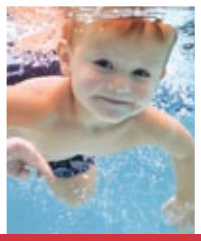
Developing Physical Literacy

A Guide For Parents Of Children Ages 0 to12



A Supplement to:
Canadian Sport for Life


Tiffany Brown Cooper

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Starting Off Right!

Childhood obesity and rising inactivity among children threatens the future health of Canada, and the problem needs to be addressed NOW if we are to prevent a generation of children from growing up with chronic health problems.

We also know[1] that being physically active later in life depends on feeling confident in an activity setting; and that confidence, as an adult, most often comes from having learned fundamental movement and sport skills as a child.

Therefore, to create an active and healthy population ALL Canadian children need a sound foundation of movement and sport skills to build on later in life; and this foundation is called Physical Literacy.

Physical Literacy

The learning and practice of fundamental movement skills is the basic building block for the development of physical literacy. Much like learning the alphabet and phonics are the fundamental skills needed to eventually read Shakespeare, or, identifying numbers and learning to add and subtract are the fundamental skills needed to eventually balance a cheque-book, the development of fundamental movement skills, and fundamental sport skills, is critical if children are to feel confident when they engage in physical activity for fun and for health, or for competition and the pursuit of excellence.

> Physical literacy gives children the tools they need to take part in physical activity and sport, both for healthy life-long enjoyment and for sporting success; and is a key component of Canada's Long-Term Athlete Development (LTAD) program.

Research shows [2,3,4] that without the development of physical literacy, many children and youth withdraw from physical activity and sport and turn to more inactive and/or unhealthy choices during their leisure time.

Physical Literacy: What Exactly is it?

Physical literacy is the development of fundamental movement skills (see page 7) and fundamental sport skills (see page 12) that permit a child to move confidently and with control, in a wide range of physical activity, rhythmic (dance) and sport situations. Physical literacy also includes the ability to "read" what is going on around them in an activity setting and react appropriately to those events.

For full physical literacy children should learn fundamental movement skills and fundamental sport skills in each of the four basic environments:

On the ground – as the basis for most games, sports, dance and physical activities

In the water – as the basis for all aquatic activities

On snow and ice – as the basis for all winter sliding activities

In the air – basis for gymnastics, diving and other aerial activities

> Sports have recognized that many of the children and youth who enter their programs lack basic movement skills.

Canada's Long-term Athlete Development Model

Canadian Sport for Life[5] documents the Long-term Athlete Development model adopted by Sport Canada and the Canadian Sport System (www.ltad.ca). Each National Sport Organization (NSO) responsible for a specific sport is developing its unique LTAD model based on Canadian Sport for Life, and through its Provincial and Territorial counterparts is implementing the model across the country. Canada's LTAD model is shown in **Figure 1**.

Physical literacy is developed during the first three stages of Canada's LTAD model, meaning the time from birth to the start of adolescence: from birth to approximately age 11 for girls and to age 12 for boys.

In addition to the material in Canadian Sport for Life, which applies to everyone, there is additional information in ***No Accidental Champions***[6] that applies to Canadians with a disability.

How and Where Do Children Become Physically Literate?

Developing physical literacy in our children will take the combined efforts of parents/guardians, day-care providers, schools personnel, community recreation leaders and everyone involved in the Canadian sport system. Each has a role to play if we are to be successful.

The Myth That it "Just Happens"

While it's true that many children DO develop good physical skills on their own by trial-and-error, there are many who do not; and for those the consequences can be severe.

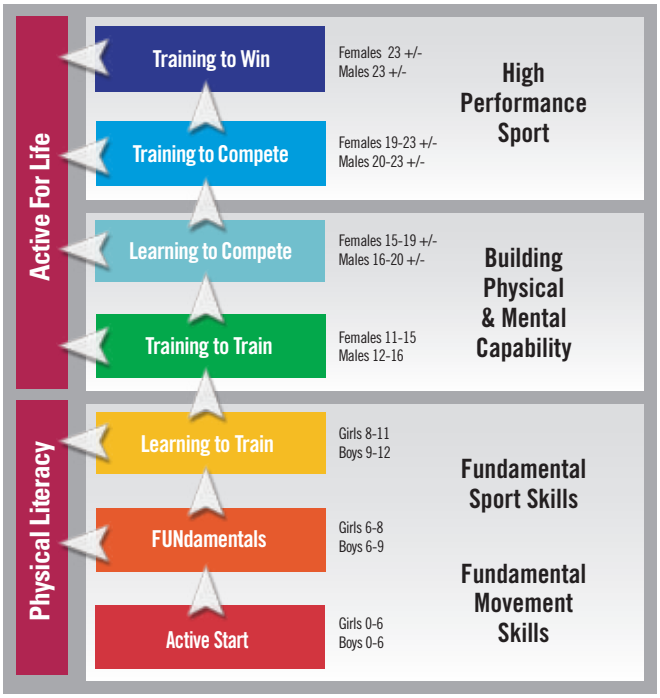
Children who are physically skilled often enjoy vigorous healthy play, while the less skilled are often left out. This creates a vicious cycle; those with the skills play, and through that play further develop their fitness and skill. In contrast, those who are less skilled play less, have fewer opportunities to refine and develop their skills, and fall further and further behind their skilled peers. Eventually many of the less skilled children stop trying, and withdraw from physical activities that would help them become fitter and develop their skills.

To prevent this from happening appropriate physical literacy need to be taught to every child in Canada. This teaching needs to occur in a wide range of settings, and, because of this many different people need to be involved. **Figure 2** gives some idea of the range of settings and the range of people who need to understand and be able to teach physical literacy skills.

Ultimately the responsibility for developing a physically literate child rests with parents and guardians. Just as parents and guardians ensure their children are in learning situations that result in them having the ability to read, write and do mathematics, they must also ensure their children develop physical literacy.

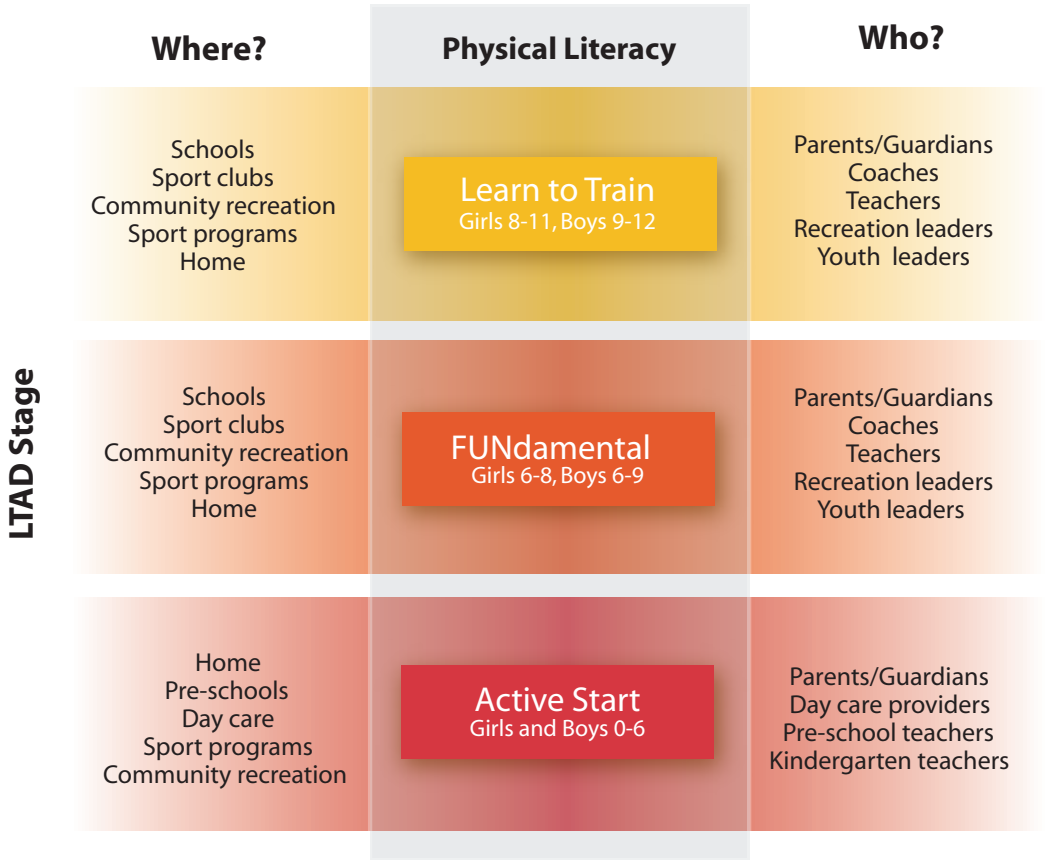
> Children tell us that not having the skills to play is one major reason they drop out of physical activity and organized sport.

Figure 1 Canada's Long-Term Athlete Development Model



Physical Literacy - the Details

Figure 2 Who is responsible for Physical Literacy?



*Where specialist physical education teachers are employed at the primary/elementary level

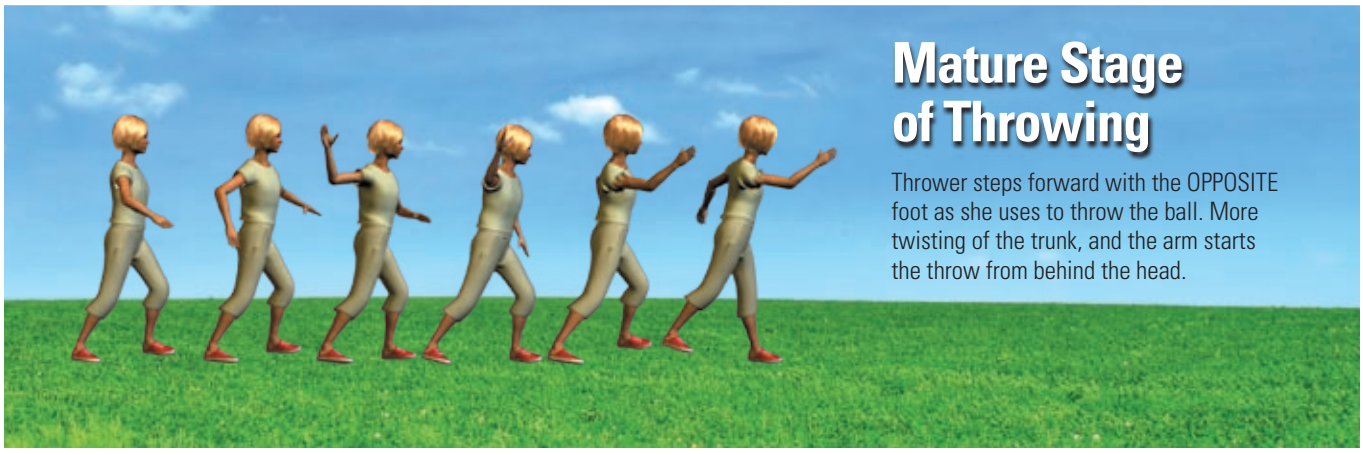
In a child, physical literacy is the combination of mastering fundamental movement skills and fundamental sport skills, which will enable a child can look at and understand movements going on around them, resulting in sound decisions based on that understanding.

