National Coaching Certification Program

BASEBALL CANADA

Planning Clinic: Coach Workbook & Reference Material

National Coaching Certification Program

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PART 1: PLANNING FOR THE SEASON

Section 1: Knowing Your Athletes and Defining Your Program's Orientation

1.1 Who Are Your Athletes?

Record essential information about your athletes in the form below.

Gender composition (check one)	All Female	( )	
	All Male	( )	
	Co-ed	( )	
Number of athletes in each age group		Male	Female
	Young children: 3-5 years	_____	_____
	Children: 6-7 years	_____	_____
	Children: 8-9 years	_____	_____
	Pre-puberty: 10-11 years	_____	_____
	Puberty, stage 1: 12-15 years	_____	_____
	Puberty, stage 2: 15-18 years	_____	_____
	Young adults: 19-22 years	_____	_____
	Adults: 22 years +	_____	_____
	Total	_____	_____
Within each age group, there are important differences	Height and weight	Yes ( )	No ( )
	Skill level	Yes ( )	No ( )
	Level of experience	Yes ( )	No ( )
Average number of years of training and competition in this baseball, including the present year			_____

Note: If you coach athletes of various age groups, select one and refer to this group when you complete the exercises in this *Workbook*.

1.2 What Is Your Program Orientation?

Given the athletes you coach, what should you emphasize most, and what should you try to achieve when you implement your program?

For each of the four categories below, choose the statement that best describes your program's orientation in that area. **Check only one statement for each category.**

General		Skill Development	
( )	Have athletes experience new activities	( )	Promote the acquisition of basic technical skills
( )	Improve athletes' general abilities and their mastery of the activity	( )	Improve basic technical skills already acquired
( )	Identify athletes with the potential to perform at a higher level	( )	Encourage the acquisition of new technical skills that are complex or more advanced
( )	Have athletes specialize in a particular discipline or playing position	( )	Improve athletes' ability to apply particular game plans or competitive strategies
Physical Conditioning		**Performance**	
( )	Improve athletes' general physical condition	( )	Give athletes the opportunity to gain experience by taking part in competitions
( )	Improve athletes' sport-specific physical condition	( )	Encourage the achievement of particular standards of performance
( )	Prepare athletes to achieve particular levels of performance in baseball-specific physical tests	( )	Participate in competitions to win; win a championship

Section 2: Building of the Plan

2.1 How Is Your Program Set Up?

Note: For this step, you will need a calendar and your calendar of competitions, if it is available.

2.1.1 When Is the First Time You Supervise Your Athletes?

What is the date of the first practice session in the program?

Month: _____ Day: _____

2.1.2 When Is the Last Time You Supervise Your Athletes?

When is the last time you supervise your athletes (practice session or competition)?

Month: _____ Day: _____

2.1.3 How Many Weeks Are There between these Dates?

_____

2.1.4 What about Breaks or Interruptions in the Program?

Write down the number of weeks when there are no practices or competitions (for example, Christmas vacation):

_____

2.1.5 Can Your Program Start Earlier or Finish Later?

Check off the answer that applies to your program:

- ❑ It is not possible for me to extend my program
- ❑ I could extend my program without too much difficulty by:
    - Starting _____ weeks earlier
    - Finishing _____ weeks later

2.1.6 What Is the Actual Length of Your Program?

Write down the **actual** length of your program in weeks, taking into account all breaks or interruptions (2.1.4) and factoring in any program extension (2.1.5).

Date of start: _____ End: _____

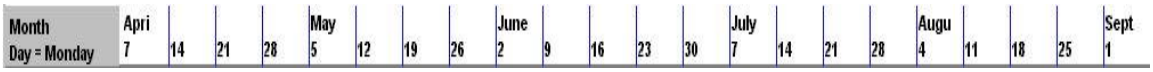
Length, excluding breaks or interruptions: _____ weeks

2.2 What Events Are There in Your Program?

To complete this section, use the Planning Calendar Worksheet on page 98. If your competition calendar is available, use it too.

- ❑ Using the information from 2.1.6 on the start and end dates for your program, fill in the top line of the Planning Calendar Worksheet:
    - First, write down the month when your program starts (for example, JAN for January, FEB for February).
    - Then write down the date of the Monday in the first week of your program.
    - Then write down the dates of all the Mondays in your program and indicate when the month changes.

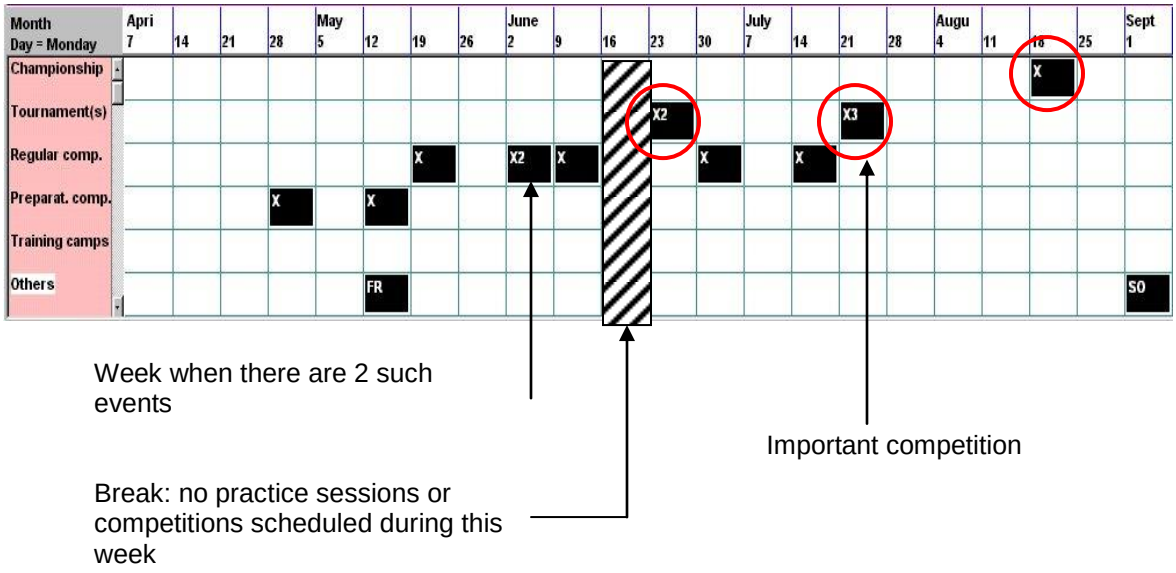
❑ Your worksheet should now look like this example:



❑ Now indicate the important events in your program.

- In the Planning Calendar Worksheet, start by selecting the row corresponding to one type of event.
- Then put an X in every week for which this type of event is scheduled. If necessary, indicate the number of events of this type during the week (e.g. *X2* for two events).
- Circle the most important events.
- For the type of event *Others* in the Planning Calendar Worksheet, create your own codes to identify other events, e.g. FR for fund-raiser or S for selection camp.
- If necessary, identify weeks when there are breaks or interruptions in your program.
- Repeat this step for every type of event.

❑ Your planning calendar should now look something like this:



2.3 What Are the Major Periods in Your Program?

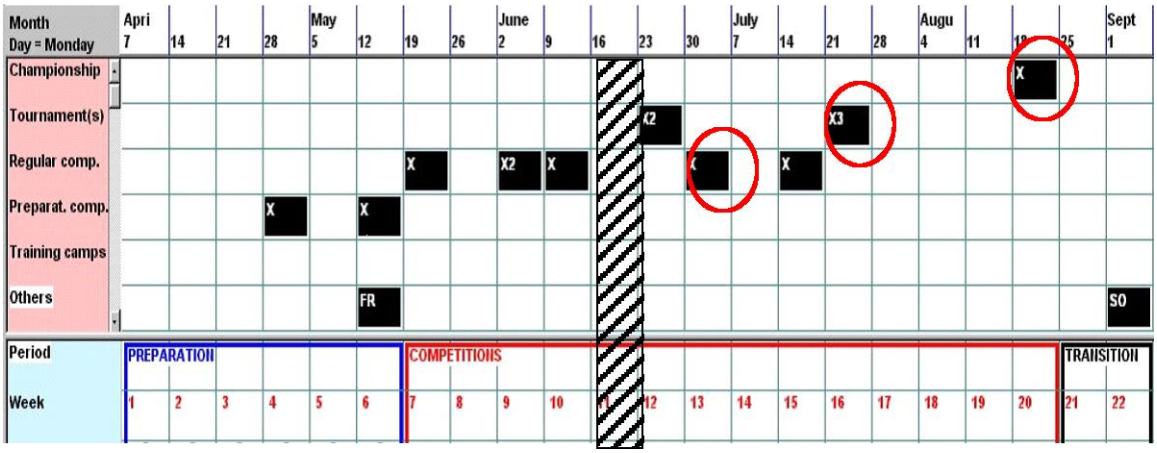
Training programs are divided into these three periods:

- **Preparation Period:** The number of weeks between the first practice session and the first regular or official competition. **Note**: Preparatory or unofficial competitions at the beginning of the program should be considered part of the Preparation Period.
- **Competition Period**: The number of weeks between the first regular or official competition of your program and the last competition the athletes will take part in.
- **Transition Period**: The number of weeks between the last competition athletes will take part in and the last supervised contact you will have with them. **Note**: There may be no formal Transition Period in your program, for example, if there are no supervised practice sessions after the last competition.

To mark these periods on your planning calendar:

- Use the two rows at the bottom of the calendar labelled **Period** and **Week**.
- Block out each period and write the name of the applicable period in the first row.

Your planning calendar should now look something like this:



Section 3: Analyzing Your Program

You will now use the information in your planning calendar to calculate different indicators for your program. These indicators include the number of game days, the number of practice days, and the percentage of the training program devoted to games.

3.1 Number of Games Days

Using the table below, calculate the number of game days in your program. Count both preparatory and regular games.

Identify the Number of Weeks in Your Program When There Are Games With:			**Partial Total**
1 day of games		**x 1**	=
2 days of games		**x 2**	=
3 days of games		**x 3**	=
4 days of games		***x 4***	=
5 days of games		***x 5***	=
6 days of games		***x 6***	=
7 days of games		***x 7***	=
A: Number of game days in your program (add all the numbers in the column Partial Total):			**A =**

3.2 Number of Practice Days

Calculate the number of practice days in your program.

Period	**Length (Weeks)**	**Average Number of Practice Days per Week**	**Partial Total**
Preparation	**x**		**=**
Competition	**x**		**=**
Transition	**x**		**=**
B: Approximate number of practice days in your program (add all the numbers in the column Partial Total):			**B =**

3.3 Analysis

For each statement in the column **Key Element in Your Program** in the table below, circle the entry in the column (A, B, or C) that best corresponds to the data for your program. For example, if your program is 26 weeks long, circle the Row 1 entry **20 and 32** in Column B.

Use the information in Sections 2, 3.1, and 3.2 to do this analysis.

#	Key Element in Your Program	Column A	Column B	Column C
		If your number is less than	**If your number is between**	**If your number is more than**
1	Length of your program in weeks	15	20 and 32	35
2	Length of the Preparation Period in weeks	6	7 and 15	16
3	Length of the Competition Period in weeks	6	7 and 20	20
4	Length of the Transition Period in weeks	2	3 and 4	6
5	Number of game days	5	6 and 20	20
6	Average length of a practice in the Preparation Period	60 minutes	75 and 120 minutes	150 minutes (2½ hours)
7	Average number of training days per week in the Preparation Period	2	2 and 4	5
8	Average length of a practice in the Competition Period	60 minutes	75 and 120 minutes	150 minutes (2½ hours)
9	Average number of practice days per week in the Competition Period	2	2 and 4	5
10	Percentage of training program devoted to games*	10%	20-35%	40%
11	Percentage of training program devoted to practices*	60%	65-80%	85%

*To calculate these percentages:

- ❑ Total number of program days = Total number of game days (A) plus Total number of practice days (B).
- ❑ Percentage of training program devoted to games = Number of game days divided by Total number of program days, expressed as a percentage.
- ❑ Percentage of training program devoted to practices = Number of practice days divided by Total number of program days, expressed as a percentage.

3.4 Reflecting on Your Program: Issues and Solutions

In 3.3, you circled entries in columns A, B, or C that best corresponded to the data for your program. For most programs, sports, and age groups:

- ❑ Circling an entry in Column A means your program is asking too little of your athletes
- ❑ Circling an entry in Column B means your program is appropriate for your athletes
- ❑ Circling an entry in Column C means your program is asking too much of your athletes

Based on the data about your program in 3.3 and what you've learned about long-term athlete development, assess whether your sport program:

( ) Features training and games opportunities that promote your athletes' development

( ) Contains significant gaps as far as opportunities for athletic development are concerned

I think this happens because:

_____

_____

_____

How do the major orientations of your sport program (1.2) compare with the model for long-term athlete development that you've learned about in this workshop?

( ) They seem appropriate

( ) They should be revised

Because … _____

_____

_____

PART 2: PLANNING A PRACTICE

Section 4: Review of the Online Training

4.1 Structure of a Practice

4.1.1 From the online training you recently took, the subject of the structure of a practice was covered. Using the lines below, indicate the 5 parts of a successful practice plan.

Section 5: Questions to Consider

5.1.1 When you plan your practice, what questions do you ask yourself (other than questions about logistics)?

5.1.2 Share your ideas with other coaches, and see what would be worth adding to your list of questions to consider when planning a practice.

5.1.3 Examine the figure below and check the information it contains against what you considered when you designed your practice. You'll probably find you've overlooked some factors you might want to consider when planning future practices.

Section 6: Planning for Safety

6.1 Prevention

During the pre-season information meeting with parents, one parent asks you these questions: "I don't know baseball very well. Are there any potential risks for my child? What actions do you take to make practices as safe as possible for the athletes?"

6.1.1 Use the table below to list points that will help you answer these questions.

Risks of Baseball	What I Do to Make Practices as Safe as Possible

6.1.2 Check the *Reference Material* sections *Sport Safety.* Are there some risk factors you forgot or other preventive measures you can take to make your practices safer? If so, add them to your table.

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Section 7: Stages of Skill Development

7.1 Developing a Basic Skill

The Learning Facilitator will direct you to the section of the Reference Material that outlines the stages of skill development and the needs of athletes at each stage.

7.1.1 Based on the information in the *Reference Material*, indicate the stage most of your athletes are. What evidence did you use to reach this conclusion? Record your answers in the table below.

p. 29, 66-68

Your athletes' abilities may be spread across several stages of skill development (e.g. from Initiation to Consolidation). Is there another stage of skill development many athletes are at? If so, which stage is it?

Stage of Development of Your Athletes	Evidence for Reaching this Conclusion
Stage of development **most** of your athletes are at for this skill: ( ) Initiation ( ) Acquisition ( ) Consolidation	
Stage of development the **second largest group** of athletes is at for this skill: ( ) Initiation ( ) Acquisition ( ) Consolidation	

Section 8: Integrating Athletic Abilities

8.1 What Abilities and Skills Does Baseball Require?

8.1.1 Complete the table that follows to determine the abilities and skills needed to perform well in baseball. You can work as a team to complete the table.

Ability/Skill	This Means Being Able to…	Actions or Situations in Baseball that Require this Ability/Skill	Importance in Baseball
Physical Ability			
Speed	Perform quick movements or cover a given distance in the shortest possible time *(e.g. all-out efforts lasting up to 8 seconds)*		( ) Very High ( ) High ( ) Moderate
Speed-Endurance	Sustain efforts at near maximum speed for as long as possible *(e.g. very intense efforts lasting between 10 and 60 seconds)*		( ) Very High ( ) High ( ) Moderate
Aerobic Stamina*	Sustain a dynamic effort over an extended period of time *(e.g. efforts lasting several minutes or even hours)*		( ) Very High ( ) High ( ) Moderate
Maximum Strength	Make a muscle or muscle group generate the highest level of tension during a maximum contraction, regardless of its duration		( ) Very High ( ) High ( ) Moderate
Speed-Strength	Perform a muscle contraction or overcome a resistance as fast as possible *(normally very brief efforts of 1 or 2 seconds)*		( ) Very High ( ) High ( ) Moderate
Strength-Endurance	Perform repeated muscle contractions at intensities below maximum strength *(15 to 30 repetitions or more)*		( ) Very High ( ) High ( ) Moderate

Ability/Skill	This Means Being Able to…	Actions or Situations in Baseball that Require this Ability/Skill	Importance in Baseball
Flexibility	Perform movements of large amplitude at a joint without sustaining an injury		( ) Very High ( ) High ( ) Moderate
Motor Ability			
Agility	The ability to execute movements or to move rapidly, with precision, and with ease.		( ) Very High ( ) High ( ) Moderate
Balance	Achieve and maintain stability, or keep control of the body during the execution of movements		( ) Very High ( ) High ( ) Moderate
Coordination	Perform movements in the correct order and at the right time		( ) Very High ( ) High ( ) Moderate
Technical/Tactical Skills			
Basic Technical/tactical Skills	Acquire and consolidate basic sport-specific skills/Analyze a basic situation and produce a correct response (one that gives a competitive advantage or increases the probability of a good performance)		( ) Very High ( ) High ( ) Moderate
Variations of Basic Technical/tactical Skills	Acquire and consolidate variations of basic sport-specific skills/Analyze more a complex situation and produce a correct response		( ) Very High ( ) High ( ) Moderate
Advanced Technical/tactical Skills	Acquire and consolidate advanced sport-specific skills/Analyze an advanced situation and produce a correct response		( ) Very High ( ) High ( ) Moderate
Decision-making	Analyze a situation and produce a correct response		( ) Very High ( ) High ( ) Moderate

Ability/Skill	This Means Being Able to…	Actions or Situations in Baseball that Require this Ability/Skill	Importance in Baseball
Mental Skills (As Appropriate)			
Attentional Control	Actively direct one's attention on relevant cues in the environment		( ) Very High ( ) High ( ) Moderate
Emotional Control	Maintain appropriate feelings at optimum levels of intensity and functioning		( ) Very High ( ) High ( ) Moderate
Goal Setting	Establish what one wants to accomplish, thereby giving a sense of purpose and direction to training and competition		( ) Very High ( ) High ( ) Moderate

* Aerobic stamina is a broad term that is sufficient for most sports. In endurance sports, however, the more specific terms *aerobic power* and *aerobic endurance* are used.

