

UNITED STATES TENNIS ASSOCIATION'S

AMERICAN DEVELOPMENT MODEL



MANUAL

A HEALTHY APPROACH TO SUPPORT LIFELONG TENNIS PLAY

Discover, Develop, Play

MARCH 2020

FOREWARD

Youth sport in the United States is undergoing exciting changes and the United States Tennis Association (USTA) is leading efforts with the American Development Model (ADM)! In partnership with the United States Olympic and Paralympic Committees (USOPC), the USTA is one of several National Governing Bodies (NGBs) who have signed on to create a sport-specific ADM. The ADM provides a foundational framework on which to build sport experiences for children and is critical to tennis as it puts into practice the best research and applications from leading experts around the world. The ADM is the backbone of everything the USTA does and it will guide community providers, tennis coaches, and facilities of all types across the country in delivering research-based programming that provides optimal opportunities for fun, development, and appropriate competition.

The foundation of the USTA's ADM is physical literacy, the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person. Youth need varied and expansive opportunities in physical activity to help develop physical literacy, including exposure and proper, player centered instruction. It's the USTA's job to be a catalyst for changes emphasizing developmentally appropriate activities for all youth in tennis.

Foundational movement skills of throwing, skipping, jumping, and hopping, along with spatial and body awareness, are critical to the development of the child before the tennis player can emerge. As children increase their physical literacy, they gain confidence and enjoyment which opens the door for a variety of recreational or competitive activities for the rest of their lives. The USTA has always been a strong supporter in utilizing long-term athlete development principles, and engagement with the ADM ensures that every tennis stakeholder now has the best possible opportunity to realize their long-term capabilities.

Take pride in knowing that everyone is in this together. By following the USOPC's lead, integrating research and best practice principles into tennis delivery in the US, more players will play the game longer, leading to greater health and a larger pool of talented players, also by having FUN along the way.

By following the ADM, children will not only have the best chance to succeed as tennis players, but as healthy individuals for the rest of their lives!

TABLE OF CONTENTS

Chapter 1 Introduction.....	4
Chapter 2 What is the American Development Model.....	5-6
Chapter 3 The Why Behind the American Development Model.....	6-15
Chapter 4 United States Tennis Association’s American Development Model.....	15-21
Chapter 5 Physical and Health Literacy	21-24
Chapter 6 Health Benefits of Tennis.....	25-29
Chapter 7 Understanding Growth and Development	29-37
Chapter 8 Tennis Specialization and Sport Sampling	37-42
Chapter 9 Tennis for All Abilities.....	42-48
Chapter 10 Quality Tennis Coaching and Officiating.. ..	48-52
Chapter 11 Parents.....	52-55
Chapter 12 Tennis Modified Equipment	55-58
Chapter 13 Tennis Competition.....	58-59
Chapter 14 ADM Programming implementation.....	59-60
Chapter 15 Top 10 ADM Takeaways.....	66-68

CHAPTER 1: INTRODUCTION

Youth sport in the United States is priming itself for change, and the United States Tennis Association (USTA) is contributing with its American Development Model (ADM) for Tennis! This model provides the philosophical underpinnings for tennis programming and pathways, putting into practice the best research and applications to maximize sport experiences to promote health and wellness. **A healthy approach to support a lifelong love of tennis.** The USTA is one of several National Governing Bodies (NGBs) who have signed on to the United States Olympic and Paralympic Committee's (USOPC) American Development Model (ADM), and has created a tennis-specific ADM that will guide all stakeholders on their tennis journey.

The pathways that tennis players take can vary tremendously. We at the USTA through the lens of the ADM challenge all athletes irrespective of their age or ability to find and develop their own journey through a **Discover, Develop, and Play** philosophy. This progressive and creative philosophy involves the discovery of your tennis skills, into developing, and then testing them out in-play opportunities. All phases could be done in one setting or developed over time, the tennis player defines that. It is also hoped that through this journey is done with enjoyment, developing the necessary playing skills in a player centered manner.

While the current youth sport culture has a pervading belief that, to be a high-performing athlete, one must specialize at a young age, examples abound of elite athletes who did not specialize early and they have encouraged today's youth to do the same. In tennis, Rafael Nadal, Roger Federer, Sloane Stephens, and John Isner, for example, are current highly-ranked players who valued their involvement in other sports. Additionally, research shows that multi-sport involvement is more likely to lead to long-term success, reduce overuse injuries, and decrease the chances of experiencing burnout and/or dropping out of sport altogether. Thus, a key aspect of the USTA's ADM is the acknowledgement that many pathways exist in one's tennis involvement, and the ADM will serve to support all pathways, providing positive and enriching experiences for all involved.

This manual provides an in-depth explanation of the USTA's ADM, including background, rationale, and the model itself. The ADM is designed to work in conjunction with the USTA Net Generation youth tennis program, the USTA's adult tennis program, and other focused products.

CHAPTER 2: WHAT IS THE AMERICAN DEVELOPMENT MODEL

Planned, systematic, and progressive development of individual athletes is called long-term athlete development (LTAD). Specific to the United States Tennis Association (USTA), it is called the American Development Model. The ADM answers one question - what are the wants and needs at each stage of development for a child to give them the best opportunity of engaging in lifelong, health enhancing physical activity? And for those with the drive and talent, the best chance of athletic success? Effective long-term athlete development focuses not on short-term gains and early success, but on what is best for the sport participant throughout their life.

ADM is a guide for developing athletes and physical activity participants while also being a powerful tool for change within sport systems. Its objectives are to make sport more inclusive, more integrated, and of higher quality, while facilitating the development of high-performance athletes more systematically.

The aim of the ADM is to build on the strengths and tackle the weaknesses and resulting consequences that hurt the current system and to provide positive experiences for athletes of all abilities.