Fundamental Movement Skills

To become physically literate children need to master fundamental movement skills, but this mastery does not come all at once, and we need to remember that children are not just "adults in miniature". For almost every skill the developing child needs to go through a series of developmental stages (For example, see **Figure 3** to see how throwing changes as the child matures). The goal should be to help each child move to the next most mature version of the skill they are learning, rather than pushing them to perform the skill the way an adult would.

Physical Literacy - the Details

Figure 3 Three stages in the development of a mature throwing pattern



Physical Literacy - the Details

Helping Children Learn Fundamental Movement Skills

Although children mature and learn at different rates, almost all children learn their fundamental movement skills in the same sequence, and go through the same phases:

When a child can learn a skill: As a child grows and develops (matures) nerve cells make more connections, while at the same time, the muscles of the body are getting stronger. Until the brain is mature enough, and the muscles strong enough, the child simply cannot learn the skill, and trying to teach the child does little good. What is important at this time is providing the child with as many opportunities to explore all possible movements in a rich environment – which means that the child's environment needs to be both safe and challenging.

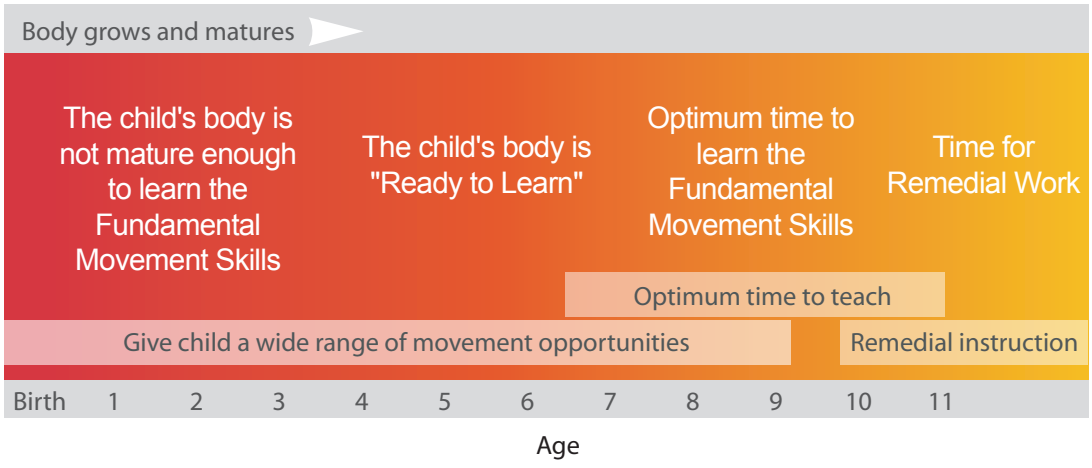
> Growth means an increase in body size, such as in height or weight. Maturation is the process in which the child's body changes to become progressively more like that of an adult.

The child is ready to learn the skill: At a certain point in maturation, all the hardware – the muscles and nerves – have developed enough that the child has the potential to perform a particular skill (the readiness factor), and now they have to learn it. As the skill begins to emerge naturally, learning can be dramatically improved through opportunities for fun practice using lots of different equipment and materials. Giving the child some simple instruction and lots of practice can help the child develop confidence that stays with them for life – although this may not speed up the learning process.

The optimum time to learn the skill: For every emerging skill there is a "best" time for the child to learn. At this time, helping the child though simple instruction and practice can improve learning, and pay great dividends. While the "best" time to teach a particular skill to an individual child varies, there is great consistency in the sequence in which children learn skills. In indication of the best time to teach some of the more common fundamental movement skills can be found in **Figure 5**.

Time for remedial work: If the child goes too long without learning a skill, then learning it may become more difficult. However, the sooner the child starts to overcome the learning deficit the easier it will be for them to catch up – and develop the skill and confidence needed to be fully active with their friends and peers.

Figure 4 Learning Fundamental Movement Skills



Physical Literacy - the Details

Fundamental Movement Skills: Parent Checklist

Making sure a child learns all the important Fundamental Movement Skills is no easy task. There are many skills to be learned, and no single place to take the child to make sure that they learn them all. To help care-givers understand the sequence of development of children, the Fundamental Movement Skill Chart (FMS), **Figure 5** is provided.

The FMS Chart shows a number of the most important fundamental movement skills each child needs to master, as well as giving some indication of when readiness for learning each skill emerges, when it is the optimum time to learn the skill, as well as the age by which failure to learn the skill might motivate care-givers to seek professional help. It also suggests the kinds of programs in which the child is most likely to learn and develop the skill. Space is provided for care-givers to check-off each skill as it is developed by the child.

Developing Fundamental Movement Skill: Suggestions for Parents

Fundamental movement skills need to be developed in a wide range of environments, and concerned parents need to question day-care providers, schools, minor-sport organizations and other organizations to make sure that their children's needs are met.

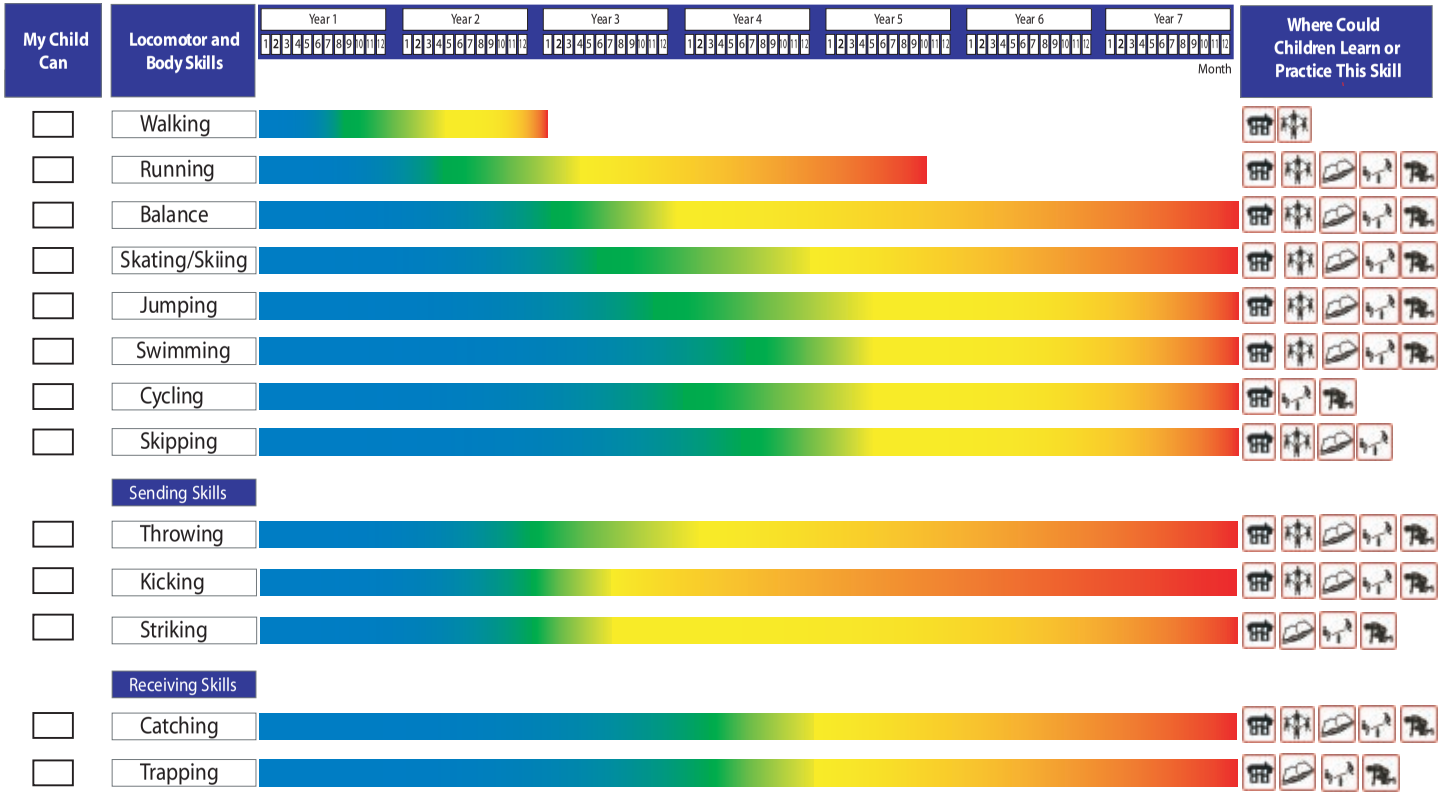
Here are some questions that need to be asked:

- Do ALL children have the opportunity to be vigorously physically active for at least 30 minutes per day for toddlers and 60 minutes per day for pre-schoolers, every day, in their home, day-care setting or school?
- Do they engage in dance and music activities?
- Is there a wide range of material that children can play with – balls (various types and sizes), bean-bags, hoops, and other similar equipment, and are there places to climb, room to run and jump, places to safely throw and kick objects?
- Do teachers and care-givers encourage ALL children, including those with a disability, to engage in active play?
- Can care-givers and teachers provide basic instruction to children who have difficulty with a specific fundamental movement skill?

> Learning fundamental sport skills before mastering related fundamental movement skills reduces performance ability later.

The **Parent Lobby Kit** which can be found at the back of this document (where it can easily be photocopied) should help you determine if your child is getting adequate opportunity to learn and practice fundamental movement skills.

Figure 5 When and Where Children Learn and Practice Fundamental Movement Skills*



* Time -lines based on Bressan E.S., and Rathbone, I. (2007). Fundamental Motor Skill Development. A paper prepared for Long-Term Athlete Development - Canadian Sport Centres - PacificSport.

Note 1: There is tremendous variability in the normal time of onset of skills among children, and this chart should be considered ONLY as a rough guide to the sequence of development that might be expected.

If you have concerns about the development of your child see your pediatrician.

All children should be exposed to a wide range of fundamental movement skills in a wide range of settings including on-land, on ice/snow, in water, and in the air. Since agility, balance and coordination are critical, children should be given the opportunity to learn running, jumping and throwing; gymnastics; swimming; and ice/snow activities. Communities should consider establishing single programs that expose children to the whole range of skills.

Fundamental Sport Skills

Running, jumping, catching, kicking, throwing and hitting something with a stick, bat, or racquet of some kind, are the basic building blocks of the many sports played by the vast majority of people on Earth, and a person who can perform these fundamental sport skills well can learn to play many sports with ease. Making good decisions in sport situations is another skill fundamental to each sport.

