US LACROSSE POSITION STATEMENT:
Boys' and Girls' Youth Lacrosse Participation Recommendations

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This project was initiated and inspired by the late Vito A. Perriello Jr., M.D., former Chair of US Lacrosse Sports, Science and Safety Committee and lifetime pediatrician.

By all indications, lacrosse is the most rapidly growing sport in America both in numbers and geographical distribution. US Lacrosse welcomes the opportunity for more youngsters to learn about the sport and embrace the benefits it has brought to so many lives. We want, however, to manage growth in a way that will foster love of the game, sportsmanship, fitness, and high skill level. Providing a fun, physically active experience will encourage a lifelong love for exercise and the sport of lacrosse.

Boys' and girls' lacrosse are two distinct games whose differences must be recognized and understood. The Sports Science and Safety Committee and the leadership of US Lacrosse would like to support safe and age-appropriate training and play in both boys' and girls' lacrosse in order to avoid physical and mental burnout, overuse injuries, concussion, and the high dropout rates reported in other sports. Up to 50 percent of all sport related injuries found at sports medicine practices are due to overuse[i] and concussion remains a significant injury for both boys and girls. In addition, studies have shown that dropout rates can range up to 35 percent and higher.[ii] [iii] Dropout rates increase as children approach the age of 14, and two of the most common reasons for quitting are: "playing is no longer fun" and adult interference.[iv]

At this critical juncture, US Lacrosse is proactively taking the known medical literature and combining it with common sense solutions to make recommendations about youth participation in lacrosse. A major point of emphasis is the recognition that a child's attention span, musculoskeletal maturity, body composition, and hand-eye coordination are vastly different from the professional, college, or even high school player. In addition, the thermoregulatory function and nutritional needs before, during sport participation and in recovery are also unique.

Hard work and practice are key ingredients to athletic success in any sport. However, overtraining, inadequate rest and poor nutrition are perilous for our youth. Although children do develop at different rates, "playing up" in a collision sport like boys lacrosse has significant physical and psychological risks.[v] We are particularly concerned about sport-related concussions and the greater vulnerability for more severe head injury among younger athletes in both the boys and girls game. Given these various risk factors described above, focus on age-appropriate coaching, training intensity, and enforcement of rules are important in promoting lacrosse while protecting our young athletes.

A priority at the U-9 and U-11 age is that all players have the opportunity to develop their skills, learn the rules of the game, and play well with their peers. Given the fact that there is such a huge range of ability, size, and coordination, it is unnecessary and quite possibly misleading to identify some children as "all-stars" at this age. First, all-star status at 9 does not guarantee similar accolades at 12 and 15. Second, all-star selections among young children overemphasize

outcomes and winning over the fundamentals of the game. This undermines enjoyment as well as learning. Furthermore, kids at this age prioritize having fun over winning. Our message needs to be consistent with their developmental need to have fun and be engaged with their peers.

Efforts to address some of these concerns have been made by various organizations within the athletic, psychological, and medical communities. While many of these efforts are not lacrosse specific, they have resulted in useful recommendations for change.

Overuse and Burnout. The American Academy of Pediatrics (AAP) [vi] addressed the need to help prevent burnout and overuse injuries in young athletes and made the following recommendations:

- Encourage early diversification in playing a range of sports, rather than early specialization[vii];
- 1-2 days off per week from competitive sports;
- 2-3 months away from a specific sport during the year;
- Emphasize fun, safety and sportsmanship as goals of sport;
- Training and playing time to increase no more than 10 percent each week;
- No sport specialization before high school;
- Participation on only one team per season;
- Reduction of excessive playing time in all day, weekend tournaments.

Nutrition. Children who are participating in physical activity such as lacrosse while they are growing require attention to their energy intake requirements. Problems in this area arise frequently during all day tournament events, strenuous summer camp schedules, and intense competition on very hot days. The following reflects estimated energy and or caloric intake requirements based on age and gender:

- For active girls ages 9-12 (~1600 calories) and active older girls (~2800 calories).
- For active boys ages 9-12 (~1800 calories) and active older boys (~3800 calories).

For active children of all ages, it is paramount that they eat 3 balanced meals with two snacks daily. Helmets, shoulder pads and other protective equipment can increase energy requirements.

Hydration. There are important issues with regard to hydration among children in sports. First, children are more vulnerable to dehydration than adults as a function of the following:

- Children have a greater surface area-to mass ratio than adults.
- Children lack adequately functioning sweat glands reducing their capacity to sweat and lose heat[viii].

