



Coaching Education Program

COACHING FEMALE HOCKEY PLAYERS



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THIS IS USA HOCKEY

USA Hockey provides the foundation for the sport of ice hockey in America; helps young people become leaders, even Olympic heroes; and connects the game at every level while promoting a lifelong love of the sport.

An organization that was born out of a shoebox in Tom Lockhart's New York City apartment in the fall of 1937 is today represented in all 50 states and includes a record one million-plus players, coaches, officials, parents and volunteers.

USA Hockey's primary emphasis is on the support and development of grassroots hockey programs. Its cutting-edge American Development Model provides associations nationwide with a blueprint for age-appropriate athlete development. Always a leader in safety, USA Hockey has been at the forefront in advancing efforts to ensure the best possible environment for all engaged in the sport, both on and off the ice.

While youth hockey is a main focus, USA Hockey also has vibrant junior and adult hockey programs that provide opportunities for players of all ability levels. The organization also supports an ever-growing disabled hockey program, which today includes six disciplines.

Beyond serving those who play the game at the amateur level, USA Hockey has certification programs for coaches and officials, inclusive of industry-leading online education modules, to ensure standards are met that coincide with the level of play. Furthermore, a large focus is put on parent education with equipment needs, rules of the game and parental roles in youth sports among common topics.

Members of the organization are entitled to many benefits, including a subscription to USA Hockey Magazine, the most widely circulated hockey publication in the world; excess accident, general liability and catastrophic insurance coverage; access to USAHockey.com; and opportunities to participate in USA Hockey National Championships, as well as player development camps.

As the National Governing Body for the sport of ice hockey in the United States, USA Hockey is the official representative to the United States Olympic & Paralympic Committee and the International Ice Hockey Federation. In this role, USA Hockey is responsible for organizing and training men's and women's teams for international tournaments, including the Olympic and Paralympic Winter Games and IIHF World Championships. USA Hockey also works closely with the NHL and NCAA on matters of mutual interest.

USA Hockey is divided into 12 geographical districts throughout the United States. Within USA Hockey's 12 districts, a total of 34 affiliates provide the formal governance for the sport.





Section 1

INTRODUCTION

INTRODUCTION

USA Hockey's *Coaching Female Hockey Players Manual* provides information for girl's hockey coaches and administrators at all ages and levels. The book addresses the growth of the game, coaching, body contact, stereotypes and myths, injury prevention, and more, in an effort to equip our members with additional resources with regard to female athletes.

During the 1990-91 season, 5,573 female ice hockey players registered with USA Hockey. Since then, that number has increased dramatically, with over 82,000 registered girls and women playing ice hockey across the United States today. While the number of girls/women's teams has grown significantly, some females continue to play on mixed-gender youth teams.

The backbone of all USA Hockey programs are the recreational leagues that offer the opportunity to practice and play games within a local rink, town or association. USA Hockey and its volunteers emphasize the fun, skill development and fellowship aspects of the game in an effort to build a solid foundation that leads to a lifetime of hockey playing enjoyment. Recreational programs for girls and women are conducted in the following age classification categories:

- » 8 & Under
- » 10 & Under
- » 12 & Under
- » 14 & Under
- » 16 & Under
- » 19 & Under
- » High School

USA Hockey and its 12 districts provide annual player development opportunities at the affiliate, district, regional, and national level. USA Hockey hosts three National Player Development Camps for girls ages 15, 16 and 17.

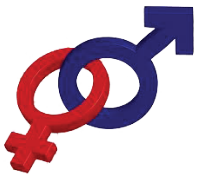
OPPORTUNITIES IN GIRLS HOCKEY

The future of girl's hockey is bright, with so many opportunities for girls to play hockey at the 6U through 19U/High School levels. Many females aspire to play hockey beyond high school and there are 177 programs at universities and colleges across the United States that offer women's ice hockey. Women's ice hockey is offered at the NCAA Division I, NCAA Division II/III, ACHA Division I, and ACHA Division II levels. The following is a breakdown of the number of programs at each level during the 2018-19 season:

- » NCAA Division I – 35 programs
- » NCAA Division II/III – 71 programs
- » ACHA Division I – 24 programs
- » ACHA Division II – 47 programs

For more information on women's NCAA programs, visit USCHO.org and for more information on ACHA women's programs visit achahockey.org.

DOES THE SEX OF AN ATHLETE MATTER?



There are varying perspectives on whether the sex of an athlete matters when it comes to coaching. Some researchers argue there is a big difference in how male and female athletes view teamwork, chemistry, competitiveness, motivation, leadership, feedback and criticism. Then there are others who argue there are more similarities between the two genders than there are differences. Effective coaching is effective, regardless of the sex of an athlete. Common stereotypes about female athletes is that they are more emotional, take criticism personally, are too sensitive, hold grudges, enjoy talking and socializing, value relationships more, are less competitive, cry more, want a cohesive team environment, are less interested in sport, lack the killer instinct, and are better listeners. Now, this can be very true about some female athletes but, these stereotypes are also true for some male athletes and may not be true for some female athletes. Nicole M. LaVoi PH.D says, "Overgeneralizing leads to false assumptions and embracing a Mars/Venus difference perspective to coaching may reinforce gender stereotypes that are potentially harmful to both males and females." Regardless of what sex an athlete is, effective coaches know their athletes, adapt to the situation and coach.

Many influences can affect who an athlete becomes such as:

- » What kind of family did the athlete grow up in?
- » Did the athlete grow up playing with boys, girls, or both?
- » Has the athlete been working primarily with female or male coaches?

These examples, and many more, affect the physical, emotional and athletic development of all athletes. However, there are two areas that are genetically different between most females and males:

- » Brain Development
- » Peak Height Velocity (PHV)

Even with these genetic differences males and females can be on the same developmental time line because the mental, physical, emotional and cognitive development of athletes is a process unique to each person.



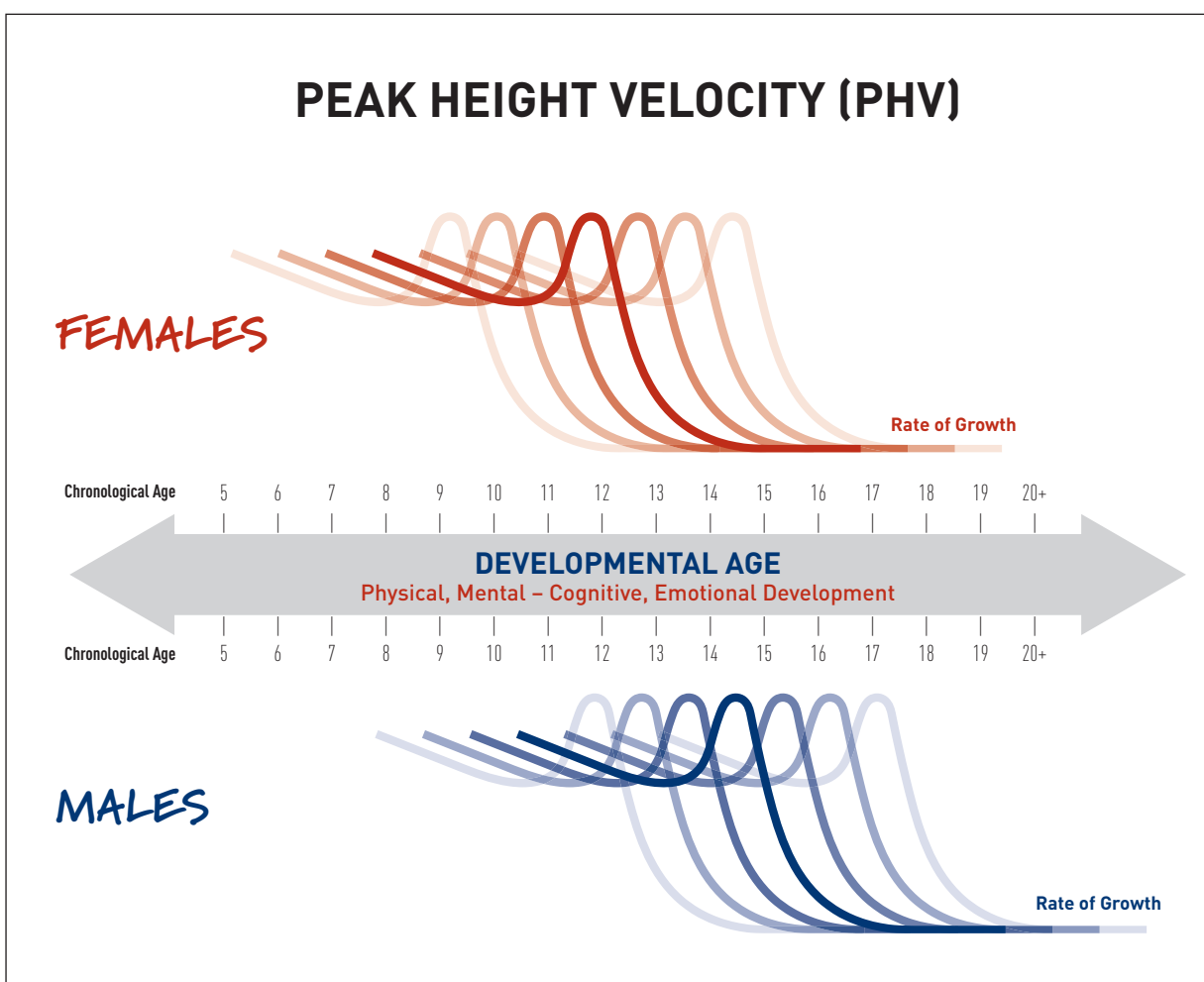
Brain Development

Experts determined that the brain development of males and females may be different. For example, the left brain develops earlier in females and the right brain develops earlier in males. As a result, females from an earlier age tend to rely more on verbal skills to understand their world. Males, on the other hand, tend to rely more on physical movement and spatial awareness. Males have a larger amygdale, the part of the brain

that works primarily on instinct and therefore, they may react more in a fight or flight manner and there may be disconnect between their emotions and language. Females have a larger corpus callosum, the part of the brain that connects the two hemispheres, so females may be better at multi-tasking and processing emotional situations verbally.

