

North American Soccer—Overplayed and Underdeveloped

How Long-term Planning Can Make the Difference for Our Young Players

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BGN The objective of athletic preparation is to play well or peak at required time(s) or time series. To qualify and play well at major games or the World Cup, or to peak for important tournaments, requires good planning and implementation by the coach/manager. For a player to achieve a peak performance, his/her training must be arranged so that he/she will peak simultaneously in the technical, tactical, physical, mental and nutritional aspects of training. In addition, the medical and environmental elements of training must also be optimized.

Soccer coaches at all levels of development who are responsible for planning peak performances must carefully integrate and sequence all of the above-mentioned factors. They should also recognize that the way this is done varies according to the developmental level of the athlete. In other words, the emphasis of training changes as players advance in their training.

For the novice soccer player, training should focus on acquiring the basic technical and tactical skills in a fun environment, and the competitive aspects of the game should be de-emphasized. Once the player has mastered the basic soccer skills and tactics, the coach can then gradually shift the emphasis of training as indicated by individual needs.

As is the case in many endeavors, it takes many years of dedicated training before a soccer player has the ability to compete at the international level. An average of eight to 12 years of general and specific preparation is required before peak performances will be achieved consistently throughout the competitive season.

The role played by genetics must not be overlooked when examining the factors that contribute to optimum elite performance. Only a few of the thousands of children who begin to play soccer will reach the elite level. These players will arrive there sooner or later than the others, depending on their own "tempo" which is determined by their genetic endowment (early or late respondents; Bouchard 1990, Bouchard et al. 1986).

This series of articles will examine the main issues related to long-term planning and player development in soccer. Many of the concepts and ideas that have been briefly introduced above will be discussed and analyzed in this article and in those that follow.

Early Specialization

During the past few decades, early specialization in sports training has been one of the main topics of discussion for coaches, sport scientists, sport administrators and parents. The salient success of the former communist countries at international competitions, especially at the Olympic

Games, demonstrated the benefits of a fully aligned sport system, including early talent identification, early selection and specialization. This sport system, which produced an unusually high number of champions, has been described and analyzed by Shneiderman, "The Soviet Road to Olympus" (1978), Riordan, "Sport and Soviet Society" (1977), and Gilbert, "The Miracle Machine."

The concept of early specialization in sports was not readily accepted or endorsed by many Western societies because of ethical concerns. Harsanyi (1992) noted that communist countries that have exploited athletes through early specialization developed a practice without any scientific theory to support it. Winning at all costs became the basic principle of training in some of these countries, regardless of the consequences for the health and well being of the athletes.

As a result, some critics rejected all of the information and structure of the former Soviet sport system, declaring that short- and long-term athletic preparation were so deeply tainted with doping that theories and practices such as periodization of training (Matveyev, 1975; Harre, 1978, Bompa 1985) must be discredited also. However, an historical overview shows that the basic concepts of athletic preparation were implemented and proven long before doping became an issue in the athletic world.

In Canada and the United States, many sports have adopted a generic model of athlete development based upon "the pyramid principle." Five components make up this pyramid, including talent identification, recruitment, training, competition and retention. Currently, administrative and coaching practices emphasize only two of these components: training and competition. As a result, the balance between the components is far from optimum. Little attention is paid to systematic talent identification and recruitment at early training ages. Nor is attention paid to the retention of athletes toward the end of their athletic career.

This balance is further upset by training plans that contain more competitions than training activities (Bompa, 1995). For example, in team sports, including soccer, softball and hockey, athletes have far more games scheduled than training sessions, and in many individual sports the competition period extends over the entire annual cycle (Balyi, 1995). Houston (1997) in a series of articles entitled "Young Hockey Talent Failed by the System" in Toronto's daily newspaper, *The Globe and Mail* described how the system emphasizes the game over the player.

In soccer, the fault lies in the existing system of competition or rather, with the non-existence of a system of competition (Balyi, 1995). In both

Canada and the United States there is an emphasis on winning at all ages and at all levels (Bompa, 1995), and as a result, basic skill acquisition suffers. This is in contrast to the former Soviet Union, Eastern Europe and Cuba, where basic athletic preparation for children between the ages of six and 10 is characterized by over-all preparation. This includes the introduction of fundamental gymnastic and track and field skills. These two sports are considered to be the "basic" sports for all other sports, because they develop general movement skills, including running, jumping, throwing, balance, agility and coordination.