KAIZEN

LTAD/ADM has been developed on the Japanese concept of kaizen, a term that can be translated as 'improvement' or 'change for the better.' (Balyi, Way, & Higgs, 2013)

Kaizen is based on the premise that everyone in the system is charged for the quality of the final product; in essence, all stakeholders are responsible for looking for methods to reduce errors and make things better in lieu of continuous improvement that leaders have developed, and continue to develop the ADM/LTAD (Balyi, Way, & Higgs, 2013).

As more information is received and more research data is created within the sporting world, continual enhancements, and refinements are needed. There is no claim that the model is exactly right, but the USTA will do everything within their power to adjust their outreach in making sure more people are exposed to tennis and that they keep playing for a lifetime.

Taking the USOPC's lead in recognizing the many changes that have occurred in youth sport in U.S. culture, the USTA believes that by integrating best practice principles into tennis delivery in the U.S., more players will play the game longer, leading to greater health and a larger pool of talented players.

The ADM focuses on the needs of participants and their individual stages of development, and establishes a frame of reference for coaches, administrators, sport scientists, parents, and others involved in assisting in the delivery of sports at all levels. The model recognizes both participation and performance-oriented pathways in sport and physical activity, preceded by the fun-based development of physical literacy in the early years. The structure of ADM guides

stakeholders to improve the quality of sport and physical activity by helping all children to be physically literate.

The USOPC believes that if all National Governing Bodies incorporate an ADM, the future of America will be positively impacted by:

- Growing both the general athlete population and the pool of elite athletes from which future U.S. Olympians and Paralympians are selected;
- Developing fundamental skills that transfer between sports;
- Providing an appropriate avenue to fulfill an individual's athletic potential;
- Creating a generation that loves sport and physical activity and one that will transfer that passion on to the next generation (USOPC, 2016).

Considering how the ADM will assist the USTA position tennis as a sport that provides health and wellness to Americans, it is important to understand the purpose behind the creation which will be explained in the next chapter.

CHAPTER 3: THE WHY BEHIND THE AMERICAN DEVELOPMENT MODEL

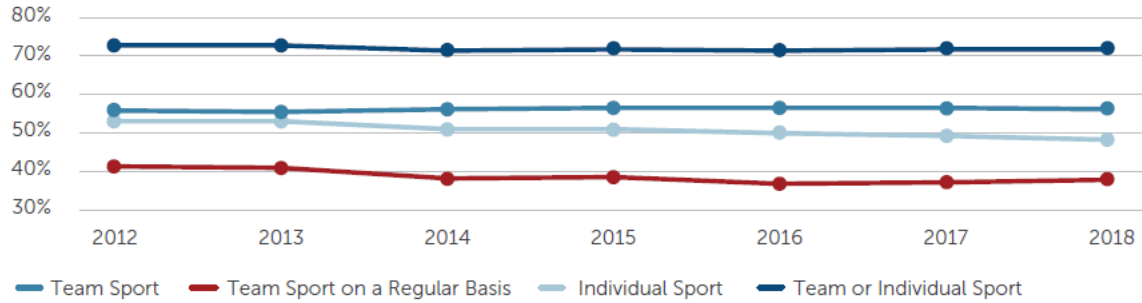
The objective of the USTA's ADM is to bring more U.S. citizens to tennis, contributing in a significant way to a healthy lifestyle. Additionally, the ADM is projected to expand the pipeline for elite players. Both of these are important, as the U.S. is in the midst of one of the biggest challenges ever as it relates to fitness and wellness of its citizens. Obesity rates are higher than ever before, and the Center for Disease Control (CDC) has predicted that because of the obesity epidemic, today's youth will be the first to have a shorter lifespan than their parents (Ludwig, 2016). While both behavioral and genetic factors influence obesity, two primary factors that are controllable include diet and lack of physical activity (CDC, 2017).

The CDC recommends at least 60 minutes of moderate to vigorous exercise each day, but current statistics suggest that only about 20% of youth meet this recommendation. For many youth, their exercise occurs during physical education class, organized youth sport participation, or family play/engagement time (US Department of Health and Human Services, 2018).

Formal sport involvement has traditionally been a primary area of activity accumulation for kids. Parents are keen to have their children involved in organized sport for a variety of reasons, including learning the sport's skills, learning how to work with others, learning how to compete, etc. However, sport participation among youth has been declining in recent years.

TOTAL SPORT PARTICIPATION RATES

Percentage of children ages 6 to 12 who played at least one day during the year



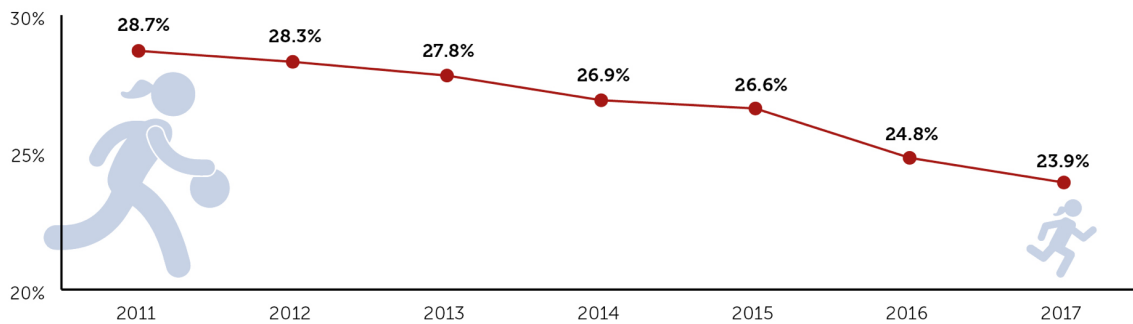
TYPE OF SPORT	2012	2013	2014	2015	2016	2017	2018
Team Sport	55.8%	55.5%	56.2%	56.6%	56.5%	56.5%	56.2%
Team Sport on a Regular Basis	41.4%	41.1%	38.2%	38.6%	36.9%	37.0%	37.9%
Individual Sport	52.9%	52.9%	50.8%	50.8%	49.8%	49.3%	48.2%
Team or Individual Sport	72.9%	72.7%	71.5%	71.7%	71.5%	71.8%	71.8%

Team sports include: baseball, basketball, cheerleading, field hockey, football (flag, touch, tackle), gymnastics, ice hockey, lacrosse, paintball, roller hockey, rugby, soccer (indoor, outdoor), softball (slow-pitch, fast-pitch), swimming on a team, track and field, Ultimate frisbee, volleyball (court, grass, sand), and wrestling. Individual sports include tennis, golf, martial arts, roller skating, skateboarding, running, and cycling (road, BMX, mountain bike). A participant is anyone who played a sport at least one day during the year, in any form and either organized or unstructured. A "core" participant is anyone who participated on a regular basis, a number of times per year that varies by sport, as defined by SFIA. A "core" participant usually includes a level of organized play. Whether participants play on one team or multiple teams, they are only counted once.