Peak Height Velocity (PHV)

The line in the following chart represents the average rate of growth for males and females. Growth is fairly consistent until kids hit their adolescent growth spurt, as is displayed on the curve. At the very top of the growth spurt curve comes a point where the child is growing at his or her fastest rate. This point is referred to as PHV or peak height velocity. After this point has been reached, the child's growth rate decelerates, as they get closer to becoming a full mature adult. PHV is used as a marker in identifying early, normal or late maturers, and as a guide for determining direction in training programs.



Balyi, E., Cardinal, C., Higgs, C., Norris, S., Way, R. (2010) Long-Term Athlete Development v2 - Canadian Sport For Life, Canadian Sports Centers, p27. ISBN 0-9738274-0-8

So what does this mean when training our athletes? When training our athletes we need to train them the same in the early years when both males and females are the same, while remembering that girls may mature physically a bit sooner than the boys.



Section 2

KEYS TO A GREAT EXPERIENCE

KEYS TO A GREAT EXPERIENCE

It is a privilege to coach and an opportunity that should never be taken for granted. If you expect your players to play with enthusiasm, then you as the coach must show up every day with the same attitude. A smile makes all the difference in the world and can bring the most distant player into the fold. The team concept can only be fully understood once you have a real grip on your players as individuals and what it is that makes them play the game. A coach's first priority should always be to provide a fun and safe environment for all involved. Below is the coaches code of conduct for all coaches.



COACHES CODE OF CONDUCT

- » Winning is a consideration, but not the only one, nor the most important one. Care more about the child than winning the game. Remember, players are involved in hockey for fun and enjoyment. A recent study from Visek and colleagues (2019) defined what makes playing sports fun for kids and the report stated that kids ranked winning as #40 in importance out of 81 fun-determinants.
- » Be a positive role model to your players. Display emotional maturity and be alert to the physical safety of the players.
- » Be generous with your praise when it is deserved; be consistent and honest; be fair and just; do not criticize players publicly; learn to be a more effective communicator and coach; don't yell at players. Players feed off of positive reinforcement.
- » Adjust to personal needs and challenges of each player; be a good listener and never verbally or physically abuse a player or official; give all players the opportunity to improve their skills, gain confidence and develop self esteem.
- » Organize your practices based on the needs of all participants. That may mean individual sectioned-off portions of the ice so the challenges of all players are met and all the coaches are working together to achieve a fun learning environment.
- » Familiarize yourself with the rules of the game.
- » Keep an open line of communication with your players and parents. Make sure you converse with each player verbally and non-verbally in a positive manner during every game and practice.
- » Be concerned with the overall development of your players. Stress good health habits and clean living.
- » Bring your best to every coaching situation. The players deserve that and more.
- » Have a great time at the rink and your players will as well.

COACHING MALES vs FEMALES

While male and female athletes do differ in some important ways, coaches should also understand that in general, males and females are much more alike than different. In fact, most of the research on this topic shows that the few gender differences that do exist often can be explained more by environmental or cultural influences than genetics. In the end, coaches should hold the same high standards for their athletes, whether coaching males or females. All athletes, regardless of gender, respond best when coaches set challenging, yet realistic, training and performance goals and emphasize skill development and improvement. Avoid the myths, and the pitfalls that come with them, of assuming you will always need to tailor your coaching approach to the gender of your athletes.

Any coaching strategy may work just as well for either female or male athletes. The best approach is to familiarize yourself with what is known about some of the potential differences between male and female athletes and then get to know each of your athletes on an individual basis. Showing your athletes that you are genuinely interested in their unique needs, motivations, and learning styles, while being sensitive to potential gender differences, is the surest way to find the best coaching approach for helping your athletes reach their goals. Of the potential differences that do exist, many believe they are less noticeable, or even imperceptible, at young ages.

Some of the potential differences in coaching the different sexes have thought to include:

- 1. Confidence.** You may find that your female athlete lacks the same confidence of her male counterpart. Often times this comes from a difference in motor competencies and physical literacy. Research has shown (Jefferies et al., 2019; Kriellaars et al., 2019) in prepubescent children that girls display lower levels of motor competencies than males of the same age. Before kids hit puberty, their bodies are physiologically very similar. Therefore, the differences in physical competencies and their resulting impact on a child's confidence is purely due to cultural and societal gender biases in the way we treat and train young girls. The Physical Literacy diagram demonstrates the association between competence, confidence, motivation and participation.



- 2. Coachability.** In part, due to a level of over confidence, many males may not take instruction as well from coaches as females. Females tend to respect their coaches and implement instruction quicker than males. Females also tend to be more appreciative of good coaching and more willing to express their gratitude. They tend to want to please the coaching staff.
- 3. Cohesion (Team Chemistry).** Social cohesion, how well teammates get along, tends to be more important to females. Task cohesion, focused on same common goal, is important to both males and females but some feel that the social aspects of the team (how well people are getting along) are more important than reaching a specific goal (winning) when judging their experience. Females tend to look for ways to improve team bonding and build cohesion, but if there is an issue, it can cause more problems.

4. **Goal vs Task Oriented.** It is believed that females tend to be more goal-oriented while males are more task-oriented. When explaining a drill, a female will tend to want to know how the drill fits into the big picture, its overall purpose, while a male player will tend to focus on task (or drill) at hand.
5. **Achievement vs Avoiding Failure.** Males tend to try to attain high levels of achievement while many females try to avoid failure. This may play out in situations where boys are comfortable with failing initially so that they can master a skill whereas a girl may avoid the drill (especially in public) so as not to publicly fail. Girls may practice in private until they master the skill and then be more willing to demonstrate it publicly.
6. **Perfectionist vs. Lots of Things Really Well.** Linked to a fear of failure, this type of athlete will tend to be a perfectionist. While they may avoid doing something in public for fear of failure, they will tend to practice the skill repetitively in private until they have perfected it. Those focused on achievement may be more willing to practice a variety of skills to excel at a lot of things.
7. **Sensitivity.** Female athletes may be more sensitive than their male counterparts. This might lead to possibility of more tears in the women's locker room than the men's.

In reality, every athlete, male and female, exists on a spectrum of personality characteristics. It is important to get to know each person as an individual and tailor your approach to the individual, much like raising children. Each person is unique in their own right and will motivate them self and will learn in their own individual way. For more information on individual differences and how to coach based on those differences, we recommend the following reference and the book, *Conscious Coaching: The Art and Science of Building Buy-in* by Brett Bartholomew.

THOUGHTS FROM THE PLAYER'S PERSPECTIVE

- » Understand where the female athlete is in her developmental path. It is very important to know what is important to teach at each level to maximize each player's potential. If a coach does things properly at the appropriate ages, then they can set that female athlete up for success as they graduate to their next phase of development. Your attention to the long-term development is crucial to properly prepare each female hockey player for her next step and phase in development.
- » Be patient. The average age of the 2018 U.S. Women's Olympic Ice Hockey Team was 24.5. The goal is not to create a national team caliber player at the 14U or younger ages. There is so



much mental, physical, cognitive and emotional development that will occur in our female hockey players through 16U, 19U, college competition and beyond.

- » Coaches are expected to respect players and help provide an environment that allows girls to grow as players and individuals.
- » Create the foundation for a great locker room culture and get the players excited to compete and play as a team.
- » Coaches need to have engaging and meaningful practices that correlate with both the level of play and the needs of the players and team.
- » Coaches must help instill confidence and life lessons in the players.
- » Players want coaches to be approachable, whether it is hockey or not, it's important for the player to feel comfortable to talk to coaches about anything they may be struggling with.
- » Players want to be held accountable. Whether it is being held accountable for small details in practice or big tasks in games, accountability will allow players to push themselves and get better.
- » Players want coaches to make things challenging for them so they can continue to learn and grow regardless of what level we are at. The tasks need to have a balance of challenge and tasks that they will eventually be able to be successful at.
- » Coaches need to provide honest feedback.



Section 3
RULES

RULES

BODY CONTACT

Body Checking is prohibited in all USA Hockey Girls/Women's age classifications and are considered body contact classifications of play. Body contact hockey does not mean "no contact." There are many instances where contact between players is legal within the rules of body contact classifications. Body contact is a skill that must be taught. Body contact is defined as contact that occurs between opponents during the normal process of playing the puck, provided there has been no overt hip, shoulder or arm contact to physically force the opponent off the puck. Legal body contact shall not be penalized under this rule. However, deliberate physical contact with an opponent, with no effort to legally play the puck, shall be penalized.

Because contact between players occurs in girls/women's classifications, it is imperative that coaches teach body contact and body checking to female players starting at the youngest age levels (8U and older). USA Hockey provides a framework for this education for all hockey players (male and female). This education provides a base for players to gain contact confidence both on and off the ice.

Although body checking is illegal in girl's classifications, a body check can still occur and all females must be prepared to take that type of contact. Also, knowing the difference between body contact and body checking will help female players know how to better use their body legally during games.

The mission of USA Hockey is clear; through a new standard of play, a greater emphasis will be placed on skating, puck possession and the proper use of the body to establish position and legally gain a competitive advantage. The goal is to create an environment that enhances skill development by reducing intimidating infractions designed to punish the opponent.

A player cannot deliver a body check to any player while participating in a body contact classification. Examples include:

- » Makes deliberate physical contact with an opponent with no effort to legally play the puck.
- » Uses overt hip, shoulder or arm contact with the opponent to physically force them off the puck.
- » Physically impedes the progress of the opponent with hips, shoulders or torso without establishing legal body contact and having no intent of playing the puck.

All USA Hockey members must demonstrate awareness and support for the application, spirit and the respect of the rules in order for continued improvement in the game of hockey. At the same time, it is important to remember that a player is entitled to use proper body position and body contact in all age classifications in order to gain a competitive advantage and players are allowed to compete for body position using their strength and balance in front of the goal or along the boards.



