



GROWTH & DEVELOPMENT

3-5 YEARS

<p>General Remarks</p> <ul style="list-style-type: none"> • Cannot see the difference between what is real and what is not • Lives in an imaginary world • Constantly imitates • Highly dependent on parents • Needs to have a well-established routine in daily activities
<p>Social</p> <ul style="list-style-type: none"> • Highly individualistic, even egocentric • May be afraid of strangers • Boys and girls may be involved in the same activities without any problem
<p>Learning</p> <ul style="list-style-type: none"> • Period of life where significant progress is seen in areas such as ability to learn, intelligence, and language; is capable of understanding concepts such as age, time, space, and morality (good-bad) • Limited ability to concentrate (very short attention span); difficulty understanding abstract concepts • Limited ability to reason and solve problems • Cannot take into account most of the information or stimuli from the environment
<p>Physical</p> <ul style="list-style-type: none"> • Growth rate is slightly reduced compared to the first two years of life; body proportions become more balanced; head is fragile • Resting heart rate and heart rate during exercise higher compared to adults • Development of the nervous system takes place at a very high rate during this period; growth of the brain is approximately 75% completed at three years of age, and 90% at the age of six • Hand-eye coordination is improved, as well as speed/rhythm of execution of fundamental movements; increased control of movements, which nonetheless remain somewhat jerky • Motor performance is highly linked to kinesthetic and touch senses • At age five, activities such as walking or running are usually well mastered and can be incorporated into games; 35 metres can be run in approximately 10 seconds
<p>Preferences</p> <ul style="list-style-type: none"> • Likes activities that stimulate several different senses and the imagination • Likes simple games with easy-to-understand tasks and rules • Prefers individual activities, yet will share his or her environment of play with others
<p>To Avoid</p> <ul style="list-style-type: none"> • Any activity that is structured or requires attention • Activities that feature repeated impacts or where there is a risk of collision • Repetitive activities (to prevent boredom and also overuse injuries) • Exposure to a cold or a hot environment • Comparisons with other children • Emphasizing the result or performance
<p>Suggestions</p> <ul style="list-style-type: none"> • Activities that feature a variety of motor experiences, and where the emphasis is put on the kinesthetic sense (i.e. knowledge of the body and location of body parts in space) • Simple explanations and provision of manual assistance to the child during the execution of the movement • All activities should take the form of games • The instructions and the teaching must be specific, simple, and aimed at a very clear objective • Creation of small groups where activities take the form of games, with focus on psychomotor development (balance, coordination, movements in all directions, various forms of movement). Where possible, parents should be involved, thus creating an opportunity to consolidate a close relationship with the child through play • Children need to be praised and complimented generously and regularly for their efforts



GROWTH & DEVELOPMENT

6-7 YEARS

<p>General Remarks</p> <ul style="list-style-type: none"> • At this age the child remains fairly individualistic and self-centred; needs a lot of attention and must be in the company of an adult and/or in a small group • High dependence on parents • Acknowledges the coach as the leader • Needs to have a well-established routine in daily activities • Has no athletic or competitive background • Interest for sport activities may begin to grow
<p>Social</p> <ul style="list-style-type: none"> • Rather individualistic; often tries to expand social circle and the number of friends, especially with individuals of the same sex • Sometimes shy • Is conscious of own feelings and emotions, and of those of others toward him/her; can play on these feelings to obtain privileges • Boys and girls can be involved in the same activities without difficulty
<p>Learning</p> <ul style="list-style-type: none"> • Learns best by observing, quickly followed by doing • Short attention span (a few minutes) • Ability to reason is limited to what is readily observable • May be afraid of the unknown • Is likely to imitate and be highly imaginative; is often curious and wants to know everything
<p>Physical</p> <ul style="list-style-type: none"> • Development of the nervous system is almost complete • Rate of physical growth is constant, yet relatively slow; on average, little difference is observed between boys and girls with regard to height and weight • Head is still very fragile; bones, tendons, muscles, and ligaments cannot sustain heavy loads • Always seems to be moving; coordination is not very well developed; endurance is low • Resting heart rate and heart rate during exercise are higher than for adults; resting heart rate is approximately 100 bpm • Aerobic metabolism predominates during effort; low anaerobic capacity • Sweating mechanism of children is not well developed, which reduces their capacity to dissipate heat during exercise; children are at an increased risk of heat injuries; children cool off rapidly, and do not tolerate cold well
<p>Preferences</p> <ul style="list-style-type: none"> • Enjoys individual activities, with some interaction with the group (e.g. tag); likes to throw, catch, hit, kick, run, jump, climb, and other activities where the whole body is involved • Enjoys all types of activities that require imagination or involve imitating an adult • Games should encourage creativity and have few rules
<p>To Avoid</p> <ul style="list-style-type: none"> • Activities that require repeated impact or wherein there is a risk of collision • Repetitive activities and activities that feature too much structure (to prevent boredom and also overuse injuries) • Exercising in a very cold or hot environment • Using equipment that is not designed for children (i.e. too big, too heavy) • Specialization in a sport or in a position • Repetition of all-out efforts lasting between 20 and 60 seconds; work against a high resistance; prolonged aerobic endurance efforts • Emphasizing the result or performance • Negative competitive experiences • Comparisons with other children • Lengthy explanations • Negative criticism