The difference between fundamental movement skills and fundamental sport skills.

Throwing is a fundamental movement skill – and a child learning this skill will learn to throw lots of different sized balls with one hand, or with both hands, and will learn to throw the ball at different speeds – sometimes for accuracy using a lot of different targets; and sometimes for distance.

When the child learns to throw a softball, using a softball pitching motion, and trying to get the ball to pass over home plate, they have moved from learning a fundamental movement skill to learning a fundamental sport skill.


Tiffany Brown Cooper

Getting the Sequence Right

For children to have success in sport – either as a health related recreational activity or in competition, it is important that they master fundamental movement skills before learning fundamental sport skills, and important that they learn fundamental sport skills before being introduced to specific techniques.

A Couple of Examples Might Help

Kicking skills:

In the **Fundamental Movement Skill** stage, children learn the basic kicking action, hopefully with each foot. They kick a wide variety of balls and try different things – kicking as far as they can, kicking to hit a target, kicking to keep the ball on the ground, kicking the ball as high in the air as they can.

In the **Fundamental Sport Skill** stage (e.g. soccer), the child learns to kick a soccer ball, without touching the ball with the hands. They learn how hard they have to kick the ball to get it to another team member, and how to kick the ball with the inside of the foot to increase passing accuracy.

Catching skills:

In the **Fundamental Movement Skill** stage, the child learns to catch – with both hands together in a two handed catch, and then with one hand. They catch a wide variety of balls of different sizes and weights, and learn to catch the ball while they are standing still, and when moving towards the ball – skills that can be transferred to any sport they later take up.

In the **Fundamental Sport Skill** stage (e.g. Baseball), the child learns to catch a baseball, using a baseball glove. As skill level improves the child learns to catch the baseball first when it is thrown, and then when it is hit with the bat – learning to catch it at ever greater distances from where it is hit.

Fundamental Sport Skills

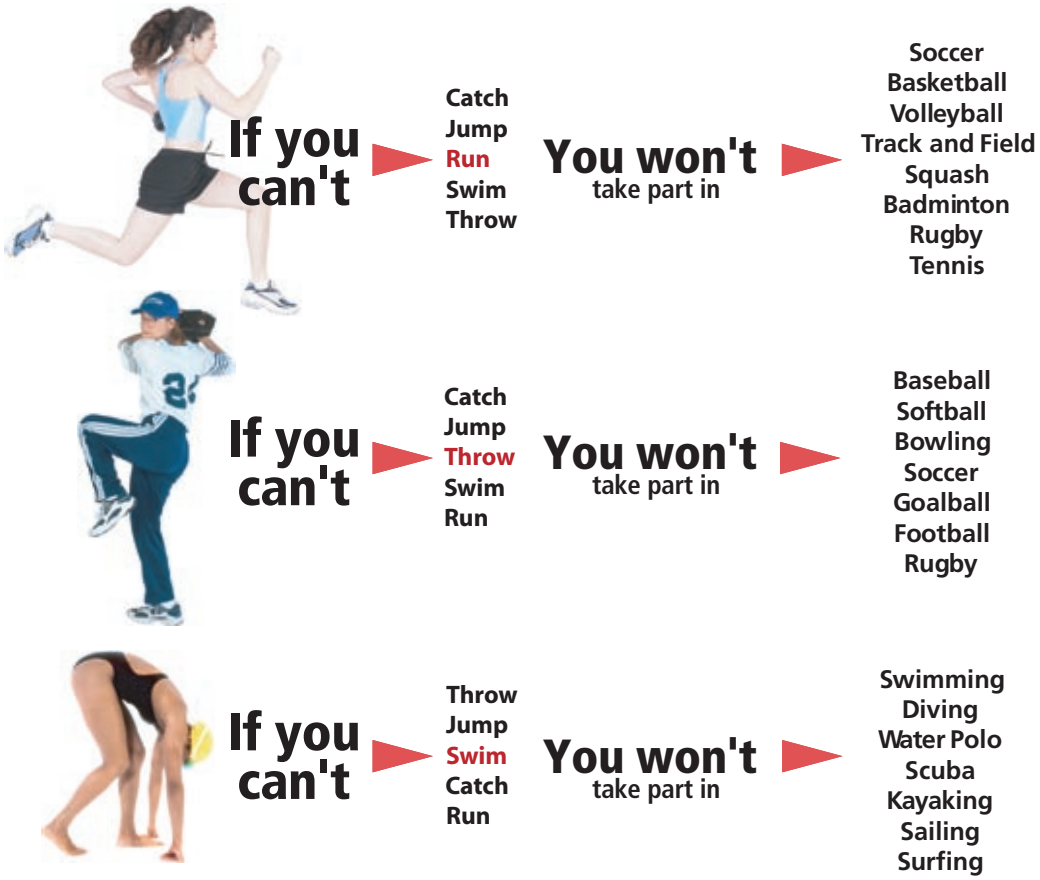
The Consequences of Missing-out On Physical Literacy

A child who misses out on developing physical literacy is at a great disadvantage. On the playground and in the park, children really like to play with other children who have the same level of skill as they do, and who can "keep the game going", and, if you can't keep the game going, you won't generally be asked to join in.

Missing out on Fundamental Movement Skills also means that the child is unlikely to choose to take part in a formal sport activity that requires proficiency in that skill, and this restricts their choice of life-long health-promoting activities. It also restricts their opportunities for sporting excellence.

Being unable to perform even a single fundamental movement skill can seriously restrict later opportunities for recreational or competitive activity, as can be seen from the few examples shown below.

Figure 6 Consequences of a missing fundamental skill



Physical Literacy During the Active Start Stage of LTAD

Ages: 0-6

Objectives: Learn fundamental movements and link them together into play (www.ltad.ca).

Physical activity is essential for healthy child development during the critical first six years of life, and is especially important during the first three years since brain growth is extremely rapid, and learning creates more brain cell connections than in later years (Gruhn, 2002). Among its other benefits, physical activity during this time:

- Lays the foundation for future success in skill development, by helping children enjoy being active, learning to move efficiently, and improving coordination and balance.
- Creates neural connections across multiple pathways in the brain (Council of Physical Education for Children, 2000) particularly when rhythmic activities are used.
- Enhances development of brain function, coordination, social skills, gross motor skills, emotional development, leadership and imagination. Helps children to build confidence and develop positive self-esteem.
- Helps builds strong bones and muscles, improves flexibility, develops good posture, improves fitness, promotes a health body weight, reduces stress and improves sleep.

Things to think about:

At this age, physical activity should always be fun, and part of the child's daily life, not something they are required to do. Active play in a safe and challenging environment is the best way to keep children physically active.

Organized physical activity and active play are particularly important for the healthy development of children with a disability if they are to acquire habits of lifelong activity. Because this is a period when children with a disability rapidly outgrow their mobility aids, communities need to find effective ways – for example, equipment swaps or rentals– to ensure that all children have access to the equipment they need to be active.

Children with sensory disabilities (visual impairment or hearing loss) often require more repetitions to learn movement skills, and different ways of getting information from the instructor. To find out more, contact your local organization providing support for persons with the specific disability.

Active Start – Physical Literacy Activities

Encourage the child to run – not just in a straight line, but with stops and starts and changes in direction. Tag and chasing games are excellent.

Play catching games with the child. Use a wide range of soft objects, and balls of different sizes. Start with catching a large ball with two hands, and progress towards smaller balls and eventually one handed catching. Remember - Balls that don't bounce too much are great for learning, as are bean-bags.

- Play games making body shapes – upside down and right-side up. Pretend to slither like a snake, and roll like a rolling pin on the floor, or down a small grassy slope.
- Play throwing games – and start with soft objects that the child can hold easily in his or her hand. Try to get the child to throw at a target, and sometime to throw as hard as they can. Get them to use both the left and right hand when they throw.
- For quiet times, or when in small spaces, play balancing games. Stand on one foot and then try the other – try balancing on different body parts, and try walking along any painted lines on the ground.
- Jump, make shapes in the air, jump to see how high the child can go, or how far. Make imaginary "rivers" and get the child to jump from one bank to the other. Try jumping from one foot, or from both. Make sure the child bends at the knees when they land.
- Introduce children to water activities and learn to swim programs. Get them on skates or skis and out on the ice or snow so that they learn to slide.
- Ride a tricycle, or a bike – with or without training wheels to develop dynamic balance.

Physical Literacy During the FUNdamental Stage of LTAD

Age: Boys 6-9, Girls 6-8

Objective: Learn all fundamental movement skills and build overall motor skills (www.ltad.ca)

This is a critical stage for the development of physical literacy, and it is during this time that the foundations of many advanced skills are laid down.

Skill development for children this age is best achieved through a combination of unstructured play in a safe and challenging environment; and quality instruction from knowledgeable teachers/leaders/coaches in community recreation activities, schools, and minor sport programs.

- Skill development during this stage should be well-structured, positive and FUN, and should concentrate on developing the ABCs – of Agility, Balance, Coordination and Speed, plus rhythmic activities.
- Hand and foot speed can be developed especially well by boys and girls during this stage and if this window of opportunity to develop speed is missed, body speed later in life may be compromised.
- This is a great age for children to take part in a wide range of sports – and they should be encouraged to take part in land-based, water-based and ice/snow based activities at different times of the year.
- It is important that all children including those with a disability, master fundamental movement skills before sport specific skills are introduced.
- Strength, endurance and flexibility need to be developed, but through games and fun activities rather than a training regimen.
- Learning to "read" the movements going on around them and make sound decisions during games are critical skills that should be developed at this stage.

Things to think about:

Children this age should not specialize in a single sport. Although they may well have a preferred sport that they take part in once or twice a week, they should take part in other sports or activities at least 3 to 4 times per week. Children this age have a strong sense of what is "fair" and should be introduced to the simple rules and ethics of sports. Basic tactics and decision making can be introduced.

Using equipment that is the right size, and that fits well makes learning activities much more enjoyable and also safer. Equipment swaps and rentals are one way to keep the cost of participation down – and this is particularly important for children with a disability who need specialized sports equipment.

Fundamentals – Physical Literacy Activities

- Encourage children to engage in unstructured physical play with their friends every day, regardless of the weather.
- Continue to play catching, throwing, hitting, running and other physically demanding games with both boys and girls. If possible, enroll children in programs that offer a wide variety of different activities (multi-sport programs) or in a wide range of different activities. Try as many different activities as possible.
- Attend parent-teacher, or other school meetings and advocate for quality physical education programs in the school – with sufficient time allocated (recommended allocation 150 minutes per week – 30 minutes per day) taught by a qualified physical educator.
- Don't be concerned with the score. At this age many programs that include competition don't keep score. This puts the focus of the program on learning and having fun, rather than on doing whatever it takes to win matches, games and leagues.
- Don't believe the myth that early specialization in sports such as soccer or hockey will lead to far greater performance later in life. Developing all-round athletes at this age is far better, but remember that a few sports (such as gymnastics and figure skating) do require early specialization.