Section 4

UNDERSTANDING THE ATHLETE

UNDERSTANDING THE ATHLETE

The purpose of this chapter is to discuss some issues that are often said to be unique to female athletes (although we will find they are often not unique), to dispel some of the myths regarding coaching female athletes and to suggest some simple solutions for addressing these topics.

FEMALE DEVELOPMENT AND MATURATION

At any given age and gender, there is a wide variation among children in size, physique and body composition, rate of growth and timing and tempo of biologic maturation. Children experience three interacting processes: growth, maturation and development. Growth refers specifically to the increase in the size of the body as a whole and of its parts. Thus, as females grow, they become taller and heavier, they increase in lean and fat tissues, their organs increase in size and so on. Different parts of the body grow at different rates and times.

Maturation is the process of maturing and has two components: timing and tempo. Timing refers to the time when specific maturational events occur: age when menarche is attained, age at the beginning of breast development, age at the appearance of pubic hair, or age at maximum growth during the adolescent growth spurt. Tempo refers to the rate at which maturation progresses - how quickly or slowly a person passes from initial stages of sexual maturation to the mature state. Timing and tempo vary among individuals.

Development refers to the acquisition of behavioral competence, the learning of appropriate behaviors expected by society. It is culture-specific. As children experience life at home, school, church, sports, recreation and other community settings, they develop cognitively, socially, emotionally, morally and so on. Children and adolescents learn to behave in culturally appropriate manners. The three processes growth, maturation and development occur simultaneously and interact. Growth and maturation are characterized by individual variation and, although under genetic and neuroendocrine control, environmental factors may also have an influence. Physical activity, especially intensive training for sport, is often indicated as one such environmental factor (Baxter-Jones et al., 2002).

It is a commonly held belief that early maturation in females, leads to a decrease in physical activity and sport participation. However, absolute maturation, body mass, waist circumference and sum of skinfolds do not significantly contribute to participation rates. Contrary to common beliefs, relatively more mature girls may, in fact, be more active than their less mature peers. However, neither changes in absolute maturation nor physical size appear to directly influence changes in physical activity in adolescent girls (Fawkner et al., 2014).

RELATIVE AGE EFFECT (RAE)

Significant and repeated over representations of ice-hockey players born in the quartile (i.e. the three months after age-group cut-off dates) for each age-group category and level of competition, including professionals, have been observed in numerous research studies. Together, these studies suggest that being relatively older within an annual sporting group provided significant attainment advantages when compared with those who were relatively younger. Peak performance in many sports, including hockey, is often not attained until the late twenties and thirties, providing a sufficient window for training and development after adolescence. Delaying elite team selection in youth hockey might reduce RAEs and indirectly help reduce the risk of compromising health during an athlete's development (Cobley et al., 2009). This phenomenon has been demonstrated in women's hockey in Sweden (Stenling et al., 2014) and Canada (Weir et al., 2010).

EPIDEMIOLOGY/INJURY RISK IN HOCKEY

Injury rate studies in the NCAA are the gold standard for non-professional sports, because they track practice and game injuries and athlete exposures using common and consistent definitions. Comparing 15 collegiate sports, Hootman et al. (2007) found that the game injury rate in women's ice hockey (12.6 per 1,000 athlete exposure) ranks third among women's sports behind soccer and gymnastics.



In the first four years data was collected in NCAA Women's Hockey (Agel et al., 2007), the injury rate in games was five times higher than the injury rate in practices. Preseason practice injury rates were almost twice as high as in-season practice rates. Concussions were the most common injury in both games (21.6%) and practices (13.2%). The rate of concussions in games appeared to be trending upward during the study period. The greatest number of game injuries (approximately 50%) resulted from player contact, whereas practice injuries were from either contact with another object (i.e. puck) or non-contact mechanisms.

Nearly one third of all game injuries (31.8%) and practice injuries (31.1%) were to the lower extremity, with the upper extremity (30.3%) and head and neck (25.4%) accounting for the majority of other game injuries. In games, concussions (21.6%) were the primary injury, followed by knee internal derangement (12.9%) and acromioclavicular joint injury (6.8%). In practices, concussions (13.2%), pelvis or hip muscle-tendon strains (12.0%), and foot contusions (7.2%) were the most predominant injuries. An athlete was almost 11 times as likely to sustain an internal derangement of the knee in a game than in a practice and more than eight times as likely to receive a concussion in a game than in a practice.

Despite the prohibition of body checking in women's games, incidental and intentional contact between players accounts for 40 percent to 58 percent of injuries (Agel et al., 2010; Dryden et al., 2000), with overt body checking causing 20 percent of injuries in recreational and youth ice hockey leagues (Decloe et al., 2014; Dryden et al., 2000).

Concussion is consistently the most frequent injury reported in studies of collegiate teams and has been reported with higher rates in women's collegiate hockey than in men's in older studies. However, a recent study found that concussion rates did not vary by gender. (Rosene et al., 2017).

Other frequently occurring injuries at the collegiate level include hip and groin strains, ankle sprains and contusions. Acromioclavicular and ligamentous knee injuries also occur in the women's games, but with reduced frequency compared to men's games.

Common injuries in female youth athletes 9 to 17 years old include muscle strains, contusions, ligament sprains, concussions and fractures (Decloe et al., 2014).

MUSCLE STRAINS

Adductor strains and groin tendon injuries are the second most common injury reported in women's ice hockey games and most common injury in practice sessions (Agel et al., 2010; Dryden et al., 2000). Adductor strains are seen in women's ice hockey with similar rates to men's, though one study of collegiate ice hockey injuries found a higher absolute injury rate for women than men (Schick et al., 2003). The adductor muscle group has been shown to achieve the greatest relative amplitude and duration of muscle activation during forward skating compared to the hip abductors and external rotators. Forward power skating requires strong eccentric contraction of the adductor muscles during the late push-off phase of the stride cycle (Chang et al., 2009).

Adductor injuries occur with the greatest frequency during training camp, with rates up to five times higher than during the regular season (Emery et al., 1999). Risk factors for adductor strains in professional ice hockey players include previous adductor injury, limited sports-specific training in the off season, veteran status, and an adductor-to-abductor strength ratio less than 80 percent (Emery et al., 2001). An off-season exercise program that focuses on adductor strengthening with sports-specific training has been shown to decrease the incidence of adductor strains in professional hockey players (Tyler et al., 2002).

HIP IMPINGEMENT

Femoroacetabular impingement (FAI) describes a spectrum of abnormal hip issues common in hockey. FAI is seen with high prevalence in male and female ice hockey players and is thought to develop due to the biomechanical forces placed on the hip joint during growth and development. A study of hockey players showed development and progression of the boney deformity after growth plate closure of the femur (Siebenrock et al., 2013). Another study of asymptomatic youth ice hockey players found a prevalence of 79 percent of hip boney deformity on MRI (Philippon et., 2013). In addition to boney deformities, hockey players can tear their hip labrum. In the recent past, surgery to clean-up and/or repair a torn labrum was standard. Now, most orthopedic surgeons try a conservative management option first. This conservative management includes core/pelvic strengthening, hip mobility exercises, and hip strengthening exercises. Likewise, a general off-ice program and warm-up that includes these components could help mitigate the risk of developing a hip impingement issue.

Reducing Hip Injury Risk

- » Hip flossing exercises
- » Bretzel

ANTERIOR CRUCIATE LIGAMENT (ACL) INJURY

Unlike many other sports, including soccer, volleyball and basketball, the incidence of ACL injuries in women's hockey is similar to the rate in men's hockey; the most common cause being contact with another player. In other sports, females tend to tear their ACL at a much higher rate than males. This higher incidence rate of non-contact ACL tears in these sports for females is attributed to a multitude of possible causes. These sports require a high rate of deceleration (i.e. stopping and landing) with mechanics not common to hockey. Despite the lower incidence of ACL injuries in women's hockey compared to other sports, it is still important to address some of the causes of injury in off-ice training sessions because the movement dysfunctions that can result in ACL injuries can cause poor performance in ice hockey if not addressed. In addition, since we advocate for well-rounded athletes who play multiple sports, it is likely that our female athletes are playing a sport (i.e. soccer) with a high risk of ACL injury.

Exercises to Address Movement Dysfunctions

- » Table Top/Pelvic Stability
- » Hip Mobility

CONCUSSION

Many speculations have been made about the reason for the potential increased concussion rate in women's sports. The increase in concussions may be due, at least in part, to improvements in self-reporting and detection of mild concussions among women players (Agel et al., 2007). Another explanation for the increased rate may be a greater variation in players' abilities to withstand player-to-player contact. Many coaches of girl's hockey (and even youth hockey) have not put an emphasis on teaching body contact and checking skills at the youngest ages. Some players were lucky to have coaches that taught body checking,

including proper technique for checking as well as for taking a body check. However, we have found that a large percentage of our female hockey players at all levels have not been taught how to give and take player contact safely.

If a difference in game concussion rates does exist between men's and women's ice hockey, it may reflect the occurrence of unanticipated checking in the women's game. It is also possible that inconsistent enforcement of the rules results in a higher incidence of concussions. In one study, of 57 reported concussions, 18 resulted from plays in which a penalty was called. Unfortunately, we have no information regarding rule violations on the other plays in which concussions were sustained. If the rule prohibiting body checking is enforced inconsistently, players will have different expectations regarding body contact. Some players may not be prepared for body contact if they feel the rules will protect them from getting hit by another player.

If a player is not anticipating a collision, greater forces may be translated to the athlete than those who are trained in body checking. This theory was supported by a study of male youth hockey players wearing instrumented helmets, which found that head impacts resulting from unanticipated collisions showed a trend for greater linear acceleration forces than anticipated collisions (Mihalik et al., 2010). Although this study did not correlate the impacts with diagnosed concussions, it suggests that anticipation of collisions with a player in good body position can decrease the force of head impacts and possibly reduce injuries. Both core strength and neck strength are necessary for an athlete to prepare for and withstand contact with another player or with the boards. An off ice conditioning program that includes core strengthening, postural stability training, and neck strengthening may help female players achieve and maintain proper skating positions to anticipate collisions and resist forces from contact with another player.

