrence of their injury and the initiation of treatment.

First Aid Kit



The Special Olympics teams must have access to the First Aid Kit at all competitions, trainings, clinics and other sporting functions.

The Coach must be responsible for the content and usage of the First Aid Kit. Coaches must be trained in the usage of the different prescribed medications, as they may be the first response for the Athlete when an incident has occurred or in a life-threatening situation.

All first-aid kits should include the following items.

Contents of a First Aid Kit

- Acetaminophen
- Alcohol wipes
- Asthma Inhaler (if prescribed by a doctor for a specific athlete)
- Athletic tape
- Band-Aids
- Compression Bandages
- Epi-Pen (if prescribed by a doctor for a specific athlete)
- Ibuprofen
- Imodium
- Liquid diphenhydramine
- Other medications if prescribed by a physician
- Powdered Sports Drink
- Rectal Diazepam (if prescribed by a doctor for a specific athlete)
- Scissors
- Sugar pouches
- Sun Screen
- Thermometer
- Mouth Mask
- Non Latex Gloves
- Sanitary Napkins
- Hydrocortisone cream
- Antibacterial cream
- Ammonia
- Eye drops
- Saline eyewash

Important to know

- ✓ Proper preparation is the key to injury prevention.
- ✓ In order to prevent injuries, coaches, athletes and the playing environment should be as prepared as possible.
- ✓ Coaches should be trained in CPR and be familiar with basic first aid.
- ✓ Coaches should also have immediate access to athlete medical information
- ✓ Coaches should have an emergency management plan.
- ✓ Coaches should periodically review physical warning signs with athletes and what to do if those physical signs occur.
- ✓ Prior to competition or practice, a coach should check the field of play and sports equipment for safety.
- ✓ Additionally, the coach should have access to a well-stocked first-aid kit.

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www.aaid.org

www.athletics.ca

www.hopkinsmedicine.org

www.specialolympics.org

Attachments

Content:

1. Emergency Action Plan
2. Coaches Safety Checklist
3. Sport Safety Checklist for Athletes
4. Injury warning signs list for Athletes with ID
5. First Aid Kit Checklist

1. Emergency Action Plan

The purpose of an emergency action plan (EAP) is to get professional support as quickly as possible in the case of an emergency. Coaches, which have not received specialized training in advanced first-aid techniques for personal/professional reasons, should leave such care to professionals. It is mandatory for the coaches to develop an EAP before the season begins and practice it throughout the season (to ensure all athletes and coaches know what to do). Such a plan consists of information on the location of the nearest telephones, directions to the venue, and the name of the person who will call emergency services. An EAP should be developed for the weekly programs as well as for events such as competitions and camps.

EMERGENCY ACTION PLAN

EVENT: _____

VENUE ADDRESS: _____

PERSON IN CHARGE: _____

PERSON TO CALL FOR HELP: _____

LOCATION OF PHONES: _____

EMERGENCY: _____

NON-EMERGENCY PHONE NUMBERS:

AMBULANCE: _____

POLICE: _____

FIRE: _____

HOSPITAL: _____

DOCTOR: _____

FACILITY: _____

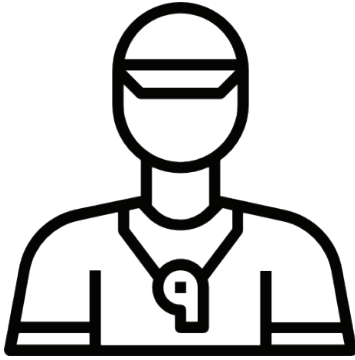
DETAILED DESCRIPTION OF LOCATION AT VENUE:

PRE-DETERMINED MEETING PLACE: _____

COACH ATTENDANCE MUST BE ON-HAND DURING AN EMERGENCY!

2. Coaches Safety Checklist





- I established an emergency action plan
- I have an emergency medical authorization form on file (required for each athlete, gives parental permission for emergency medical care if it is required. It should include contact names, addresses, phone numbers and health insurance information)
- I inspected and instructed the proper use of sports equipment (shin pads, helmets, mouth guards etc)
- I checked the sports facilities (debris, rocks, water and other hazards are removed from the playing field)
- I established warm up/cool down flexibility regimen (warm up before every workout; workouts are limited to no more than two hours)
- I established weather related policies (including heat and storms; lightning etc)
- I created a hydration plan (I encourage the athletes to drink before, during and after an exercise session)
- I have a heat illness program in place (prevention through medical screening; acclimatisation, conditioning, uniform selection and hydration)
- I have a well-stocked first aid kit available at all times
- I follow R.I.C.E principle when injuries occur

3.Sport Safety Checklist for Athletes

Warm-Up and Stretching



- I warm up and stretch before training and games.



Drink Water



- I bring a water bottle to every training and game.
- I drink plenty of water before, during and after play.
- I don't wait until I feel thirsty to drink water.
- If I feel dizzy - I tell my coach that I need a water break.

Appropriate Gear



- I have right sport equipment (helmets, shin guards, mouth guards, ankle braces, shoes with rubber cleats and sunscreen).
- I wear it for both trainings and games.

Concussion Awareness




- I know the signs and symptoms of a concussion
- If I think I have a concussion or just don't feel well, I tell my coach right away!




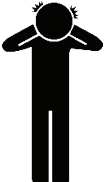



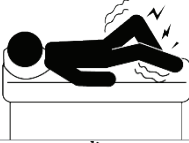



Rest and Recovery



Icon by Adiomia

- If I have any pain during or after any trainings or games, I tell my coach, parents or another adult.
- It is  to take a break to rest during trainings
- I tell my coach when I need a break.

4. Injury warning Signs List for Athletes with ID

	Chest pain
	Shortness of breath or difficulty breathing
	Dizziness or light-headedness
	Headache
	Fatigue
	Pain
	Rash
	Muscle soreness
	Numbness
	Tingling
	Changes in coordination

5. First Aid Kit

- Acetaminophen
- Alcohol wipes
- Asthma Inhaler (if prescribed by a doctor for a specific athlete)
- Athletic tape
- Band-Aids
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- Rectal Diazepam (if prescribed by a doctor for a specific athlete)
- Scissors
- Sugar pouches
- Sun Screen
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- Non-Latex Gloves
- Sanitary Napkins
- Hydrocortisone cream
- Antibacterial cream
- Ammonia
- Eye drops
- Saline eyewash



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