GROWTH & DEVELOPMENT

6-7 YEARS (Continued)

Suggestions

- All activities should take the form of games; conditions in which activities or games take place should be varied to promote the development of a variety of motor patterns and skills
- Rules should be adapted to encourage a high degree of interaction between and involvement of participants, and to increase the probability of success during the activity; modified, scaled-down equipment should be used
- Demonstrations should be highly specific, simple, and aimed at the achievement of a well-defined objective; duration of activities should be relatively short, and exercises should change frequently
- Children need to be praised and complimented generously and regularly for their efforts; feedback should focus on one point only; choose the most important one; children should be encouraged to be proud of their own performance, and to congratulate others for theirs
- Basic motor abilities should be developed through games; techniques should be introduced in ways that stimulate the child's imagination (e.g. refer to a funny situation of the child's life, a cartoon)
- Encourage children to drink water, and in hot conditions, ensure that there are plenty of beverages available

Examples

- Relay or obstacle races
- Somersaults, pirouettes, jumps, runs, lateral movements, rope climbing, rope skipping, use of play structures, sliding, throwing, catching, passing a ball with hands or feet; hitting a ball
- Basic strength exercises using the child's own body weight (push-ups, pull-ups, squats with own body weight)



GROWTH & DEVELOPMENT

8-9 YEARS

General Remarks
<ul style="list-style-type: none">• Has a high degree of imagination; being active is very important; likes to work, learn, and accomplish things• Still needs a well-established routine in daily activities• Wants to act on his/her own; does not like conventions or norms, but will accept the coach's instructions if there is a sense that he/she participates in the establishment of the rules and conditions governing the activity• Very little or no athletic background• Interest in sport activities is often high• Some early developers may be entering puberty, particularly girls.
Social
<ul style="list-style-type: none">• Is still individualistic and self-centred, but shows an increasing interest for the group; wants to be accepted by others, and usually shows a great deal of loyalty toward the team• Needs praise and positive feedback• Is conscious of own feelings and emotions, and of those of others toward him/her; can play on these feelings to obtain privileges• Boys and girls may be involved in the same activities without difficulty• Seeks the approval of others; may reject opportunities to interact with individuals of the opposite sex
Learning
<ul style="list-style-type: none">• Accepts following instructions to learn faster, and reacts favourably to positive feedback/praise; ability to concentrate and to pay attention is relatively good; can begin to make some generalizations• The emphasis should be on motor development and the learning of skills in a variety of sports• It is possible to start teaching the rules of the game and fundamental tactical principles• Is capable of assessing the angles of moving objects (e.g. balls), yet may still have some difficulty distinguishing between right and left• Ability to reason and solve problems is limited to what can be observed
Physical
<ul style="list-style-type: none">• Physical characteristics are similar to children aged 6-7, but coordination and stamina are better; growth rate is slow, which tends to allow for a greater degree of motor control and autonomy• The development of the nervous system is almost complete• Reaction time is slow; shows an increased ability to make coordinated and quick movements• Large muscle masses (e.g. the legs) show a greater degree of development compared to smaller ones (e.g. arms, hands)• Very little potential for increased muscle mass (hypertrophy); strength gains result primarily from increased coordination and neural factors• Resting heart rate and heart rate during exercise are higher than for adults; aerobic metabolism predominates during effort and anaerobic capacity is low• The sweating mechanism of children is not well developed, which reduces their capacity to dissipate heat during exercise; children are at an increased risk of heat injuries
Preferences
<ul style="list-style-type: none">• Enjoys individual or group games, and drills where participants are paired• Likes activities where the whole body is involved (e.g. jumping, running)• Likes to assume some responsibility, and to take part in decisions relating to games or activities played• Prefers activities that will allow him/her to shine and to be successful