Other physiologic differences affecting women's risk of concussion may include the effect of estrogen and decreased cervical muscle strength in women (Dick, 2009), though these effects have not been studied adequately in the sport-related concussion literature.

CONCUSSION REPORTING

A survey of high school athletes found that while they generally were able to correctly identify symptoms of a concussion, fewer than 50 percent of those who had experienced a concussion actually reported their symptoms at the time of injury (Register-Mihalick et al., 2013). Similarly, a study of collegiate athletes revealed that almost 80 percent did not seek medical attention during a practice or game when they believed they had experienced a concussion (Delaney et al., 2014). A trend of concealing symptoms of a concussion is especially prevalent among ice hockey players in all levels (Cusimano et al., 2014; Kroshus et al., 2014; Mrazik et al., 2014). While male players cite a desire to continue playing as a common reason why they do not report symptoms, female players reported withholding symptoms because they did not want to disappoint a coach or a parent (Mrazik et al., 2014). When developing concussion education programs for female teams, involving the coach in the presentation as a health advocate may encourage these athletes to report symptoms and remove themselves from play. Other authors have found that an educational video specific to concussions in ice hockey is an effective method of improving concussion knowledge and attitude and may help improve symptom reporting (Cusimano et al., 2014; Kroshus et al., 2014).

REDUCING CONCUSSION RISK

Increasing cervical strength is important for youth athletes, as this decreases the risk of head/neck injury and concussion risk. What is important to take away is that for every pound gained in neck strength, the risk of concussion decreases by 5 percent. According to Wilson et al., (2018), typical improvements can range from 8 to 50 percent when pursuing a neck strengthening protocol. As a result of this, players may wish

to incorporate some neck related work into their sessions. However, this routine may be hard for some to follow regularly “unsupervised” and pairing athletes together may present a challenge as some adolescents may not manage this task maturely and could cause undue harm to a peer (Wilson, 2018). Proper instruction from the coach is necessary for proper form and resistance in performing the exercises safely.

Recommended Exercises

- » Methodist Neck Strengthening
- » Wilson Neck Exercises

UPPER EXTREMITY INJURY

Most people focus the majority of their preventative and performance efforts on the lower extremity. As the previously mentioned studies noted, the majority of injuries do occur in the lower extremity. Despite this, attention should be paid to the upper extremity for both performance improvement and injury mitigation efforts. In general, females have less relative upper body strength than their male counterparts. However, in the sport of hockey the athlete must use their upper extremity to self protect (i.e. when falling to the ice, when battling on the boards) and need good upper body strength to effectively shoot, pass and to hold onto their stick.

Recommended Exercises

- » Plank
- » Side Sit to Bear
- » S & C Vertical/Horizontal Push/Pull

PELVIC FLOOR DYSFUNCTION/URINARY INCONTINENCE/LOW BACK - SI JOINT PAIN

The pelvic floor is the base of the core. Dysfunction in the pelvic floor group of muscles can lead to a host of issues including low back/SI joint pain, poor sport performance, increased injury risk at distal joints (i.e. ACL injuries), and urinary incontinence issues. Sports with high levels of contact/collision and vertical impact forces (i.e. volleyball, gymnastics) tend to have the highest incidence of urinary incontinence.

- » 53% of females over the age of 20 have issues with urinary incontinence (only 12% of them sought help for their issue).
- » 28% of female collegiate athletes have urinary incontinence episodes.
 - Of those, 40% first noted problems in high school and 17% in middle school
- » Urinary incontinence issues are often thought to only be a female issue but 33% of all urinary incontinence occurs in males (tends to be older males).
- » Incidence rate by female sport:
 - Gymnastics 67%
 - Tennis 50%
 - Basketball 44%
 - Hockey 32%
 - Track 26%

There are several analogies that illustrate the function of the pelvic floor. If you were to imagine that the core is like a soda can, the top of the can would be the respiratory diaphragm (breathing) and the bottom the pelvic floor (also a diaphragm). The sides of the can would be the abdominals, obliques, and back muscles. If you did not break the seal of the soda can and tried to crush the can with your foot, you would likely hurt your foot and not make much of a dent in the can. Similarly, if you have control of all of your sphincters in

your diaphragms (respiratory and pelvic floor) you would have a solid core and could resist outside forces to prevent injury (i.e. to our spine, SI joint, knees). However, if the seal of the can has been broken (or you do not have good control of your sphincters), you are more susceptible to injury and will have a harder time generating force/power for sport purposes because of a lack of a stable base to move from.

In order to have optimal control of the diaphragms (and the sphincters in them), the respiratory diaphragm and the pelvic floor/diaphragm need to be parallel to each other. If we lose this position, due to stiff hip flexors pulling our pelvis into an anterior tilt, pregnancy, or because we develop a “beer belly,” we lose the ability to control our sphincters. This could lead to increased risk of injury in sport, urinary incontinence, acid reflux, low back/SI joint pain, etc.

To minimize this risk, exercises to improve hip mobility and pelvic/core stability, and glute strength/control should be incorporated into off-ice training and warm ups. There is no need for the coach to directly discuss pelvic floor dysfunction issues with their female athletes. A good general off-ice training program and warm up sequence can safely and appropriately address these issues with the majority of female athletes. If an incident is brought to your attention, such as over hearing athletes joking about an accident, should you address the issue? In this case, you should briefly mention the high prevalence of the issue within sport (i.e. normalize it so an individual knows they are not alone), discuss how the problem is often caused by a muscle imbalance and can be fixed with appropriate care and suggest that the athlete speak to their parents or healthcare provider regarding the issues they are having in addition to recommending the athlete continue to do the exercises below on a regular basis.

Low back/SI joint pain can be caused by many different issues, including pelvic floor dysfunction, ligamentous instability at the SI joint, disc and facet joint issues, hip and thoracic spine mobility issues and poor posture/skating mechanics. In an attempt to minimize low back and SI joint pain/dysfunction some simple exercise solutions are provided below. These exercises can be incorporated into an off ice training session as a complementary exercise or as part of the off-ice warm-up depending on individual athlete/team needs.

Recommended Exercises

- » Table Top
- » Planks
- » Hip/Thoracic Mobility



Section 5

CORRECTIVE EXERCISES & PRE-HABILITATION

CORRECTIVE EXERCISES & PRE-HABILITATION

PROXIMAL STABILITY BEFORE DISTAL MOBILITY

When designing off-ice training and warm up programs, the plan should be designed in such a way as to emphasize stability through the “core” (shoulder blades through the pelvis) prior to developing strength and power in the segments further away from the trunk (i.e. legs and arms).

A 5-minute core progression workout was developed jointly at the Cirque du Soleil by the Director of CRITAC, Dean Kriellaars and Researcher at CRITAC, Adam Decker. This interactive PDF (Movement Preparation Core Progressions) found at the end of the book provides an explanation on the correct way to execute each movement along with a video demonstration (click on the picture). These progressions should remain a critical component of off-ice training at all levels.

Once this core stability has been attained (or re-engaged), then the focus can turn to more explosive movements/lifts. Exercises to develop this proximal stability include table top exercises, forward and side planks, side sit to bear, RT2, bear crawls and DNS lunge.

KINETIC LINKING

Kinetic linking is how we transfer energy/force from one segment to the next. It’s the summation of force generation from the ground up (and vice versa). Imagine trying to throw a baseball by just extending and then flexing your wrist. The ball does not go very far. Now throw the ball like you normally would from outfield to home plate, with a step. By taking a step, rotating your trunk and your arm, extending your elbow, and then finally flexing your wrist from an extended position, you are able to generate more force and transfer it from the ground to the ball propelling it much further. Kinetic linking, with a similar sequence, also occurs when striking the puck with a stick. When training on- and off-ice, we should not isolate movements at a joint but perform drills and exercises in a movement sequence. For example, the focus should not be on isolated movements/lifts like a hamstring curl machine but a multi-joint movement like a squat or deadlift variation.

PELVIC/HIP AND THORACIC SPINE MOBILITY AND STABILITY

It is common for a hockey player’s hips to become stiff. This stiffness can contribute to injury at the hip, the knee and the low back. The stiffness can also limit skating speed/power. To minimize this risk, simple hip mobility exercises can be integrated into the off-ice training and warm-up plans.

UPPER EXTREMITY STABILITY AND STRENGTH

As mentioned previously, the upper extremity is commonly injured in hockey and therefore should be considered in a complete off-ice training plan. To improve stability, weight bearing exercises like the side sit to bear, RT2, and bear crawls can help build appropriate neuromuscular control patterns. To build strength in the upper extremity, including grip strength, a balance program of horizontal pushing (i.e. push-ups, bench press), horizontal pulling (i.e. bent over rows, rowing machine), vertical pushing (i.e. military press), and vertical pulling (i.e. chin ups, pull-ups, lat pull downs) should be a key component of the off-ice training program.



Section 6

NUTRITION

NUTRITION

Hockey is a dynamic, high-intensity sport requiring anaerobic fitness, strength, power, explosiveness and mental acuity. Body leanness is desired for speed and quickness, while a strong, muscular body frame is necessary in contact situations. These wide-ranging demands highlight the need for proper nutrition for the purposes of muscle and brain performance, maintaining hydration, optimizing muscle and soft tissue recovery, and promoting ideal body composition. The purpose of this portion is to outline basic nutrition needs for hockey players, particularly female athletes as they train through the growth and development phases. While general guidelines will be given, it is important to note that every athlete has unique needs and may benefit from individual guidance given by a registered dietitian (RD or RDN) with a board certification in sports nutrition (CSSD).

BASIC NUTRITION

Healthy food choices for kids, adults, and athletes are the same - fresh fruits and vegetables, low fat dairy or dairy substitutes, whole grains, heart-healthy fats, and lean proteins to provide necessary vitamins, minerals, and fiber for optimal body functioning. Athletes, and especially athletes going through growth, development and maturation, need to eat more! Calorie intake needs to increase substantially as training volume and intensity increases. Under-consuming calories (called low energy availability) can have severe consequences, including chronic fatigue, loss of or failure to gain muscle and bone mass, increased injury risk, weakened immune system, stress fractures, nutrient deficiencies, and hormonal dysfunction. Severely low energy availability can compromise or delay growth, development, and/or maturation.