Physical Literacy During the Learn to Train Stage of LTAD

Age: Boys 9-12, Girls 8-11
(ends with the onset of puberty)

Objective: Learn overall sport skills
(www.ltad.ca)

This is the most important stage for the development of sport specific skills as it is a period of accelerated learning of coordination and fine motor control. It is also a time when children enjoy practicing skills they learn and seeing their own improvement.

- It is still too early for specialization in late specialization sports. Although many children at this age will have developed a preference for one sport or another, for full athletic development they need to engage in a broad range of activities, playing at least 2-3 different sports.
- While competition is important, it is learning to compete that should be the focus – not winning. For best long-term results 70% of time in the sport should be spent in practice, with only 30% of the time spent on competition.
- This is an important time to work on flexibility.
- Develop endurance through games and relays.

Things to think about:

This is the time to develop and refine all fundamental movement skills, and learn overall sport skills. The brain is nearing adult size and complexity and is capable of very refined skill performance. Late developers (those who enter puberty later than their peers) have an advantage when it comes to learning skills as the Learn to Train stage lasts longer for them.

By this age children have developed clear ideas about the sports they like and in which they feel they have success, and this should be encouraged. The focus should be on playing at least 2-3 sports in different seasons. Focusing only on one sport year round should be discouraged.

Learn to Train – Physical Literacy Activities

- Continue to encourage children to engage in unstructured physical play with their friends every day, regardless of the weather.
- Enroll children in minor sport programs each season, and have them try different positions or events – they might find something they are very good at that was unexpected.
- Encourage children to take every opportunity to play different sports at school, during physical education classes, intramurals or on school teams if their school has them.
- Try to have children take part in some land-based, some water-based and some snow/ice based activities.
- Keep children working on flexibility, speed, endurance and strength. For strength activities they should use their own body weight, Swiss balls or medicine balls – not heavy weights.
- Keep sport and physical activity FUN.

Physical Literacy During the Learn to Train Stage of LTAD

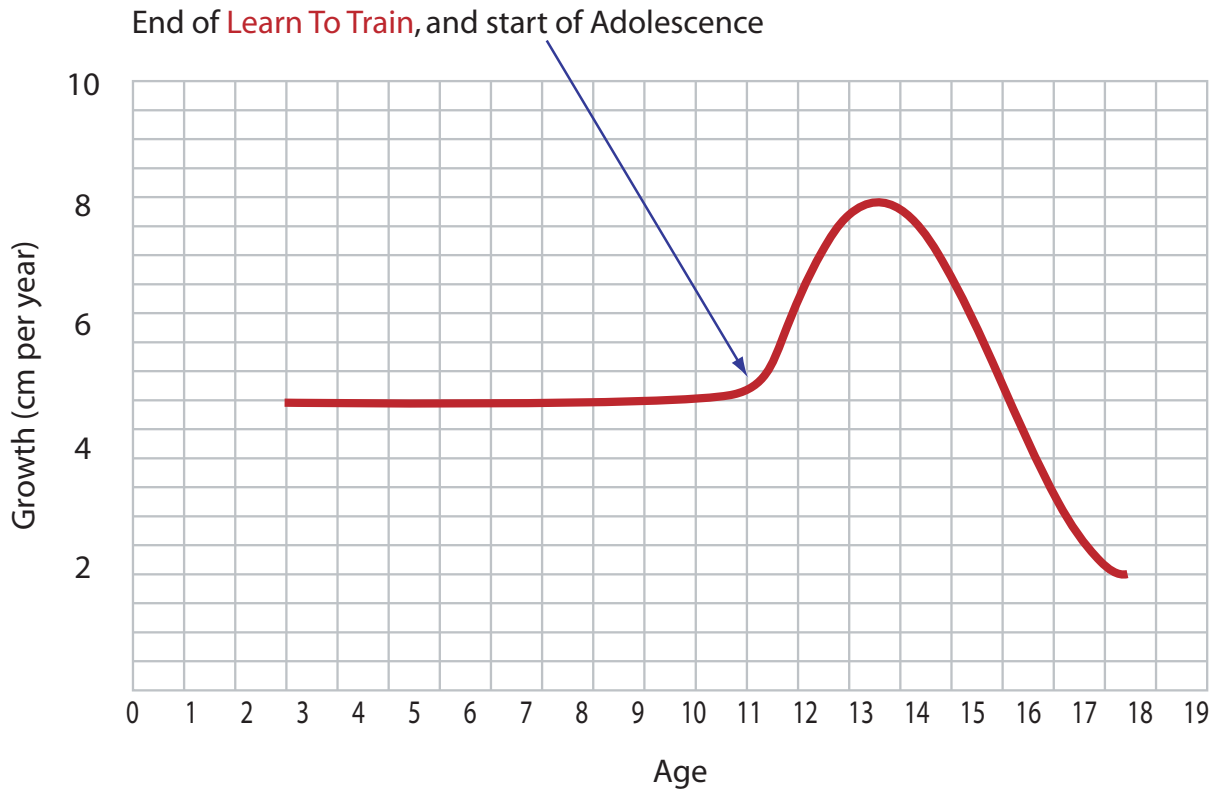
Tracking the End of Childhood

The Learn to Train stage of development ends with the onset of puberty and the rapid growth that accompanies this important life event. There are some simple ways to track the onset of adolescence, and many parents already have the tools and the records that can help.

Many parents go through the birthday ritual of measuring how tall a child has become – and often have the birthday heights etched on the kitchen door frame. Recording these heights on each birthday tells us how tall the child is, and if we look at how much the child has grown since their last birthday we get a measure of how fast they are growing and this is called the "height velocity".

During the years from about age 6 until the onset of puberty children grow at a fairly constant rate usually about 5-6 cm per year. If you keep track of this, and then one year this value has increased – you'll know that the child is starting the adolescent growth spurt and puberty is not far behind. Recording and plotting height every 3 months from about age 8 onwards provides an even more accurate picture. For more details see the document "The Role of Measuring Growth in Long-term Athlete Development" at **www.ltad.ca**.

Figure 7 The Start of Adolescence



More On the ABCs: Useful In All Sports

Agility, balance, coordination, and speed are valuable in almost all sports. Developing the ABCs is an important part of physical literacy, and there are a number of activities in which they can be learned and refined.

Some sports and activities are better at developing one or more of the ABCs than others, and the key sports are:

- Gymnastics is a great way for young children to learn and develop their agility, balance, and coordination, while Athletics (track and field) is a great way to develop speed and coordination.
- Skating and skiing provide great opportunities for the development of balance, coordination and speed, while soccer helps with speed, agility, and coordination.
- In addition to developing confidence and safety in the water, swimming or Synchro (Aquasquirts) develops balance and coordination.
- Cycling (or skateboarding or horse riding) to develop balance and the judgment of speed.

More On the ABCs: Useful In All Sports

What this Means For Parents

What this means is that parents and care-givers should try to see that their children have the opportunity to take part in all of these activities during the critical physical literacy years.

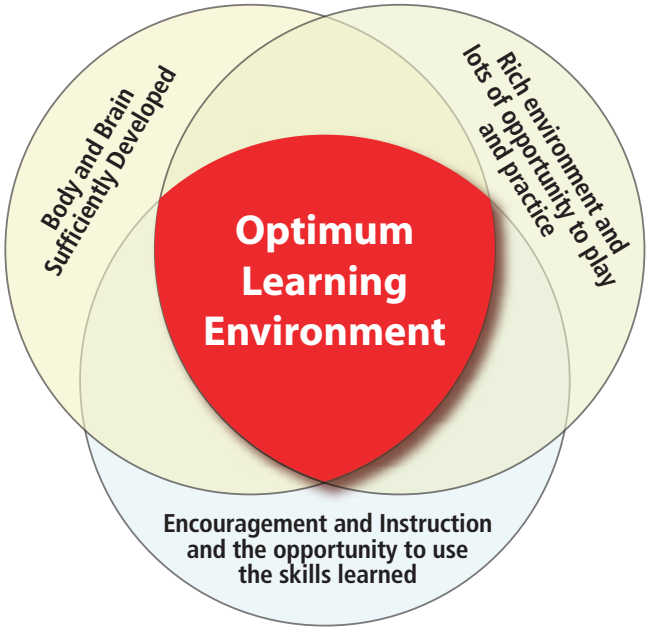
In communities with limited recreational opportunities, and for parents with limited financial resources, this may be difficult to achieve. This makes school physical education programs critically important, since they provide the only opportunities for the development of physical literacy for EVERY Canadian child.

Community recreation and sport programs also have a role to play. Community recreation programs for pre-pubescent children could be organized to ensure that children are enrolled in single programs that cover a range of physical literacy skills, rather than single sport programs.

Sport programs offered by minor sport organizations are obviously going to focus on their own sport, but could do a much better job of teaching broad physical literacy skills particularly in warm-ups and small-game activities - rather than teaching over specialized sport-specific skills in isolation.

Fortunately there is also a move nationally for sports to get together to work cooperatively on the introduction of children to "clusters" of sports.

Figure 8 Creating the Optimum Learning Environment for Fundamental Movements and Fundamental Sport Skills



Finding The Sport That is Right For Your Child

A child's desire to play a particular sport should always be the most important consideration when deciding to enroll him or her in a program. However, in addition, there are ways to find out what sports your child might excel in. SportFit® is one such way.

SportFit®, developed by 2010 Legacies Now and the Government of British Columbia, is a simple on-line questionnaire where children can enter their answers to simple sport related questions, and can enter the results of some simple physical tests (details of the test are also available on-line and can be done at home with very basic equipment). The computer program then considers the test results and answers, and suggests sports that fit well with the child's profile. The nice thing is that it often suggests sports you might not otherwise have thought about.

SportFit Can be found at **www.sportfitcanada.com**

More On the ABCs: Useful In All Sports

Some Other Skills to Develop

While it is easy to understand why physical literacy needs to include the skills of running, jumping, throwing kicking, catching, and other skills, along with agility, balance, coordination and speed, there are a couple of other skills that are less obvious. The two most important of these skills are prediction and interception.

Think for a moment about what it takes to catch a softball hit high into the air.