The concept of basic general athletic preparation is not widely accepted in Canada nor in many other Western cultures. The importance of fundamental skills and fitness is often neglected by coaches and parents who focus on competitive performances and winning rather than on the acquisition of basic technical and tactical skills and fitness. Canadian athletes undergo highly demanding sport specific training regularly without basic skill and fitness development.

In many sports, such as alpine skiing, baseball, figure skating, softball, soccer, rugby, water polo and water skiing, the elite system of training and competition is utilized for young and developing athletes. The result of this type of athletic preparation is typified by entry level soccer players who, when required to perform various tactical maneuvers, cannot because they have never been introduced to the proper kicking skills. Young players cannot be expected to perform the complex technical aspects of a sport before they have acquired the basic skills.

The North American overemphasis on competition during early athletic development is also partially a consequence of the way that competitions are scheduled. In many sports, calendar planning is very sophisticated at the elite levels, but largely neglected at the developmental levels. However, optimum calendar planning is equally important at both levels.

Often, young athletes must peak year round because the competitive calendar does not allow time for fundamental training. Volunteers who mean well, but who have no expertise in athlete development often compile training and/or competition calendars for the developmental levels. Sport and recreation administrators often do scheduling rather than by technical experts or coaches who realize that the competitive calendar must reflect the players' developmental level of the players.

Young soccer, rugby and softball players—

continued from page 6

as well as figure skaters—compete throughout the year because of the existing competitive schedules and repeat the same or similar patterns year after year. This is not to say that young athletes should not be given the opportunity to compete. Starischka and Tschien (1977) suggest that there is no annual phase without competitions, and that children are better motivated when they have short term, concrete goals, rather than long-term, abstract ones. Thus, participation in tournaments is encouraged, but the development of fundamental fitness, technical and tactical skills should be given priority in the annual training plan and this is reflected in the annual competition schedule.

This approach works when the training and competition ratios are 5-15:1, versus the Canadian approach where the ratio of training to competition is often 1:1-5. Bompa (1995) recommends a 4:1 training to competition ratio for developing athletes during the competitive season. Therefore, even higher ratios are required during the preparatory phases of training! In other words, competition is appropriate within the annual plan for young athletes, however the emphasis of training should be on general skill acquisition and this emphasis should be reflected in the percentage of the annual plan allotted to it.

Regardless of the causes, the present system of competition in Canada and particularly in British Columbia (and very possibly in the United States) should be critically examined from the viewpoint of optimum development of young athletes/players. Normative data about early athlete development from countries that are excelling in soccer and have a well balanced sport system can provide valuable information regarding changes that need to be made in the Canadian and American sport systems.

Coaches, sport administrators, boards of directors and club planners at all levels must have a solid understanding of the principles of long-term athletic preparation, including periodization, trainability of young, intermediate and elite players, growth and development or maturation, and critical or sensitive periods. This information will help them to make intelligent choices when undertaking activities related to athletic preparation, such as formulating long-term training plans or drawing up annual competitive calendars.

Specific long-term Athlete/Player Development Studies

Most of the Canadian and American soccer publications are devoted to skill development, tactical solutions and drills to enhance technical and tactical improvements. Surprisingly little has been written about long-term player development or physical preparation of the entry level, intermediate or elite player. In contrast, the importance of long-term athlete development has been written about at length in other sports' publications. Belov (1995), Durand and Salmela (1994, 1995) gymnastics; Touretski (1993) swimming; Holm (1987) tennis; and Thumm (1987) athletics are just a few of many authors who have discussed this issue in relation to specific individual sports. Much of the information contained in these and other models for long-term athlete development is relevant to soccer.

With regard to team sports, King (1992) analyzed and described the aspects of long-term athlete development in rugby. Table 1 identifies six stages of development for rugby players.