The concept of nutrient-density can help guide choices in each food group. That is, choosing items that contain the highest concentration of vitamins, minerals, fiber, and other beneficial properties such as water, antioxidants, and omega-3 fats. In addition, foods with the highest nutrient density tend to have less added sugars and fats.

A “perfect” diet should not be the goal for anyone, including athletes. Rather, a mostly healthy, not overly rigid diet that incorporates some treat foods is ideal. Athletes should consider the “80/20 Rule.” This refers to making nutrient-dense, athletically appropriate choices 80 percent of the time, while allowing 20 percent of the diet to be less rigid. In a standard 2,000- calorie diet, 20 percent would equate to 400 calories per day.

PERFORMANCE FUELING

As young athletes become more serious about their sport, they should begin to think of food as fuel. Carbohydrate, protein and fat are macronutrients that are essential nutrients that contain energy, or calories, that fuel and repair the body in different ways. Vitamins and minerals, micronutrients, are dietary components that do not contain calories, but are also essential for life. Both macro and micronutrients have direct and indirect effects on sports performance. Fueling for performance means eating the proper nutrients, in the right amount, at the right times to ensure that fuel is available to working muscles and proper tools are available to facilitate recovery. Carbohydrates serve as the main muscle fuel during exercise, while protein helps facilitate muscle repair and synthesis of new tissue. Fats assist with nutrient absorption, hormone production, and decreasing inflammation caused by intense training. Fat, however, takes longer to digest, which can lead to gastrointestinal discomfort and slower delivery of nutrients to working muscles. Therefore, fat intake should be minimized at pre- and postgame/practice meals and snacks.

For hockey players, a particular importance should be placed on eating carbohydrates. As stated above, they are the main muscle and brain fuel, used to power all-out sprints down the ice, strategic thinking

and quick movements that make game-winning saves. Hockey is considered highly anaerobic, meaning that it is comprised of short duration, high-intensity bursts of one point five minutes or less. This type of activity burns phosphocreatine (an energy source naturally in muscle tissue) and muscle glycogen (stored carbohydrates). Hockey players may burn through 60 percent of their quadriceps muscle glycogen in a single game! Considering that most hockey players also train on and off the ice in between games, it's possible to deplete muscle glycogen quickly if the right types of foods are not consumed. Thus, carbohydrate intake should comprise about 60 percent of total energy intake. To maximize micronutrient intake, most carbohydrate intake should come from nutrient-dense sources such as 100 percent whole grains, breads, cereals, pasta, oats, potatoes and fruit. These foods contain magnesium, iron, B vitamins, vitamin C and fiber that strengthen and repair muscles, bones, soft tissues, the gastrointestinal system and assist in energy production. However, some carbohydrate-containing foods are more palatable and digest more quickly and easily during the pre/mid/post activity timeframe, yet are less nutrient dense. Foods such as sports drinks, chews, bars, pretzels, chocolate milk and applesauce help maintain energy and electrolyte levels and are appropriate to use during activity. Inadequate carbohydrate intake can lead to low energy, decreased strength, inability to maintain intensity, increased recovery time, and over time lead to higher injury rates, decreased immune function and increased body fat.

The timing of food and fluid intake can impact energy levels, mental focus and recovery. Athletes should never go more than three to four hours without eating, with additional planned pre- and post-activity snacks. Pre-activity fuel should be rich in energizing carbohydrates and a moderate amount of protein, eaten approximately one hour before activity. Post-activity fuel should also be carbohydrate-rich and contain approximately 20 grams of high quality protein. It is key for post-activity recovery fuel to be consumed 30 minutes or less after activity.

FEMALE ATHLETE TRIAD

Female Athlete Triad involves Relative Energy Deficiency in Sport (RED-S) which causes generalized adverse effects (e.g. development, metabolism, mental condition, circulatory organs and immunity), resulting in decreased performance. RED-S is an imbalance in energy (calorie) intake compared to energy use (i.e. daily energy needs, workouts) and can include disordered eating and eating disorders. The concept of RED-S is a broad concept and is seen in male and female athletes. It is necessary to emphasize the importance of energy intake that is commensurate with exercise energy expenditure with athletes, in simple terms athletes need to fuel themselves for their sport.

Researchers have reported that the incidence of eating disorders in elite athletes is 18-31 percent, compared with 5-9 percent among women in the general population. Early screening of athletes in a low Energy Availability (EA) state, which is the preliminary stage, and how to intervene at an early stage are important points when considering Female Athlete Triad prevention. If a coach suspects, low EA, Female Athlete Triad, disordered eating, or an eating disorder, they should refer the athlete to a licensed healthcare provider. If the athlete is a minor, the coach should speak to the athlete's parents/guardians. Coaches should encourage all of their athletes to eat healthy to fuel for their sport, to hydrate well with water and avoid sugary drinks and to seek assistance from a licensed dietitian if warranted.

With RED-S, a hormone imbalance can occur leading to a later age at menarche and irregular or absent menstrual periods, termed oligo menorrhea, leading to amenorrhea. This hormone imbalance affects bone mass acquisition and bone mineral density (BMD). The age of maximal bone mass acquisition is approximately 18-20 years, and if low estrogen status or low bodyweight is present at puberty, it is not possible to acquire maximal bone mass, leading to low BMD and potentially osteoporosis.

Several studies have evaluated the Female Athlete Triad and stress fractures. When one of the three factors of the Female Athlete Triad are observed, the risk of a stress fracture is 2.4-4.9 times higher, and the risk is 6.8 times higher when all of the factors of the Female Athlete Triad are observed. It has also been reported that the risk of stress fractures in amenorrhoeic athletes is two to four times higher than the normal menstrual cycle group. In addition, the risk of stress fractures in athletes with low BMD is higher than those with normal BMD. The risk of stress fractures is also higher in athletes with nutritional issues such as low EA.

ROLE OF THE COACH IN NUTRITION

Coaches play many key roles in the success, enjoyment, mental and emotional growth of athletes throughout their hockey careers. When it comes to nutrition, coaches can be a positive support system by being on the lookout for any red flags, knowing when to refer to a professional, and providing a positive and inclusionary nutritional environment. Below are examples for how to put this into practice:

- » Encourage players and parents to bring snacks for before and after practice like fresh fruit, Gatorade, and chocolate milk
- » Pick restaurants for team meals that provide nutrient-dense options
- » Allow time for fluid intake on the ice
- » Provide parents with a list of snack ideas for tournaments and travel
- » Give positive reinforcement when you see athletes practice good fueling behaviors
- » Model good nutrition behaviors of your own

Below are nutritional red flags that coaches can be on the lookout for. If any of the below are observed, coaches should address their concerns directly with the parent/guardian versus approaching the athlete.

- » Sudden dietary changes, fad dieting, and/or restriction of specific food groups (i.e. extremely low fat, no carbohydrates, vegetarian/veganism, etc.)
- » Sudden large increases or decreases in body weight or body fat
- » Decrease in performance, weakness, and/or low energy
- » Difficulty focusing
- » Mood swings
- » Social withdrawal from the team
- » Facial swelling
- » Discoloration of the teeth
- » Not eating before or after practice
- » Restricting fluid intake on the ice
- » Not participating in team meals

In contrast, it is not the coach's role to write or prescribe nutrition plans or diets, determine ideal body weights, weigh athletes, or personally monitor athletes' diets. Through the "Find a Sports RD" link, the Sports and Cardiovascular Nutrition and Wellness Dietetic Practice group provides a wonderful resource that allows coaches to search for registered dietetic professionals in their area (www.scandpg.org/search-rd/). Coaches and hockey organizations would benefit from networking with area dietitians to whom they can refer teams or individual athletes for education and assessment.

Adolescent hockey players juggle on and off-ice training, games, schoolwork and social activities, all the while going through the growth, development and maturation process. This is a critical time for building solid fueling habits, a healthy relationship with food and confidence in their body image. Coaches are critical players during these highly influential times. Encourage your athletes to become aware of their nutrition habits to reap the benefits of enhanced hockey performance and long term health and wellness.



Section 7

GIRL'S HOCKEY Q&A

GIRL'S HOCKEY Q&A

Q&A WITH DIRECTOR OF GIRL'S HOCKEY

Q What type of advertising, marketing and recruiting do you do to get your association name out and players in?

A We advertise through programs and camps that are put on in our rink.

We also have a “development team” at Boston University. This program is geared toward players that have some skating and hockey experience and who want to get prepared for a team for the following season. All of our programs follow the principals of the American Development Model (ADM). Practices focus on skill development in the areas of skating, passing, shooting, and puck handling, as well as cross-ice and small area games to emphasize fun and skill development.

Q What are some challenges you face as an organization?
How do you overcome those challenges?

A A challenge we face is attracting quality coaches and goalies at the youngest levels. The time commitment and administrative requirements for coaches makes it difficult to recruit new coaches. As far as our biggest challenge in attracting quality coaches at the youngest levels goes, we seek to keep strong relationships with our program alumni, and look to keep them involved in giving back to the program. This helps in maintaining consistency in program philosophies as well.

Additionally, having multiple coaches on each team for support is essential during the long youth season. It provides support to our coaching staffs, so it's not all on the shoulders of one person, but also allows our players to learn from multiple coaches throughout the season. This is beneficial as they develop their learning styles and understanding of the game.

Lastly, each of our teams have a separate manager to handle all off-ice and scheduling duties for the team. We find that if our coaches are fully supported in their roles to be successful, we maintain them and they can continue to grow and develop within our program.

Q How do you select your coaches?
Does the gender of coaches matter when it comes to age levels?