As the catcher – the child needs to be able to:

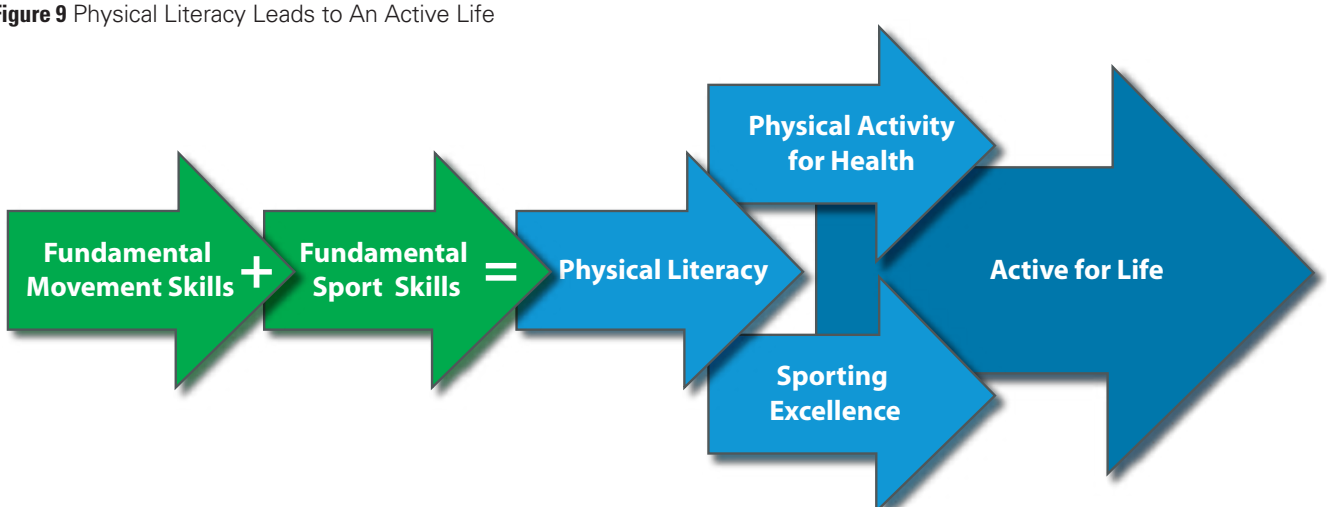
- See the ball leave the bat, and predict where it will land.
- Move to where they think the ball will land – and get there for when the ball arrives. This is the ability to intercept the ball, and this is a physical literacy skill that needs to be learned.
- Then they need to be able to catch the ball!

This ability to predict and intercept is also critical to many stick, bat and racquet sports, where the child needs to predict where the ball or puck is going, and then move their bat, racquet or stick so that the moving "stick" makes solid contact with the moving "ball".

Learning this kind of complicated skill requires two things, and is helped by a third:

- Sufficient maturation of the brain and vision – which usually happens between the ages of 4 and 7.
- Lots of opportunity to try to catch, intercept and hit lots of different sized and shaped objects moving in many different directions at many different speeds (although interestingly many children find it much harder to do this with small balls moving slowly, than with balls moving a bit faster).
- Good instruction, particularly about body position and what children should look for, can dramatically help children master this critical physical literacy skill.

Figure 9 Physical Literacy Leads to An Active Life



A New Approach?

Tiffany Brown Cooper

Canada's progress in Long-term Athlete Development is starting to change the way some organizations think about developing physical literacy. Groups of sports, led by the "on-ice" sports of Ice Hockey, Ringette, Speed Skating, and Figure Skating are collaborating to introduce young children to the world of skating – working to develop skating skills, on-ice agility, balance, and coordination so that the child can later enter any one (or more) of these sports for healthy recreation or to develop sport excellence.

Approaching this in a different way, some local recreation organizations are offering young children the opportunity to sign-up for year-round programs that combine exposure to a number of different sports, with fundamental movement skill learning opportunities and lots of skill-developing mini-games.

This new approach is also being tried by some sport facilities. Swimming pools are developing "introduction to aquatics" programs that teach water safety and basic swimming – with the opportunity to take the first steps towards competitive swimming, water polo, synchronized swimming and diving.

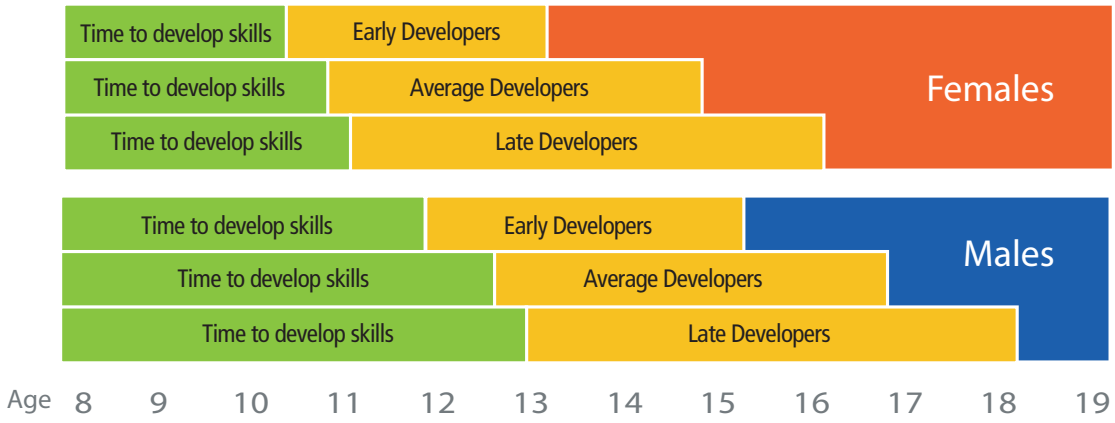
With creative thinking, local recreation providers and groups of national sport organizations could put together programs such as:

- Introduction to ball games – teaching the throwing, hitting, catching, passing and kicking skills that could lead to later involvement in basketball, volleyball, soccer, rugby, team handball and other similar games.
- Introduction to hitting games: teaching children to hit stationary and moving objects with a variety of bats and racquets, providing the building-block skills for softball, baseball, hockey, golf, tennis, badminton, racquetball or squash.
- Introduction to being "on-the-water" making children safe and comfortable around boats and introducing them to the idea of propelling a boat using paddles, oars, and sails – to encourage children to take up canoeing, kayaking, rowing, and sailing.

A New Approach?

As a nation, we have to change the thinking of many groups that work with young children. Too many organizations think of children as a resource to be brought into their sport, and to be kept in that single sport for as long as possible – the "get them early and keep them" approach. This "get them and keep them" approach restricts the range of physical literacy skills that children develop, diminishes their all-round athletic development, and stops too many children from experimenting with different sport – and finding the one that is just right for them. Long-term, both the sports and the children are hurt by this approach.

Figure 10 Children Who Enter Puberty Late Have Longer Time Period to Refine Fundamental Sport Skills



Physical Literacy – The Key to an Active Healthy Life and to Sporting Excellence

Being physically active is more important to health than just about any other part of life over which we have control. Recent research suggests that it is better for your health to be overweight and active than to be of normal weight and be inactive. For this reason alone it is critical that children develop the knowledge, skills and attitudes that give them the very best chance of staying active throughout their lives.

When a child has confidence in his or her ability to take part in recreational and sporting activities without fear of showing themselves up, the probability that they will join in is high; and if they enjoy the activity they will likely continue with it. A child's movement confidence develops gradually as they grow and learn, and the child is constantly comparing their own level of ability with the ability of the children with whom they play. Physically literate children who move with skillful purpose KNOW that they move well, and this confidence encourages them to try new and different activities without fear.

Physical literacy also provides a foundation from which sporting excellence can grow.

To develop the highest levels of sporting excellence in late specialization sports requires about 10 years of deliberate practice, and requires that the person first develop their athletic abilities and, only when these have been refined, specialize in sport specific techniques and skills.

All too often, early overspecialization in a single sport leads to a failure to become physically literate, to poorer ultimate performance than would otherwise be the case, and to injury, burnout and early retirement from sport.

Physical literacy is, therefore, the key both to developing habits of life-long physical activity for enjoyment and health, and to the development of athletes who have the strong foundation that will permit them to reach the highest levels of international sporting excellence – to become world-class athletes.

A New Approach?

Early vs. Late Developers

Adolescence is the period between childhood and becoming an adult. While both the start and end of this period are difficult to define, it is usually obvious when a youth is going through the many physical, psychological, social and sporting changes that accompany it.

Not all children enter adolescence at the same age, and it takes different children different lengths of time to complete the process. In general, children who enter adolescence early pass through it faster than those who start later, and whether you start early or late partially depends on your body shape. Stockier, more muscular children usually enter adolescence earlier than their peers who are thinner and leaner.

The whole process starts at about age 10-11 for girls, and about 2 years later for boys, usually takes 3 to 4 years to complete. This means that for girls aged 12, some will have almost completed the physical changes of puberty, while others have barely started. For boys the greatest range of development is found in 14 year olds.

Few sports understand the difficulties faced by early and late developers, and those difficulties are different for boys and girls. Because of this, in many Canadian sports there are disadvantages to being either an early or a late developer.

One advantage late developers should have is that they have a longer period of time between learning fundamental movement skills and the onset of adolescence (see Figure 10). This Learn to Train stage is a time when the human body is perfectly designed for the acquisition and refinement of sport skills, and the longer a child is in this stage, the better developed their skills can become.