8.1.2 Check the *Reference Material* section *Importance of Physical and Motor Abilities by Sport Family*. Compare your ratings from the tables in 8.1.1 with the tables in the *Reference Material*. Make any necessary changes to your ratings.

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Section 9: Matching Them Up: Put it All Together

9.1.1 You determined how important specific abilities are in baseball. You have also determined the athletes you will be working with. You now need to determine what abilities you should or should not be avoiding based on these 2 criteria.

9.1.2 Check the *Reference Material* section *Athletic Abilities: Growth and Development Considerations*. For each ability identified as being important for baseball, mark which should be emphasized and which should be avoided (because they are unsafe or because the athletes' bodies cannot yet respond to this type of training).

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Abilities Needed in My Sport	Abilities to Avoid, Given Athletes' Age	Abilities to Emphasize, Given Athletes' Age

REFERENCE MATERIAL

SECTION 1

SEASON PLANNING

OVERVIEW OF THE ATHLETE'S LONG-TERM DEVELOPMENT

Overview of the Athlete's Long-Term Development*					
Key Program Elements	**Community Sport**	**Competition – Introduction**		**Competition – Development**	**Competition – High Performance**
Age Group	Chronological Age Males: 6-9 years Females: 6-8 years	Chronological/Developmental Age** Males: 9-12 years Females: 8-11 years	Males: 12-16 years Females 11-15 years	Chronological/Developmental Age Males: 16-23 years +/- Females: 15-21 years +/-	Chronological Age Males: 19 years +/- Females: 18 years +/-
General Orientation	FUNdamentals	Learning to train	Training to train	Training to compete	Training to win
Objectives	❑ Overall movement skills ❑ Fun and participation ❑ General, overall development ❑ Integrated mental, cognitive, and emotional development ❑ Screening for talent ❑ Daily physical activity	❑ Overall sport skills development ❑ Integrated mental, cognitive, and emotional development ❑ Major skill learning stage: all basic sport skills should be learned before entering Training to train ❑ Introduce ancillary capacities ❑ Talent identification	❑ Sport-specific skills development ❑ Integrated mental, cognitive, and emotional development ❑ Major fitness development stage: aerobic and strength; the onset of Peak Height Velocity (PHV) is the reference point. ❑ Develop ancillary capacities ❑ Frequent musculoskeletal evaluations during PHV ❑ Use talent identification to help athletes focus on 2 sports	❑ Sport, event, position-specific physical conditioning ❑ Sport, event, position-specific technical/tactical preparation ❑ Integrated mental, cognitive, and emotional development ❑ Optimize ancillary capacities ❑ Specialization	❑ Ages are sport specific, based on international normative data ❑ Maintenance or improvement of physical capacities ❑ Further development of technical/ tactical, and playing skills ❑ Modelling all possible aspects of training and performance ❑ Frequent preventive breaks ❑ Maximize ancillary capacities ❑ High performance
Type of Periodization	No periodization, but well-structured programs	Single or double periodization	Single or double periodization	Single, double, or triple periodization	Single, double, triple, or multiple periodization; frequent recovery breaks
Length of Program	A few weeks (6-12)	20-30 weeks		35-45 weeks	45-50 weeks
Ratio of Practice (Training) to Competition	Most time devoted to games and activities to develop motor skills; competition and results are not a priority	70% of the time devoted to sports participation should be spent training, 30% to competition and competition-specific training (these percentages may vary slightly, depending on the sport)	60% of the time devoted to sports participation should be spent training, 40% to competition and competition-specific training (these percentages may vary slightly, depending on the sport)	40% of the time devoted to sports participation should be spent training, 60% to competition and competition-specific training (these percentages may vary slightly, depending on the sport)	25% of the time devoted to sports participation should be spent training, 75% to competition and competition-specific training (these percentages may vary slightly, depending on the sport)
Number of Practices per Week	Participation in preferred sport 1 or 2 times per week and in many other sports 3-4 times per week	Sport-specific training 3 times per week plus participation in other sports 3-4 times a week	Sport-specific training 6-9 times per week, including complementary sports	Sport-specific technical, tactical and fitness training 9 to 12 times per week	Sport-specific technical, tactical, and fitness training 9 to 15 times per week

Overview of the Athlete's Long-Term Development*					
Key Program Elements	**Community Sport**	**Competition – Introduction**		**Competition – Development**	**Competition – High Performance**
Specialization	None, encourage participation in a wide range of sports	None, encourage participation in a wide range of sports	Select 2 sports	Select 1 sport	Event and position specific
Training Priorities – Physical Preparation	❑ First window of accelerated adaptation to speed ❑ Develop speed, power, and endurance using games ❑ Introduce basic flexibility training ❑ Develop linear, lateral, and multi-directional speed, with repetitions lasting less than 5 seconds	❑ Further develop flexibility through exercises ❑ Further develop endurance through games and relays ❑ Further develop speed by using specific activities that focus on agility, quickness, and change of direction during the warm-up	❑ This is a window of accelerated adaptation to aerobic, speed, and strength training ❑ Emphasize flexibility training, given the rapid growth of bones, tendons, ligaments, and muscles	Tailor fitness and recovery programs to the individual athlete	Fully established Maximization of performance
Training Priorities – Motor Development	Develop fundamental movement skills and the ABCs of athleticism (agility, balance, coordination, and speed)	❑ This is a window of accelerated adaptation to motor coordination ❑ Teach fundamental movement skills and general, overall sport skills	Further develop and consolidate sport-specific skills	Perform basic and sport-specific skills under a variety of competitive conditions during training	Fully established Maximization of performance
Training Priorities -– Technical Development	Teach appropriate and correct running, wheeling, jumping and throwing using the ABCs of athletics	Introduce hopping and bounding exercises or training on hills/gradients to aid in strength development	Sport-specific technical training	Tailor technical development to the individual athlete	Fully established Maximization of performance
Training Priorities -– Tactical Development	Introduce simple rules of ethics of sport	Basic tactical preparation, correct decision-making in common competitive situations	Basic tactical preparation, correct decision-making in common competitive situations	Development of national-level tactical skills and decision-making abilities	Development of international-level tactical skills and decision-making abilities
Training Priorities – Mental skills		Introduction to mental training	Learn to cope with mental challenges of competition	Advanced mental preparation (individualized)	Advanced mental preparation, highly individualized approach
Training Methods	Medicine ball, Swiss ball, own-body-strength exercises	Medicine ball, Swiss ball, own-body-strength exercises	Introduce free weights	Frequent use of sport-specific and competition-specific exercises	Frequent use of sport-specific and competition-specific exercises

*Much of this table is drawn from and summarizes "The Situation and the Solutions," by Istvan Balyi, which appeared in *Coaches Report,* Summer 2001, Vol. 8 No. 1.

** The need to develop sport programs and activities that take into consideration the athlete's developmental age is widely recognized. Unfortunately, few tools are available to assist coaches in determining developmental age accurately and most such tools need considerable refinement to be of use to Competition – Introduction coaches. The Coaching Association of Canada is acutely aware of this shortcoming and is working actively to find solutions. In the meantime, coaches will need to rely mainly on chronological age and/or on their own judgment when making decisions regarding an athlete's developmental status.

DEFINITIONS OF ATHLETIC ABILITIES

Category	Athletic Abilities Required in Most Sports
Physical abilities are determined by the rate at which energy and force can be produced by the muscles, and by the range through which the movements can be executed	**Speed**: The highest rate at which a movement or a series of movements can be executed, or the ability to cover a given distance in the shortest possible time during an all-out effort of very short duration *(8 seconds or less).* **Speed-Endurance**: The ability to sustain efforts at near-maximum speed for as long as possible *(normally, very intense efforts lasting between 8 and 60 seconds).* **Aerobic Stamina**: The ability to sustain a dynamic effort over an extended period of time *(normally, efforts lasting several minutes or even hours).* ***Note****: Intense efforts lasting between 2 and 10 minutes require a subset of this athletic ability referred to as maximum aerobic power.* (Aerobic stamina is a broad term that is sufficient for most sports. In endurance sports, however, the more specific terms aerobic power and aerobic endurance are used.) **Maximum Strength**: The highest level of tension generated by a muscle or muscle group during a maximum contraction, regardless of the duration of the contraction. **Speed-Strength**: The ability to perform a muscle contraction or overcome a resistance as fast as possible *(normally, very brief efforts of 1-2 seconds).* **Strength-Endurance**: The ability to perform repeated muscle contractions at intensities below maximum strength *(normally, 15-30 repetitions or more).* **Flexibility**: The ability to perform movements of large amplitude about a joint without sustaining injury.
Motor abilities support the controlled execution of movements	**Agility**: The ability to execute movements or to move rapidly, with precision, and with ease. **Balance**: The ability to achieve and maintain stability. There are three types of balance: (1) **static balance**: adopting a controlled body position in a stable environment; (2) **dynamic balance**: maintaining control during movement or stabilizing the body by performing muscular contractions to offset the effect of an external force; and (3) the ability to **keep an object or another body under control** in either a static or dynamic manner. **Coordination**: The ability to perform movements in the correct order, and with the right timing.
Tactical abilities support effective decisions	The ability to analyze a situation and produce a correct response, i.e. one that gives a competitive advantage or increases the probability of a good performance (**read and react**). It is also the ability to read cues from your opponents and your environment and to select the best response option (**associative solutions**), to develop an **inventory of responses** in order to face the same situation and to be able to **vary the response** when facing a similar but slightly different situation.
Mental skills enable the athlete to be in the proper state of mind to perform successfully	**Attentional Control**: The ability to pay attention to what is important in a given situation and avoid negative influences or distractions. **Emotional Control**: The ability to consciously maintain a high level of control over one's feelings when in stressful conditions. **Goal Setting**: The ability to identify clear goals and priorities that will guide future actions and decisions.

ATHLETIC ABILITIES: GROWTH AND DEVELOPMENT CONSIDERATIONS

The table on the following page presents information on when to emphasize and when to avoid training certain athletic abilities.

These guidelines represent the opinion of experts in the fields of growth and development and training; as such, they apply to most sports. However, for sports in which athletes specialize at a very young age, such as gymnastics, some of these guidelines may seem to differ from the training approaches commonly used. If this is the case, (1) exercise judgement both when interpreting guidelines and when implementing sport-specific training methods, and (2) consult with recognized experts where necessary to ensure that the training activities are appropriate, safe, and adapted to athletes' physical maturity.

At the same chronological age (e.g. 12 years of age), there can be significant differences in physical maturity. It would not be unusual for some athletes to be ahead of or behind the general training guidelines for their age by 2 or more years.

Guidelines for the Training of Athletic Abilities by Athletes' Age

Athletic Abilities		Developmental Age in Years														
		6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Aerobic Power (intense, short efforts of 2-10 min)	**F**	☹	☹	☹	☹	☹			☐	☺	☺	☺	☺	■	■	■
	M	☹	☹	☹	☹	☹	☹			☐	☺	☺	☺	■	■	■
Aerobic Endurance (long efforts)	**F**	☹	☹	☹	☹		☺	☺	☺	☺	■	■	■	■	■	■
	M	☹	☹	☹	☹	☹		☺	☺	☺	☺	■	■	■	■	■
Speed-Endurance	**F**	☹	☹	☹	☹	☹			☺	☺	☺	■	■	■	■	■
	M	☹	☹	☹	☹	☹	☹			☺	☺	☺	■	■	■	■
Strength-Endurance	**F**	☹	☹	☹			☺	☺	☺	☺	☺	☺	■	■	■	■
	M	☹	☹	☹			☺	☺	☺	☺	☺	☺	☺	■	■	■
Maximum Strength	**F**	☹	☹	☹	☹	☹	☹	☹			☺	☺	☺	■	■	■
	M	☹	☹	☹	☹	☹	☹	☹	☹	☹		☺	☺	☺	☺	■
Speed-Strength (muscular power)	**F**	☹	☹	☹	☹	☹	☹	☹	☹		☐	☺	☺	☺	■	■
	M	☹	☹	☹	☹	☹	☹	☹	☹			☐	☺	☺	☺	■
Flexibility	**F**	☺	☺	☺	☺	☺	■	■	■	■	■	■	■	■	■	■
	M	☺	☺	☺	☺	☺	■	■	■	■	■	■	■	■	■	■
Speed (efforts of 8 seconds or less)	**F**	☺	☺	☺			☺	☺	☺	☺	■	■	■	■	■	■
	M		☺	☺	☺				☺	☺	☺	☺	■	■	■	■
Speed (fast cadence of movement, short efforts)	**F**	☺	☺	☺	■	■	■	■	■	■	■	■	■	■	■	■
	M	☺	☺	☺	■	■	■	■	■	■	■	■	■	■	■	■
Agility/Balance/ Coordination	**F**	☺	☺	☺	☺	☺	■	■	■	■	■	■	■	■	■	■
	M	☺	☺	☺	☺	☺	■	■	■	■	■	■	■	■	■	■
Basic Techniques	**F**		☐	☺	☺	☺	☺	☺	■	■	■	■	■	■	■	■
	M			☐	☺	☺	☺	☺	☺	■	■	■	■	■	■	■
More Advanced Techniques	**M F**							F	FM	☺	☺	☺	☺	■	■	■
Tactics and Decision-making	**F**	☹	☹	☹			☐	☐	☺	■	■	■	■	■	■	■
	M	☹	☹	☹			☐	☐	☺	■	■	■	■	■	■	■

Legend: ☹ Should be avoided ☺ Optimal training age ☐ Not a priority

☐ In moderation ■ As needed by the sport

F Female M Male

SAMPLE SPORT PROGRAMS

Note: These examples were produced using the ProPulses PLAN software developed jointly by CardiSport (www.cardisport.com) and the Coaching Association of Canada (www.coach.ca).