Fig 3.1 The Aspen Institute Total Participation Rates

ACTIVE TO A HEALTHY LEVEL

Percentage of kids who regularly participated in high-calorie-burning sports



Sports considered by SFIA to be high-calorie-burning include: bicycling (BMX, mountain, road), running/jogging, basketball, field hockey, football (tackle, touch), ice hockey, roller hockey, lacrosse, rugby, soccer (indoor, outdoor), swimming (on a team or for fitness), track and field, badminton, racquetball, squash, tennis, cross-country skiing, martial arts, wrestling, stand-up paddling, climbing (sport, traditional), trail running, triathlon, snowshoeing, boxing, dance, step and other choreographed exercise to music. The list also includes several activities more associated with teens and adults, including high impact/intensity training, cardio kickboxing, stationary cycling, rowing machine, stair-climbing machine, treadmill, aquatic exercise, bodyweight exercise, cross-training-style workouts, Pilates training, adventure racing, cardio tennis, pickleball, MMA and other combat training.

Fig 3.2 The Aspen Institute (2019)

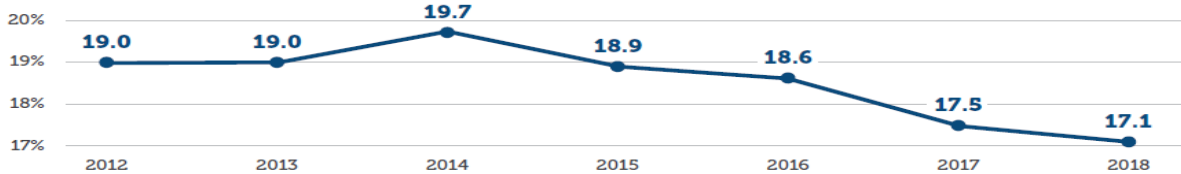
While a variety of factors have been identified for this decrease, notable ones include early specialization pressures, costs, lack of access, and interference with family life (i.e., families spending significantly more time on youth sport activities during the week and on weekends).

Over the last 30 years or so, youth sport in the U.S. has moved from a multi-sport participation-based model to more of a focused, specialization model. With this transition, youth have more opportunities to train and to learn the foundations of their sport, often sooner than they would have before. Along with more training comes more competitions, but an unintended consequence has been more injuries and higher rates of burn-out. The specialization model also requires more financial investment from parents, as well as time and travel investments. Indeed, it's been estimated that \$9 billion/year is spent on travel associated with youth sports (Forbes, 2017)

As costs have steadily increased, some youth, especially those from lower-income families, have been left on the sidelines. One in four families earning \$60,000 or less said that their child(ren) were less involved in sport because of the cost. For those making over \$60,000, 12% said cost was a barrier to their child's participation.

PHYSICALLY INACTIVE CHILDREN

Percentage of kids ages 6 to 12 who engaged in no sport activity during the year



	2012	2013	2014	2015	2016	2017	2018
Average	19.0%	19.0%	19.7%	18.9%	18.3%	17.5%	17.1%
By Household Income							
Under \$25,000	24.4%	26.0%	28.4%	28.7%	32.5%	32.4%	33.4%
\$25,000 to \$49,999	22.0%	23.5%	23.4%	24.2%	24.3%	24.9%	24.5%
\$50,000 to \$74,999	17.1%	17.8%	20.1%	19.3%	19.3%	18.7%	17.4%
\$75,000 to \$99,999	16.5%	17.1%	16.1%	16.2%	16.3%	15.6%	15.0%
\$100,000+	14.4%	13.9%	13.4%	12.6%	10.9%	10.6%	9.9%

Fig 3.4 The Aspen Institute, State of Play: Trends and Developments in Youth Sport

A number of national organizations have addressed this issue, including the CDC, The Aspen Institute, Alliance for a Healthier Generation, SHAPE America and its state counterparts, and the United States Olympic & Paralympic Committee (USOPC), to name a few. As a result of the 1978 Ted Stevens Olympic and Amateur Sports Act, the USOPC has been charged with

promoting and supporting physical activity/fitness and encouraging public participation in US citizens. The USOPC does this by working with its member organizations, including the national governing bodies (NGBs) for various sports. In 2014, the USOPC created the American Development Model (ADM) to provide a research-based model for using sport as a path toward an active and healthy lifestyle (USOPC, 2020). The model uses long-term athlete development principles, along with quality coaching concepts, to promote and encourage physical activity within a developmentally appropriate framework for continued sport participation. This model will help maximize the potential of America's youth and improve the health and well-being for future generations in the US.

NET GENERATION

It is with the considerations mentioned above that the USTA has taken stock of where it is as a National Governing Body involved in impacting youth through a sport. Through marketing and tennis product research, the solution was to develop a youth brand that could unite all tennis programming stakeholders and kids 5-18 years old under one umbrella. That youth brand is called Net Generation. Net Generation is a celebration of a game where no one sits on the sidelines. Tennis is easy to learn and tailored to all ages and abilities, teaching kids a game that will help them build friendships and learn skills they will use for life. Net Generation aims to connect tennis providers with players in a safe environment that focuses on engaging more kids in sports in order to get them playing for a lifetime. To achieve this, all providers are required to complete a Safe Play background screening that the USTA subsidizes. The USTA's willingness to pay for each Net Generation provider's Safe Play background screening demonstrates the importance of protecting youth in sports in this day and age.