Table 1—Multi Year Plan for Rugby

(King, 1992)			
Stage	Chronological Age	Training Age	Training Phase
1.	12-13 years	1 - 2	Preliminary
2.	14-15 years	3 - 4	Basic Specialization
3.	16-17 years	5 - 6	Specialization
4.	18-19 years	7 - 8	Advanced Specialization
5.	20-21 years	9 -10	Phase of Perfection
6.	22 + years	11	High Performance

Sanderson (1989) called for a four-phase development plan, and pointed out that training content and implementation have to be flexible enough to allow both early and late developers to progress at their own rate.

Table 2—long-term Structure of Training

(Sanderson, 1989)		
Phase	Duration	Developmental Stage
Initiation	3 - 4 years	Early school years
Basic Training	5 -7 years	Pre-pubescent and during puberty
Build-up Training	3 - 4 years	Post-pubescent
Systematic High Level Training	6 -10+ years	Adulthood

Platonov identified the need for long-term planning in a general (non-sport-specific) context. He included five stages of development and provided

normative data about the number of training hours and the percentage distribution of general, complementary and specific training loads.

Table 3—Stages of Generalized Athletic Preparation

(Platonov 1985)				
Stages	Training Load			Annual Training Load Hours
	General	Complementary	Specific	
Initial	50	45	5	100 - 250
Basic	35	50	15	350 - 500
Specific Base	20	40	40	600 - 800
Maximization	15	25	60	900 - 1100
Maintenance	10	25	65	1200 - 1400

Bompa (1996) identified a two-phase long-term periodization model, including the generalized (6 to 14 years) and the specialized (15 + years) phases. Each phase is broken down into two stages. The two stages within the generalized phase are called the initiation stage (6 to 10 years) and the athletic formation stage (11 to 14 years). The two stages within the specialized phase are referred to as specialization (15 to 18 years) and high performance (19+ years). Bompa also underlined the importance of over-all athletic development versus early specialization for young athletes.

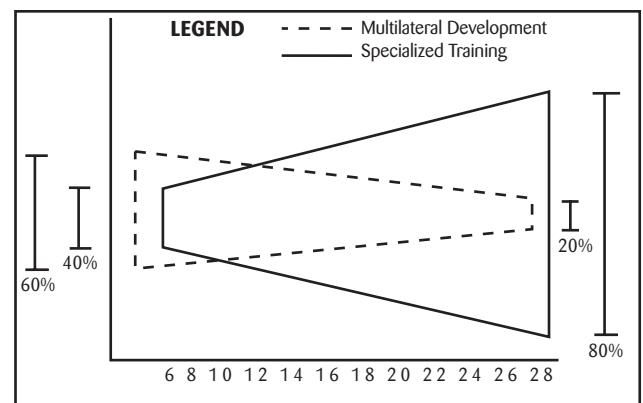


Figure 1.
Ratio Between Multilateral Development and Specialized Training at Various Ages (Bompa, 1995)

Balyi (1996) identified "early" and "late" recruitment sports, and recommended that all sports be classified according to these categories for athlete development projects. He defined early recruitment sports as those sports where early specific training is essential to be successful, such as gymnastics, rhythmic gymnastics, swimming, diving, fencing and table tennis. Late recruitment sports were defined as "open skill sports," such as, soccer, rugby, volleyball, combative or racquet sports, where early specialization is not essential for future excellence.

Balyi identifies three phases of long-term development within early recruitment sports and four phases within late recruitment sports.

Table 4
Early Recruitment Sports Late Recruitment Sports

Training to Train	FUNDamental
Training to Compete	Training to Train
Training to Perform	Training to Compete
	Training to Perform

Obviously, in early recruitment sports the FUNDamental and Training to Train phases must be combined to optimize the development of young athletes and makes long-term development a more complex phenomenon.

To summarize the trends of the literature on long-term athlete development models, most publications refer to a three or four stage model, commencing structured athlete development around the age of eight. However, in several sports, later recruitment still will contribute to salient performances, but overall athletic development during the FUNDamental phase is a certain prerequisite of excellence.