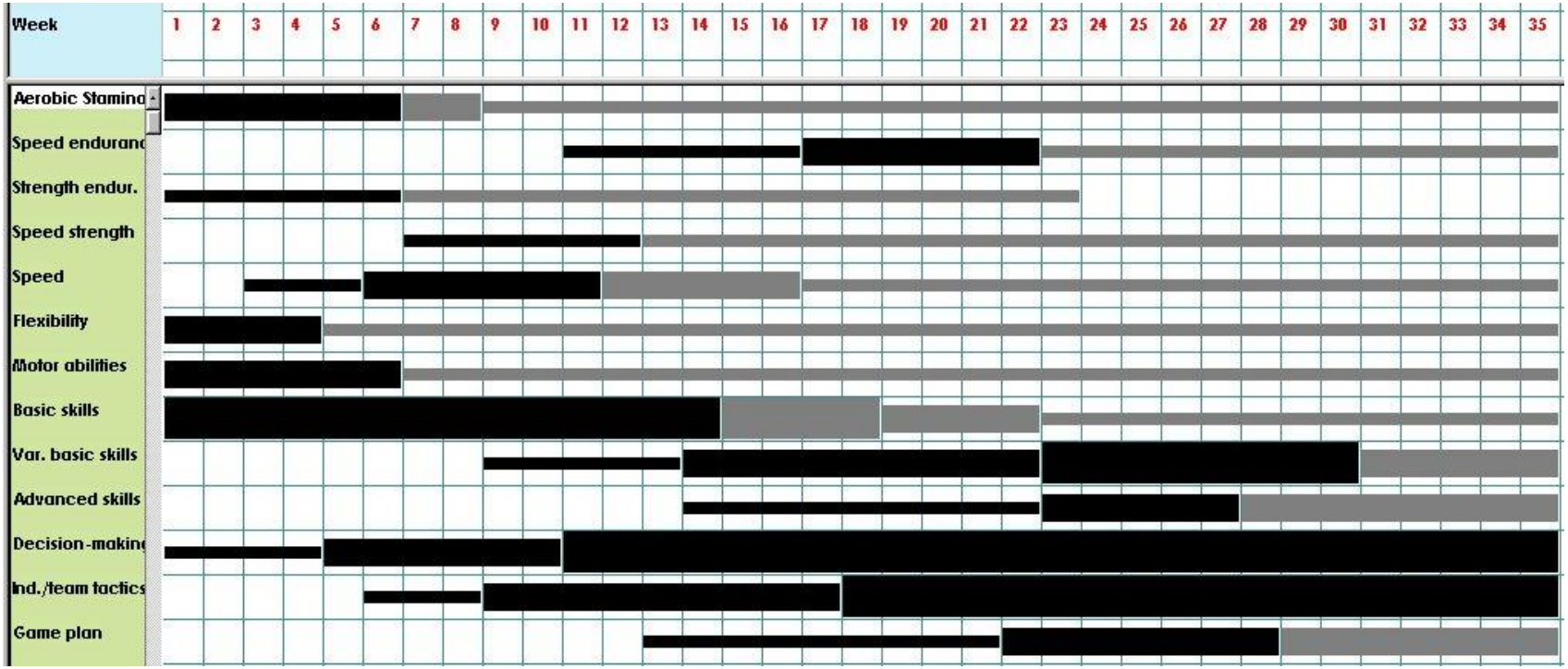
How to Read the Sample Programs

- In each figure, the most important athletic abilities for the sport family are listed vertically.
- The abilities listed in most sample programs were defined earlier in this document (page 24). We are providing only the sample program for baseball in this Workbook.
- In some cases, terms specific to a sport family have been added, but they are fairly simple and should be easily understood by coaches of these types of sports.
- Where appropriate, self-explanatory abbreviations have been used.
- For each week of a program, the importance of training a specific athletic ability is indicated by the thickness of a band:

  - Thin band = not very important
  - Medium-thickness band = moderately important
  - Thick band = very important
- The intention and training objective for a specific athletic ability is indicated by black, grey, and light grey colour coding.

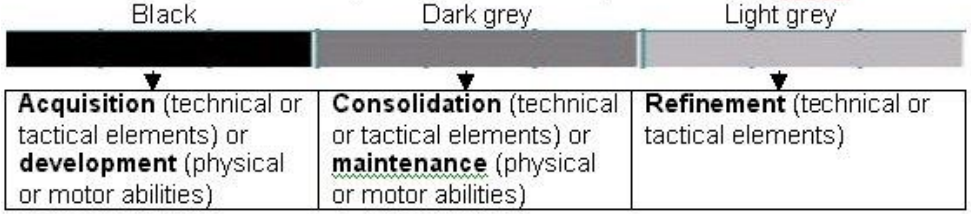
- For technical and tactical elements, the following colour coding is used:
  - Black = Introduction and Acquisition
  - Grey = Consolidation
  - Light grey = Refinement
- For physical condition elements (aerobic stamina [aerobic power and aerobic endurance], speed, speed-endurance, strength, strength-endurance, speed-strength, flexibility) and motor abilities (agility, balance, coordination), the following colour coding is used:
  - Black = Development
  - Grey = Maintenance
- Examples
  - A thick black band for Basic Skills means that activities that contribute to acquiring basic technical elements should be included and that a large proportion of the available time should be devoted to this type of training.
  - A thin, light-grey band for Var. Basic Skills means that activities that contribute to refining variations of basic technical elements should be included, but that only a small proportion of the available time should be devoted to this type of training.
  - A thick black band for Aerobic Endur. means that activities that contribute to developing aerobic stamina should be included, and that a large proportion of the available time should be devoted to this type of training.

Sample Baseball Program, Competition – Introduction



The **training emphasis given to a specific athletic ability** is shown by the thickness of the band:

The **training objective for a specific athletic ability** is shown by a colour code:



Activity Planning Guidelines for Various Stages of Skill Development

Recommended Practice Conditions	Training Objectives			
	Initiation First contact	**Acquisition** Movement patterning	**Consolidation** Correct execution in variable conditions	**Refinement** Minor improvements
Surrounding environment	Stable and predictable, free of distractions	Stable and predictable, free of distractions	Increased variability and distractions in the environment, but not to the point where movement patterns deteriorate	Competition conditions
Decision-making	No decision-making or options to choose from	Simple decision-making, maximum of 2 options	More complex decisions to make, increased frequency of decision-making, and more options (3-4)	Complex decisions, as many options and at the same frequency as in a competition
Speed of execution	Slow and controlled	At athlete's own pace	Increased, variable, and close to competitive demands	Similar to conditions in competition
Number of repetitions	As needed, depending on athlete's general motor development	High	High	As many as possible
Risk factor	Completely safe conditions, errors of no consequence	Low-risk conditions	Less than or similar to what is encountered in regular competition	Similar to a high level of competition
During training, the emphasis should be on…	Basic stances and positions; getting the idea of what the movements are about, look like	Global execution and general form of the movement	Maintaining the form of movements and some performance consistency under a variety of conditions and under stress	Creating conditions that stress the specific elements that need adjustments

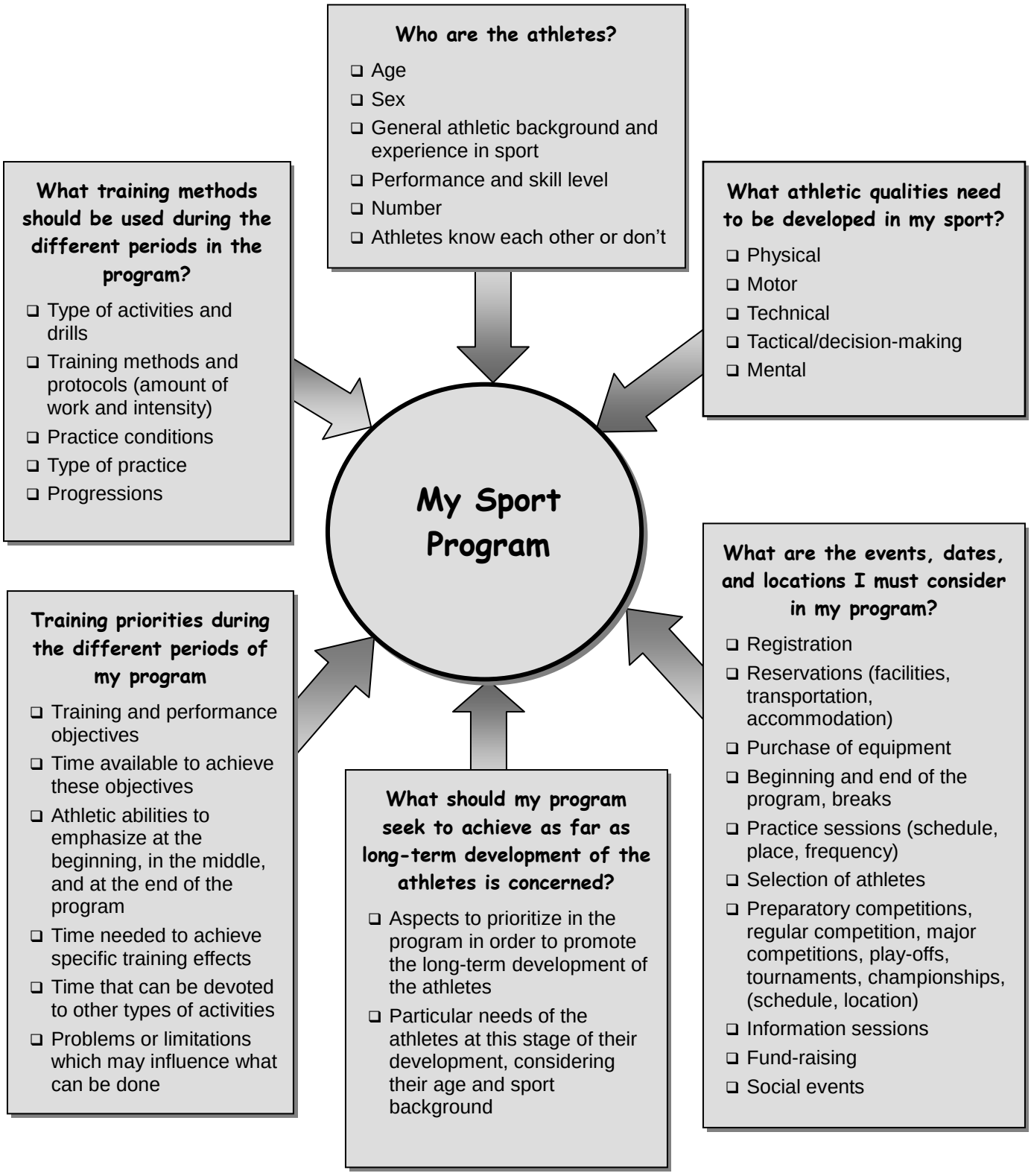
Summary Table: Training Methods

Athletic Ability	Training Objective	Number of Weeks Required for Significant Improvement	Training Frequency	Training Time (Minutes)	
				Minimum:	**Up to:**
Technique	Initiation	1-2; variable	3 or +	30	60
	Acquisition	4-6	3 or +	30	60-90
	Consolidation	3-4	2 or +	20	60-90
	Refinement	Variable; probably several months or more	2-3 or +	??; most likely at least 20-30	60-90
Tactics	Acquisition	4-6	2	20	45
	Consolidation	Variable; 3-4	2	20	45-60
	Decision-making	??; probably several	2	??	??
Aerobic Endurance	Development	6	2-3	20-30	60-75
	Maintenance	*Not applicable*	1	20-25	60-75
Aerobic Power	Development	6	2-3	20	55-60
	Maintenance	*Not applicable*	1	12-15	55-60
Speed	Development	4	2-3	15	45-50
	Maintenance	*Not applicable*	1	10	45-50
Speed-Endurance	Development	4	2-3	18-20	45-50
	Maintenance	*Not applicable*	1		45-50
Maximum Strength	Development	*Seeking systematic development of this athletic ability in young athletes is NOT recommended*			
	Maintenance				
Strength-Endurance	Development	4-5	2	10	30-35
	Maintenance	*Not applicable*	1	10	30-35
Speed-Strength	Development	4-5	2	5	12
	Maintenance	*Not applicable*	1	5	12
Flexibility	Development	3-5	2-3 or +	12-15	50-55
	Maintenance	*Not applicable*	1	5-8	50-55
Motor Abilities (agility, balance, coordination)	Development	??; probably several	2-3 or +	??; probably at least 10-15	??; probably 20-45
	Maintenance	*Not applicable*	??; probably at least one	??; probably at least 10-15	??; probably 20-45

Notes

- Training time has been adapted for Competition – Development athletes and includes the time of both physical effort/motor engagement and recuperation. The column **Minimum** represents the lowest threshold likely to have a training effect on the athletic ability in a sport context.
- Some of these guidelines may not be appropriate for all sports or may be difficult to implement without modification in sports that take place in an environment that (1) is unpredictable and unstable or (2) requires efforts that are not easily controllable and quantifiable. For example, the guidelines relating to speed or endurance are relatively easy to apply to cyclical sports like running, cycling, cross-country skiing, speed skating, or swimming but are harder to apply to team sports, racquet sports, artistic sports, or combat/duel sports. However, for these sports, the guidelines may still help coaches implement sport-specific activities, particularly as far as work/rest ratios, number of repetitions, and required level of intensity are concerned.
- Most scientific studies on training methods are based on research conducted on adult athletes, so their findings have been modified to take into account that your athletes are, for the most part, children or adolescents. Do not hesitate to adjust the number of sets or repetitions if workouts seem too easy or too hard.
- For sports in which the importance of the athletic ability is High, use the highest weekly frequency proposed, and establish a progression that will enable the athlete to complete the maximum amount of work suggested for each session. It may take several weeks of training to achieve this.
- For sports in which the importance of the athletic ability is Moderate, use the lowest weekly frequency proposed as a starting point, and establish a progression that will still enable the athlete to complete the least amount of work suggested for each session. It may still require several weeks of training to achieve this. If there is enough time during practices, try to have athletes do more work.
- For sports in which the importance of the athletic ability is Low, time restrictions may prevent you from including this type of activity in your program. If this is the case, ensure that the athletes have the opportunity to participate in different forms of sport activity outside your program or during the off-season so that they can still do some work in this area to achieve a balanced athletic development.

Major Questions to Consider When Putting Together a Sport Program



STRUCTURE OF A SPORT PROGRAM

Periods and Phases of a Sport Program

Knowing the general pattern according to which sport form evolves in the short term allows us to divide a sport program or season into periods. Periods promote the progressive development of athletic abilities and prepare athletes for the major competitions they will participate in.

The periods of a sport program are Preparation, Competition, and Transition.

Period	Beginning	End
Preparation	First practice of the program	First "official" competition of the program
Competition	First "official" competition of the program	Last competition of the program
Transition	Last competition of the program	Last structured training activity of the program

To describe more precisely the major characteristics of a program, each period is usually subdivided into smaller units called phases.

The **Preparation Period** is usually divided into three phases:

1. General Preparation Phase (GPP)
2. Specific Preparation Phase (SPP)
3. Pre-Competition Phase (PCP)

The **Competition Period** is usually divided into two phases:

1. Regular Competition Phase (RCP)
2. Major Competition Phase (MCP)

Whether the phases of the Competition Period are completely distinct or the regular and important competitions overlap varies from sport to sport.

The **Transition Period** is usually not divided into smaller units. The Transition Period generally occurs after the last competition of the season. It is a time for physical, mental, emotional, and social recuperation. It follows a period of high intensity in training and competition. This recuperation can be achieved by complete rest or active rest, where athletes drastically reduce their training volume and intensity, as well as participate in other physical or sporting activities just for fun.

Note: The main characteristics of each period and phase of a sport program and the priorities and objectives of each are covered later in this document.

LONG-TERM ATHLETE DEVELOPMENT

The general recommendations for sport programs presented below apply when:

- Athletes are most often children or young adolescents
- Participation in sport is seasonal
- There is a wide range in athletes' experience in sport and in their levels of performance

General Recommendations

- Encourage athletes to try various sports activities.
- Emphasize basic athletic development and ensure that athletes are as active as possible during practices. Primary training objectives include the development of basic motor abilities (agility, balance, coordination), speed, and physical conditioning, as well as the acquisition and development of basic technical and tactical skills. In some instances, it is possible to work on acquiring more complex techniques.
- Athletes can do some strength training (avoiding heavy weights); they can also train the athletic abilities that require significant energy production from the muscles (without, however, putting too much emphasis on the development of speed-endurance).
- Do not subject athletes to a mechanical approach to learning their sport, involving high numbers of repetitions in an artificial context.
- As athletes are now able to concentrate better, it is possible to focus on more specific and more complex tasks in practices. Instructions can also be more complex.
- Development of tactical and decision-making skills can begin.
- In sports involving late specialization, athletes may begin to specialize in a particular discipline or position at around 13-14 years.
- Participation in competition becomes more serious, but there should not be too much pressure on athletes; competitive experience must be fun, and the level of competition must be adapted to athletes' capabilities.
- Athletes must spend more time on general training and the development of basic athletic abilities than on specialized training and preparation for competition.

Position of the Coaching Association of Canada with regard to Sport Programs

3.1.1
Sport programs for young athletes must be seen as one part of their long-term development.

3.1.2 Consequently, programs must be designed to provide a logical and adapted progression that will promote the development of a variety of athletic abilities and basic sport skills rather than emphasizing the achievement of short-term performance goals.

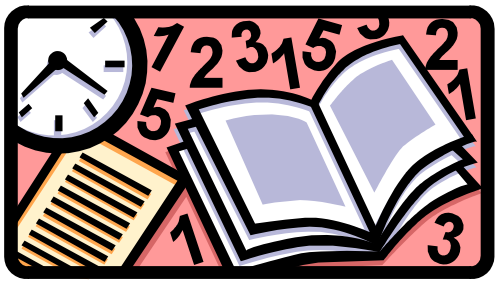
COMMON ISSUES AND POSSIBLE SOLUTIONS

Some common issues in sport programs are listed below, with possible solutions. If your program does not seem to have such issues, follow the recommendations that appear in the next sections of this document as closely as possible.