Second, children who train and compete over long periods of time such as tournaments or camps on intensely hot days are particularly vulnerable to dehydration. To manage these risks, the following has been recommended:

- Provide longer periods of rest between matches and games.
- Attend to heat acclimatization, fluid and energy intake, proper clothing, air temperature and humidity.[ix] Protective equipment such as shoulder pads and helmets used in boys' lacrosse limits cooling and should be minimized in practice during acclimatization when appropriate.
- Encourage hydration between bouts of exercise as well as during games. Drink enough fluid so that urine color is pale throughout the day.[x] Thirst is not a reliable indicator of hydration status. Experts recommend that children and teens drink fluids every 15-20 minutes during physical activity.

Concussion. Although organizations such as the Centers for Disease Control and Prevention (CDCP) have made major contributions to the understanding and prevention of concussions in sports, collision sports are in the early stages of establishing age-related guidelines with regard to appropriate contact. USA Hockey is currently evaluating a proposal that changes the age of permitted body checking from 12 and under to 14 and under to better protect their youth players. Given that there are some similarities in contact between boys' lacrosse and hockey, it is fitting that US Lacrosse proposes similar guidelines for safety in boys' lacrosse.

Two studies are of particular importance to the question of contact in youth sports such as lacrosse. First, Davids [xi], in his research on ball skills, found that children under the age of 15 years have less functional capacity to fully utilize their peripheral vision when intercepting a ball. Second, Mihalik and colleagues recently [xii] found that severity of head injury was decreased when hockey players could anticipate and prepare themselves for oncoming hits. If we are to link the findings of these two studies, it appears logical to postulate that young athletes (15-years-old and younger) may not have the experience, capacity, and or training to see and anticipate hits from athletes approaching outside their line of vision. Therefore, greater limits are needed to protect youth athletes while more efforts are needed to train coaches to better understand and safely apply the different approaches to contact in the boys and girls game.

Fair Play. Although limiting aggressive play in lacrosse is necessary in protecting the safety of its young players, other approaches that involve incentives for safe play may serve as an effective complement to rules. In particular, the fair play concept has been modeled quite successfully in youth ice hockey in which an incentive is provided to players (and coaches) to play by the rules by awarding a fair play point if the team has less than a predetermined number of penalties at the end of the game. These awarded points in turn improve the team's standing at the season's end either by increasing their ranking or raising their position in post-season play.[xiii] Programs like these may help to foster a greater emphasis on sportsmanship and avoid unfair or penalty play to protect the safety of its players.

US Lacrosse Endorsements and Recommendations.

Based on the various findings and recommendations above, our collaborations with experts in the medical and psychological fields, and the expertise of the US Lacrosse Sports, Science and Safety Committee, we endorse the following recommendations on proper training, limits on contact, optimal nutrition and hydration, and fair play for youth participation in lacrosse:

General Guidelines [xiv] [xv]:

1. Athletes at all level of play should have 1-2 days off per week from competitive athletics and training to allow for recovery.

2. Athletes at the U-9, U-11, U-13 and U-15 level should have at least 2-3 months away from sport specific training and competition during the year.

3. Athletes at the U-9, U-11, U-13 and U-15 level should play on only one lacrosse team during a season. If an athlete is playing on more than one team in the same season, they should not participate for more than 16-20 hours per week.

4. Tournaments should not be played at the U-9 level. The emphasis at this level should remain on skill development and team concepts.

5. All-Star teams should not be created at the U-9 and U-11 levels.

6. Encourage participation in multiple sports throughout the year and avoid sports specialization before the U-15 age group (high school). Those athletes who choose to specialize in the sport of lacrosse in high school will need to take extra precaution with regard to overuse injuries and burnout. While there may be potential benefits to extra training, the risks of becoming one-dimensional at a young age needs to be evaluated on a seasonal basis. Furthermore, specialization does not guarantee improved play or college acceptance and only an estimated 5 percent of high school senior athletes progress to play some form of collegiate sports. Some researchers believe there is a benefit to multiple sport participation throughout high school.

7. Weekly training time should not increase by more than 10 percent each week.

8. Young athletes should hydrate [x] :

    a. Before exercise (2-3 hours prior):
        i. U-9 and U-11 should drink 4-8 ounces
        ii. U-13 and U-15 should drink 8-16 ounces
    b. During exercise:
        i. U-9 and U-11 should drink 5 ounces every 15-20 minutes if < 90 pounds
        ii. U-9 and U-11 should drink 9 ounces every 15-20 minutes if >90 pounds
        iii. U-13 and U-15 should drink 5-10 ounces every 15-20 minutes
    c. Post exercise:
        i. U-9 and U-11 should drink 24 ounces for each pound lost
        ii. U-13 and U-15 should drink 24 ounces for each pound lost

Water should be the primary source of hydration throughout the day and before exercise. Sports drinks are only recommended for children and adolescents who have participated in vigorous exercise for longer than 60 minutes.[xvi]

9. Heat acclimatization should be accounted for when planning preseason practice.[ix]
    a. Athletes should only participate in one practice a day for the first 5 days of preseason if unacclimatized.
    b. Total practice time should not exceed ninety minutes in a day.
    c. During the first two days of preseason practice, protective equipment should be limited to a helmet and gloves for boys and eye protection for girls. Contact drills and competition should not occur during these days.