A We seek the most qualified coaches for every team, regardless of gender. Many of our 12U and younger coaches are parents who have played collegiately or beyond. Primarily our 14U and older teams have non-parent coaches who coach the same level team annually. We look to supplement our coaching staff with as many alumni as possible from the program. Ideally, we have a female on every coaching staff.



Have you ever had females wanting to play on youth teams instead of girls' teams?



Yes, this is an inquiry that comes along, however, we have made the decision as an organization to encourage females to play on girl's teams. Some of our players do play on youth teams outside of our organization. We do have many skill development camps and clinics that are co ed.



Do you provide any help for graduating players and the college process?



Yes, this is a huge emphasis within our program. We work together as directors, coaches, parents and players to provide an all-encompassing network for our players as they navigate the college recruitment process.

CONCLUSION

Hockey is hockey. Whether you are a male or female athlete, hockey is competitive, fun and challenging. If you are a coach who coaches female hockey or is starting to coach, you will notice that the only real difference between male and female hockey is maturity level in each individual player and even that can vary from player to player. As a coach, our job is to develop each player on our team and at times that can be a challenge because of the amount of differences in each player. We as coaches need to know our players and become more player-centered in our approach to teaching the game of hockey.



APPENDICES

GIRL-CENTERED ENVIRONMENT CHECKLIST

SAMPLE PRACTICE PLANS

MOVEMENT PREPARATION CORE PROGRESSIONS



GIRL-CENTERED ENVIRONMENT CHECKLIST

WELCOMING SPACE

- Girls are safe when arriving at programming (entrance and activity space are hazard-free, well-lit, and appropriately supervised)
- Girls' bathrooms are accessible and appropriately stocked (accessible garbage cans, hygiene products, etc.)
- Girls are actively and intentionally welcomed to programming and included in activities
- Girls see pictures of female role models or girls being active while participating in programming
- Girls see female adults who look like them while participating in programming
- Girls have the opportunity to be active in space that is reserved just for them

APPROPRIATE EQUIPMENT

- Girls have access to sports equipment that works for them (the right size, appropriate to the rules of their sport, etc.)
- Girls have access to personal items, like sports bras, hair ties and sneakers, that enable them to participate in sports. If they don't have these items, program staff attempt to secure them on their behalf.

INCLUSIVE LANGUAGE

- Girl (and boy) participants are referred to in gender-neutral terms. Program staff don't refer to all campers as "guys".
- Girls hear the program staff refer to positive female athlete role models when naming teams or giving examples of great performances
- Girls hear the camp staff acknowledge important female sporting events during camp, like what is happening during the Women's World Cup or how Serena Williams is doing at Wimbledon

REFLECTION

- Girls have the chance to reflect on their experiences in formal and informal ways
- Girls have the chance to provide feedback to the program staff about their experiences
- Girls see their program staff reflect on their bias about girls in sport and actively work to change it
- Girls see their program staff intervene when they hear comments or see actions that minimize girls' ability to participate in sports.

Practice Plan 1

Equipment Required: Nets (4-5), borders (10), pucks (75), tires (2)

SKILL ACQUISITION

Rise and Shine Passing

<https://youtu.be/aZaYmarsZQ>

Set up one team in each end zone with ½ players on goal line and ½ players on blue line. Coach passes a puck to any player. That player will carry puck towards another line, call their name, pass her puck, and replace her. New player continues and makes pass to new player. Coach continues to put several more pucks into play to create chaos. Progression options:

1. Backhand passes only.
2. Players pass to a line, open up and get puck back before passing to a second line who will enter play and replace passer.
3. Start with 3 x 1v1s in the middle, players with puck must pass to their teammate to get out of middle, players without puck try to get it back and pass to their teammate to get out of middle, whichever player is without the puck when new player is added must continue to chase.

Concepts: Underhanding, puck movement, passing, edgework, speed.

STATIONS

Station 1: 2v2 Transition Game

<https://youtu.be/8gKkPyr8rc>

This is an offense, defense, out game. 2 Xs start on defense and two Os start on offense. The two Xs must carry the puck above the dot before they can pass to two Xs located above the top of the circle. Once Xs receive puck, they attack the Os who will transition to defense.

Concepts: Breakout, puck support, compete, 2v2 roles, team concepts, transition.

Station 2: RR 2v0 to 2v1

<https://youtu.be/hs5DyzGy0t0>

Drill starts as a 2v0 with a lateral pass to a quick shot. Play out rebound. On dead puck, coach tosses a new puck and releases defending player. Offense plays 2v1 focusing on possession, support, communication, and movement. If D gets it, skate up ice or tape-to-tape pass with coach. Switch side pass comes from on 2v0 halfway through. Progression, can create 2v1 at beginning to force reading of pass options on 2v1.

Key Teaching Points: Move puck laterally, quick shot & score, possess and support puck, move toward puck, communicate.

Station 3: Pit Hockey with Ringettes

<https://youtu.be/6OY6Pt8GFHc>

Split the group into two teams and set up a small tire as a "goal" for each team on opposite sides of neutral zone in front of bumper. Put a ringette in the middle and have the players play 2v2 and battle to score as many goals as they can in 20-25 seconds by touching ringette to their "goal." Encourage them to score as many goals as they can so defensive player has to backcheck and then has to use body contact to gain possession. Can use puck if no ringette.

Concepts: Compete, body contact, lift stick, puck possession, defensive positioning, quick transition.

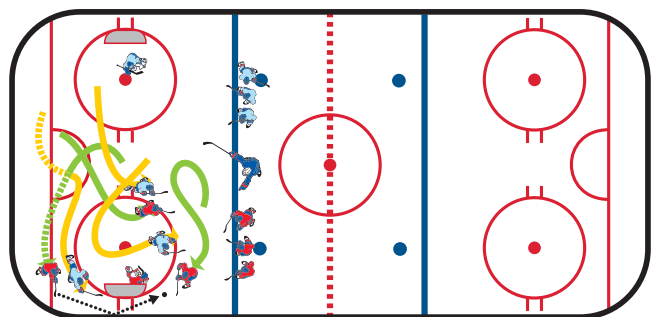
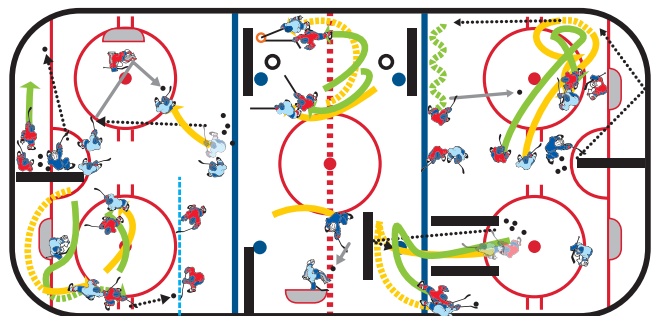
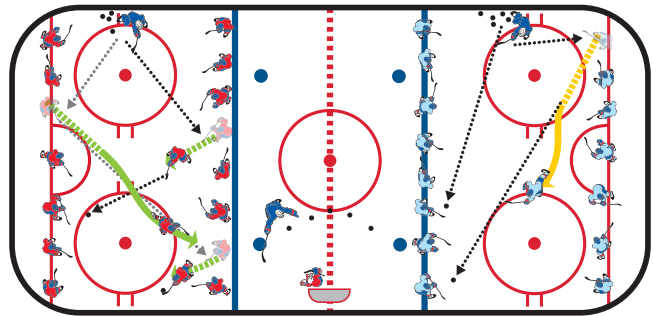
Station 4: Blue Line Shooting Game

<https://youtu.be/yYuD36G-5Z8>

Drill begins with a designated shooter on blue line (all shots come from this player). Coach spots a loose puck in corner and two players battle for possession. Coach can add agility where players lay on ice, kneel facing the coach, barrel roll, etc. The player that wins puck, becomes offensive player and must pass puck to designated shooter. The other player becomes defensive player. Designated blue line shooter walks blue line while underhanding (push or pull puck) and shoots puck. Player defending must defend player at net front, not point player. Offensive forward should get to net for screens and can play reasonable rebound. Player who was offensive in front of net will become next designated blue line shooter.

Progression: Coach releases additional defensive player to attack point in shooting lane.

Concepts: Passing, blue line shooting, defensive play, net front 1v1 battles.



Station 5: Chute Angling

<https://youtu.be/C-LLuPc3yag>

Coach sets up two barriers to create a chute at the top of the circles. O and X face the blue line and X chips a puck to the blue line or barrier to start the drill. O retrieves the puck and turns back to attack net (can go either way) and X closes the gap on O and angles O to the outside skating forward. Make sure X takes back ice, stick on puck, body on body, giving O as little time and space as possible. Play 1v1 until O scores, goalie covers puck, or X steals puck and skates it above tops of circles.

Key Teaching Points: Skate forward; Stick on Puck; Body on Body to keep player to outside.

SMALL AREA GAME

Breakout Game

<https://youtu.be/zm9IHjZCIOE>

Players play 3v3 and before they can attack the oppositions net, they must pass the puck behind their own net. The team without the puck must forecheck the team that is passing the puck behind their own net. Emphasize good angles and reading and reacting.

Concepts: puck support, regrouping, breakouts, forechecking, line rushes, transition.

Practice Plan 2

Equipment Required: Nets (4), pucks (75)

*Adjust length and number of games depending on number of players/length of ice session.

SKILL ACQUISITION

Rise and Shine Passing

<https://youtu.be/aZalYmarsZQ>

Set up one team in each end zone with ½ players on goal line and ½ players on blue line. Coach passes a puck to any player. That player will carry puck towards another line, call their name, pass her puck, and replace her. New player continues and makes pass to new player. Coach continues to put several more pucks into play to create chaos. Progression options:

1. Backhand passes only.
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3. Start with 3 x 1v1s in the middle, players with puck must pass to their teammate to get out of middle, players without puck try to get it back and pass to their teammate to get out of middle, whichever player is without the puck when new player is added must continue to chase.

Concepts: Underhanding, puck movement, passing, edgework, speed.