Possible Issue in Sport Program	Solutions to Consider
The program is too short to allow any significant athletic development in your sport or discipline	❑ Encourage athletes to participate in other sports with similar demands and in other sports that may help them develop other types of skills ❑ Enrol athletes in sport schools or camps so that they continue their development and avoid losing too much sport fitness
The Preparation Period is too short	❑ Extend the Preparation Period by starting practices earlier before the first regular competitions ❑ Use some of the early season competitions as a continuation of the Preparation Period where results aren't too important
There isn't enough competition	❑ Include simulated competition in your practice sessions ❑ Organize friendly or unofficial competitions
Practice sessions are too short	❑ Do the general warm-up before you go onto the field or into the facility ❑ Train the motor abilities (agility, balance, coordination, etc.) or some physical abilities (flexibility, endurance, strength) outside practice sessions so that you can spend as much of the available time as possible on sport-specific activities ❑ Create workstations or circuits that enable a larger number of athletes to be active at the same time
There isn't enough practice or preparation time to enable significant athletic development in the sport or discipline; not enough training opportunities between competitions	❑ Extend the Preparation Period; i.e. begin practices earlier in the program ❑ Use some of the early-season competitions as a continuation of the Preparation Period where results aren't too important ❑ Increase the number of practice sessions between competitions ❑ Provide athletes with programs for activities they can do on their own between practice sessions so that you can focus on important sport-specific elements during practice sessions ❑ Don't let performance in the most recent competition or preparation for the next competition dictate all the content of the practice sessions; situate the content of practices in a longer-term perspective (several weeks, or the season)

Possible Issue in Sport Program	Solutions to Consider
The Competition Period is too long; too many competitions in the program; too many "important" competitions	❑ Talk to other coaches and administrators responsible for the competition structure and try to reduce the length of the program and the number of competitions ❑ When possible, consider not taking part in certain competitions ❑ Rest some athletes by withdrawing them from certain competitions or not registering them, and give other athletes chances to get competitive experience ❑ Consider some early-season competitions as part of the Preparation Period where results aren't too important (for example, early-season wins get fewer points than wins after a certain date). ❑ Priorize competitions and focus on those that lead to the next stage in the development process
Practice sessions are too long	❑ If possible, reduce the length and increase the frequency of practices ❑ If you can book only long periods of time in facilities, include frequent breaks during practices and plan fun activities
Practice sessions are too frequent	❑ To avoid fatigue, alternate hard training days with easy days during the week ❑ Build in a rest day every 2-3 days of practice ❑ Build in an easy session or a rest day the day after a competition, especially if the competition is particularly demanding ❑ Avoid planning a tough practice session the day before a competition
Selection dates are too early in the program	❑ Don't conduct selection camps that result in the elimination or exclusion of athletes ❑ Delay selection dates ❑ Create different training groups within the same club or team ❑ Provide other opportunities later in the season for athletes who weren't selected
Selection criteria are based on current ability in the sport, not athletic potential	❑ Evaluate athletes on their ability to apply elements from practices to competition, rather than on their performance ❑ Don't conduct trials that result in the elimination or exclusion of athletes ❑ Create different training groups within the same club or team ❑ Provide other opportunities later in the season for athletes who weren't selected
There is too much emphasis on winning or short-term performance	❑ Evaluate athletes on their ability to apply elements from practices to competition, rather than on their performance ❑ Redefine the program's objectives if there seems to be too much emphasis on competition results
Athletes begin to specialize too soon	❑ Don't start to specialize if athletes haven't mastered the basic skills essential to the sport
Motor abilities are not sufficiently developed	❑ Introduce activities to train the motor abilities (agility, balance, coordination, etc.) that athletes can practise in their free time ❑ Maximize active engagement during practices and create activities that call on the motor abilities

Acknowledgements, References, and Glossary



ACKNOWLEDGEMENTS FOR NCCP COMPETITION INTRODUCTION DESIGN A BASIC SPORT PROGRAM

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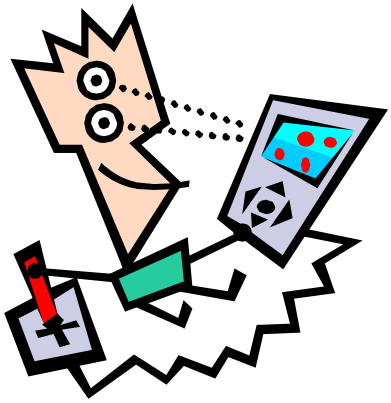
GLOSSARY

Glossary	
Ability	The quality of being able to do something, especially the physical, mental, financial, or legal power to accomplish something.
Adaptation	Changes that occur in the organism as a result of the administration of a stimulus (i.e., training). Adaptations are usually specific to the nature of the stimulus imposed.
Adolescence	The period of physical and psychological development from the onset of puberty to maturity.
Aerobic endurance	Aerobic Endurance is the body's ability to exercise whole muscle groups over an extended period of time at moderate intensity, using aerobic energy. Your aerobic system uses oxygen to break down carbohydrates and convert them into lasting energy.
Aerobic stamina	The ability to sustain a dynamic effort over an extended period of time (normally, efforts lasting several minutes or even hours). Note: Intense efforts lasting between 2 and 10 minutes require a subset of this athletic ability referred to as maximum aerobic power.
Agility	The ability to execute movements or to move rapidly, with precision, and with ease.
Balance	The ability to achieve and maintain stability. There are three types of balance: (1) static balance: adopting a controlled body position in a stable environment; (2) dynamic balance: maintaining control during movement or stabilizing the body by performing muscular contractions to offset the effect of an external force; and (3) the ability to keep an object or another body under control either in a static or a dynamic manner.
Biological age	Age expressed relative to physiological and anatomical function and level of development in comparison to other individuals of the same chronological age.
Childhood	The period between birth and puberty.
Chronological age	Number of years and days since date of birth.
Closed skill	A skill that takes place in a stable, predictable environment by a performer who knows exactly what to do and when. A closed skill is therefore not affected by the environment and tends to be habitual. Movements follow set patterns, have a clear beginning and end, and tend to be self-paced, for example, a free throw in basketball or a serve in squash or tennis.
Continuous skill	A skill that has no particular beginning or end and lasts for many minutes, e.g. swimming or riding a bicycle.
Coordination	The ability to perform movements in the correct order and with the right timing.
Cyclical sport	A sport in which a movement is repeated over and over, e.g swimming or running.

Glossary	
Discrete skill	A skill that features an easily defined beginning and end, and is usually of brief duration (e.g. throwing a ball).
Early developer	An individual whose growth spurts happen earlier then average.
Flexibility	The ability to perform movements of large amplitude about a joint without sustaining injury.
Late developer	An individual whose growth spurts happen later then average.
Massed practice	A sequence of practice and rest periods in which the rest time is much less then the practice time.
Maximal aerobic power (MAP)	The highest work rate or power output at which energy can be produced aerobically. MAP is determined by two factors: VO2max and mechanical efficiency. Under normal conditions, an intensity of 100% of MAP can be sustained for approximately 6 to 8 minutes.
Maximal oxygen consumption (VO2max)	Highest amount of oxygen that can be used by the body to produce energy when performing a particular form of exercise at maximal intensity.
Maximum speed	The highest rate at which a movement or a series of movements can be executed, or the ability to cover a given distance in the shortest possible time during an all-out effort of very short duration (8 seconds or less).
Maximum strength	The highest level of tension generated by a muscle or muscle group during a maximum contraction, regardless of the duration of the contraction.
Motor ability	The quality of being able to do something physical.
Open skill	A skill performed in an environment that is constantly changing and in which movements must be continually adapted. An open skill is predominantly perceptual and mostly externally paced, for example, a pass in football. Sports such as netball, football, and hockey usually involve open skills.
Overload	Making the training harder then the body is used to. In so doing, the body adapts and becomes stronger, faster, etc.
Part practice	The learning technique in which the task is broken down into parts for separate practice.
Specificity	A principle of training according to which adaptations are determined by the nature and magnitude of the training stimulus. This concept implies that, to maximize adaptation, the nature and the conditions of training activities must be designed to replicate closely those encountered in competition. Specificity therefore applies to variables such as type of activity, muscle masses involved, motor pattern, speed of movement, environmental conditions, power output, duration of effort, and cognitive and perceptual demands.
Speed-endurance	The ability to sustain efforts at near-maximum speed for as long as possible (normally, very intense efforts lasting between 8 and 60 seconds).

Glossary	
Speed-strength	The ability to perform a muscle contraction or overcome a resistance as fast as possible (normally, very brief efforts of 1-2 seconds).
Strength-endurance	The ability to perform repeated muscle contractions at intensities below maximum strength (normally, 15-30 repetitions or more).
Variable practice	A practice in which varying learning conditions are used, e.g. in baseball, hitting random pitches (fastball, curve, slider) versus hitting only fastballs.

PLAN A PRACTICE



THE PARTS OF A PRACTICE

A well-structured practice has five parts:

- **The introduction:** The coach prepares the site and equipment, welcomes the athletes, and tells them what will happen during the practice. This is also a good time to assess the general status of the athletes (e.g. have they recovered from the previous practice?).
- **The warm-up:** The coach plans activities that gradually activate the athletes and prepare them physically and mentally to effectively perform the main part of the practice. The warm-up consists of two parts: (1) general and (2) specific. The general warm-up aims to raise the body temperature until the athlete sweats, to allow for progressive muscle stretching. The specific warm-up, designed for the athlete's particular sport, aims to prepare the warmed muscles for the types of movements the athlete will perform in the main part of the practice. The movements in the specific warm-up should mimic those of the main part, gradually building in intensity and range of motion.
- **The main part:** The coach ensures a smooth flow of activities that are challenging for the athletes and help them improve sport-specific abilities and fitness. The activities chosen must be appropriate for the sport, as well as athletes' age, fitness, and ability levels.
- **The cool-down:** To initiate the recovery of the body, the coach plans low-intensity transition activities between the more intense efforts of the main part and the end of the practice. The coach also plans for some time for athletes to stretch.
- **The conclusion:** The coach provides some comments on the practice and gives athletes an opportunity to provide feedback. The coach ensures that the practice ends on a positive and friendly note. The coach also provides some information about the next practice or game.

SPORT SAFETY THROUGH RISK MANAGEMENT

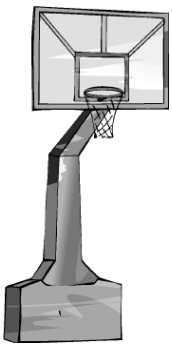
By its very nature, physical activity can present some risk of injury. One of the key responsibilities of the coach is to manage the potential risks that present themselves during practice or competition.

The main risk factors can be categorized as follows:

Environmental Risks

Factors related to the weather or its effects on the practice or competition site.

Examples: Lightning, rain, puddles/mud on the playing surface, heat and humidity, cold.



Equipment and Facilities Risks

Factors related to the quality and operating conditions of equipment and facilities.

Examples: A ski binding that does not release, ill-fitting helmet, damaged gymnastics apparatus, debris on the playing surface.

Human Risks

Factors related to athletes and the people associated with them, such as parents, coaches, officials, and event organizers. Human risks may also be related to athletes' individual characteristics (e.g. height, weight, level of physical preparation, ability) or behaviour (e.g. carelessness, panic, aggression). Human factors related to coaches include their training and experience, their supervision of athletes, and the decisions they make about situations they put athletes in.

Examples: Matching athletes of uneven strength and ability in a combative sport, forgetting to spot a gymnastics athlete.

Summary

Preventing Sport-related Injuries: What to Do and When to Do It
Before the Season
❑ Have each athlete complete a medical profile ❑ Inform parents of possible risks ❑ Inform parents and athletes about educational material on concussions ❑ Ensure facilities and equipment meet established safety requirements ❑ Create and fill in a facility safety checklist ❑ Review last season's injuries or common injuries in your sport
During the Season
Before a practice or competition ❑ Inspect equipment and facilities ❑ Meet with the officials ❑ Prepare an Emergency Action Plan ❑ Plan specific safety measures for the practice/competition **During a practice or competition** ❑ Inform athletes of specific safety measures relating to activities, facilities, and equipment ❑ Ensure there is proper supervision ❑ Evaluate athletes ❑ Ensure that fair play principles are followed **After a practice or competition** ❑ Store equipment safely ❑ Fill in an accident report if necessary

After the Season

- ❑ Keep an accident/injury report log

HEAT AND HUMIDITY AS RISK FACTORS

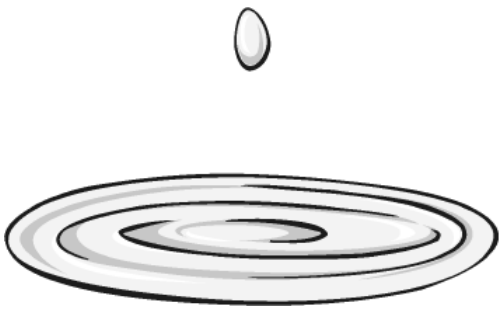
The Challenge of Exercising in the Heat

- During exercise, the muscles produce heat. This heat must be dissipated, or the body runs the risk of overheating. Overheating can result in serious, potentially life-threatening injuries.
- Sweating is one of the heat-dissipating mechanisms of the body. When sweat evaporates, it cools off the body.
- Most sport activities lead to heat production and sweating. Evaporation of sweat works best when the air is dry. In moist, damp air, sweat cannot evaporate easily, and cooling off is harder.
- If the air temperature is high during vigorous activity, athletes can lose a significant amount of water through sweating.
- High temperatures and high relative humidity make it hard for the body to dissipate heat; heavy sweating occurs, but the water lost does not help cool off the body. Under these conditions, athletes run the risk of overheating.
- Water lost as a result of heavy sweating can lead to dehydration. Dehydration can reduce performance, decrease the body's ability to dissipate heat, and endanger health.
- During exercise in the heat, adequate hydration is a must. Athletes must drink water whenever the risk of dehydration is present.
- Thirst is not a good indicator of a need for water. In fact, dehydration has already started if an athlete feels thirsty.
- In most exercise conditions, the rate at which athletes lose water exceeds the rate at which they can absorb it by drinking. Exercise in a hot environment accentuates this. Athletes therefore need to drink fluids *before* they are thirsty.
- Because their sweating mechanism is not fully developed, children run a higher risk of overheating when exercising in the heat. In addition, children tend to not drink enough during exercise, especially if the drink is not flavoured.

Steps to Take to Avoid Heat Injuries

- Give athletes enough time to get used to the environment they will face in competition. Insisting on heat acclimatization may mean not entering competitions or adjusting duration and intensity of training if athletes cannot train in a similar climate for approximately two weeks beforehand.
- To protect athletes (especially young children) from the potentially harmful effects of ultraviolet (UV) rays, have them do the following:
  - Wear a hat or a cap with a visor
  - Wear UV protecting sunglasses
  - Wear clothes that cover the upper part of the body, the neck, the arms, and the legs
  - Use sun screen lotion (protection factor of 30 or more) on exposed skin, including the face and hands
  - Avoid exposing their body to the sun without effective protection when the UV index is high
  - If possible, train in the shade
- Before exercise, athletes should drink 400 to 600 mL of fluid.
- During exercise, athletes should drink 150 to 250 mL of fluid every 15 minutes. Remind athletes to drink, lead by example, and never restrict athletes from drinking during a practice or competition.
- After exercise, athletes should rehydrate by drinking as much fluid as thirst dictates; athletes may have to force themselves to drink.
- Beverages should be cool (8° to 10°C) and not too sweet; children prefer flavoured sport drinks, and using them encourages children to drink.
- Tell athletes to bring a personal water bottle with cold fluids to each practice or competition; inform parents about the importance of hydration; make sure each bottle is clean and well identified.
- Tell athletes to monitor their hydration level by checking their urine. If it is dark, if there is not much of it, and if it has a strong smell, athletes are probably dehydrated and should force themselves to drink.

Note: Pay particular attention to these steps during the first few hot days of spring or summer, when athletes are not yet acclimated to hot and humid weather.



The Humidex

- The humidex is a useful guide to assessing the risk of exercising in hot and humid conditions.
- The humidex describes how hot and humid weather feels to the average person. The humidex combines the temperature and humidity into one number to reflect the perceived temperature.
- Because it takes into account both heat and humidity, the humidex provides useful information about the risks of exercising in the heat.
- The table below shows the humidex value for various air temperatures and levels of relative humidity. For instance, if the air temperature is 25°C and the relative humidity is 70%, the humidex is 32°C. This means that the sensation of heat when it is 25°C and the relative humidity is 70% is about the same as when it is 32°C and the air is dry (20% relative humidity).

RELATIVE HUMIDITY (%)

TEMPERATURE (°C)

	15	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**	**95**	**100**
20						20	20	21	22	22	23	24	24	25	25	26	27	27
21						21	22	22	23	24	24	25	26	26	27	28	29	29
22					22	22	23	24	25	25	26	27	27	28	29	30	30	31
23					23	24	24	25	26	27	28	28	29	30	31	31	32	33
24					24	25	26	27	28	28	29	30	31	32	33	33	34	35
25				25	26	26	27	28	29	30	31	**32**	33	33	34	35	36	37
26				26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
27				27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
28			28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43
29			29	30	31	32	33	35	36	37	38	39	40	41	42	43	45	46
30			30	31	33	34	35	36	37	39	40	41	42	43	44	46	47	48
31			32	33	34	35	37	38	39	40	42	43	44	45	47	48	49	50
32		32	33	34	36	37	38	40	41	42	44	45	46	48	49	50	51	53
33		33	34	36	37	39	40	41	43	44	46	47	48	50	51	53	54	55
34		34	36	37	39	40	42	43	45	46	48	49	51	52	53	55	56	58
35		36	37	39	40	42	43	45	47	48	50	51	53	54	56	57	59	
36		37	39	40	42	44	45	47	49	50	52	53	55	57	58	60		
37	37	38	40	42	44	45	47	49	51	52	54	56	58	59				
38	38	40	42	43	45	47	49	51	53	54	56	58	60					
39	39	41	43	45	47	49	51	53	55	57	59							
40	41	43	45	47	49	51	53	55	57	59								

Guidelines for Exercising at Different Humidex Values

The guidelines below are provided for a heat-acclimated, well-hydrated person.