Net Generation's mission is to spread the love of tennis to a new generation by empowering those who teach them. Coaches, organizers, and teachers can gain access to the expertise of the USTA as they work with leading experts worldwide to develop new play formats, curricula, and digital tools. Net Generation is innovation in action, reaching a new generation and creating a new era of tennis.

Squaring the Pyramid

The current youth sports model in the U.S., which has developed over the past couple of decades, consists of a pyramid, where players work to move up the pyramid, often spending significant amounts of time and money in the process. In this current model, some youth are restricted from playing as time goes on, primarily due to lack of ability (which could be related to developmental level) and/or lack of resources.



Fig. 3.5 Traditional Athlete Development Model

The ADM strives to “square the pyramid,” so that individuals place importance on physical activity throughout their lifespan, developing a broad range of athletic skills through the acquisition of physical literacy and developing a love for physical activity that will sustain them. Some players will become highly skilled and will pursue their sport at competitive levels, while others will play recreationally. Some will move between those spaces, sometimes playing recreationally and other times striving to excel. Both types of play will be beneficial, and there will be appropriate play spaces for both.

While much of the early work in Long-Term Athlete Development (Balyi, Way, & Higgs, 2013) informs the current USOPC ADM, the Aspen Institute, through their Project Play, has been a leader in the U.S. for adapting the model for U.S. culture. Their “Squaring the Pyramid” model looks as follows:

SPORT FOR ALL, PLAY FOR LIFE MODEL
BROAD ACCESS LEADS TO SUSTAINED PARTICIPATION

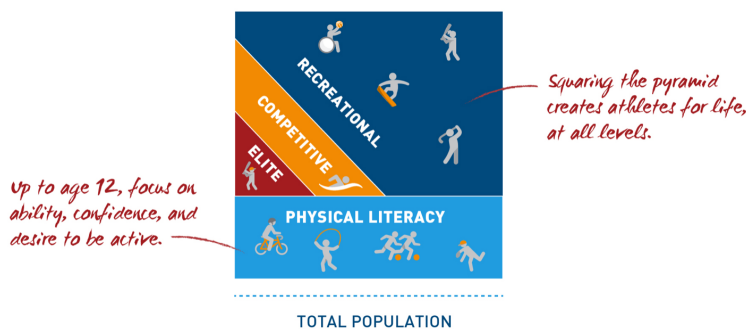


Fig 3.6 The Aspen Institute - Squaring the Pyramid

Youth need varied and expansive opportunities in physical activity to help develop physical literacy, including exposure and proper, age-appropriate instruction. Foundational movement skills of throwing, skipping, jumping, and hopping, along with spatial and body awareness are developed. As children gain physical literacy, they then can participate in a variety of physical activities, for recreational or competitive purposes, with the goal of lifelong involvement.

The USTA has taken the concept of squaring the pyramid and made it their own with the below diagram.

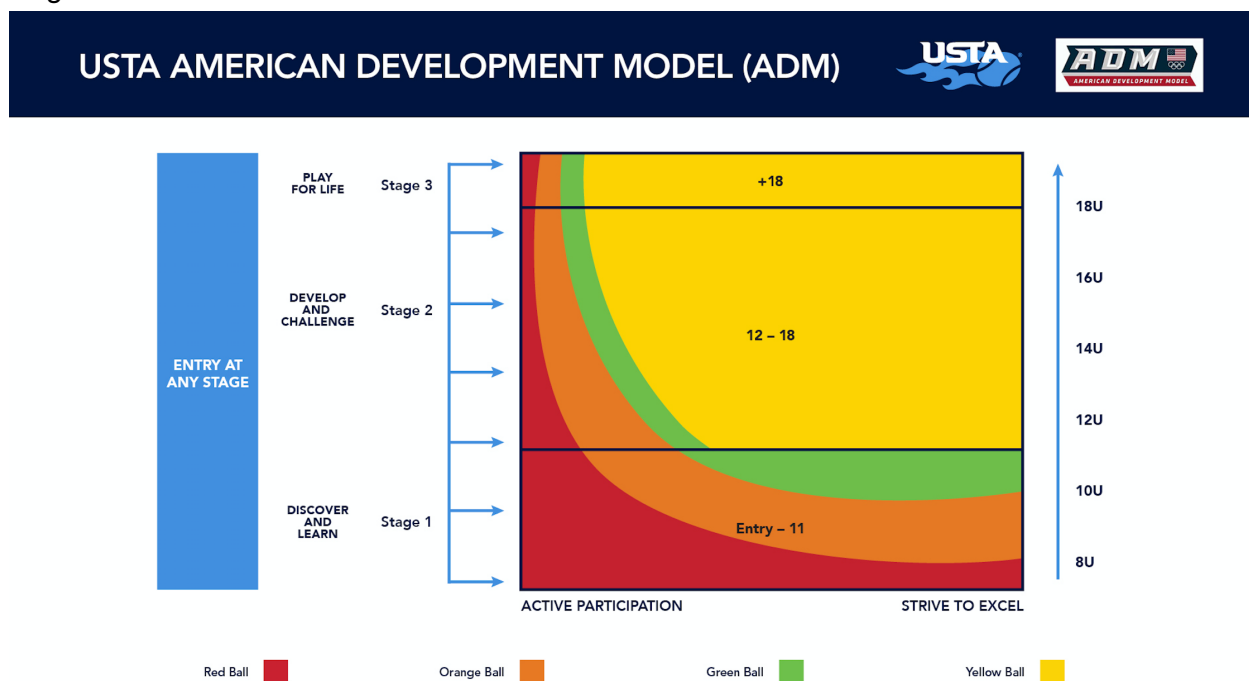


Fig 3.7 USTA's ADM Squaring the Pyramid

While the USTA has traditionally been a strong supporter and leader in utilizing long-term athlete development principles, the addition of the ADM as a philosophical framework in the USTA's Net Generation program only serves to make Net Generation stronger. Net Generation serves as a comprehensive launch site for parents and players while providing a scientifically-based curriculum for coaches and providers. Net Generation also serves as a checkpoint for Safe Play, ensuring that all Net Generation providers have been background-checked. Specifically, here are 10 reasons why the USTA has developed and fully supports this tennis ADM:

1. To provide an athlete-centered pathway and have all three stakeholders working together (parents, players, coaches).
2. To allow any child of any age an opportunity to enter the sport and cater to their needs with an emphasis on achieving success (fun).
3. To align the USTA programs to facilitate increased participation and more Top 100 ranked players.
4. To provide a holistic approach to the development of tennis athletes.