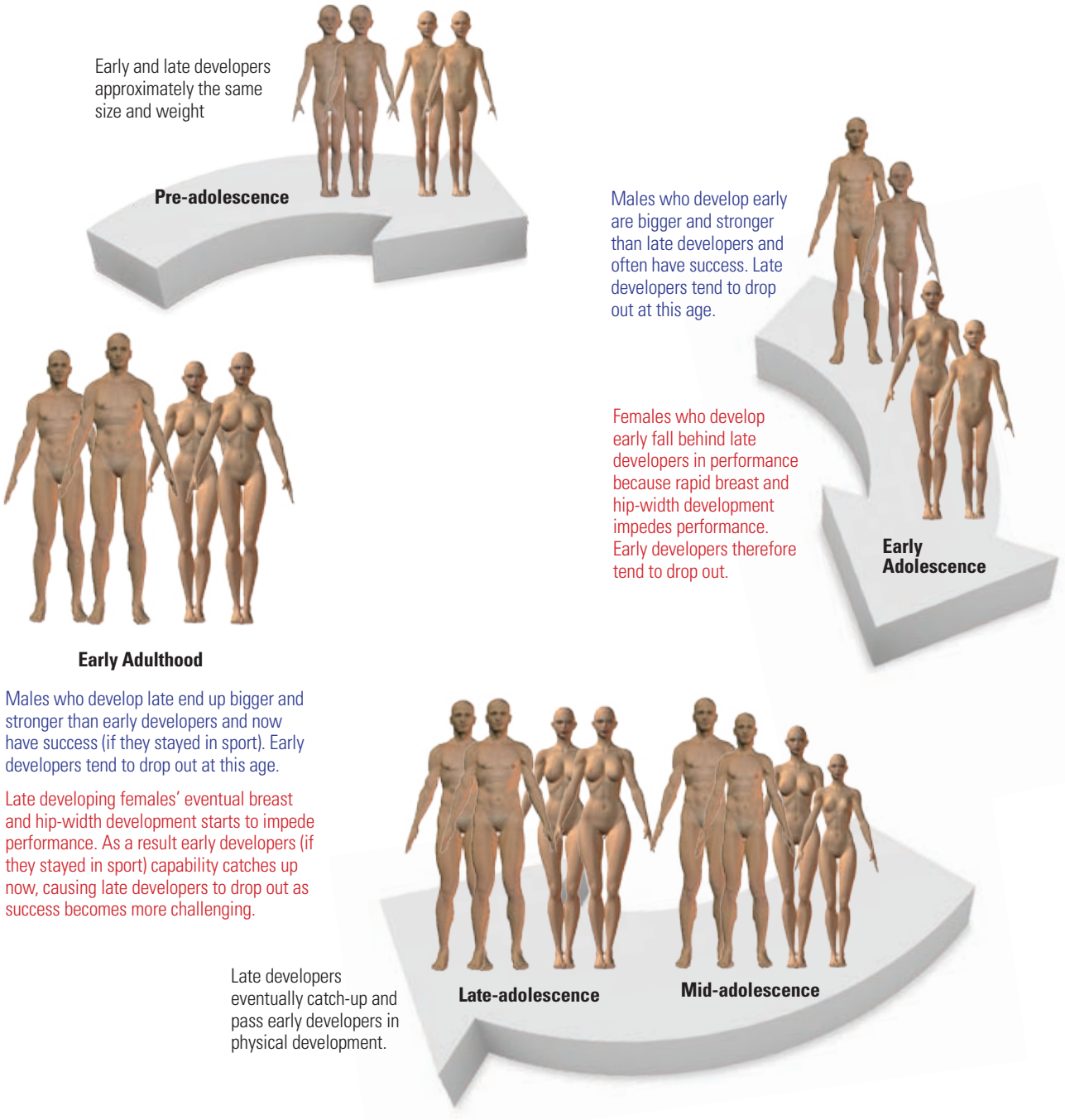
The Challenge In Sport For Late and Early Developers

Males: In reality, male late developers are often at a great disadvantage, and this is especially true in sports where age group competitions are held. As their peers go through puberty, late developing males find themselves much smaller, less muscular and physically weaker. Training and competing against bigger, stronger and faster opponents is not always fun, particularly in contact sports, and late developers therefore tend to drop out – despite the fact that in the long run they have greater potential for success. There are also disadvantages of being an early developer. Early in adolescence early developers (who go through a relatively rapid but short adolescence) are bigger, stronger and faster than their peers and this often translates into sporting success. However, as late developing team mates and competitors go through their longer, more sustained, growth spurt those late developers eventually catch up with and surpass the early developers. With their late developing peers now bigger faster, stronger, and more skilled than them, the early developers tend to drop out of their sport towards the end of adolescence.

Females: For females the situation is less clear, but appears to be reversed. The rapid growth of breasts and the widening of hips, along with social pressures to discontinue sport invovlement, can cause early developing to drop out early in their teen years; while late developing females who have had success with their prepubescent bodies as teammates develop before them face the same difficulty when older.

A New Approach?

Figure 11 Early and Late Maturing Children Drop Out of Sport at Different Times For Different Reasons



A New Approach?

It Also Matters When In The Year Your Child Is Born

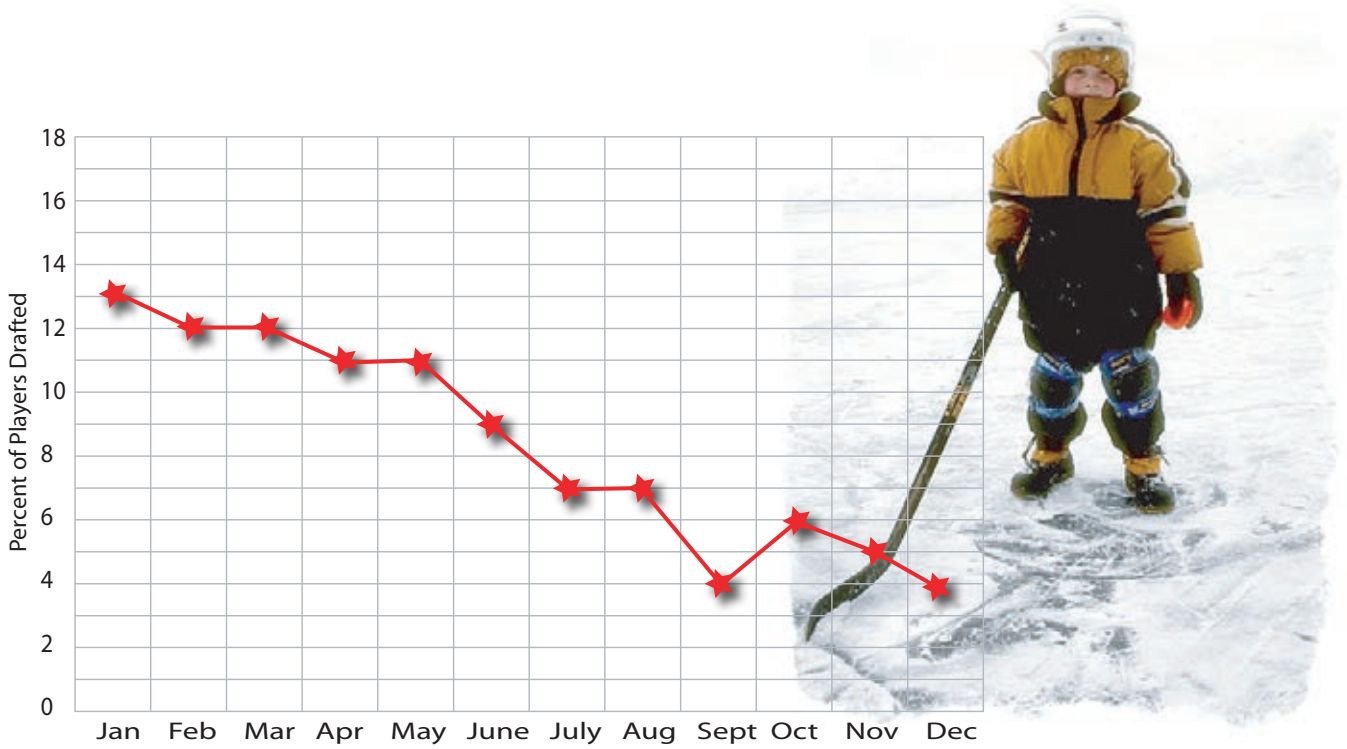
When sports have age-group competition and athletes have to compete all year in the same age group depending on their date of birth, this can be either an advantage or a serious disadvantage. This is because, depending on when in the year your child is born, they could always be the oldest or youngest in their age-group.

Children who are always the oldest in their age-group tend to be bigger, stronger and more skilled than their younger team mates, and it is believed that this causes coaches to think that they are "better" players than the younger ones on the team. Because of this they seem to pay more attention to the older players, give them more playing time, and spend more time coaching them – and in the end this tends to make them better players with more opportunity to advance to higher levels of play.

Consider for example, in 2007 more than 13% of hockey players who were drafted in major junior hockey were born in January, and only 4% in December! This is called the relative age effect.

Parents need to work with minor sports to find ways to reduce the relative age effect, including such easy changes as; age on date of competition rather than age at the start of the competitive season.

Figure 12 Distribution of Birthmonths of Drafted Ontario Hockey League, Western Hockey League, and Quebec Major League Players



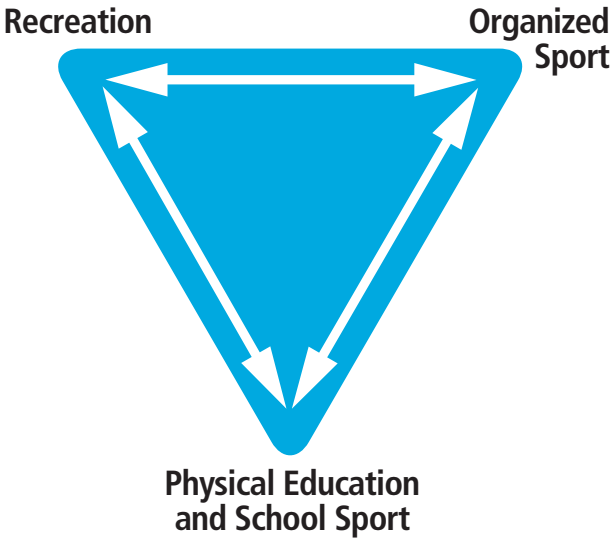
Impact On the Education, Recreation Sport and Physical Activity System

Making physical literacy a priority will require changes from all those involved in the care and education of children, and will require care-givers, the education system and the recreation and sport community to work more closely together. With cooperation and joint action, programs can be put in place that will be truly child centred.

Working Together

In the past there has been little communication between schools delivering physical education and school sport, and those community groups delivering elite or recreational sport. Development has been separate and uncoordinated. With a focus on developing physical literacy, these three area of operation need to work more closely together to ensure that there is a seamless parthway for the young person developing their physical literacy skills.

Figure 13 Three Systems Working Together



Early Childhood Educators

Early childhood educators might be parents looking after their children at home, or professionals working in pre-school and daycare centres.

Since education in physical activity is not always a high priority in the training of Canadian early childhood educators, and many parents are not well prepared to deal with the Active Start activities of their young children there is a great need for help and guidance. Fortunately such guidance is available in the form of HOP: Health Opportunities for Preschoolers documents available for downloading and printing through the Active Start links at **www.ltad.ca** or from **www.educ.uvic.ca/faculty/temple/vtstd/HOP/Frameset.htm**

The document is full of excellent activities that don't require a great deal of equipment or a lot of space, and will serve well those working to improve the activity level of young children.

Don't Forget to Play!

While working with young children, introducing them to new games and activities is important. So too are opportunities for unstructured play. Guidelines suggest 30 to 60 minutes of structured activity for toddlers each and every day, coupled with several hours set aside for unstructured play – with activities initiated by the child. This setting aside of time for unstructured play activities is sometimes called "deliberate" play.

Let's Get Rhythm

During the early years of life, basic rhythm skills are developed, and, if developed well open up later possibilities for lifelong involvement in dance, music and other artistic activities. Rhythm activities also help develop fluid movement patterns that can help children perform many fundamental movement and fundamental sport skills with greater ease and efficiency.

Impact On the Education, Recreation Sport and Physical Activity System

When Children Don't Have Physical Literacy

Not being physically literate has consequences for the child, but it also has consequences for schools, recreation programs and organized sports.