GROWTH & DEVELOPMENT

8-9 YEARS (Continued)

To Avoid

- Activities that feature repeated impacts or where there is a risk of collision; repetitive activities (for reasons of boredom but also to prevent overuse injuries); activities that are too structured
- Mechanical and/or highly repetitive approach to the teaching of fundamental techniques; use of equipment that is not designed for children
- Repetition of all-out efforts lasting between 20 and 60 seconds; work against a high resistance; prolonged aerobic endurance efforts
- Exposure to a cold or hot environment
- Specialization in a sport or for a position
- Emphasizing winning and creating a pressure to perform
- Comparisons with other children
- Negative competitive experiences
- Lengthy explanations
- Negative criticism

Suggestions

- Establish guidelines for acceptable behaviour, and act in a constant and predictable manner; however, accept each child unconditionally
- Children need to be praised and complimented generously and regularly for their efforts; feedback must focus on one point only; choose the most important one; emphasize the following: development of confidence, self-esteem, peer interaction, cooperation, having fun, putting winning and losing into perspective, and giving a 100% effort
- Demonstrations must be highly specific, simple, and aimed at the achievement of a well-defined objective; duration of activities must be relatively short, and exercises must change frequently
- Focus on activities that are aimed at developing coordination, balance, and proper motor patterns; encourage participation in a variety of sports and activities; encourage the use of both right and left hands and feet whenever possible to enhance motor patterns and improve coordination; good age to use speed games
- Modified, scaled-down equipment should be used; competitive games where ability levels are matched; create opportunities for the child to demonstrate the progress he/she has made in a way that will enhance self-image; participants should have the opportunity to take some responsibility, and to assess the impact of such decisions; rules should be adapted to encourage a high degree of interaction between and involvement of participants, and to increase the probability of success during the activity
- Encourage children to drink water, and ensure that plenty of beverages are available when exercising in the heat