5. To align programs that look more at the developmental age and not the chronological age of athletes.
6. To provide training and competition products that support participation and performance pathways in preventing early specialization.
7. To help develop matching coach education pathways that provide better tools for those coaches working with participation and/or performance players.
8. To position tennis as part of a sampling of sports for children 12 and under.
9. To attract more youth to the sport by anchoring programs within the ADM.
10. To position tennis in the market place that emphasizes its social, physical, and personal benefits, its concussion free aspect, and how it's a sport for a lifetime.

The purpose of the ADM is to tackle the many weaknesses and resulting consequences that hinder the current system and establish positive experiences for participants of all abilities. The present weaknesses of the sport system to attracting, engaging, and retaining more athletes to keep them active for a lifetime are:

Poor Training, Practice, and Competition Theories

- Young athletes over-competing and under-training in team sports
- Adult training and competition programs used on developing athletes
- Training methods and competition programs used for male athletes imposed on female athletes
- Preparation focusing on short-term outcomes and not toward the process of long-term development
- Chronological age used more than developmental age in training and competition planning.
- Coaches' lack of awareness of periods of accelerated adaptation to training
- Underlying fundamental movement skills and sport skills not being appropriately developed at the right time or not done at all
- Needs of athletes with disabilities not well understood

Structured Programs

- The most experienced coaches working with elite athletes; volunteers coach at the developmental level when quality, trained coaches are needed
- Parents not being educated on the principles and purpose of the ADM
- Competition systems hindering athlete development
- A more cohesive pathway required with physical education programs, recreational community programs, and competitive programs
- Sports asking athletes to specialize too early in an attempt to attract and retain participants

Inactive and Unhealthy Lifestyles

- An unhealthy, sedentary lifestyle dominating everyday life
- People lacking knowledge about how to be active and conduct a healthy lifestyle

- In general, people having poor nutritional habits

Limits to Athletic Development

- Poor movement abilities
- Lack of proper fitness
- Low level skill development
- An overemphasis on winning over performance
- Imposing adult constraints on children resulting in them not having fun
- Under training causes undeveloped and unrefined skills
- Female athletes not reaching their potential due to not having the right programs available
- Athletes not attaining their genetic potential and optimal performance level

Ineffective Collaboration and Inefficient Delivery of Programs

- Lack of cohesive policies
- Lack of communication between private, non-profit, sport federations, and governmental bodies
- Failure to achieve success in international competitions
- Athletes are pulled in many directions with family, collegiate play, professional play, and sponsors.
- Lack of planning for developing the next wave of international athletes (Balyi, Way, & Higgs, 2013)

One major concern to the current system is the lack of development of fundamental movement skills and sport skills. This shortcoming results in a lack of confidence, and when children don't feel confident in a variety of movement skills, they are less likely to try other sport activities, contributing to the increased dropout rate of youth in sport.

TOOLS FOR AN ACTIVE LIFE

If you can...

RUN



BALANCE



SWIM



You can enjoy...

- Playing tag
- Soccer
- Basketball
- Lacrosse
- Ultimate Frisbee
- Triathlon
- Tennis



- Gymnastics
- Biking
- Softball
- Football
- Snowboarding
- Zumba
- Yoga



- Swimming
- Snorkeling
- Kayaking
- Water polo
- Surfing
- Diving
- Rowing



Fig 3.8 The Aspen Institute - Tools for an Active Life

CHAPTER 4 UNITED STATES TENNIS ASSOCIATION'S AMERICAN DEVELOPMENT MODEL

Due to the enormity of creating an American Development Model (ADM) for the USTA, a task force was put together consisting of a wide-ranging profiles that included volunteers, USTA Community and Player Development staff, parents, and coaches. The primary purpose was to make sure all aspects of the current landscape of youth sport were considered to position tennis to grow as a sport and produce the next generation of elite athletes. The primary resource in providing consistency with other National Governing bodies ADM's was the USOPC's American Development Model-Rebuilding Athletes in American document (USOPC, 2020).

The ADM is influenced by the work of Istvan Balyi, who is known worldwide as an industry leader in long term athlete development principles. Balyi's approach to organized sport focuses on key principles of development and periodization of training plans, which help support athletes' individual needs (USOPC, 2020).

Several research articles, books, and resources were also considered. Notable ones include:

- Positioning youth tennis for success (Hainline, 2012)
- Development Model of Sports Participation (Cote & Vierimaa, 2014)
- Long Term Athlete Development Plan for the Sport of Tennis in Canada-Sport for Life
- Positive Youth Development through Sport (Holt, 2016)
- USA Ice Hockey LTAD- A brighter future for all.
- US Lacrosse-Lacrosse Athlete Development Model
- PGA Golf American Development Model
- USA Football Development Model
- The Aspen Institute Project Play-Sport for All, Play for Life
- FTEM Framework (Gulbin, Croser, Morley, & Weissensteiner, 2014)