Humidex Value	Discomfort at Rest	Risk of Overheating during Exercise
Below 24°C	None	Low to moderate
25 to 29°C	None	Moderate
30 to 39°C	Some	High – Children should be monitored closely
40 to 45°C	Great	Very high – Exercise is not advised for children, older people, or individuals with a poor fitness level
Above 45°C	Great Risk of overheating even at rest	Extreme – Exercise is not advised for any athlete

If the humidex is above 30°C, and especially if it exceeds 35°C:

- Tell athletes to bring extra water or sport drinks, ensure there will be access to water during the practice or competition, and bring a big jug of fluids.
- Tell athletes to dress in loosely fitting, lightweight, light-coloured clothes.
- Plan for low-intensity activities.
- Plan for shorter work bouts, with frequent and longer pauses.
- Schedule practices early in the morning or during the evening; avoid the hours between 10 a.m. and 6 p.m.
- Consider changing the location of the practice to a shaded area, or ask athletes to bring umbrellas to create shade during breaks.
- Consider exercising indoors, in a facility with air conditioning.
- Consider alternatives to physical exercise.

EMERGENCY ACTION PLAN (EAP)

An Emergency Action Plan (EAP) is a plan coaches design to help them respond to emergency situations. Preparing such a plan in advance will help you respond in a responsible and clear-headed way if an emergency occurs.

An EAP should be prepared for the facility or site where you normally hold practices and for any facility or site where you regularly host competitions. For away competitions, ask the host team or host facility for a copy of their EAP.

An EAP can be simple or elaborate. It should cover the following:

- Designate in advance who is **in charge** if an emergency occurs (this may be you).
- **Have a cell phone** with you and make sure the battery is fully charged. If this is not possible, find out the exact location of a telephone you can use at all times. Have spare change in case you need to use a pay phone.
- Have **emergency telephone numbers** with you (facility manager, superintendent, fire, police, ambulance), as well as athletes' contact numbers (parents/guardians, next of kin, family doctor).
- Have on hand a **medical profile for each athlete** so that this information can be provided to emergency medical personnel. Include in this profile signed consent from the parent/guardian to authorize medical treatment in an emergency.
- Prepare **directions** for Emergency Medical Services (EMS) to follow to reach the site as quickly as possible. You may want to include information such as the closest major intersection, one-way streets, or major landmarks.
- Have a **first-aid kit** accessible and properly stocked at all times (all coaches are strongly encouraged to pursue first-aid training).
- Designate in advance a **call person**: the person who makes contact with medical authorities and otherwise assists the person in charge. Be sure that your call person can give emergency vehicles precise directions to your facility or site.

When an injury occurs, the EAP should be activated immediately if the injured person:

- Is not breathing
- Does not have a pulse
- Is bleeding profusely
- Has impaired consciousness
- Has injured the back, neck, or head
- Has a visible major trauma to a limb

Note: See Appendices 1 through 4 for a number of EAP-related forms and checklists.

Emergency Action Plan Checklist

Access to telephones 	❑ Cell phone, battery well charged ❑ Training venues ❑ Home venues ❑ Away venues ❑ List of emergency phone numbers (home competitions) ❑ List of emergency numbers (away competitions) ❑ Change available to make phone calls from a pay phone
Directions to access the site	❑ Accurate directions to the site (practice) ❑ Accurate directions to the site (home competitions) ❑ Accurate directions to the site (away competitions)
Athlete information	❑ Personal profile forms ❑ Emergency contacts ❑ Medical profiles
Personnel information	❑ The person in charge is identified ❑ The call person is identified ❑ Assistants (charge and call persons) are identified

❑ **The medical profile of each athlete should be up-to-date and be in the first-aid kit.**

❑ **A first-aid kit must be accessible at all times and must be checked regularly.**

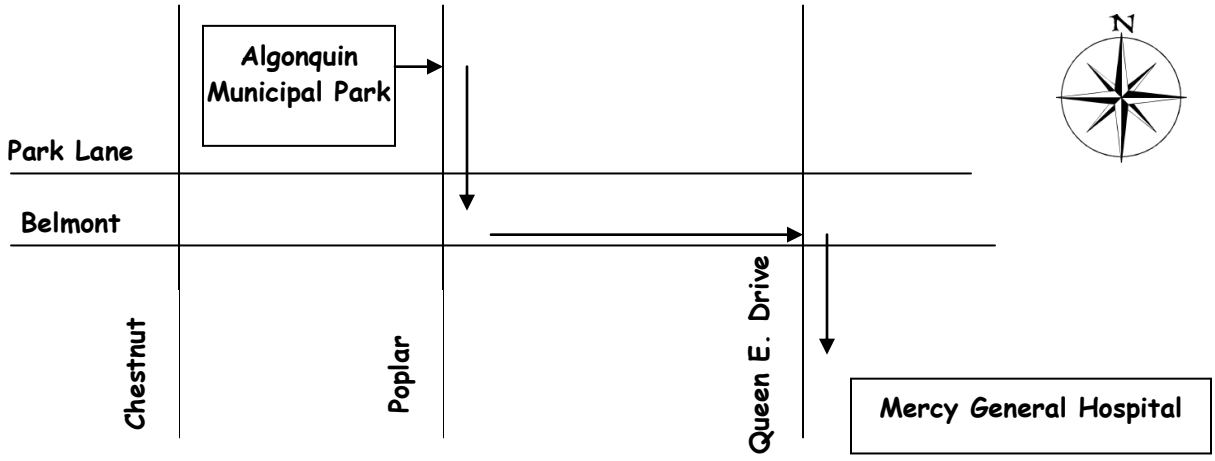
Sample Emergency Action Plan

Contact Information

Attach the medical profile for each athlete and for all members of the coaching staff, as well as sufficient change to make several phone calls if necessary. The EAP should be printed two-sided, on a single sheet of paper.

Emergency phone numbers:	9-1-1 for all emergencies
Cell phone number of coach	(xxx) xxx-xxxx
Cell phone number of assistant coach:	(xxx) xxx-xxxx
Phone number of home facility:	(xxx) xxx-xxxx
Address of home facility:	Algonquin Municipal Park 123 Park Lane, between Chestnut St. and Poplar St. City, Province/Territory, Postal Code
Address of nearest hospital:	Mercy General Hospital 1234 Queen Elizabeth Drive City, Province/Territory, Postal Code
Charge person (1st option):	Suzy Chalmers (coach)
Charge person (2nd option)	Joey Lemieux (assistant coach)
Charge person (3rd option):	Angela Stevens (parent, nurse, usually on site)
Call person (1st option):	Brad MacKenzie (parent, cell xxx-xxxx)
Call person (2nd option)	Sheila Stevens (parent, cell xxx-xxxx)
Call person (3rd option):	Stefano Martinez (parent, cell xxx-xxxx)

Directions to Mercy General Hospital from Algonquin Municipal Park



Sample Emergency Action Plan (cont'd)

Roles and Responsibilities

Charge Person

- Reduce the risk of further harm to the injured person by securing the area and sheltering the injured person from the elements
- Designate who is in charge of the other athletes. If nobody is available for this task, cease all activities and ensure that athletes are in a safe area.
- Protect yourself (wear gloves if in contact with body fluids such as blood)
- Assess ABCs (check that the airway is clear, breathing is present, a pulse is present, and there is no major bleeding)
- Wait by the injured person until EMS arrives and the injured person is transported
- Fill in an accident report form

Call Person

- Call for emergency help
- Provide all necessary information to dispatch (e.g. facility location, nature of injury, description of first aid that has been done, allergies and other medical problems for that athlete)
- Clear any traffic from the entrance/access road before ambulance arrives
- Wait by the driveway entrance to the facility to direct the ambulance when it arrives
- Call the emergency contact person listed on the injured person's medical profile

Steps to Follow When an Injury Occurs

Note: It is recommended that emergency situations be simulated during practice to familiarize coaches and athletes with the steps below.

Step 1: Control the environment so that no further harm occurs

- ❑ Stop all athletes
- ❑ Protect yourself if you suspect bleeding (put on gloves)
- ❑ If outdoors, shelter the injured athlete from the elements and from any traffic

Step 2: Do an initial assessment of the situation

If the athlete:

- ❑ Is not breathing
- ❑ Does not have a pulse
- ❑ Is bleeding profusely
- ❑ Has impaired consciousness
- ❑ Has injured the back, neck, or head
- ❑ Has a visible major trauma to a limb
- ❑ Cannot move his or her arms or legs or has lost feeling in them

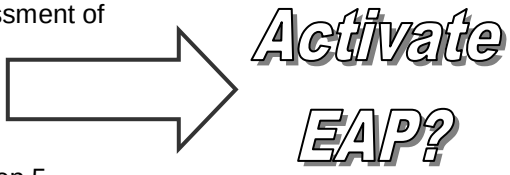
If the athlete does not show the signs above, proceed to Step 3

Step 3: Do a second assessment of the situation

- ❑ Gather the facts by talking to the injured athlete as well as anyone who witnessed the incident
- ❑ Stay with the injured athlete and try to calm him or her; your tone of voice and body language are critical
- ❑ If possible, have the athlete move himself or herself off the playing surface; do not attempt to move an injured athlete.

Step 4: Assess the injury

- ❑ Have someone with first-aid training complete an assessment of the injury and decide how to proceed.
- ❑ If the person trained in first aid is not sure of the severity of the injury or no one present has first-aid training, activate EAP.
- ❑ If the assessor is sure the injury is minor, proceed to Step 5.



Step 5: Control the return to activity

Allow an athlete to return to activity after a minor injury only if there is no:

- ❑ Swelling
- ❑ Deformity
- ❑ Continued bleeding
- ❑ Reduced range of motion
- ❑ Pain when using the injured part

Step 6: Record the injury on an accident report form and inform the parents

HEAD INJURIES AND CONCUSSIONS

Concussion Questions and Answers

There is a lot to know about concussions and their proper management. This section deals in depth with the most common issues associated with concussions. Read on to learn:

- What is a concussion?
- What actually happens?
- How do concussions occur?
- Who should the athlete tell?
- What are the signs and symptoms of a concussion?
- How are concussions diagnosed?
- When can the athlete return to normal activity?
- How can the athlete cope with the symptoms of concussion?
- How can the athlete manage emotions after a concussion?
- How can athletes prevent concussion?

What is a Concussion? — Definition

A concussion is a common form of brain injury and can be caused by a direct or indirect hit to the head or body (for example, a check to the boards, a hit to the head, or a car crash). This causes a change in the brain function, which results in a variety of symptoms. With a concussion, there is no visible injury to the structure of the brain, meaning that tests like MRI or CT scans usually appear normal.

What Actually Happens? — Definition

When a person suffers a concussion, the brain suddenly shifts or shakes inside the skull and can knock against the skull's bony surface. A hard hit to the body can result in an acceleration and/or deceleration injury when the brain brushes against bony protuberances inside the skull. Such force can also result in a rotational injury in which the brain twists, potentially causing shearing of the brain nerve fibres. It is not yet known exactly what happens to brain cells in a concussion, but the mechanism appears to involve a change in chemical function. In the minutes to days following a concussion, brain cells remain in a vulnerable state. New research emphasizes that the problem may not be the structure of the brain tissue itself, but how the brain is working. The exact length of this change is unclear. During this time period, the brain does not function normally on a temporary basis, and is more vulnerable to a second head injury.

How Do Concussions Occur? — Definition

Most concussions occur as a result of a collision with another object while the object or person is moving at a high rate of speed. Forces such as these (and others) can result in deceleration and rotational concussive injuries.

Who Should the Athlete Tell?

It is extremely important to seek medical advice immediately upon receiving a blow to the head or body that results in signs or symptoms of a concussion. Often, concussions can go untreated (and even unnoticed by others) because few symptoms are visible to casual observers. Many times, the symptoms of a concussion may not be identified until the athlete recovers to the point where increased exertion causes symptoms to worsen. In fact, 4 out of 5 professional athletes do not even know that they have been concussed (Delaney et al, CJSM 2001).

Although symptoms may not be immediately apparent, it is important to be aware of possible physical, cognitive, and emotional changes. You can never be too careful! Symptoms may actually worsen throughout the day of the injury or even the next day. Without proper management, a concussion can result in permanent problems and seriously affect one's quality of life.

It is important for athletes to tell a family member, friend, co-worker, teammate, employer, trainer, or coach if they think they have had a concussion. Because a concussion affects the function of the brain and can result in symptoms such as memory loss or amnesia, it is important that others be aware of the signs and symptoms of concussions to help identify the injury in others. If athletes think they have had a concussion, they should immediately remove themselves from the current activity whether it is sports, work, or school. They should not drive and should seek medical attention immediately.

What are the Signs and Symptoms of a Concussion? — Definition

Following a concussion, athletes may experience many different signs and symptoms. A symptom is something athletes will feel, whereas a sign is something athletes' friends, family, or coach may notice. It is important to remember that some symptoms may appear right away and some may appear later. Just as no two people are the same, no two concussions are the same and so the signs and symptoms may be a little different for everyone. Some may be subtle and may go unnoticed by injured athletes, as well as their co-workers, friends, and family.

Contrary to popular belief, most concussions occur without a loss of consciousness (LOC).

How are Concussions Diagnosed?

With a concussion, there is no visible injury to the structure of the brain, meaning that tests like MRI or CT scans usually appear normal.

Concussions typically resolve fully with proper rest and management in about a week or two, but concussions which are not diagnosed can lead to long-term and more serious health implications. The first and most important step is to consult a doctor, preferably one familiar with concussion management.

There are many potential factors which may help to inform individual diagnosis, concussion management, and recovery, although many of these are still being researched to find the exact link. For example, severity is probably impacted by a number of factors such as the athlete's history of previous head injuries, including number of past concussions, length of recovery time, timing between past concussions, age, and style of play. Factors such as this may lead to a different, slower recovery, which is why concussion history should always be monitored.

Return to activity while still concussed and symptomatic can lead to an increased risk for another concussion, more intense symptoms, and a prolonged recovery.

Diagnosing a concussion may take several steps. The athlete's doctor may ask questions about the concussion and work/ sport history, the most recent injury, and will conduct a neurological

exam. This can include checking the athlete's memory and concentration, vision, coordination, and balance.

The athlete's doctor may request further tests including a CT scan or MRI; these tests can be important to assess for other skull or brain injury but they do not inform concussion diagnosis. In the majority of concussions, there will not be any obvious damage found on these tests.

***Neuropsychological testing*:** Sometimes the role of neuropsychological testing is important in identifying subtle cognitive (i.e., memory, concentration) problems caused by the concussion and may at times help to plan return to pre-injury activity. In addition, balance testing may be required. Usually these are arranged by the concussion expert.

When Can the Athlete Return to Normal Activity? — Return to Play

Athletes should not return to activity or play until they have completed the 6 Steps to Return to Play and have been cleared by their doctor. A concussed athlete should be removed from activity immediately and should be assessed by a medical doctor. Given that symptoms may worsen later that night and the next day, athletes should not return to their current activity. When athletes are concussed, their ability to assess their situation may be impaired. Post-concussive symptoms may intensify with an increase in activity, so it is important that return to activity is gradual and monitored/supervised by a medical professional.

The 6 Steps to Return to Play include:

1. No activity, mental and physical rest until symptom free
2. Light aerobic activity like walking or stationary cycling
3. Sport-specific activity like skating or running
4. Training drills without body contact
5. Training drills with body contact — only once cleared by a physician
6. Game play

These steps do not correspond to days, though each step should take a minimum of one day. If symptoms return during this process, athletes should stop the activity and return to rest until symptoms resolve before they try any activity again. A physician should be consulted if symptoms persist.

For more detailed information about returning to play, please see the Return to Play Guidelines (pages 63-64 in this document).

How Can the Athlete Cope with the Symptoms of Concussion? — Emotions

The best medical management for a concussion is rest, both physical and mental. An athlete who has suffered a concussion may often feel lethargic and tired. It is important for athletes to admit this fatigue to themselves. The brain is telling the athlete that he or she needs rest and it is extremely important that the athlete listen to it. If the athlete continues pushing himself or herself and struggling on, it is likely to make the symptoms worse.