GROWTH & DEVELOPMENT

10-11 YEARS

General Remarks
<ul style="list-style-type: none">• Develops conscience, morality, and values• May display a highly competitive attitude (wants to look like a competent performer)• Marked distinctions between boys and girls begin to be visible, particularly toward the end of this period• May want to break free from the authority of adults, and may show a defiant attitude• Athletic background may be highly variable among participants; participation in sport activities is often done on a seasonal basis, in programs that can be relatively short (a few weeks)• Time devoted to general training and acquisition of a variety of skills and motor patterns should be greater than time spent training for a specific activity, or preparing for, or being engaged in, competition
Social
<ul style="list-style-type: none">• Is usually very interested in group activities, and creates strong links with a few friends• Wants to enjoy a greater degree of autonomy, and wants to help• Shows a high degree of loyalty to the group• Begins to be interested in individuals of the opposite sex, without showing it openly• Expresses his/her feelings easily (e.g. anger, sadness)• Boys and girls can be involved together in the same activities
Learning
<ul style="list-style-type: none">• Child begins to show some ability to deal with abstract concepts, yet prefers concrete examples• Emphasis should still be on general motor development and the learning of skills in a variety of sports, however fine motor control improves during this period• It is possible to start teaching a few specialized techniques, as well as fundamental tactical principles; the rules of the games should be well understood• Capacity to concentrate increases (can stay focused for approximately 10 minutes at a time)
Physical
<ul style="list-style-type: none">• Strength and endurance gains are possible as a result of fitness training, but improvements are also directly related to growth; very little potential for increased muscle mass (hypertrophy). Strength gains result primarily from increased coordination and neural factors• Flexibility improves but it should also be trained• Reaction time is relatively slow, however good visual acuity and depth perception allow for better performance in throwing/catching exercises• Sweating mechanism of children is not well developed, which reduces their capacity to dissipate heat during exercise; children are at an increased risk of heat injuries• In girls, the second half of this period marks the beginning of a major growth spurt that will last approximately 3.5 years; some girls may have their first menstruation as early as 11 years old• In some boys, puberty will begin at the end of this period.
Preferences
<ul style="list-style-type: none">• Enjoys games that feature some competition, team games, as well as activities that require some form of effort or that represent some sort of a physical challenge
To Avoid
<ul style="list-style-type: none">• Activities that feature repeated impacts or where there is a risk of collision; repetitive activities (to prevent boredom and also overuse injuries); activities that feature too much structure; exposure to a cold or hot environment• Use of equipment that is not designed for children; repetition of all-out efforts lasting between 20 and 60 seconds; work against a high resistance; prolonged aerobic endurance efforts• Specialization in a sport or for a position on the team• Emphasizing winning and creating a pressure to perform• Comparisons with other children• Unpleasant or non-gratifying competitive experiences• Mechanical and/or highly repetitive approach to the teaching of fundamental techniques



GROWTH & DEVELOPMENT

10-11 YEARS (Continued)

Suggestions

- Participation in several sports/activities should be encouraged
- Rules should be adapted to encourage a high degree of interaction between and involvement of participants, and to increase the probability of success during the activity; modified, scaled-down equipment should be used
- Demonstrations should be highly specific, simple, and aimed at the achievement of a well-defined objective; duration of activities should be relatively short, and exercises should change frequently
- Time when participants are actively involved in activities during practices should be maximized
- Children need to be praised and complimented generously and regularly for their efforts
- Feedback should focus on one point only; choose the most important one; emphasize the development of confidence, self-esteem, peer interaction, cooperation, having fun, putting winning and losing into perspective, and giving a 100% effort
- Encourage children to drink water, and ensure plenty of beverages are available when exercising in the heat



GROWTH & DEVELOPMENT

12-15 YEARS

General Remarks
<ul style="list-style-type: none"> • Period where major growth spurts occur; in each sex, large differences in physical maturation may be observed in individuals of the same chronological age; in general, girls are more mature than boys • Acquires moral concepts, values, and attitudes that make it possible to relate meaningfully to society; positive role models are important • Opinion of friends tends to be more important than that of the coach; participants want to look like, or be perceived as competent performers • This is a period of major change during which participants are likely to challenge authority, be very critical, question decisions, and ask for justification • Competition becomes increasingly important to some participants; time devoted to general training should be greater than time spent training specifically for a sport, or time spent competing
Social
<ul style="list-style-type: none"> • It is important to separate boys and girls for activities and competition • Emotional instability may be observed due to the rate at which physiological changes occur • Shows a greater desire for independence; this can be a time of rejection of parental authority and, in general, a period when there is a high degree of confrontation with adults • Develops close relations with individuals of both sexes; enjoys being more independent, and having more responsibility; a great deal of interest toward sexuality is observed toward the end of this period • This period is important for the development of values such as respect for others, fair play, and a work ethic
Learning
<ul style="list-style-type: none"> • Begins to think like an adult. It is important to take into account the different maturity level between boys and girls; interests and abilities differ between the sexes; challenges are often very appealing • Needs change on a regular basis; is highly curious; capacity to concentrate increases (can stay focused for 20 minutes or more at a time); increasingly capable of abstract thinking • This is a good period to consolidate the development of fine motor skills, to teach more complex tactical notions, and to encourage decision-making in specific situations • Specialization by sport and for a position can begin; however, participation in a variety of sports that have different demands should be encouraged
Physical
<ul style="list-style-type: none"> • Girls: The development of secondary sexual characteristics (pubic hair, breasts) begins around 11-11.5 years of age. On average, the growth spurt begins shortly thereafter. Maximal growth rate (or peak height velocity, PHV) is normally observed between 11.5 and 12.5, and menarche (first menstruations) occurs approximately one year after PHV. During this period, body fat content tends to increase progressively, and typical female body forms (hips) appear due to hormonal effect. As a result of these changes, performance often plateaus or may even decline for a short period of time. In addition, for a period of several months following menarche, girls may have difficulty sustaining heavy training loads. Girls should be counselled that this phenomenon is normal, and that their performance will continue to improve after this temporary phase. • Boys: The development of secondary sexual characteristics (pubic hair, testes, penis size) occurs progressively around age 11. On average, the growth spurt begins at age 13, and PHV is reached at around age 14-15. Significant gains in muscle mass and in strength typically occur one year after PHV (i.e. at around ages 15-16) due to higher levels of testosterone; this age represents a good time to initiate strength training with heavier loads if this athletic ability is important in the sport. • During the growth spurt, feet and hands tend to grow first, followed by the legs and the arms; long bones are fragile during this time; growth is accompanied by an increase in body weight throughout the period • As a result of the rapid growth spurts that occur during PHV, body parts can be disproportionate; this can have a direct effect on coordination and the ability to perform certain skills that were well mastered before • This period is well suited for the development of aerobic fitness, as well as flexibility • Strength and speed-endurance training can begin toward the end of this period