Contact Guidelines - Boys:

1. Poke checking and stick checking will be allowed at all levels; however, no swings over the head or one handed checks should be permitted at the U-9, U-11 and U-13 level.

2. No body checking at the U-9, U-11 and U-13 level in the boys' game. A defender may have minor body contact using his arms and stick while defending an attacking player who has the ball and is attacking the goal. Such contact may be permitted as long as the defender only uses his hands and stick, not his shoulders, torso or head. Given the research outlined above regarding development of peripheral vision, game officials should be especially alert to blind side checks at all ages at the youth level.

3. No take-out checks at any level in youth lacrosse.

4. Trained coaches at the youth level significantly impact the learning environment as well as teaching "contact" safely. We recommend that the coach certification program is expanded to as many areas of the country as possible, particularly at the youth level.

5. Coaches should be instructed how to "teach" a good hit as well as train greater visual awareness in young athletes. Strength training targeting the neck, back, and core musculature, as well as anterior cruciate ligament (ACL) prevention training programs should be considered.

6. Trained officials are crucial for protecting the safety of the game. Whenever possible, US Lacrosse certified officials should be available for youth games or to train officials working at the youth level. Appropriate and consistent enforcement of the rules as written can help ensure the safety of the youth athletes.

7. A comprehensive concussion evaluation and management program is recommended for youth lacrosse at all levels.

Contact Guidelines - Girls:

1. No stick checking at the U-9 or U-11 level.

2. Modified checking at the U-13 level (below the shoulder).

3. Full checking at the U-15 level provided that one of the two US Lacrosse certified officials has at least a local rating.

4. Trained coaches at the youth level significantly impact the learning environment as well as teaching the rules as written. We recommend that the coach certification program is expanded to as many areas of the country as possible, particularly at the youth level.

5. Trained officials are crucial for protecting the safety of the game. Whenever possible, US Lacrosse certified officials should be available for youth games or to train officials working at the youth level. Appropriate and consistent enforcement of the rules as written can help ensure the safety of the youth athletes.

6. Strength training targeting the core musculature, as well as anterior cruciate ligament (ACL) prevention training programs should be considered.

7. A comprehensive concussion evaluation and management program is recommended for youth lacrosse at all levels.

Tournament Guidelines:

1. Basic nutritional principles should be applied prior to, during and after training and competition.[xvii]

2. All day tournaments should limit teams to approximately three hours of play per day.

3. Between tournament games, each athlete should have enough time off to achieve the following: to eat a meal or large snack, to rehydrate, to allow their core temperature to return to normal and to allow basic fatigue to dissipate. A reasonable minimum amount of time off between tournament games is 2 hours in warm or hot weather.[xviii]

4. Heat guidelines should be accounted for when deciding maximum player minutes in a tournament.[ix]

5. Remember the 10 percent rule, particularly for pre-season tournaments. This means that training and playing should not increase by more than 10 percent each week**.**

6. Water should be the primary source of hydration throughout the day and before exercise. Sports drinks are only recommended for children and adolescents who have participated in vigorous exercise for longer than 60 minutes.[xix] Coaches should allow for water breaks every 10-15 minutes during tournament play in extreme heat.[xx]

7. Avoid "energy" drinks, as they typically contain stimulants like caffeine, guarana and high concentrations of carbohydrates.

8. Athletes need to drink enough fluid to replace lost fluids within 1-2 hours after exercise. At least one hour of rest is necessary to allow for enough time for proper rehydration and snacking.[xxi]

Fair Play:

1. US Lacrosse should consider a pilot program to evaluate the "Fair Play" concept to halt the culture of aggression in lacrosse, to encourage more young players and their families to play lacrosse, to give incentive to coaches, officials, athletes and parents, and to protect the integrity of the game.

Parents, athletes, coaches, and US Lacrosse leadership working together can continue to grow the game of lacrosse, and hopefully contribute to a new generation of lacrosse players who will love the game, understand the positives of athletic participation and fitness, and want to play for a lifetime. Sportsmanship, safety, skills of the game, and having fun are vital for players, families, and the sport of boys' and girls' lacrosse. We hope that the recommendations help facilitate a safe approach to lacrosse that is inviting to our young players of all ages and abilities.

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US Lacrosse Sports Science & Safety Committee Members

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