The first thing to fail when athletes get tired is concentration. If there is something important to get done, it is best for athletes to complete it when they are fresh after resting. When their attention starts to fade, they may need to stop, rest again, and write down the important things for later.

Many athletes who have suffered a concussion often complain of being very irritable. Athletes may find that things that would not normally annoy them suddenly do. Athletes sometimes find

themselves losing their temper, snapping at family members or friends, and being very annoyed over things. This may be because athletes' own self-control needs a fresh, working brain as well. In order to cope with this, athletes need to be aware of emotions. Some athletes have learned personal relaxation methods such as imagery and progressive relaxation methods to optimize their coping skills.

Other symptoms such as dizziness and clumsiness appear because the brain is reacting slowly and less efficiently. Concussions can upset balance organs in the ear, resulting in vertigo. One way to deal with these types of symptoms is to take special care in actions and movements, which means walking slowly and being aware of one's surroundings.

Other problems such as noise sensitivity and visual changes are also the result of a concussion. Putting up with noise and bright lights needs brain energy, and athletes may find that they do not have the energy level to do so. Athletes may be around a loud radio, bright lights, or a stimulating environment and find themselves suffering from bad headaches. One answer to coping with this is to avoid loud noise and bright lights as much as possible. Many people find it helpful to wear sunglasses everywhere, even indoors.

When dealing with other symptoms, it is crucial for athletes to take only medications that their doctor has prescribed or approved of. Also, athletes should not drink alcohol or take any drugs not prescribed by a medical doctor, as it may hinder recovery and can put athletes at risk for further injury. Although symptoms resolve spontaneously in most cases, usually in a couple of weeks, the process of healing from a concussion may take considerably more time. It is important for athletes to pace themselves and increase activity gradually, as well as to consult with their family or friends before making any important decisions.

How Can the Athlete Manage Emotions after a Concussion? — Emotions

When coping with a concussion, it is not uncommon for athletes to become overwhelmed by a variety of emotions. Often athletes feel concerned, anxious, and sometimes depressed. The first part of the healing process is to understand that these emotions are normal. After an injury, most people go through an initial stage of denial. Athletes may refuse to believe that they are injured or unable to participate in their selected work, activity, or sport. It is extremely tough for athletes to realize that after sustaining a concussion, their body may not be able to respond as it did before.

Other emotions such as anger and depression are also common when suffering a concussion. Athletes may find themselves being angry, displaced, and blaming others for their injury. It is quite common to become very angry at co-workers, family, and friends. As athletes continue to become more aware about the extent of their injury, depression may set in. This may include self-pity, crying, insomnia, etc. When athletes are unable to work, play, and participate in their normal life, they may become doubtful of their personal abilities and struggle with their personal worth. They may worry that if they are out of the "loop", somebody will take their spot or permanent position. They may suffer a blow to their ego and it is not uncommon for athletes to isolate or alienate themselves.

With time, most athletes learn to accept the injury. It is important to allow themselves to mourn, be sad, and then move on. Attempting to be mad or tough and find blame for an injury is a waste of time. It is important to leave the "should haves" or "would haves" out of the picture and focus on the future. The reality is that the athlete has suffered a concussion and has to deal with it. This may include setting goals for himself or herself and maintaining a positive attitude. The athlete may also weigh the pros and cons of his or her future. Dealing with a serious concussion is very demanding and can result in economic loss and emotional burden for the athlete and his

or her family. A positive, optimistic outlook can help to speed up the healing process and lessen the emotional pain, while thinking negatively discourages everyone around the athlete.

It is also important for athletes to take an active role in their recovery and seek out the resources available to them. Athletes should also continue to participate in daily functions and activities, as their step-wise recovery allows. Athletes should not isolate themselves.

Lastly, it is important to be patient. Concussion can result in permanent damage and seriously affect one's quality of life. Athletes must not rush their recovery, because it will only lead to negative results. Athletes should follow the advice of their doctor and trust in the healing process.

How Can Athletes Prevent Concussion?

It is important to take a preventative approach when dealing with concussions. This is especially true with recent concussions as the brain is still very vulnerable at that time. Prevention of concussion and head injury is most successful when workers and athletes are properly educated and the safety rules of the working and sporting environment are enforced. Concussions are an invisible injury, making it important for athletes to share information with the people surrounding them. This will help them understand athletes' situations and educate them for the future.

Protective equipment can reduce the risk and severity of injuries to the face and skull, but there is no concussion proof helmet, nor is there research to support that mouth guards prevent concussions.

Source: Modified/adapted from Parachute. *Concussion Questions and Answers*. Available at parachutecanada.org (www.parachutecanada.org/active-and-safe/item/concussion-questions-and-answers).

Concussion Action Plan

Source: Modified/adapted from Parachute. *Concussion Action Plan*. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_ActionPlan.pdf).

Guidelines for Return to Play after a Concussion

GUIDELINES FOR RETURN TO PLAY AFTER A CONCUSSION

thinkfirst pensezd'abord CANADA

A concussion is a serious event, but you can recover fully from such an injury if the brain is given enough time to rest and recuperate. Returning to normal activities, including sport participation, is a step-wise process that requires patience, attention, and caution.

Each step must take a minimum of one day but could last longer, depending on the player and his or her specific situation.

STEP 1: NO ACTIVITY, ONLY COMPLETE REST.
Limit school, work and tasks requiring concentration. Refrain from physical activity until symptoms are gone. Once symptoms are gone, a physician, preferably one with experience managing concussions, should be consulted before beginning a step wise return to play process.

STEP 2: LIGHT AEROBIC EXERCISE.
Activites such as walking or stationary cycling. The player should be supervised by someone who can help monitor for symptoms and signs. No resistance training or weight lifting. The duration and intensity of the aerobic exercise can be gradually increased over time if no symptoms or signs return during the exercise or the next day.

SYMPTOMS? Return to rest until symptoms have resolved. If symptoms persist, consult a physician.

NO SYMPTOMS? Proceed to **Step 3** the next day.

STEP 3: SPORT SPECIFIC ACTIVITIES.
Activities such as skating or throwing can begin at step 3. There should be no body contact or other jarring motions such as high speed stops or hitting a baseball with a bat.

SYMPTOMS? Return to rest until symptoms have resolved. If symptoms persist, consult a physician.

NO SYMPTOMS? Proceed to **Step 4** the next day.

STEP 4: BEGIN DRILLS WITHOUT BODY CONTACT.

SYMPTOMS? Return to rest until symptoms have resolved. If symptoms persist, consult a physician.

NO SYMPTOMS? The time needed to progress from non-contact exercise will vary with the severity of the concussion and with the player. **Proceed to Step 5 only after medical clearance.**

STEP 5: BEGIN DRILLS WITH BODY CONTACT.

SYMPTOMS? Return to rest until symptoms have resolved. If symptoms persist, consult a physician.

NO SYMPTOMS? Proceed to **Step 6** the next day.

STEP 6: GAME PLAY.

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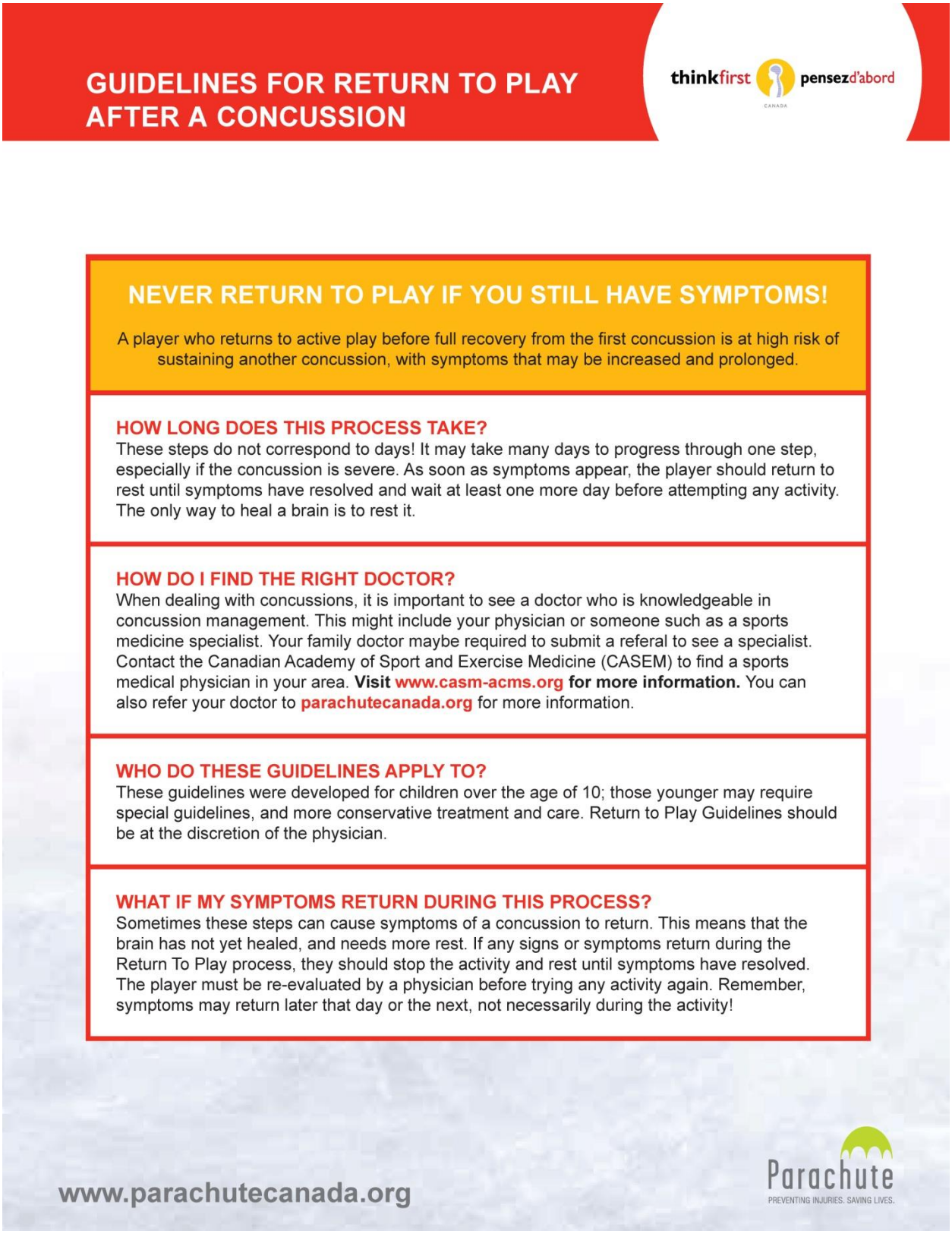

Source: Parachute. *Guidelines for Return to Play after a Concussion*. Available at parachutecanada.org ((http://www.parachutecanada.org/downloads/programs/activeandsafe/returntoplayguidelines.pdf).

Stages of Skill Development

BEGINNER		INTERMEDIATE	ADVANCED	
Initiation	**Acquisition**	**Consolidation**	**Refinement**	**Creative Variations**
Key Points to Look For				
The first contact the athlete has with the skill. The athlete may have no idea of what to do to perform the skill.	The early stage of learning where the athlete becomes capable of (1) coordinating key components of movements and (2) executing them in the correct order, thus performing a rough form of the skill. The movements are not well synchronized or under control, and they lack rhythm and flow. The execution is inconsistent and lacks precision. The athlete has to think about what he or she is doing while performing the skill. Both form and performance tend to deteriorate markedly when the athlete tries to execute movements quickly or is under pressure, as may be the case in a competitive situation.	The athlete can execute the movements or the skill with correct form. Movement control, synchronization, and rhythm are good when performing the skill under easy and stable conditions. The movements can be repeated consistently and with precision under these conditions. Some elements of performance can be maintained when the athlete is under pressure, conditions change, or demands increase, but performance remains inconsistent. The athlete begins to develop a more personal style.	The athlete can execute the movements in a way that is very close to the ideal in terms of form and speed. The performance is very consistent and precision is high, even under very demanding conditions and in situations that are both complex and varied. Only minor fine-tuning may be necessary to achieve optimal execution, and a fairly personal style is established. All components of the movement have been automated, which enables the athlete to focus on the environment while performing and to make rapid adjustments as necessary. The athlete can reflect critically on his or her performance to make corrections.	This stage is achieved only by the best athletes in the world. The movements can be performed according to the ideal, and the athlete has developed a personal style that is efficient. Personal interpretation of movements or personal movements can be combined into unique patterns in response to specific competitive situations.
At this stage, athletes need to…				
Have a clear mental image of what correct execution looks like. Understand the fundamental positions, stances, and patterns of the sport or skill. Feel safe when performing the skill. Reach a comfort level with some movements or feelings that may be unfamiliar and that are part of the skill to be learned.	Understand clearly what they have to do, and have a good mental picture of the task. Perform a lot of repetitions at their own pace and under conditions that are stable, easy, and safe. Practise on both sides, if appropriate. Find some solutions by themselves through trial and error, based on some feedback from the coach.	Be exposed to a variety of situations, and perform a lot of repetitions under varied conditions. Have clear objectives for both form (correct execution) and the result of actions. Be challenged by more complex and demanding tasks or conditions, and find more solutions through trial and error, based on less frequent feedback from the coach. Practise the movements or the skill in conditions where fatigue prevails or that replicate competitive demands, and deal with the consequences of errors.	Be exposed to complex or demanding competitive situations that require the skill to be executed at a very high level. Learn how to solve problems they encounter.	Be exposed to complex or demanding competitive situations that require the skill to be executed perfectly. Develop their own solutions.

Planning Guidelines

- As the table on the previous page shows, the needs of athletes differ depending on the stage of skill development they are at. Athletes' needs should guide the goals you have for practices that aim at developing skills.
- For practices that aim at developing skills, you should ensure that the goals, as well as the activities in which the athletes are involved, are *adapted to the needs* of the athletes and that the *conditions* in which these activities take place also match the athletes' capabilities. Selecting or designing appropriate activities and identifying suitable conditions in which they take place are therefore critical steps in planning your practice.
- You will likely have to allow for the fact that *not all athletes are at the same stage of skill development*. This can be dealt with by planning different activities for different groups of athletes or adapting practice conditions to different athletes' needs.
- You can plan the activities and tasks that athletes will do during a practice in many different ways. Athletes can perform (1) the whole skill, or only parts of it, (2) many repetitions without rest, or rest for varying amounts of time in between repetitions, or (3) the same task several times in a row, or distinct movements or actions each time either in a predictable order or in random order.
- The most effective activities/tasks, types of practice, or practice conditions may also vary with the skill to be learned (open, closed, discrete, serial, or continuous) or the stage of skill development the athletes are at. Additional adjustments may be necessary to take into consideration the age of the athletes.

Planning guidelines for activities and practice conditions that support skill development at various stages are proposed in the following pages.

Note: Your National Sport Organization's Athlete Development Model specifies what technical and tactical abilities to train, as well as the priority in which they should be trained at various ages and levels of competition.

Activity Planning Guidelines for Various Stages of Skill Development

Recommended Practice Conditions	Stage of Skill Development			
	Initiation First contact	**Acquisition** Movement patterning	**Consolidation** Correct execution in variable conditions	**Refinement** Minor improvements
Surrounding environment	Stable and predictable, free of distractions	Stable and predictable, free of distractions	Increased variability and distractions in the environment, but not to the point where movement patterns deteriorate	Competition conditions
Decision-making	No decision-making or options to choose from	Simple decision-making, maximum of 2 options	More complex decisions to make, increased frequency of decision-making, and more options (3-4)	Complex decisions, as many options and at the same frequency as in a competition
Speed of execution	Slow and controlled	At athlete's own pace	Increased, variable, and close to competitive demands	Similar to conditions in competition
Number of repetitions	As needed, depending on athlete's general motor development	High	High	As many as possible
Risk factor	Completely safe conditions, errors of no consequence	Low-risk conditions	Less than or similar to what is encountered in regular competition	Similar to a high level of competition
During training, the emphasis should be on…	Basic stances and positions; getting the idea of what the movements are about, look like	Global execution and general form of the movement	Maintaining the form of movements and some performance consistency under a variety of conditions and under stress	Creating conditions that stress the specific elements that need adjustments

THE CHALLENGE ZONE

When the requirements of an activity are too high for the ability of the athlete, he or she may become anxious or discouraged and may have trouble learning. On the other hand, when the requirements are too low, the athlete may quickly show signs of boredom or lack of interest. The difficulty level associated with the task must therefore be optimal; the athlete must feel that he or she has the ability to succeed but that the **activity represents a challenge**. In other words, the athlete will be motivated to learn when challenged at the appropriate level, which implies that there must be a reasonable chance of success or failure when he or she performs a task. ***As a general rule, if athletes succeed about 2 times out of 3, the activity represents a suitable challenge.***

Order of Activities in the Main Part of the Practice

Practices often feature several activities aimed at developing a variety of abilities.

Paying attention to the **order** in which activities take place in the main part of the practice may increase the probability of achieving the desired goal. Here are a few general guidelines about the optimal order of activities.