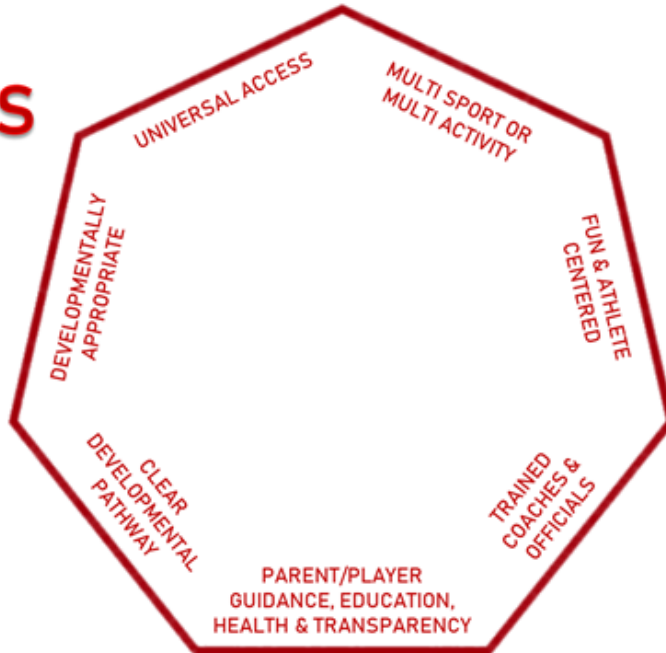
Once a framework of the USTA's ADM was created, it was then sent to a representation of tennis stakeholders and other National Governing Sports Bodies to review and provide feedback. Dr. Brian Hainline, who has many influential roles throughout the sporting industry, including sitting on the USTA Board of Directors, and very instrumental in developing the Golf and Flag football's ADM, provided unquestionable mentorship along the way. The last entity that was engaged to grant final approval of the model was the USTA's Sports Science Committee, the resulting product being the below American Development Model for tennis.

The USTA's ADM consists of three primary components:

- Key principles for providers to maximize tennis player engagement, learning, and fun
- Stages of tennis play
- The 5 C's of tennis programming

These components overlay upon one another and are built into the USTA curriculum frameworks (i.e. Net Generation and Intro to Adult Play...). For illustrative purposes, they will be highlighted separately.

7 KEY PRINCIPLES



KEY PRINCIPLES



Universal Access

Make sure playing tennis is safe, accessible, local and affordable



Developmentally Appropriate Teaching and Coaching Methods

Emphasize motor and foundational skills through developmentally appropriate teaching and coaching



Support Multi-Sport or Multi-Activity Participation

Build athletes through a multi-sport approach within tennis programming and cross-promotion with other sports and activities



Fun and Athlete-Centered

Focus on creating a fun, positive, and engaging atmosphere within a team culture rather than wins and losses



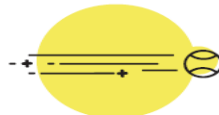
Trained Coaches

Ensure coaches at all age levels are qualified and trained



Parent/Player Guidance, Education, and Transparency

Provide parents and players the information needed to guide their tennis development



Clear Development Pathway

Integrate tennis into physical education programs in schools, recreational community programs, and advance into age- and skill-based programs and competitions

Seven key principles guide the USTA ADM. These principles are designed to lend guidance to providers, helping them create optimal learning experiences for players entering the game, as well as provide for continued quality participation so players can enjoy and stay engaged in the game of tennis while reaching their full potential. These principles are also integrated within the Net Generation curriculum.

(1) *Developmentally Appropriate Teaching, Coaching Methods, and Competition - Emphasize motor and foundational skills through developmentally appropriate training and coaching and into competition.*

A clear understanding of an athlete's developmental level (as opposed to his or her age) will help coaches, parents, and administrators appropriately tailor the training, skills, and tactics taught to maximize an individual's full potential while helping avoid burnout.

In order to succeed, participants must first learn foundational motor skills and technique. Coaches, parents, and administrators who jump directly into competition tactics and strategy without emphasizing fundamentals may put their athletes at a disadvantage. To ensure long-term success, participants must be given adequate time and knowledge to develop these essential building blocks for success.

(2) *Train All Coaches and Officials - Ensure coaches for all age levels are qualified and trained.*

Quality coaches are critical to an athlete's development; therefore, quality coaching education is imperative for athlete success at all levels. Quality coaching not only requires a coach to be qualified and highly knowledgeable about their sport, but also to understand effective communication, practice planning, and athlete development. It is essential to have a strong understanding of growth and development as well as an understanding of the process of how people learn. The very best coaches view themselves as lifelong learners and are always working toward improving themselves.

(3) *A Clear Development Pathway - Integrate tennis into physical education programs in schools and recreational community programs. From there, kids and teens can then advance into age- and skill-based programs and competitions.*

No matter the age of the player, no matter the stage of development of the player, and no matter the desired goal of the player, the USTA has a place and a way for everyone to play tennis. Recent research demonstrated concern among parents and coaches that a "race to yellow ball" culture sometimes exists, and that, while the 10U pathway is well-defined, beyond that, the pathway is less clear (UCF, 2018). In a concerted effort with the United States Olympic & Paralympic Committee, the USTA's ADM provides a variety of pathways to guide players and their parents along their unique journey. Tennis benefits when multi-level pathways, as suggested by UCF research, are readily available. Indeed, the tennis ADM is committed to allowing American youth to utilize tennis as a path toward an active and healthy lifestyle and to create opportunities to maximize their full potential.

(4) *Support Multi-sport or Multi-activity Participation - Build athletes through a multi-sport approach within tennis programming and cross-promotion with other sports and activities.*

The USTA's American Development Models' mission is to attract and retain more athletes and keep them playing tennis for a lifetime. An area of concern recently has been the occurrence of coaches and parents wanting their athletes to specialize in one sport at a young age. A proven solution to this for young athletes is to strategize with sport sampling. Sport diversification at younger ages translates into a longer sports career, a lifetime of physical activity, and better overall health and wellness.

(5) Fun and Athlete-Centered - *Focus on creating a fun, positive, engaging atmosphere within a team culture rather than wins and losses.*

Fun, engaging, and athlete-centered is essential for any sports activity. The definition of “fun” may change as participants advance to more elite levels of competition, but a standard emphasis on making the process positive and enjoyable is key. USTA’s ADM understands the need to have programs that ensure that kids are having fun, as this is what kids want and what keeps them playing for a lifetime.