Schools: When students arrive at secondary school without having developed physical literacy in the earlier grades, physical education teachers spend much time trying to teach movement and sport skills that should already have been learned. This remedial work is difficult, and if the students have not had success in physical education in the earlier grades they have frequently developed negative attitudes towards the subject that makes them unwilling to fully participate.

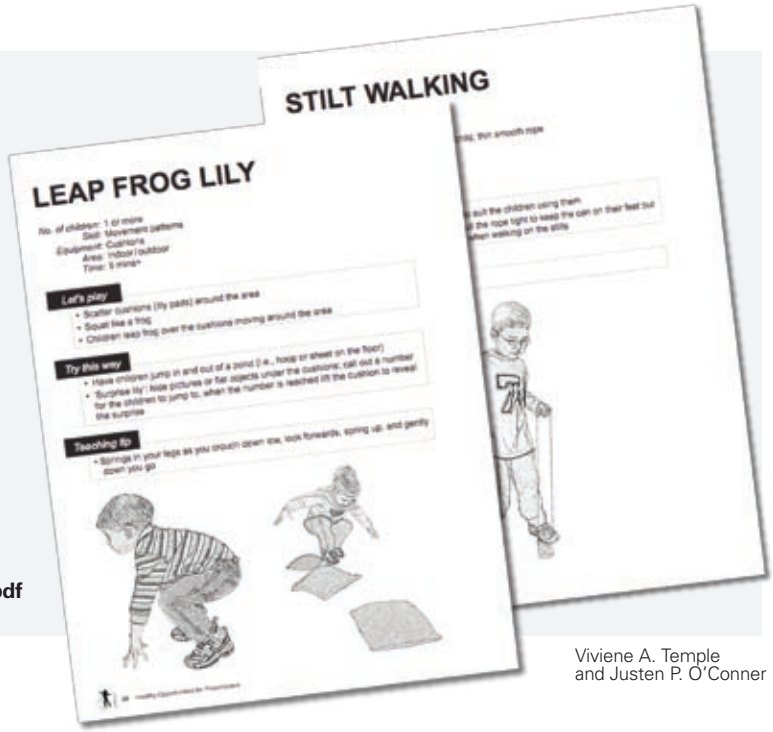
Recreation Programs: Lack of physical literacy means that children and youth are less likely to take part in recreation programs for fitness, health and enjoyment. This reduces the potential enrollment in recreation programs with the associated reduction in revenue. Reduced participation and reduced revenues make programs vulnerable, and with many municipalities keeping close watch on expenditures may lead to the closure of programs and even facilities. If children without physical literacy enroll in recreation and sport programs, it becomes difficult for instructors to equally provide instruction to those with good movement skills and those needing remedial assistance.

Sport Organizations: Lack of physical literacy leads to fewer potential athletes, and while this is ultimately a loss for the child, it also means that local, provincial and national teams have fewer athletes to choose from resulting in less able performances. Ultimately this is reflected in poorer national performances for Canada on the international stage. It also means that coaches of athletes in the Train to Train, Train to Compete, and even the Train to Win stages of Long-term Athlete Development must spend time working on fundamental movement and fundamental sport skills that their athletes should have mastered much earlier in their lives.

Figure 14 HOP: Health Opportunities For Preschoolers

Examples of activities from the HOP documents: Excellent activities for parents and caregivers to use in developing movement skills during the Active Start (0-6 years of Age) Stage of Long-Term Athlete Development.

Available for download from
www.educ.uvic.ca/faculty/temple/vtstd/pdf/HOP05.pdf



Viviene A. Temple
and Justen P. O'Conner

Developing Physical Literacy in Every Child

To ensure that every child has a wide range of opportunities, and the quality instruction, to develop physical literacy will be a challenge. The challenge will be particularly difficult for those children growing up in difficult circumstances, or those who come from populations that have traditionally been under-represented in physical activity, recreation, and sport.

Those under-represented groups have included:

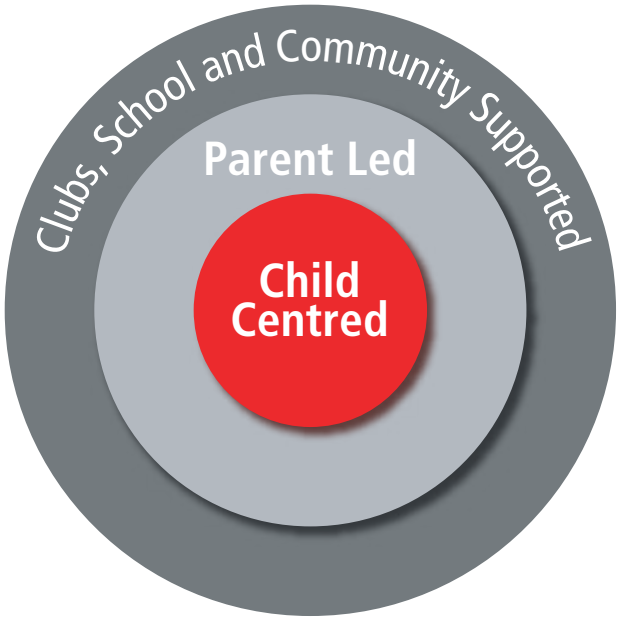
- Aboriginal youth
- Youth with a disability
- Girls; especially those from ethnic groups that have not traditionally valued physical activity
- Disadvantaged inner-city youth

The challenge of ensuring that children from these disadvantaged groups develop physical literacy will only be met when parents and care-givers demand that schools, pre-school and day care centres, community recreation centres and sport organizations make physical literacy a priority. This means making programs child-development centred, rather than sport centred, and it means that parents and care-givers need to hold the organizations that work with their children accountable for delivering activities and programs that develop fundamental movement and fundamental sport skills from birth to the onset of adolescence.

It also means that parents need to support programs and organizations that foster physical literacy, and, where possible, avoid those that either do not offer sufficient physical activity, or offer activities that are far too specialized too early in life.

Programs to develop physical literacy need to be Child centred, Parent driven, and Club, School and Community supported.

Figure 15 Child Centred Physical Literacy



Where In the Canadian Sport System Can Children Learn Physical Literacy Skills?

There are unlimited opportunities for Canadian children to learn the physical literacy skills that will enable them to engage in health enhancing sport activities or to pursue their dreams of athletic excellence. Many national and provincial sport organizations have programs - and more are being added all the time. Sometimes its not easy to work out what physical literacy skills your child will learn from programs in a particular sport, and to help you, the chart on the next page has been created.

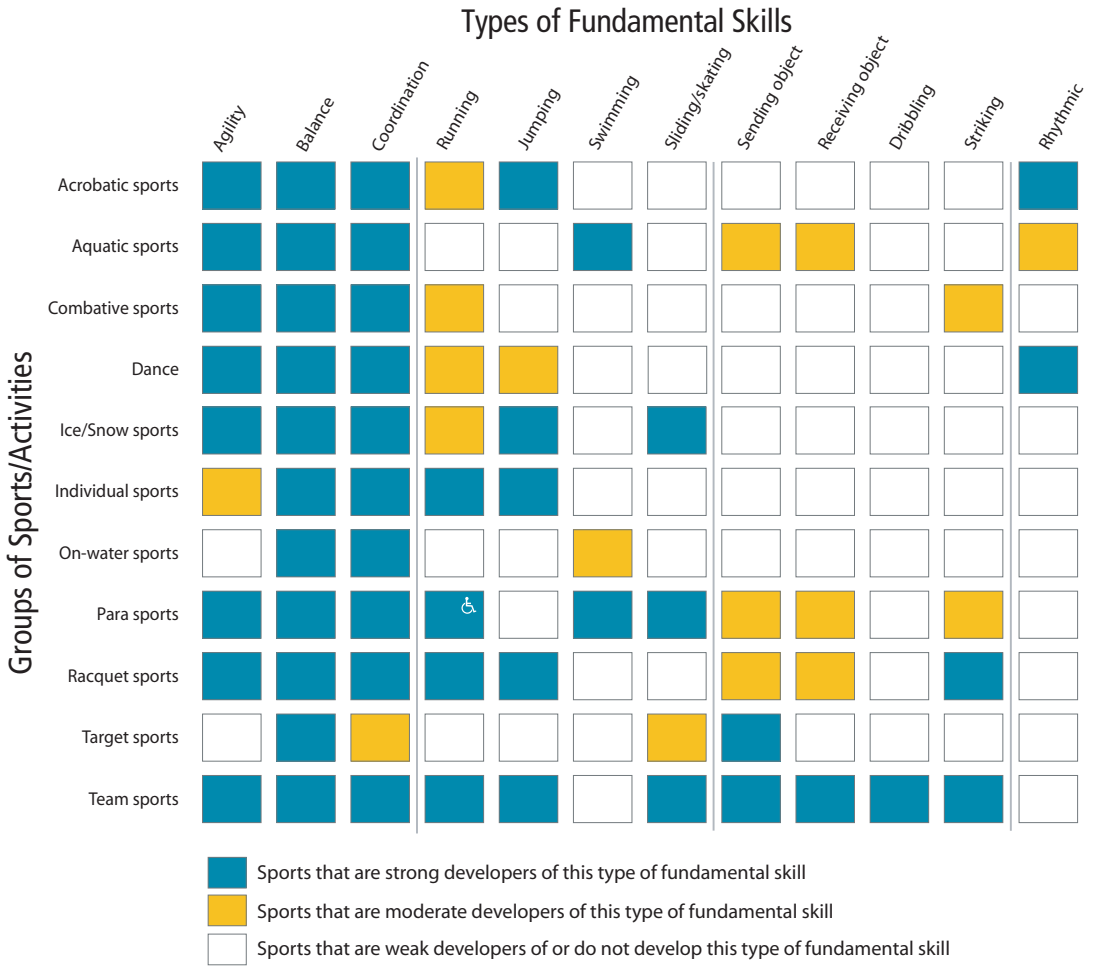
There are a couple of things to remember when you use it:

This is not a definitive list since programs change all the time. So use it as a rough guide only.

Not everyone agrees on exactly which sport programs best develop which physical literacy skills. Our aim is to be roughly right about the "Big Picture" rather than exactly right about any specific skill or sport.