Early in the Main Part of the Practice…

Athletes are not tired, so try to plan for:

- ❑ Activities to acquire **new** techniques, skills, or motor patterns
- ❑ Activities that develop or require coordination or balance
- ❑ Activities that develop or require speed

Then Consider…

- ❑ Activities to develop or require speed-endurance
- ❑ Activities that develop or require strength
- ❑ Activities that develop or require strength-endurance

Later in the Main Part of the Practice…

Athletes may be tired, so try to plan for:

- ❑ Activities to consolidate skills already acquired
- ❑ Activities that develop or require aerobic endurance
- ❑ Activities to develop flexibility

Planning a Practice: Self-evaluation Checklist

Structure and Organization

- ❑ The practice is organized and well structured (introduction, warm-up, main part, cool-down, conclusion)
- ❑ The length of the practice is appropriate for athletes' age and ability level
- ❑ The practice makes full use of available facilities and equipment to achieve the practice goals
- ❑ In the main part of the practice, activities take place in optimal order

Nature of the Activities

- ❑ The practice includes a variety of activities
- ❑ Athletes have sufficient practice time during each activity
- ❑ The activities have well-defined goals, and the purpose of the tasks involved is clear
- ❑ The activities are adapted to athletes' skill and fitness level
- ❑ The activities are appropriate to athletes' growth and development stage
- ❑ Practice conditions are adapted to athletes' skill level
- ❑ The activities present exciting and reasonable challenges to the athletes

Safety

- ❑ Potential environmental, mechanical, and human risk factors have been considered, and the activities are designed accordingly
- ❑ An Emergency Action Plan is available
- ❑ Educational material on brain injuries and concussions has been discussed with athletes and parents

Practice Planning Tips

Practice Planning Tips
❑ Always include a warm-up in your practice plan. Never skip or rush the warm-up, as this may lead to injury. If you are short on time, consider having athletes warm up before the practice; for instance, if facilities are available for only a limited period of time.
❑ Get help from anyone who is available. For example, parents can help by arranging stations so that you can maximize the time your athletes are active. In this case, make sure your assistants are familiar with your practice plan, and give them simple and clear tasks.
❑ Avoid activities and games that eliminate people – the athletes who need the most practice will probably get bumped first.
❑ When you plan an activity that involves opposition, pair up athletes with similar ability levels so that they can challenge each other and each has a fair chance of success. This may also reduce the risk of injuries.
❑ Think of all the skills required to perform the drill! A drill or an activity might be relevant to your sport or to the long-term goal you have in mind, but the skill or fitness level of your athletes AT THIS TIME may be such that they cannot really benefit from it.
❑ Be realistic about the actual number of skills your athletes can learn in a season. For some skills, it may take a lot of time and practice for athletes to go beyond the Acquisition stage.
❑ Always make sure that athletes have mastered the fundamentals of their sport before you plan for more advanced techniques. However, it is a good idea to start developing tactical and decision-making skills early on. To do this, put your athletes in quite complex sport-specific situations that require them to use their observation skills, analyze the situation, and come up with possible solutions.

Practice Planning Tips
❑ Plan for fun – can you find a way to develop a skill or ability through a game or activity the athletes enjoy doing? Ask athletes which activities they like the most: use those ones often, or try variations of them to achieve specific goals.
❑ Be creative when athletes have to do a lot of repetitions, as is the case in the Acquisition and Consolidation stages of skill development. Although your athletes may have to work on the same fundamental movements in many practices to acquire the correct motor patterns, you can avoid monotony by using different activities or games that require the movements and looking for new and fun ways of doing them.
❑ Take time to get athletes to talk about their own performances and discuss what they think is important to work on improving individually, and if appropriate, as a team. Try to build this into your next practice plan.
❑ Use random practice whenever possible, as it promotes better long-term performance improvements.
❑ Better long-term improvement in performance can be achieved by not making practices too predictable.
❑ Motor tasks that do not produce extreme fatigue or muscle soreness can be practised every day.
❑ Tasks that do produce marked fatigue or muscle soreness should not be practised every day, and recovery between practices must be longer. Alternate the days where these skills or tasks are performed with recovery days, or with days where other, less tiring skills are practised. For skills that involve some impact or where exhaustion can occur, it may be necessary to practise them only every third day.
❑ Be aware of athletes' physical capabilities before you ask them to do physical activity (growth and development). Keep in mind that there could be some significant physical differences between your athletes, especially in teenagers.

Practice Planning Tips
❑ Simulate competitive situations in practice. Include all elements of the game or competition in your practices, e.g. rules, competition protocols, interaction with officials, respect for opponents and teammates, etc.
❑ Make a list of all the skills that athletes should be coached in, given their age and experience – this becomes a key element of your development plan.
❑ The first time you play a game or conduct a drill, it may not be as successful as you might like – athletes may need more time to learn it. Give the activity a name, so that they will recognize it immediately in the future.
❑ Find out what your athletes like and dislike about practice. Keep a file or a list of favourite drills, activities, and games. Don't be afraid to repeat a game or drill – we enjoy doing the things we like to do.
❑ Practice does not make perfect, it only makes permanent. Perfect practice makes perfect, permanently.
❑ Keep a binder that has EVERYTHING in it: medical information, player information, rosters, directions, systems of play, team rules, etc. Keep a written or electronic record of what you do in practice.
❑ Make a list of EVERYTHING: have a TO DO LIST (generic sheet for every day/practice).
❑ Make a list of all your systems of play, break them all down into parts, and organize drills for each individual concept. Break down all concepts into different options. Develop a drill for every option.
❑ Try to keep things as simple as possible.

ACKNOWLEDGEMENTS FOR NCCP COMPETITION INTRODUCTION PLANNING A PRACTICE

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APPENDIX 1 — FIRST-AID KIT

A complete first-aid kit is essential. This kit must be carefully prepared to treat the most common injuries. Furthermore, it must be accessible to those responsible for the team. Here is a list of what a first-aid kit should contain.

Contents	Use
Medical Record	❑ important information in case of an emergency
Disinfectants	
❑ soft antiseptic soap	❑ all skin lesions
❑ antiseptic cream	❑ laceration requiring cleaning before a dressing can be applied
❑ antiseptic solution	
❑ peroxide	
Dressings	
❑ ocular	❑ cover and close the eye
❑ aseptic (sterile gauze, 50, 75, 100mm rolls)	❑ dry compression
❑ adhesive bandages (“Band-Aid” type and butterfly closures)	❑ protection of minor lesions
❑ elastic bandages (100 and 150mm)	❑ compression
❑ triangular bandages and safety pins	❑ multiple uses but primarily to act as an arm support in case of a fracture
Drug products and ointments	
❑ zinc ointment	❑ scratches or blisters
❑ xylocaine spray	❑ sore burns
Other useful items	
❑ cleaning solution for foreign bodies	❑ dislodge foreign bodies
❑ scissors	❑ common use
❑ tongue depressor	❑ multiple uses
❑ body temperature thermometer	❑ check body temperature
❑ chemical cold bags (if you don’t have access to real ice)	❑ in case of trauma
❑ plastic bags	❑ for ice cubes
❑ phone number list (cell phone, pen, quarters, paper, athletes’ emergency records)	❑ ensure quick response
❑ tools	❑ minor repair of equipment
❑ adhesive tape (37.5mm)	❑ support wounded joints

APPENDIX 2 — SAMPLE FACILITY INSPECTION GRID

Facility: _____

Date: _____

Inspected by: _____

Item	Adequate	Inadequate	Corrective Measures *	Observations
Stationary Equipment				
Team Equipment				
Individual Equipment				
First-aid Kit and Procedures				
Others				
*Corrections 1) add 2) replace 3) modify 4) discard 5) clean 6) repair 7) check				

Note: This document, once completed, should be given to the facilities manager, and the coach should keep a copy for his/her files.

Facilities Manager Name:_____ Signature:_____

Name of Coach: _____ Date (dd/mm/yy): _____

Signature of Coach: _____

APPENDIX 3 — LIST OF ATHLETES, COORDINATES, AND EMERGENCY INFORMATION

Telephones: 911 Service Available Yes ( ) No ( ) Ambulance _____

Police _____ Fire Department _____

Name of Athletes and Sex (M/F)	Date of Birth (YYYY/MM/DD)	Address and Home Telephone Number	Known Medical Conditions	Specific Procedure to Implement	Person(s) to Contact in Case of Emergency	Telephone Number(s)

APPENDIX 4 — SAMPLE PRACTICE PLANNING SHEET

Sport/team/athlete(s): _____ Date: _____

Location: _____Start time: _____Total Duration: _____

Objective(s) :

Equipment:

Activities **Goals:** Athletic abilities, type of effort, length, intensity, movements, etc.	**Key Points/Messages** Guidelines, safety, etc.
Introduction (duration = min)	
General warm-up (duration = min) **Specific warm-up** (duration = min)	
Main part (duration = min)	
Cool-down (duration = min)	
Conclusion (duration = min)	

APPENDIX 5 — SAMPLE ACTIVITY PLANNING SHEET

Practice session date: _____Athletes: _____

Name of the activity: _____ *Warm-up ( ) Main part ( ) Cool Down ( )*

Duration: _____Objective(s): _____

Equipment needed: _____

Description: *(Athletic abilities to be trained, purpose, movements, types of effort, intensity, duration, etc.)*

Directions/guidelines to give athletes: _____

_____

_____

_____

_____

Success criteria: _____

_____

_____

Risk factors/safety guidelines to give to athletes: _____

_____

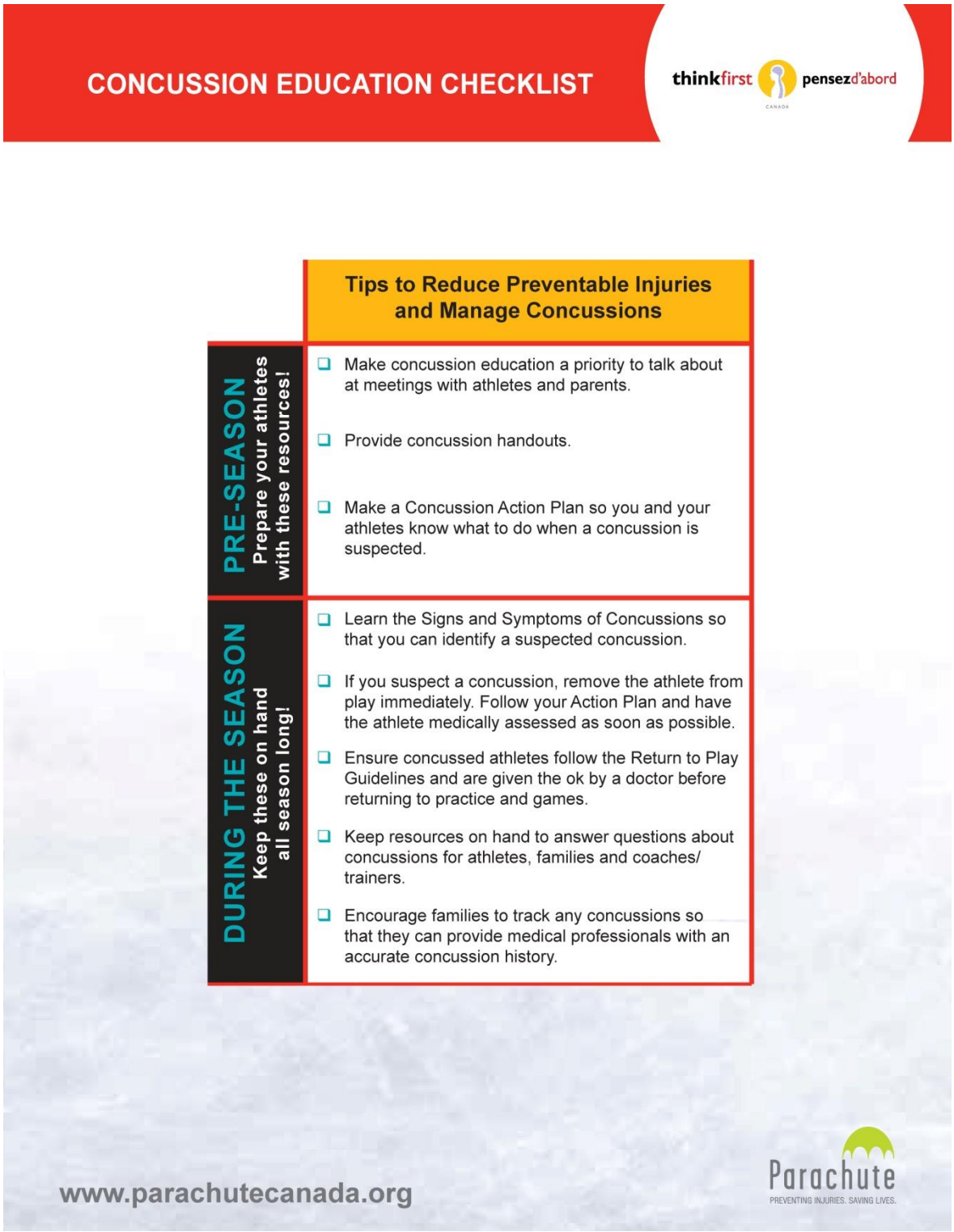
_____

_____

Notes/comments: _____

_____

APPENDIX 6 — CONCUSSION EDUCATION CHECKLIST



Source: Modified/adapted from Parachute. *Concussion Education Checklist*. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_EdChecklist.pdf).

APPENDIX 7 — CONCUSSION EDUCATION TEAM MEETING GUIDE

Source: Modified/adapted from Parachute. *Concussion Education Team Meeting Guide*. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_TeamMeetGuide.pdf).

APPENDIX 8 — CONCUSSION GUIDELINES FOR THE ATHLETE

CONCUSSION GUIDELINES FOR THE ATHLETE

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WHAT IS A CONCUSSION?

A concussion is a brain injury that cannot be seen on routine x-rays, CT scans, or MRIs. It affects the way a person may think and remember things for a short time, and can cause a variety of symptoms.

WHAT ARE THE SYMPTOMS AND SIGNS OF CONCUSSION?

YOU DON'T NEED TO BE KNOCKED OUT (LOSE CONSCIOUSNESS) TO HAVE HAD A CONCUSSION.

THINKING PROBLEMS	ATHLETE'S COMPLAINTS	OTHER PROBLEMS
• Does not know time, date, place, period of game, opposing team, score of game • General confusion • Cannot remember things that happened before and after the injury • Knocked out	• Headache • Dizziness • Feels dazed • Feels "dinged" or stunned; "having my bell rung" • Sees stars, flashing lights • Ringing in the ears • Sleepiness • Loss of vision • Sees double or blurry • Stomachache, stomach pain, nausea	• Poor coordination or balance • Blank stare/glassy eyed • Vomiting • Slurred speech • Slow to answer questions or follow directions • Easily distracted • Poor concentration • Strange or inappropriate emotions (ie. laughing, crying, getting mad easily) • Not playing as well

WHAT CAUSES A CONCUSSION?

Any blow to the head, face or neck, or a blow to the body which causes a sudden jarring of the head may cause a concussion (ie. a ball to the head, being checked into the boards in hockey).

WHAT SHOULD YOU DO IF YOU GET A CONCUSSION?

YOU SHOULD STOP PLAYING THE SPORT RIGHT AWAY. Continuing to play increases your risk of more severe, longer lasting concussion symptoms, as well as increases your risk of other injury. You should tell your coach, trainer, parent or other responsible person that you are concerned you have had a concussion, and should not return to play that day. You should not be left alone and should be seen by a doctor as soon as possible that day. You should not drive. If someone is knocked out, call an ambulance to take them to a hospital immediately. Do not move them or remove athletic equipment such as a helmet until the paramedics arrive.

HOW LONG WILL IT TAKE TO GET BETTER?

The signs and symptoms of a concussion often last for 7-10 days but may last much longer. In some cases, athletes may take many weeks or months to heal. Having had previous concussions may increase the chance that a person may take longer to heal.

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CONCUSSION GUIDELINES FOR THE ATHLETE

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HOW IS A CONCUSSION TREATED?

CONCUSSION SYMPTOMS ARE MADE WORSE BY EXERTION, BOTH PHYSICAL AND MENTAL. THE MOST IMPORTANT TREATMENT FOR A CONCUSSION IS REST. You should not exercise or do any activities that may make you worse, like driving a car, reading, working on the computer or playing video games. No snow shoveling, cutting the lawn, moving heavy objects, etc. If mental activities (eg: reading, concentrating, using the computer) worsen your symptoms, you may have to stay home from school. You may also have to miss work, depending on what type of job you have, and whether it worsens your symptoms. If you go back to activities before you are completely better, you are more likely to get worse, and to have symptoms last longer. Even though it is very hard for an active person to rest, this is the most important step.