GROWTH & DEVELOPMENT

12-15 YEARS (Continued)

Preferences
<ul style="list-style-type: none">• Enjoys challenges and the opportunity to accomplish individual feats• Accomplishment of actions that are likely to be looked at or admired by peers/friends• Activities that contribute to the development of fine skills/dexterity and that do not require too much strength (i.e. racket sports, swimming, golf, skiing), team games, situations where some form of competition exists
To Avoid
<ul style="list-style-type: none">• Repetition of all-out efforts lasting between 20 and 60 seconds before or during PHV; work against a high resistance; prolonged aerobic endurance efforts that involve impact on the joints (i.e. running on a hard surface such as asphalt); repetitive activities (to prevent boredom and also overuse injuries)• High mechanical stress (compression forces) on the long bones and the backbone, e.g. lifting heavy weights• Programs where the number of competitions is greater than the number of practices• Pressure to perform• Negative competitive experiences
Suggestions
<ul style="list-style-type: none">• Time when participants are actively involved in activities during a practice should be as high as possible• Acquisition of more complex or sport-specific techniques; explanations can be more elaborate, where appropriate• Correct execution of movements must be emphasized if strength training is performed• Appropriate supervision of training activities is important to prevent unnecessary risks that adolescents may take• Games emphasizing skill and dexterity• Opportunities to meet or interact with sport role models (athletes or coaches); competitions or tournaments that involve trips; social activities among the team/training group• When an athlete or participant who has reached puberty experiences pain in the joints (e.g. shoulders, elbows, knees), or if he or she now seems to have difficulty completing workouts that could previously be sustained with no difficulty, training loads (amount-frequency-intensity) may have to be decreased to avoid undue stress on the athlete's body• Depending on the maturity level, involvement of the adolescent in roles such as officiating, or the leadership of certain activities (e.g. leading a warm-up or cool-down)