DRILLS

Designated Shooters Game

<https://youtu.be/LcaTF6mITEY>

Players play 2v2 and each team has two designated shooters on their team (like D-men that makes it 4v2) that they have to pass to before they are on offense. The D have to pass D to D before shooting or passing to a teammate. Offensive D can only make one D to D pass and they must either one-touch or two-touch the puck. Defensive forwards should not defend the point instead defending the opposing forwards who will be net front. On coach's whistle, forwards leave the zone, the D-men become the 2v2 forwards, and 2 new players become the D-men.

Concepts: Puck support, offensive zone play, defensive zone play, power play, line changes, transition.

Urgency Game

<https://youtu.be/UU8RGi-kqww>

On whistle, middle player protects puck (can use any space in the whole zone). The other two players go attack the player on the other team with the puck to create a quick turnover and attack net 2v1. Once a team scores or after 1:30, blow the whistle. Scoring is 1 point for a goal; 1 point if no shot allowed; 1 point if single player has puck protected on stick when the whistle blows.

Progression: Play 3v2 instead of 2v1.

Key Teaching Points: Create quick turnover, use space, protect puck, stick on puck, body on body, cause a turnover, make a play.

Puck Retrieval Game

To start each rep, one player is designated as a puck retriever, and coach will spot a puck for that player to retrieve behind defensive net. As this happens, coaches for each team release players at different times (can create any scenario 1v2, 1v3, 2v3, etc). Player X reads situation and makes a play based on the pressure and support. Play it out until whistle. On new pucks, coach to put puck in a place where a player will have to retrieve it off the boards. Halfway through change drill so that players retrieve puck in offensive zone.

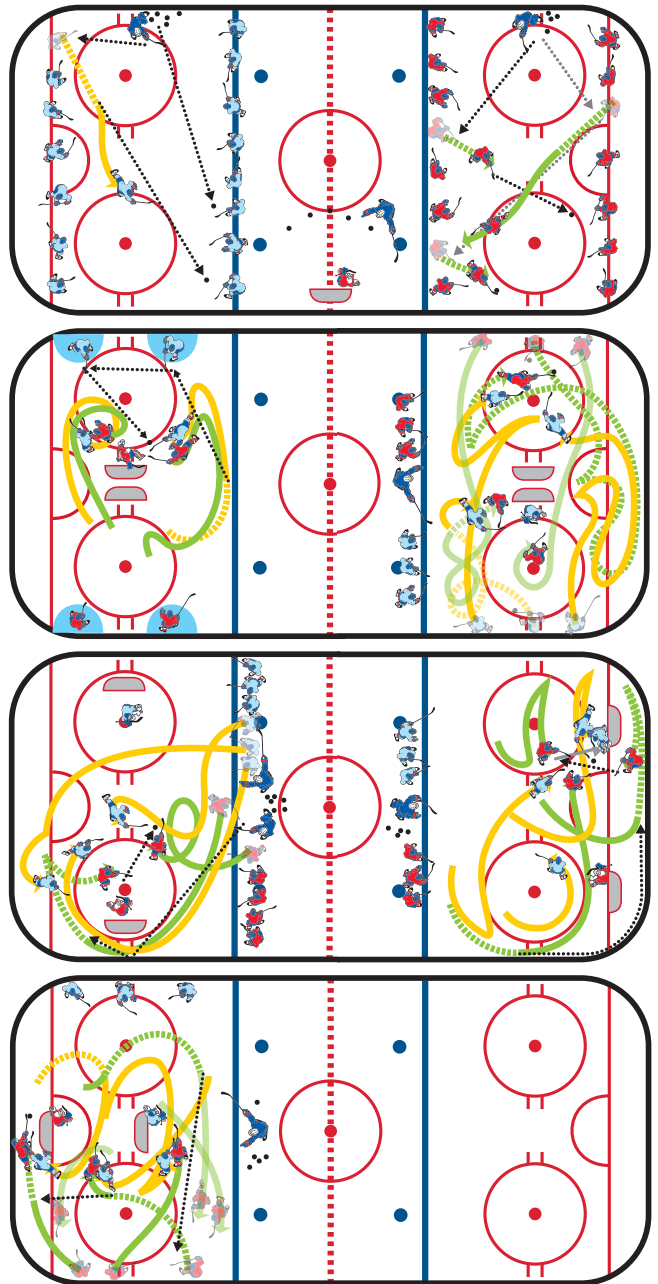
Key Teaching Points: Eyes up, scan threats, support; see the play/make the play.

Slot Scoring Game

<https://youtu.be/aVAJkx2FiUU>

2v2 with a designated shooter in each circle. Setup two nets one on each goal line and each net is designated for each team. Coach throws a puck in the zone and the two teams battle 2v2 for possession. The first shot on any net has to come from the designated shooter in the circle who cannot be pressured. The designated shooters move to get open in circle for a shot. The focus is on battling for superior position both offensively and defensively. The designated shooter must shoot and the second opportunity off the rebound can be scored by one of the two players in the game. Designated shooters should shoot the puck quickly, only having puck on stick for less than one second. Emphasize underhanding and making good passes.

Concepts: COMPETE; shooting, scoring, moving to find passing lanes, net front coverage, transition.



Novels (i.e. Noble + Levels)

<https://youtu.be/WVG19U4Ewww>

Players play 2v2 or 3v3 with team O starting on offensive and X on defense. The offensive team can shoot at either net. When the defending team steals the puck they pass to their teammates who are waiting on the side boards. Those three Xs are now on offense and can attack either net. The three Xs that just passed to their teammates leave the zone and the three Os that were on offense become defense. Three new Os now take their place at the side boards waiting to transition. Game is continuous.

Key Teaching Points: transition, passing, communication, OZ play, DZ play, puck support.

Practice Plan 3

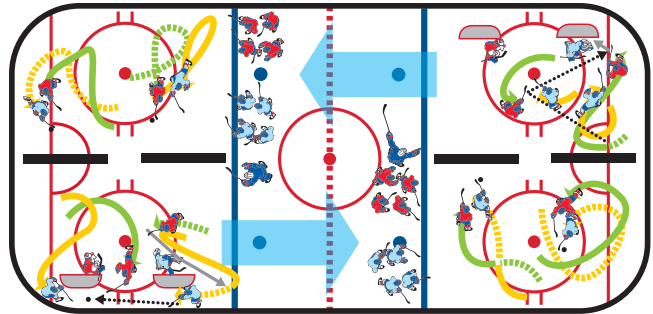
Equipment Required: Nets (5), borders (10), pucks (75), cones or tires (2-3)

WARMUP

1v1 to 2v2 Game

16 players and 4 goalies active at all times (after first shift). Players begin by playing two separate 1v1 keep away games on the right side of the borders. On whistle (30 seconds), two new players go in for the 1v1s and the players playing 1v1s go to the 2v2 side, and the players playing 2v2 go to the opposite end line.

Concepts: Puck handling, Puck support, passing, receiving, offensive zone play, defensive zone play, transition, strategy, puck possession, scoring, puck protection.



STATIONS

Station 1: 50/50 Takeover Support Game <https://youtu.be/r6kpQ-tf38>

Players move down to top of circles. Coach dumps a puck in and players battle for the 50/50 puck. The player that wins the puck, skates back toward top of circle protecting the puck, scissors with the next player in line on their team and they attack 2v1. Play it out until a goal is scored, goalie covers, or defending team skates the puck out.

Progression: add backchecker.

Concepts: takeovers, puck possession, body position, puck protection, puck support.

Station 2: 2v2 Corner Levels <https://youtu.be/8z1H6-JOU10>

Players compete 2v2 and can score on either net. On a goal, coaches dump puck into space where scoring team has an advantage to gain possession. Utilize 30 second shifts. Goalies change net every other whistle.

Key Teaching Points: compete, 4 roles, puck possession, scoring, creativity.

Station 3: Breakout vs. Forecheck <https://youtu.be/XmP-mrQubdc>

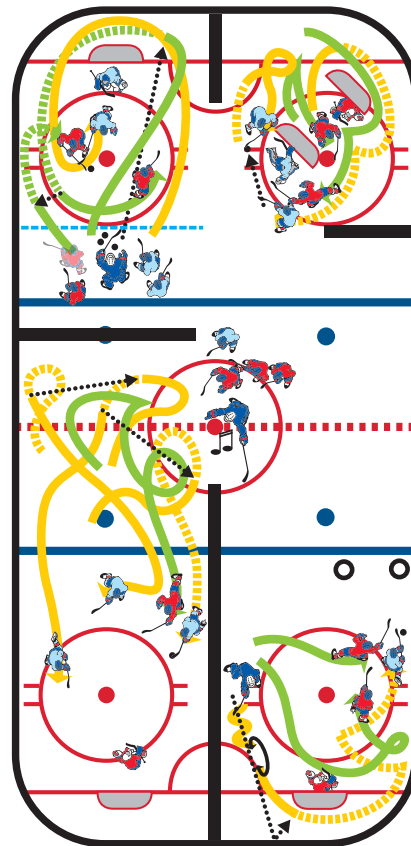
O takes two strides backward, transitions, shoulder checks, and picks up puck and O tries to skate the puck behind the net and then breakout through the two tires. X1 and X2 forecheck O and try to take the puck away and score 2v1. Coach sends X1 and X2 at different times to force them to read the play, use proper angles/body positioning and timing to win the puck. Make sure every player plays O and X1/X2. Encourage body contact/proper angling.

Concepts: angling (stick on puck, hands on hands, hips through hands), defensive support, breakout, skating, puck protection, timing, awareness, transition, hunt loose pucks.

Station 4: Zone Entry with Backchecker

Three Os move and pass with each other in neutral zone while X tries to steal the puck. Give Os a point for takeovers and X 2 points if they steal the puck. On coach's whistle, the Os attack net and X backchecks. Four new players come into neutral zone and play monkey in the middle. Emphasize zone entry concepts (drive wide with speed, eyes up, net drive for screen, creating width/depth, creativity).

Concepts: communication, eyes up, decision-making, filling lanes and layers, back checking.