Return to school should not happen until you feel better, and these activities do not aggravate your symptoms. It is best to return to school part-time at first, moving to full time if you have no problems. Once you are completely better at rest, you can start a step-wise increase in activities (see "When can I return to sport?") It is important that you are seen by a doctor before you begin the steps needed to return to activity, to make sure you are completely better. If possible, you should be seen by a doctor with experience in treating concussions.

WHEN SHOULD I GO TO THE DOCTOR?

Anyone who gets a head injury should be seen by a doctor as soon as possible. You should go back to the doctor IMMEDIATELY if, after being told you have a concussion, you have worsening of symptoms like:

1. **being more confused**
2. **headache that is getting worse**
3. **vomiting more than twice**
4. **not waking up**
5. **having any trouble walking**
6. **having a seizure**
7. **strange behaviour**

WHEN CAN I RETURN TO SPORT?

It is very important that you do not go back to sports if you have any concussion symptoms or signs. Return to sport and activity must follow a step-wise approach:

- STEP 1) **No activity, complete rest. Once back to normal and cleared by a doctor, go to step 2.**
- STEP 2) **Light exercise such as walking or stationary cycling, for 10-15 minutes.**
- STEP 3) **Sport specific aerobic activity (ie. skating in hockey, running in soccer), for 20-30 minutes. NO CONTACT.**
- STEP 4) **"On field" practice such as ball drills, shooting drills, and other activities with NO CONTACT (ie. no checking, no heading the ball, etc.).**
- STEP 5) **"On field" practice with body contact, once cleared by a doctor.**
- STEP 6) **Game play.**

NOTE: **EACH STEP MUST TAKE A MINIMUM OF ONE DAY.** If you have any symptoms of a concussion (e.g. headache, feeling sick to his/her stomach) that come back either with activity, or later that day, stop the activity immediately and rest until symptoms resolve, for a minimum of 24 hours. See a doctor and be cleared before starting the step wise protocol again.

YOU SHOULD NOT GO BACK TO SPORT UNTIL YOU HAVE BEEN CLEARED TO DO SO BY A DOCTOR.

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Source: Parachute. *Concussion Guidelines for the Athlete*. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_Guidelines_for_the_Athlete.pdf).

APPENDIX 9 — CONCUSSION GUIDELINES FOR THE PARENTS/CAREGIVERS

CONCUSSION GUIDELINES FOR THE PARENTS/CAREGIVERS

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WHAT IS A CONCUSSION?

A concussion is a brain injury that cannot be seen on routine x-rays, CT scans, or MRIs. It affects the way your child may think and remember things, and can cause a variety of symptoms.

WHAT ARE THE SYMPTOMS AND SIGNS OF CONCUSSION?

YOUR CHILD DOES NOT NEED TO BE KNOCKED OUT (LOSE CONSCIOUSNESS) TO HAVE HAD A CONCUSSION.

THINKING PROBLEMS	CHILD'S COMPLAINTS	OTHER PROBLEMS
• Does not know time, date, place, period of game, opposing team, score of game • General confusion • Cannot remember things that happened before and after the injury • Knocked out	• Headache • Dizziness • Feels dazed • Feels "dinged" or stunned; "having my bell rung" • Sees stars, flashing lights • Ringing in the ears • Sleepiness • Loss of vision • Sees double or blurry • Stomachache, stomach pain, nausea	• Poor coordination or balance • Blank stare/glassy eyed • Vomiting • Slurred speech • Slow to answer questions or follow directions • Easily distracted • Poor concentration • Strange or inappropriate emotions (ie. laughing, crying, getting mad easily) • Not playing as well

WHAT CAUSES A CONCUSSION?

Any blow to the head, face or neck, or a blow to the body which causes a sudden jarring of the head may cause a concussion (ie. a ball to the head, being checked into the boards in hockey).

WHAT SHOULD YOU DO IF YOUR CHILD GETS A CONCUSSION?

YOUR CHILD SHOULD STOP PLAYING THE SPORT RIGHT AWAY. They should not be left alone and should be seen by a doctor as soon as possible that day. If your child is knocked out, call an ambulance to take him/her to a hospital immediately. Do not move your child or remove any equipment such as helmets until the paramedics arrive.

HOW LONG WILL IT TAKE FOR MY CHILD TO GET BETTER?

The signs and symptoms of a concussion often last for 7-10 days but may last much longer. In some cases, athletes may take many weeks or months to heal. Having had previous concussions may increase the chance that a person may take longer to heal.

HOW IS A CONCUSSION TREATED?

THE MOST IMPORTANT TREATMENT FOR A CONCUSSION IS REST. The child should not exercise, go to school or do any activities that may make them worse, like riding a bike, play wrestling, reading, working on the computer or playing video games. If your child goes back to activities before they are is completely better, they are more likely to get worse, and to have symptoms longer. Even though it is very hard for an active child to rest, this is the most important step.

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Once your child is completely better at rest (all symptoms have resolved), they can start a step-wise increase in activities. It is important that your child is seen by a doctor before he/she begins the steps needed to return to activity, to make sure he/she is completely better. If possible, your child should be seen by a doctor with experience in treating concussions.

WHEN CAN MY CHILD RETURN TO SCHOOL?

Sometimes children who have a concussion may find it hard to concentrate in school and may get a worse headache or feel sick to their stomach if they are in school. Children should stay home from school if their symptoms get worse while they are in class. Once they feel better, they can try going back to school part time to start (eg. for half days initially) and if they are okay with that, then they can go back full time.

WHEN CAN MY CHILD RETURN TO SPORT?

IT IS VERY IMPORTANT THAT YOUR CHILD NOT GO BACK TO SPORTS IF HE/SHE HAS ANY CONCUSSION SYMPTOMS OR SIGNS. Return to sport and activity must follow a step-wise approach:

- STEP 1) **No activity, complete rest. Once back to normal and cleared by a doctor, go to step 2.**
- STEP 2) **Light exercise such as walking or stationary cycling, for 10-15 minutes.**
- STEP 3) **Sport specific aerobic activity (ie. skating in hockey, running in soccer), for 20-30 minutes. NO CONTACT.**
- STEP 4) **"On field" practice such as ball drills, shooting drills, and other activities with NO CONTACT (ie. no checking, no heading the ball, etc.).**
- STEP 5) **"On field" practice with body contact, once cleared by a doctor.**
- STEP 6) **Game play.**

NOTE: **EACH STEP MUST TAKE A MINIMUM OF ONE DAY.** If your child has any symptoms of a concussion (e.g. headache, feeling sick to his/her stomach) that come back either during activity, or later that day, your child should stop the activity immediately and rest until symptoms resolve, for a minimum of 24 hours. Your child should be seen by a doctor and cleared again before starting the step wise protocol again.

WHEN SHOULD I TAKE MY CHILD TO THE DOCTOR?

Every child who gets a head injury should be seen by a doctor as soon as possible. Your child should go back to the doctor IMMEDIATELY if, after being told he/she has a concussion, he/she has worsening of symptoms such as:

1. **being more confused**
2. **headache that is getting worse**
3. **vomiting more than twice**
4. **strange behaviour**
5. **not waking up**
6. **having any trouble walking**
7. **having a seizure**

Problems caused by a head injury can get worse later that day or night. The child should not be left alone and should be checked throughout the night. If you have any concerns about the child's breathing or how they are sleeping, wake them up. Otherwise, let them sleep. If they seem to be getting worse, you should see your doctor immediately. **NO CHILD SHOULD GO BACK TO SPORT UNTIL THEY HAVE BEEN CLEARED TO DO SO BY A DOCTOR.**

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Source: Parachute. Concussion Guidelines for the Parents/Caregivers. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_Guidelines_for_the_Parents:Caregivers.pdf).

APPENDIX 10 — CONCUSSION GUIDELINES FOR THE COACH/TRAINER

CONCUSSION GUIDELINES FOR THE COACH/TRAINER

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WHAT IS A CONCUSSION?

A concussion is a brain injury that cannot be seen on routine x-rays, CT scans, or MRIs. It affects the way a person may think and remember things for a short time and can cause a variety of symptoms.

WHAT ARE THE SYMPTOMS AND SIGNS OF CONCUSSION?

AN ATHLETE DOES NOT NEED TO BE KNOCKED OUT (LOSE CONSCIOUSNESS) TO HAVE HAD A CONCUSSION.

THINKING PROBLEMS	ATHLETE'S COMPLAINTS	OTHER PROBLEMS
• Does not know time, date, place, period of game, opposing team, score of game • General confusion • Cannot remember things that happened before and after the injury • Knocked out	• Headache • Dizziness • Feels dazed • Feels "dinged" or stunned; "having my bell rung" • Sees stars, flashing lights • Ringing in the ears • Sleepiness • Loss of vision • Sees double or blurry • Stomachache, stomach pain, nausea	• Poor coordination or balance • Blank stare/glassy eyed • Vomiting • Slurred speech • Slow to answer questions or follow directions • Easily distracted • Poor concentration • Strange or inappropriate emotions (ie. laughing, crying, getting mad easily) • Not playing as well

WHAT CAUSES A CONCUSSION?

Any blow to the head, face or neck, or a blow to the body which causes a sudden jarring of the head may cause a concussion (ie. a ball to the head, being checked into the boards in hockey).

WHAT SHOULD YOU DO IF AN ATHLETE GETS A CONCUSSION?

THE ATHLETE SHOULD STOP PLAYING THE SPORT RIGHT AWAY. They should not be left alone and should be seen by a doctor as soon as possible that day. If an athlete is knocked out, call an ambulance to take them to a hospital immediately. Do not move the athlete or remove athletic equipment like a helmet as there may also be a cervical spine injury; wait for paramedics to arrive.

AN ATHLETE WITH A CONCUSSION SHOULD NOT GO BACK TO PLAY THAT DAY, EVEN IF THEY SAY THEY ARE FEELING BETTER. Problems caused by a head injury can get worse later that day or night. They should not return to sports until he/she has been seen by a doctor.

HOW LONG WILL IT TAKE FOR THE ATHLETE TO GET BETTER?

The signs and symptoms of a concussion often last for 7-10 days but may last much longer. In some cases, athletes may take many weeks or months to heal. Having had previous concussions may increase the chance that a person may take longer to heal.

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CONCUSSION GUIDELINES FOR THE COACH/TRAINER

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HOW IS A CONCUSSION TREATED?

IT IS VERY IMPORTANT THAT AN ATHLETE DOES NOT GO BACK TO SPORTS IF THEY HAVE ANY CONCUSSION SYMPTOMS OR SIGNS.

Return to sport and activity must follow a step-wise approach:

STEP 1) **No activity, complete rest. Once back to normal and cleared by a doctor, go to step 2.**

STEP 2) **Light exercise such as walking or stationary cycling, for 10-15 minutes.**

STEP 3) **Sport specific aerobic activity (ie. skating in hockey, running in soccer), for 20-30 minutes. NO CONTACT.**

STEP 4) **"On field" practice such as ball drills, shooting drills, and other activities with NO CONTACT (ie. no checking, no heading the ball, etc.).**

STEP 5) **"On field" practice with body contact, once cleared by a doctor.**

STEP 6) **Game play.**

NOTE: **EACH STEP MUST TAKE A MINIMUM OF ONE DAY.** If an athlete has any symptoms of a concussion (e.g. headache, feeling sick to his/her stomach) that come back either with activity, or later that day, he/she should stop the activity immediately and rest until symptoms resolve, for a minimum of 24 hours. The athlete should be seen by a doctor and cleared before starting the step wise protocol again. This protocol must be individualized to the athlete, their injury and the sport they are returning to.

WHEN CAN AN ATHLETE WITH A CONCUSSION RETURN TO SPORT?

It is very important that an athlete not play any sports if they have any signs or symptoms of concussion. The athlete must rest until he/she is completely back to normal. When he/she is back to normal and has been seen by a doctor, he/she can then go through the steps of increasing activity described above. When the athlete has progressed through these steps with no symptoms or problems, and has received clearance from a doctor, he/she may return to play. If you are unsure if an athlete should play, remember...**when in doubt, sit them out!**

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Source: Parachute. *Concussion Guidelines for the Coach/Trainer*. Available at parachutecanada.org (www.parachutecanada.org/downloads/programs/activeandsafe/Concussion_Guidelines_for_the_Coach:Trainer.pdf).

APPENDIX 11 — POCKET CONCUSSION RECOGNITION TOOL

Pocket CONCUSSION RECOGNITION TOOL

To help identify concussion in children, youth and adults

RECOGNIZE & REMOVE

Concussion should be suspected **if one or more** of the following visible clues, signs, symptoms or errors in memory questions are present.

1. Visible clues of suspected concussion

Any one or more of the following visual clues can indicate a possible concussion:

Loss of consciousness or responsiveness
Lying motionless on ground/Slow to get up
Unsteady on feet / Balance problems or falling over/Incoordination
Grabbing/Clutching of head
Dazed, blank or vacant look
Confused/Not aware of plays or events

2. Signs and symptoms of suspected concussion

Presence of any one or more of the following signs & symptoms may suggest a concussion:

- Loss of consciousness
- Seizure or convulsion
- Balance problems
- Nausea or vomiting
- Drowsiness
- More emotional
- Irritability
- Sadness
- Fatigue or low energy
- Nervous or anxious
- "Don't feel right"
- Difficulty remembering
- Headache
- Dizziness
- Confusion
- Feeling slowed down
- "Pressure in head"
- Blurred vision
- Sensitivity to light
- Amnesia
- Feeling like "in a fog"
- Neck Pain
- Sensitivity to noise
- Difficulty concentrating

3. Memory function

Failure to answer any of these questions correctly may suggest a concussion.

"At what venue are we at today?"
"Which half is it now?"
"Who scored last in this game?"
"What team did you play last week/game?"
"Did your team win the last game?"

Any athlete with a suspected concussion should be IMMEDIATELY REMOVED FROM PLAY, and should not be returned to activity until they are assessed medically. Athletes with a suspected concussion should not be left alone and should not drive a motor vehicle.

It is recommended that, in all cases of suspected concussion, the player is referred to a medical professional for diagnosis and guidance as well as return to play decisions, even if the symptoms resolve.

RED FLAGS

If ANY of the following are reported then the player should be safely and immediately removed from the field. If no qualified medical professional is available, consider transporting by ambulance for urgent medical assessment:

- Athlete complains of neck pain
- Increasing confusion or irritability
- Repeated vomiting
- Seizure or convulsion
- Weakness or tingling/burning in arms or legs
- Deteriorating conscious state
- Severe or increasing headache
- Unusual behaviour change
- Double vision

Remember:

- In all cases, the basic principles of first aid (danger, response, airway, breathing, circulation) should be followed.
- Do not attempt to move the player (other than required for airway support) unless trained to so do
- Do not remove helmet (if present) unless trained to do so.

from McCrory et. al, Consensus Statement on Concussion in Sport. Br J Sports Med 47 (5), 2013

Planning a Practice Checklist

Structure and Organization

- ❑ The practice is organized and well structured (introduction; warm-up; main part; cool-down; conclusion).
- ❑ The duration of the practice is appropriate for the age and ability level of the athletes.
- ❑ Full use is made of available facilities and equipment to achieve the practice goals.
- ❑ Activities are designed so there is minimal waiting time for athletes during the practice.
- ❑ The transition from one activity to the next is planned in such a way as to minimize the time wasted.
- ❑ In the main part of the practice activities are sequenced optimally relative to each other.

Nature of the Activities

- ❑ The practice includes a variety of activities.
- ❑ Athletes have sufficient practice time during each activity.
- ❑ The activities have well-defined goals.
- ❑ The activities are adapted to the skill and fitness level of the athletes.
- ❑ The activities are appropriate to the growth and development stage of the athletes.
- ❑ Practice conditions are adapted to the stage of skill development the athletes are at.
- ❑ The activities present exciting and reasonable challenges to the athletes, and are chosen or designed so that athletes succeed 2 out of 3 times.

Safety

- ❑ Potential environmental, mechanical, and human risk factors have been considered, and the activities are designed accordingly.
- ❑ An Emergency Action Plan is available.

PRACTICE PLANNING WORKSHEET 2

TEAM: **DATE:** **TIME:** **from** **to**

LOCATION: **GOAL(S):**

EQUIPMENT NEEDED:

Introduction	**Key messages/safety points**
Warm-up	**Include general and specific warm-up** **Key messages/safety points** **Equipment needed**
Main part	**Pay attention to the order of the activities** **Key messages/safety points** **Equipment needed**
Cool-down	**Key messages/safety points**
Conclusion	**Key messages/safety points**

ACTION CARD

Date: _____ Location: _____

I will START…

I will STOP…

I will CONTINUE…

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Planning Calendar Worksheet

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Month																																								
Day = Monday																																								
Training Camps																																								
Preparat. Comp.																																								
Regular Comp.																																								
Tournaments																																								
Playoffs/Championships																																								
Practices																																								
Importance of Compet. (Rank 1=High / 5=Low)																																								
Other																																								
Period																																								
Phase																																								

Note: *Regular comp.* refers to regular competitions. *Preparat. comp.* refers to preparatory competitions or pre-season competitions.