Developing Physical Literacy in Every Child

Figure 16 Sports That Contribute to the Development of Fundamental Skills



Sport groupings

Acrobatic sports
*Gymnastics
*Rhythmic Gymnastics
Freestyle Aerials
*Trampoline
Sport Parachute
*Diving
Ski jumping

Aquatic sports
*Swimming
Synchro
Waterpolo

Combative sports
Boxing
Fencing
Judo
Karate
Taekwondo
Wrestling

Target sports
Archery
Biathlon
Shooting
Golf
Lawn bowls
Bowling
Curling

Ice/Snow sports
*Figure Skating
Speed skating
Bobsleigh
Skeleton
Luge
Alpine skiing
Freestyle skiing
Snowboarding
Cross-country skiing

Individual sports
Athletics
Cycling
Equine
Triathlon
Weightlifting

Racquet sports
Badminton
Racquetball
Squash
Table tennis
Tennis

Team sports (ice)
Broomball
Hockey
Ringette

Team sport (floor)
Basketball
Volleyball

Team sports (Field)
Baseball
Cricket
Field hockey
Football
Lacrosse
Rugby
Soccer
Softball
Ultimate frisbee

On-water sports
Canoe/Kayak
Rowing
Waterski
Wakeboard
Yatching

Para sports
Goalball (Visually impaired)
Boccia (Cerebral Palsey)
Wheelchair rugby (Quadriplegics)
Sledge hockey (Various disabilities)

Notes:

For Para sports (sports for persons with a disability) running includes alternate means of locomotion, including wheelchairs.

Sports in red: Indicates the most common sports for persons with physical or intellectual disability.

*Early specialization sports

Next Steps

As Canada develops and implements its Long-term Athlete Development program (www.ltad.ca), physical literacy is gaining greater and greater importance. Individual sports, and groups of sports are working to create or improve their programs for young children, and for the first time in many years, schools and sports organizations are sharing a common language and common approach. This cooperation and collaboration needs to expand, and everyone in pre-school and day care settings, education, community recreation and sport needs to work together to create the first ever generation of physically literate Canadian children.

Continuous Improvement

One of the key ideas in Long-term Athlete Development is that of "Kaizen" or continuous improvement. The information presented in this document is based both on the latest scientific research and on the knowledge and experience of people who work in physical activity and sport with pre-adolescent children. As knowledge develops some of the details presented here may be replaced with newer and better information – and that is as it should be.

The good news is that there are improvements and some exciting developments in the drive to develop physical literacy in Canada. Governments across the country are beginning to see physical literacy as a powerful tool in the battle against childhood obesity and are throwing their support behind new physical literacy developments.

Parent Lobbying Kit (Photocopy as required)

Parents and care-givers should encourage pre-schools, schools, community recreation and sport organizations to offer quality physical activity programs. One way to do this is by asking appropriate questions. While not exhaustive, the following questions should provide a good stating point for discussions.

Questions to Ask: Preschool and School Programs

Building/Facility/Grounds

1. Is there sufficient outdoor space available for children to safely run and play vigorously, including ball-kicking and throwing games?
Yes **No**

2. Is there sufficient indoor space available for children to safely run and play vigorously, including ball-kicking and throwing games?
Yes **No**

3. Are the spaces available only at restricted times for organized activities, or are they available both for organized activities and for free play?
Yes **No**

4. Is there climbing equipment on which children can climb, hang by their arms, hang upside-down, and otherwise explore?
Yes **No**

Equipment

5. Is there enough equipment for all the children to be able to play at the same time?
Yes **No**

6. Do they have balls of different colours, sizes and textures?
Yes **No**

7. Do they have scoops, hoops and appropriately sized bats?
Yes **No**

8. Do they have mats for children to roll and tumble on?
Yes **No**

9. Do they have scooters and other wheeled toys for children to ride on?
Yes **No**

10. Is the equipment available for free play – or only available during specific times?
Yes **No**

11. Is the equipment brightly coloured and in good condition?
Yes **No**

Programs and Personnel

12. For pre-toddlers, is at least 30 minutes per day, every day, set aside for structured (adult led) play?
Yes **No**

13. For toddlers and older, is at least 60 minutes per day, every day, set aside for structured (adult led) play?
Yes **No**

14. Are fundamental movement skills (0-8/9 year olds) or fundamental sport skills (8/9 year olds to start of adolescence) encouraged and taught by the program leaders?
Yes **No**

15. Are program leaders trained in helping children develop fundamental movement skills and fundamental sport skills?
Yes **No**

16. Are children encouraged to engage in vigorous physical play during unstructured play times?
Yes **No**

17. Are children given the opportunity to complete small challenges that expand their range of movement skills (for example jumping onto a soft mat from slightly higher than their comfort zone)?
Yes **No**

Parent Lobbying Kit (Photocopy as required)

18. Do the caregivers engage in physical activities with the children to model the importance of being active?
Yes **No**

19. Are girls encouraged to be as physically active as the boys?
Yes **No**

20. Are children with a disability included in all physical activities?
Yes **No**

Total number of "Yes" answers:

17-20: This program encourages maximum development of physical literacy. Stay with the program and encourage other parents to sign up their children.

13-16: A good program that needs a little help to make it great. Talk to the organizers about what they can do to improve the program. They are likely to be responsive as they obviously care about physical literacy.

9-12: Not a good program for the development of physical literacy, but at least there is some opportunity for physical activity. You need to have a serious talk with the program organizers to help them improve their program. If they are not willing to make changes, start looking at alternative programs.

Under 9: If there are other programs available in your community, run, don't walk to them, check them out, and sign up your child for a program that does more to develop physical literacy.

Questions to Ask: Minor Sport Programs

Building/Facility/Grounds

1. Is there sufficient space available for children to learn the skills of the sport and also safely run and play vigorously?
Yes **No**

2. Is there sufficient space available for children to play the sport and also safely run and play vigorously?
Yes **No**

3. Is the space used suitable for the sport being practiced?
Yes **No**

4. Is there non sport specific space that children can use for free play?
Yes **No**

Equipment

5. Is there enough equipment for all the children to be able to learn the sport at the same time?
Yes **No**

6. Do they have sport equipment of suitable size and weight for the size and strength of the children?
Yes **No**

7. Is there appropriate sport safety equipment, and is it used consistently?
Yes **No**

8. Is non-sport specific equipment available to permit children to learn a wide range of fundamental sport skills?
Yes **No**

9. Is equipment in good condition?
Yes **No**

10. Is the sports equipment available for safe free play – or only available during instruction?
Yes **No**

Programs and Personnel

11. Are fundamental movement skills taught, refined and practiced?
Yes **No**

12. Are fundamental sport skills taught, refined and practiced?
Yes **No**

13. Do all children get to learn and practice equally?
Yes **No**

14. Do all children get to play equal amounts of time?
Yes **No**

Parent Lobbying Kit (Photocopy as required)

15. Do all children get to play different positions, and/or try different events?
Yes **No**

16. Is the ratio of practice to competition appropriate (at least 70% practice to no more than 30% competition)?
Yes **No**

17. Do adult leaders emphasize learning and skill rather than winning?
Yes **No**

18. Are the sport leaders/coaches trained and/or certified?
Yes **No**

19. If present, are children with a disability included in all physical activities?
Yes **No**

20. Do the sport leaders/coaches make learning the sport fun?
Yes **No**

Total number of "Yes" answers:

17-20: This program encourages maximum development of physical literacy. Stay with the program and encourage other parents to sign up their children.

13-16: A good program that needs a little help to make it great. Talk to the organizers about what they can do to improve the program. They are likely to be responsive as they obviously care about physical literacy.

9-12: Not a good program for the development of physical literacy, but at least there is some opportunity for physical activity. You need to have a serious talk with the program organizers to help them improve their program. If they are not willing to make changes, start looking at alternative programs.

Under 9: If there are other programs available in your community, run, don't walk to them, check them out, and sign up your child for a program that does more to develop physical literacy.

Parent Action Steps

To get programs changed parents need to educate themselves about physical literacy and Long-Term Athlete Development, gather information about the programs in their schools and communities, and be prepared to speak out at parent-teacher meetings and minor sport organizational meetings to get the changes they want to see.

Step 1: Read and understand this document and Canadian Sport for Life. Visit www.ltad.ca for more information, as well as **www.coach.ca**, and **www.cahperd.ca**.

Step 2: Use the "Questions to Ask" sheets to gather information about the program in your child's pre-school, school, community recreation program, or minor sport program.

Step 3: Recruit other concerned parents so that you are not alone. Meet as a group and go over the information you have gathered – discuss what might need to be changed.

Step 4: As a group, decide what needs to be changed – focus on no more than 2 or 3 key issues (for example: allocating a specific time each day for fundamental movement skill development in a pre-school, spending more time on skill development and practice for a minor sport program, ensuring equal playing time for all participants in a recreation program, etc.)

Step 5: Make an appointment to meet with the Principal, Coach or program leader. Try to avoid meeting before or after a practice or when there are lots of children around, since you want the undivided attention of the person you are meeting with.

Step 6: Make sure the leader you are meeting with understands that you want to help him or her do what is best for the children – that you want to work together for improvement.

Step 7: Clearly articulate what you want to happen – focus on what you want to see done, not on what you think might be wrong.

Parent Lobbying Kit (Photocopy as required)

Step 8: Leave the meeting with a clear understanding of the next steps the leader will take, and the time-frame in which the changes will be made. Set up a future appointment to review the changes that everyone agrees will be made. Offer to help, and follow-up on that offer!

Step 9: If no agreement can be reached – then it might be time to consider moving your child to another program. If you want more information:

There are excellent programs across the country, and around the world, and you are encouraged to visit the following web-sites where you can find details of programs and activities that can help your child.

www.ltad.ca
Canada's web-site dedicated to Long-term athlete development and related topics. An excellent place to start.

www.quebecenforme.org
A Quebec site with information on physical activity and health promotion - with a special emphasis on children aged 4-12.

www.cahperd.ca
The web-site of Canada's physical educators - useful information for parents, teachers, and anyone interested in physical literacy. Has interesting and age appropriate resources for sale.

http://www.2010legaciesnow.com/221
This is where you can find the excellent HOP (Healthy Opportunities for Presschoolers) activity booklet for download.

www.kino-quebec.qc.ca
Information about Quebec's programs to promote physical activity.

http://www.reginainmotion.org
Information about community programs that encourage physical activity - including active pre-schools.

http://www.sparc.org.nz
This New Zealand web-site has a series of pamphlets on activities for young children that can be downloaded. The "Eyes' need to move too" is particularly interesting. Covers children in the Active Start stage of LTAD.

www.sportfitcanada.com
This is the link for the SportFit program, that suggests activities children might be good at based on the results of some simple physical tests.

www.cpra.ca
Canadian Parks and Recreation Association - Organization promoting parks and recreation services for community health.

www.pacificsport.com
Canadian Sport Centres - Network of training centres for high performance athletes, including those with a disability.

www.coach.ca
Coaches Association of Canada - Information on coaching and certification programs available to your child's coach.

www.pch.gc.ca/progs/sc/federations/index_e.cfm
National Sport Organizations - The National Sport Organizations that are supported, in part, by contributions from Sport Canada.

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Tiffany Brown Cooper

Published by Canadian Sport Centres

Canadian Sport Centres | Centres canadiens multisports

Canadian Sport for Life Physical Literacy
ISBN 978-0-9738274-5-3

We acknowledge the financial support of the Government of Canada through Sport Canada, a branch of the Department of Canadian Heritage.

Canada

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