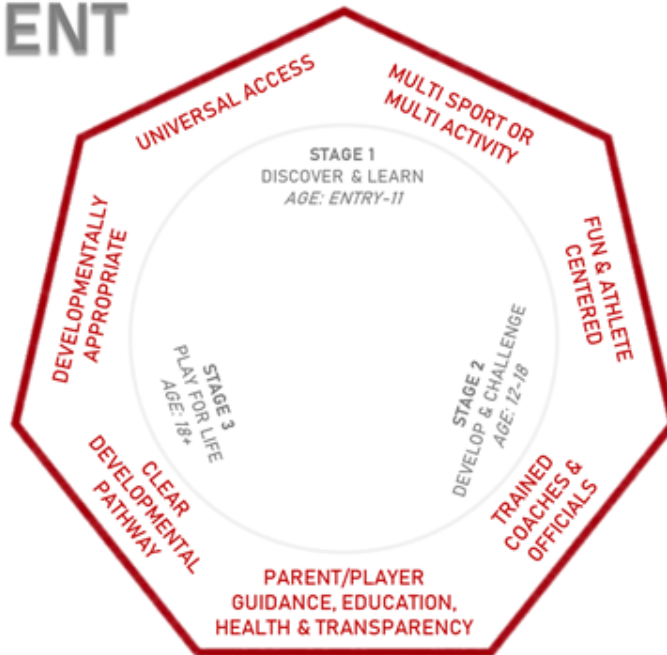
(6) Universal Access - *Make sure playing tennis is safe, accessible, local, and affordable.*

Universal access to the ADM is a priority for the USTA. It is the USTA’s goal that everyone, regardless of race, color, religion, age, national origin, physical or mental disability, socio-economic status, sexual orientation, or gender identity has access to the benefits of the ADM. By providing this access and inclusivity, children will have the opportunity to experience the benefits of physical activity and be on the pathway to realizing their athletic potential.

(7) Parent/Player Guidance, Education, Health, and Transparency - *Provide parents and players the information they need to guide their healthy tennis development.*

The USTA is committed to providing people of all ages the information needed to guide tennis experience and development under the American Development Model. From a youth perspective, we see parents as a key resource to enhance children’s performance, enjoyment, motivation, and overall positive youth development. From an adult perspective, the USTA must ensure that all information pertaining to tennis development is accessible through various outlets, including but not limited to digital platforms and tennis programming. As the national governing body of tennis, it is our responsibility to share the proper information, insights, and tools needed in order to grow the sport of tennis and keep people playing for a lifetime.

3 DEVELOPMENT STAGES



DEVELOPMENT STAGES

Keeping the ADM principles in mind, the USTA's ADM adopts an approach that is designed to introduce the game in an appropriate manner based on the physical, social, mental, and emotional levels of the player. It is the USTA's belief that anyone can begin playing the game of tennis, no matter their age or capability. The USTA's ADM differs in this regard from many other sports' ADMs, where the assumption is that the age of initial involvement is in the early childhood years. While early exposure is ideal, and a large portion of the USTA ADM works under this premise, it's important to understand that flexibility is built into the model to consider and support initial involvement without regard to age. Ideally, though, youth are introduced early, and for this reason, the model is first described with the assumption of early exposure.

Tennis has been a leader in the creation and adoption of modified equipment that allows new players to enter the game easily and progress efficiently. Specifically, different balls and court sizes were adopted to allow youth to use equipment compatible with their size. The system is commonly referred to as ROGY (Red, Orange, Green, and Yellow), representing the ball colors and corresponding court sizes.

Initially, this system was introduced as "Quickstart" and then changed to "10 and Under Tennis" to be consistent with the International Tennis Federation's terminology. Since then, the modified equipment has been found to be beneficial to those picking up the sport at other ages, with some communities offering, for example, 60-foot court orange ball social leagues for adults. The ability-appropriate equipment slows the pace of play down and reduces the space, making it easier to learn. Additionally, even after learning, some adults prefer to play on the reduced court. The graphic below demonstrates the flexibility and adaptability of the USTA's ADM, considering age, stage of play, and reason for playing.

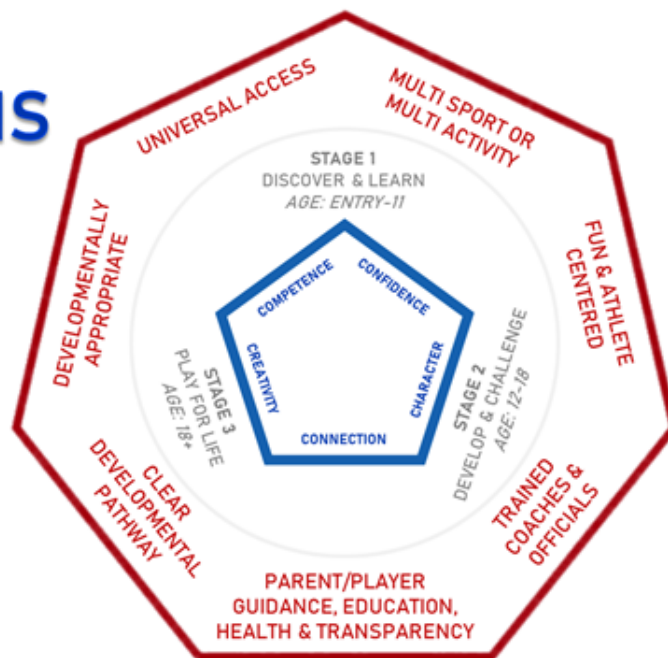
The model guides players' progression through the sport, realizing that desired goals and outcomes of players will vary greatly. These can range from weekend social players (i.e. "active participation") to serious competitors striving to make a living as a professional (i.e. "strive to excel"). Ultimately, though, the hope is that all players will "play for life," reaping the physical, social, and emotional benefits that tennis provides.