GROWTH & DEVELOPMENT

16-17 YEARS

<p>General Remarks</p> <ul style="list-style-type: none"> • At the end of puberty, the individual is no longer a child, but is not completely an adult yet, which can create some identity problems • Late developers may still be experiencing the effects of puberty • The participant seeks greater autonomy, and progressively becomes more mature emotionally • Specialization in a sport or for a position may require year-long preparation; however, training may remain a seasonal process, particularly at the beginning of this period • Training volume increases progressively from one year to another, and may reach 15 hours or more per week, depending on the sport, at the end of this period • In participants who are training seriously, the amount of time devoted to general training, specific training, and preparing for competition or competing is approximately the same
<p>Social</p> <ul style="list-style-type: none"> • Sexuality becomes very important and participants seek intimacy with others • Although a greater degree of independence is sought, friends remain very important • Wants to be considered an adult • Often, the coach will be a role model; the participant will frequently reject parental authority • Participants become increasingly aware of their own values • Social activities are very important
<p>Learning</p> <ul style="list-style-type: none"> • Social awareness increases, and as a result participants develop a broader range of behaviours; participants also develop the ability to think logically • Period when participants begin to specialize in particular sports, and develop broader strategic and tactical awareness
<p>Physical</p> <ul style="list-style-type: none"> • Major physiological systems and functions are established; appropriate time to develop aerobic capacity; significant increase in strength and anaerobic capacity (endurance-speed) • Training of power and speed can be done • Increase in muscle mass in boys, due to the increased production of certain hormones, in particular testosterone • Growth in girls typically ends at 17-18 years, and at 19-20 years in boys
<p>Preferences</p> <ul style="list-style-type: none"> • Prefers to play the full game or activity, i.e. without modification of the rules or conditions of play • Prefers activities that contribute to improving physical appearance or to creating a particular status in the eyes of peers (e.g. sport, art, theatre) • Group activities become important (e.g. movies, dances, parties, travel)
<p>To Avoid</p> <ul style="list-style-type: none"> • Development of certain muscle groups while ignoring antagonists (e.g. developing the quadriceps but not the hamstrings)
<p>Suggestions</p> <ul style="list-style-type: none"> • Delegate certain tasks, provide opportunities for the participant to solve technical-tactical problems and improve decision-making • All athletic abilities can be trained and developed, relative to the degree of physical maturity of the individual • Strength-endurance can be trained with no reservations based on the demands of the sport; if increased muscle mass is an important goal to achieve given the sport, this can be accomplished through strength training programs using moderate loads in sets of 8-12 repetitions; all major muscle groups should be developed to avoid muscle imbalances (note: major increases in muscle mass should not be expected in females) • Strength training with very heavy weights (1-5 repetition maximum, or RM) can be done by both sexes, but with caution and under the guidance of experienced coaches • Include sessions dealing with officiating, strategy, and tactics • Creating an assistant coaching role for some appropriately qualified participants may improve self-esteem and peer acceptance • Important time to work at developing respect for others, and concepts like fair play and work ethic • Provide opportunities for participants to observe and meet role models



GROWTH & DEVELOPMENT

18+ YEARS

General Remarks
<ul style="list-style-type: none">• Major physiological systems and functions are established, which allows for the training of all athletic abilities• Self-assured; chooses own path and goes out on his/her own• Resists involvement in situations which may question self-image as an independent person• The need to achieve may lead the participant to strive for improved performance• General training time may be reduced as the serious participant concentrates on specialization and preparation for competition
Psychosocial
<ul style="list-style-type: none">• Professional and family obligations lead to much less free time• Intimate relationships are very important• Financial independence provides greater opportunity for choice• May become a member of a group of close friends
Learning
<ul style="list-style-type: none">• Adults over 25 years of age often have experience in a broad range of activities (e.g. sport, work, education) which can greatly improve learning and the transfer of knowledge and experience from one area to another
Physical
<ul style="list-style-type: none">• Young men stop growing at around 20 years of age• The individual may expend significant energy and time raising children and working• Strength, speed, and power are at their peak in the early 20s, and may be maintained through to the early 30s• Endurance reaches its peak towards the late 20s; after the age of 30, physical capacities begin to decline progressively
Preferences
<ul style="list-style-type: none">• Activities that help relieve stress
To Avoid
<ul style="list-style-type: none">• Nothing; all abilities can be trained
Suggestions
<ul style="list-style-type: none">• Interaction with others is important and may take the form of participation in seminars, workshops, or sport training camps• Individuals may seek roles and responsibilities in the management, organization or promotion of activities and events• Becoming a coach, official, or referee is one way of keeping this group engaged and committed, and also offers the opportunity for social interaction• Engage in competitive activities and events in practices