Balyi (1996) working with the British Columbia Soccer Association used the four stages model to develop a sport-specific soccer long-term player development model. The following table summarizes his concept: (See Table 5 on page 8)

continued on page 8

continued from page 7

Coming to Terms:

The following terms related to long-term athlete development provide a brief definition and explanation of the technical terms that are used in this and forthcoming articles.

- Chronological age refers to “the number of years and days elapsed since birth” (Haywood, 1993).
- Skeletal (or biological) age refers to the maturity of the skeleton “determined by the degree of ossification of the bone structure” (Haywood, 1993).
- Periodization is the structuring or cycling of short- and/or long-term training programs to provide optimum performance(s) at the

- with a three to four months’ period of “in season” or competitive cycle.
- Double periodization is characterized by two competitive seasons (fall and spring in Europe). Thus, the competitive cycle or “in season” will take six to seven months, while the training season will be shorter, only four to five months. The only reason that this can be accomplished is that the players who are undertaking double periodization are well trained and they can focus on high quality of training and a long “in season.”
 - Multiple periodization is the framework of preparation of elite players. After eight to 12 years of training they are fully trained and do not need to take part in general condi-

- jumping, throwing and overall body coordination. This phase also provides the fundamentals of fitness development. The structure of training is very loose, since soccer is one of the sports the young athletes are practicing with a large number of other sports.
- The Training to Train phase refers to the concept that training is emphasized versus competition. It does not imply that the young, developing players should not compete, or should not try to win when they play their matches, but rather that during the first few years of training the major emphasis should be on the acquisition of fundamental skills and fitness. Obviously

TABLE 5—LONG TERM PLAYER DEVELOPMENT - SOCCER
(Balyi and Hamilton, 1997)

FUNDamental Chronological age 5 - 9	Training to Train Skeletal age 9 - 14	Training to Compete Skeletal age 14 - 18	Training to Perform Chronological age 18 +
• FUN and participation	• Emphasis on general physical conditioning	• Sport and individual specific physical conditioning	• Maintenance (or possible improvement) of physical capacities
• General, overall development, agility, balance, coordination.	• FUNDamental technical skills progressing toward more specific skills at the end of the phase	• Sport-specific technical and playing skills under competitive conditions	• Further development of technical, tactical and playing skills
• Introduction to tactics	• FUNDamentals of tactical preparation	• Advanced tactical preparation	• Modeling all aspects of training and performance
• Speed, power and endurance through FUN and games.	• Participation in complementary sports; (similar energy system and movement pattern requirements)	• Individualization of technical-tactical skills	• Frequent prophylactic breaks
• Proper running, jumping and throwing technique	• Individualization of fitness and technical training	• Social-psychology; team dynamics	• All aspects of training individualized
• Medicine ball and body weight exercises for strength	• Fundamentals of “ancillary capacities”	• Sport and individual-specific “ancillary capacities”	• Fine-tune “ancillary capacities”
• Introduction to mental training	• Training for all positions (keeper or defensive/offensive position to be determined before the end of this phase)	• Position-specific fitness and technical-tactical training	• Fine-tune position specific capacities
• Training for all positions			
• NO periodization, very loose structure of training Soccer-specific twice a week with participation in other sports.	• Single Periodization Soccer-specific training four times per week, with participation in other sports	• Double Periodization Soccer-specific technical, tactical and fitness training six time per week	• Double or Multiple Periodization Soccer-specific technical, tactical and fitness training 9-12 times per week

- required time(s) or time series. The term is a synonym for planning for athletic training and performance. In order to attain a peak performance, training must be arranged so that the athlete achieves a simultaneous peak in all components of training, including technical (skills), tactical, physical and mental. In addition nutritional, medical, environmental and equipment factors must also be optimized. Coaches are responsible for the planning and implementation processes involved in achieving peak performance(s). Therefore they must carefully integrate and sequence all the factors of training and performance. The achievement of optimum peak performance(s) requires several years of general and specific preparation to ensure that all components are trained and optimized, while avoiding interference between them. Single, double and multiple periodization refers to the number of seasons in an annual cycle.
- Single periodization is characterized by one competitive season and usually seven to eight months of training, which is followed