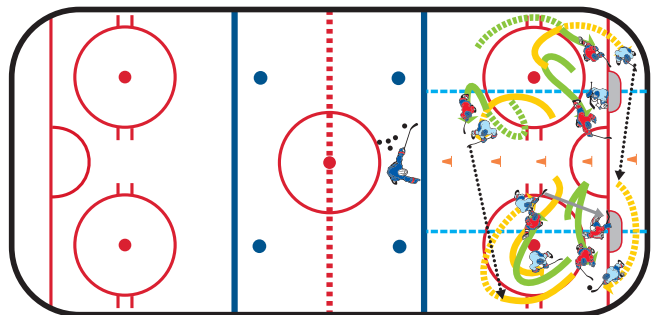


SMALL AREA GAME

3v2 Royal Road with 2 Pucks <https://youtu.be/mxlhKcq-fj0>

Players line up with three offensive players on one side of zone and two defensive players on opposite side of zone to create two 3v2s. This game is played with two pucks that can be passed to the opposite side of the zone. Offensive team must pass or carry the puck across the "royal road" prior to shooting the puck on net. Players can play rebounds, but for next scoring opportunity must again carry or pass the puck across the "royal road" for goal to count. Defensive team must obtain possession and make pass to teammates on opposite side of zone. With the two pucks, players cannot shoot on a goalie that is playing a different puck. Must maintain possession until goalie is ready to play second puck.

Points: 1 point for takeover play, 1 point for goal, 2 points for Royal Road goal.




Movement Preparation CORE PROGRESSIONS

CIRQUE DU SOLEIL




SKY-CENTRE-SIDE-CENTRE (SLOW PACE)
Start position: Sit on floor, knees bent to 90, toes to sky, then lift heels off ground. Hands cupped at belly button (Centre), as if holding bowling ball. Pause momentarily in each position.
Movement: Centre, Sky (overhead), Centre, Side (twist left), Centre, Sky, Centre, Side (twist right), Centre. Repeat in steady & controlled pace.



SKY-CENTRE-SIDE-CENTRE (FAST PACE)
Start position: Assume Sky-Centre-Side-Centre position.
Movement: Repeat sequence quickly but in a controlled manner: Sky (overhead), Centre, Side (twist to left), Centre, Sky, Centre, Side (twist to right), Centre.



BENT-KNEE TO "V"
Start position: Assume Sky-Centre-Side-Centre CENTRE position.
Movement: Extend both arms above head (SKY), while extending both knees from 90. Pause for 1 sec. Return to start position. Repeat in a steady, controlled manner.

Level I

Level II


Level III




FRONT PLANK
Start position: Lie face-down on floor. Prop self up using forearms and toes as points of contact. Elbows below shoulders. Feet are shoulder-width apart. Shoulders aligned with hips and ankles - straight like a board.
Movement: Static hold.




BENT KNEE V SIT with HEEL CUP
Start position: Assume Sky-Centre-Side-Centre CENTRE position.
Movement: Use cupped right hand to rotate and reach to gently touch right heel. Return to start position. Repeat on left side. Continue in a steady, controlled manner.



SUPERMAN DYNO (FAST PACE)
Start Position: Assume front plank. Feet wider than normal.
Movement: Similar to Superman Dyno Slow, except now complete more explosively (dynamically) and without pause between repetitions.




UP-UP-DOWN-DOWN (SLOW PACE)
Start position: Assume front plank position.
Movement: Press left forearm off ground by extending left elbow, as supported by left hand (UP). Repeat on right side (UP). Return to start plank position (DOWN R then DOWN L). Repeat at slow pace in control.




UP-UP-DOWN-DOWN (FAST PACE)
Start position: Assume front plank.
Movement: Complete same sequence as Up-Up-Down-Down (SLOW PACE). However, now, complete each rep quickly, but still in control. Also try to alternate which arm goes UP first.



SUPERMAN CRUNCH
Start Position: Assume Front Plank. Extend left arm as in Pointers (level 1). Place feet slightly wider than normal.
Movement: Touch left elbow to right knee, at position just above belly-button. Return to start position. Complete 2 reps, then repeat on opposite side. Continue pattern.




POINTERS (SLOW PACE)
Start Position: Assume front plank. Feet slightly wider than normal.
Movement: Shift weight support to left arm. Extend right arm to point forward. Hold 1/2 sec. Return to start position. Shift weight to right. Repeat on opposite arm. Controlled.




SUPERMAN DYNO (SLOW PACE)
Start Position: Assume front plank. Feet slightly wider than normal.
Movement: Extend right arm to point forward, while raising left foot just off ground. Pause 1 sec. Now, dynamically, switch your arms and feet ("Jump"). Pause and Repeat.




STAYIN ALIVE
Start Position: Assume Front Plank. Feet slightly wider.
Movement: Extend right hand and then diagonally to side (2 cocks), while pointing left foot diagonally (8 cocks) to opposite side. Pause 1 sec. Return to start. Repeat for other side (left hand and right foot).



SUPERMAN
Start Position: Assume front plank. Feet wider than normal.
Movement: Start by doing a right arm pointer, then lift left foot ("1"). Return to start front plank position. Perform left arm pointer with right foot off. Repeat pattern.




SIDE PLANK ROLLOVERS with HEEL TO SKY
Start position: Assume Side Plank Right.
Movement: From side plank, raise left foot (keep leg straight, push heel to sky) so ankle is slightly above shoulder, as if spreading legs apart. Slowly return foot to start position. Do 2 reps. Roll to left side and repeat.



STAR PLANK with HEEL TO SKY
Start position: Assume Star Plank Left.
Movement: From star, lower right leg (keep straight) so ankle back left ankle, as if clicking heels. Return to start position. Complete 2 reps. Then roll to right side and complete 2 reps of heel to sky. Repeat in a steady, controlled pattern.



SIDE PLANK RIGHT
Start position: Assume Side Plank Right. Prop self up onto right side with legs straight. Prop self up onto right elbow & forearm. Shoulders, elbows, hips, knees, and ankles all aligned. Raise right hand to sky or keep hand to side.
Movement: Static hold.




STAR PLANKS
Start position: Assume Side Plank Left. Prop self onto left hand (not elbow). Shoulders, elbows, hips, knees, and ankles aligned. Raise right hand and leg to sky, so body resembles a star.
Movement: Static hold. Switch to right side half way.



STAR PLANK DYNOS
Start position: Assume Star Plank Right.
Movement: Hold for 1 sec, then, dynamically, "jump" on to left side and assume star plank left position. Hold for 1 second. Continue in quick, yet controlled pattern. Progress from a quick roll-over to a real jump.




SIDE PLANK LEFT
Start position: Lie on left side with legs straight. Prop self up onto left elbow & forearm. Shoulders, elbows, hips, knees, and ankles all aligned. Raise right hand to sky.
Movement: Static hold.



STAR PLANK ROLLOVERS (SLOW PACE)
Start position: Assume Star Plank on right side.
Movement: Hold for 1-2 sec, then roll on to left side and assume Star Plank Left position. Hold for 1-2 seconds. Repeat in a steady, controlled pattern. You will go through a 4 point position during the roll (both hands & feet on ground).



TABLE TOP RUSSIAN KICKS DYNO
Start position: Assume Table Top.
Movement: Complete same sequence as Table Top Russians (Slow). However, complete each rep dynamically ("jump") and without pause between reps. As if doing a Ukrainian or Georgian dance.



SIDE PLANK ROLLOVERS
Start position: Assume side plank right position with free hand held high.
Movement: Roll on to left side by placing left elbow on ground achieving a plank left position. Hold momentarily. Repeat in opposite direction.



TABLE TOP HEEL TO SKY
Start position: Assume Table Top.
Movement: Raise right leg (keep straight) to sky, as if kicking a ball from the air, then lower to tap heel on floor. Return to start position. Perform movement for left leg. Repeat in steady, controlled manner.



STRETCH CLOCKS
Start Position: Assume Clock Right. However, move hands slightly more forward (above head) than in Level 2.
Movement: Complete Clock Right (Slow) movement for 360 degrees (one revolution), then switch to Clock Left (Slow) for 360.



TABLE TOP
Start position: Lie face-up on floor. Place hands below shoulders, with hands in most comfortable position. Place feet (ankles) below knees. Raise hips and back off ground, so stomach and legs create a flat "table".
Movement: Static Hold



CLOCK RIGHT (SLOW PACE)
Start Position: Assume front plank. Move hands slightly more forward than normal (just above head).
Movement: Move right hand to 2 o'clock position and left leg to 8 o'clock position. Then, bring left arm to right arm and right leg to left leg. Rotate around steady & controlled.



JUMP CLOCKS
Start Position: Assume Clock Right position but with hands above head.
Movement: Rotate right about 5-15 degrees with a total body "jump" movement. Continue jump rotations for one revolution. Then reverse direction and jump left.



TABLE TOP RUSSIAN KICKS (SLOW PACE)
Start position: Assume Table Top position.
Movement: Extend right knee and point toe, so supporting on right & left hands and left foot. Hold 1 sec. Return to start table top position. Extend left knee. Repeat in a steady, controlled manner.



CLOCK LEFT (SLOW PACE)
Start Position: Same as Clock Right.
Movement: Move left hand to 10 o'clock position and right leg to 4 o'clock position. Then, bring right arm to left arm and left leg to right leg. Rotate around steady & controlled.



SLAM AND TWIST
Start position: Lie on back with legs on bench. Hips and knees at 90 degrees. Hold hands to ears with elbows wide.
Movement: Sit-up quickly, slam chest to thigh. Lower trunk moves back to floor. Start up again. Lower trunk moves again. Twist trunk, 3 times each to right and to left (stay tall). Return to start position with head back on ground. Repeat.

PROGRESSION:

Start at Level I, try all ten exercises for 10 seconds, rest between each when needed.

Progress to 15, then 20, then 25, and finally 30 seconds. Again, only resting when needed.

Once you can complete every exercise for 30 seconds consecutively (a 5 min routine), progress to next level.

Suggested frequency is once daily, 3 to 5 times per week. A maximum of twice daily, 7 days per week.

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