- tioning or fitness preparation. The world’s best soccer players can compete year-round without detraining (national championship, international club finals, national team qualifying, European Championships, Olympics, Pan-Am Games, or World Cups), because the high intensity and high frequency of competition (and training) fully maintains their established physical and technical capacities.
- The shortcoming of North American soccer development is related to the present framework of player preparation. It is not effective to simply superimpose the program used to train elite athletes on young developing players. This method ignores the unique characteristics and needs of each age group. For young players, a higher ratio of training to competition is required and beneficial.
 - The FUNDamental phase refers to learning the basic technical and tactical skills (and basic rules of the game) through fun and games. It is a very important phase of athletic preparation, where overall physical skills are developed including agility, balance, quickness, fundamentals of running,

- scrimmaging and playing matches will be an important component of the training load, but the rational proportion of training (including scrimmaging) to competition/ match ratio will favor training 15 to 1 during preparatory (or off season) and 5 to 1 in the competitive (or in season). The structure of training is important; single periodization is the most suitable framework for training.
- The Training to Compete phase refers to player preparation that aims to provide high intensity and specificity of training all year ’round. Players will learn how to perform all the learned skills under a variety of competitive conditions as they are exposed to all possible competitive conditions during training. Specific emphasis will be placed on optimum preparation by modeling training and competition (matches, tournaments). Fitness programs, recovery programs and psychological preparation will be fully individualized.
 - Obviously, at this stage technical and tactical preparation must also be individualized

continued on page 9

too. These activities must be organized above and beyond team preparation, or generalized team preparation will contribute to individual weaknesses. (This phase of player development should only be introduced after the goals and objectives of the “Training to Train” phase have been achieved. Double periodization is the most suitable framework for this phase.

- The Training to Perform phase refers to the final stage of player preparation. Once all the player's abilities have been fully established in terms of physical, technical, tactical and mental preparation, as well as his/her “ancillary capacities” or knowledge base, the focus of training becomes the optimization of performance or peaking when required. Double and/or multiple periodization is the most suitable framework for this phase.
- As stated earlier, the importance of fundamental physical, technical, tactical and mental training is too often overlooked by coaches and parents at early training ages. The focus is on competition and winning rather than on the acquisition of basic skills and fitness levels. Thus, the short and long-term training and competition design for soccer development must take into consideration the framework of the fundamental, training to train, training to compete and training to perform phases. (See the

schematic illustration of the progression of the specificity of training through the four phases of player preparation. (Figure 2).

- Ancillary capacities refer to the attained, accumulated, integrated training and competition skills. This includes the knowledge base related to training, competition and its total environment, such as warm-up and cool-down; stretching; pre-match cardiovascular and central nervous system warm-up strategies; hydration and nutrition for training as well as before and during tournaments; taper and peak for major tournaments or regular weekend league games; recovery and regeneration from training, during the regular season and during tournaments, and overall psychological capacities and their collaterals (Balyi and Hamilton, 1997). (Figure 2)

Schematic Illustration of the Progression of the Specificity of Training

To summarize, soccer coaches at all levels of development must recognize that long-term planning is essential to athletic success. As well, they must realize that young athletes are not miniature adults and that the emphasis and content of training differs according to the developmental age of the child. For young players, the emphasis of training should be on basic skill acquisition and fitness in a fun environment. Competition is an essential part of training, but should not be the focus of it. Achieving this type of athlete develop-

ment may involve critically examining our current coaching and training methods in light of those used by other countries that have achieved success in the sport. It may also involve reorganizing competition schedules to allow children and developing players to have more time to learn and master basic movement skills and basic technical/tactical skills.

The results of these changes may contribute significantly to a higher caliber of skills, fitness levels and knowledge base (ancillary capacities) among North American soccer players, as well as greater longevity of their athletic careers.

In the next issue, we will continue to examine concepts related to long-term player development. The concepts of trainability, psycho-social and cognitive development of adolescent soccer players, talent identification, periodization and a soccer-specific long-term athlete development model, including the fundamental phase, will be described and analyzed. Finally, in the third and fourth parts of this series, the Training to Train, Training to Compete and Training to Perform phases will be discussed. **O**

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Figure 2

Schematic Illustration of the Progression of the Specificity of Training