Key Definitions

Under each stage, the USTA recommends the following key definitions (the 5 C's) to provide further understanding to the essence of each stage.

- *Competence*: technical, tactical, and performance skills
- *Confidence*: self-belief, resilience, mental fortitude, and a sense of positive self-worth
- *Character*: respect for the sport and others, integrity, self-discipline, and ethical and moral well-being
- *Connection*: interpersonal skills and the ability to build and sustain meaningful and positive relationships
- *Creativity*: provides a unique and imaginative environment that encourages problem solving and promotes individuality and self-reliance

5 KEY DEFINITIONS



Developing and emphasizing player and athlete-centered outcomes drive the inclusion of these key definitions, and the foundation originates in the facilitation of Positive Youth Development. The 5 C's are majorly influenced by Self-Determination Theory (SDT) and Achievement Goal Theory (AGT), along with a variety of other theoretical and empirical sources, and will be showcased under each stage.

Inside the Stages

Stage 1: Discover & Learn (Age: Entry – 11 years old)

This is the first step of involvement with sports at a young age or when first introduced to a new sport.

Discovery of sport concepts and the motor skills required are critical to learning how the sport is played.

Many skills are transferable between sports, and we encourage tennis program providers to accommodate those who participate in multiple sports. At this early stage, our coaching techniques allow these children to learn the basics of tennis and other activities, including fundamental movement skills, through discovery and exploration.

Age: Entry to 4 years old

With Stage 1 incorporating such a broad age range, suggestive home-based strategies are presented for kids ages entry to 4. The emphasis during this age is the promotion of physical activity and the development of athletic skills to begin building their athletic foundation.

- Run, jump, leap, strike, catch, throw
- Single step commands
- Most activity can take place at home or in a group setting

Age: 5-11 years old

Competence

- Learn the basic rules of the game and sports techniques
- Develop motor skills that are related to tennis and transfer to other sports
- Emphasis on practice over competition; fun and engaging at local level
- Improve physical literacy - agility, balance, and coordination

Confidence

- Age and stage-appropriate play and competition
- Self-confidence through fun and success.
- Sample different sports through unstructured play
- Positive and supportive kid-centered learning environment
- Learning and achievement is part of the process

Character

- Cultivate a passion for sports and a healthy lifestyle
- Love of learning and creativity
- Understand and respect the rules and sportmanship
- Respect for self and working with others
- Learning to handle concept of winning and losing

Connection (Player, Parent, Coach)

- Foster positive friendship and relationships with others
- Importance of qualified coaches
- Ensure a safe environment for children
- Recognize the importance of growth and development
- Awareness of growth mindset for players, parents, and coaches

Creativity

- Provide learning environment that allows for innovation and kid-centered decisions
- Free play to discover sport and new skills
- Allow children to make decisions on practice and play
- Foster independence- play and practice on their own
- Cooperative style of coaching and teaching

Stage 2: Develop & Challenge (Age: 12-18 years old)

The second stage of the development process occurs after an athlete has been involved in tennis and wants to explore more organized training options. It also caters to the individual who is taking up tennis for the first time. This stage focuses on refining the skills needed to be successful in the activity or sport and then furthering skill development through challenges such as recreational competition, organized sports programs, or club participation.

Athlete readiness and motivation determine the choice to pursue the next level in the sport. The second stage may begin earlier for some athletes who are quick to develop physically and mentally. Fun and socialization are still key areas of emphasis in order to encourage future participation and avoid burnout.

Competence

- Developmentally appropriate training and competition
- Ongoing development of agility, balance, endurance, strength, and coordination
- Increased awareness of injury prevention
- Best practices of rest and recovery

Confidence

- Emphasize physical education/skill development, and developmentally appropriate play and competition
- Participate in a fun, challenging, structured, and continuous training and competition program
- Help players define success as more than wins
- Use multiple-sport experiences for cross-sport development
- Ask kids what they want to do

Character

- Emphasize 100% effort and love of the game
- Develop a sense of intrinsic motivation
- Listen to the coach and try multiple solutions
- Develop a sense of responsibility/independence
- Good behavior on and off the court

Connection (Player, Parent, Coach)

- Holistic approach to sport development
- Focus on both individual and team as well as social aspects and fun
- Positive approach to coaching and communication
- Learn to work together with mixed abilities, ages, and genders
- Incorporate character development into training and competition

Creativity

- Participate in multiple sports experiences to promote fitness, and skill development in a fun environment
- Encourage free play to discover new sport and skills
- Provide different experiences (e.g. Field trips- pro events, social events, college matches, social competitions)
- Encourage growth mindset as learning
- Encourage student led practice and play to foster new solutions and ideas

Stage 3: Play for Life (Age: 18+ years old)

At stage three, athletes begin to train and compete in a program that matches their personal interests, goals, and developmental needs. Allowances are also made for individuals that are taking up tennis for the first time with developmentally appropriate practices and play.

Competitions become more clearly defined in this process with the potential for new experiences in team selection. Maximizing potential becomes an option for athletes as they start to grasp the commitment necessary for specific sports, and the skill sets needed to excel at the next competitive level.

Technical, tactical, physical, and psycho-social development becomes more important for the athlete at this time. This is also the stage to increase tennis-specific training. Recreation and multi-sport play can continue to be used in a cross-training capacity allowing athletes the opportunity to develop more fully.

Competence

- Participate in more structured individual and team competitions
- Focus on the enjoyment of sport and the health benefits of participation
- Ongoing refinement and development of tennis skills
- Increased focus on performance (sports science) related activities

Confidence

- Be active and involved
- Compete for both the challenge and the fun
- Developmentally appropriate training

Character

- Develop as a person with achievement goals
- Focus on the enjoyment of sport and the health benefits of participation
- All participants become lifelong learners of tennis (sports)

Connection

- Develop relationships through tennis
- Family-based play and competition
- Social team events based on playing level
- Positive coaching
- Local, regional, national, and international based competitions that meet athletes' needs and their competition goals

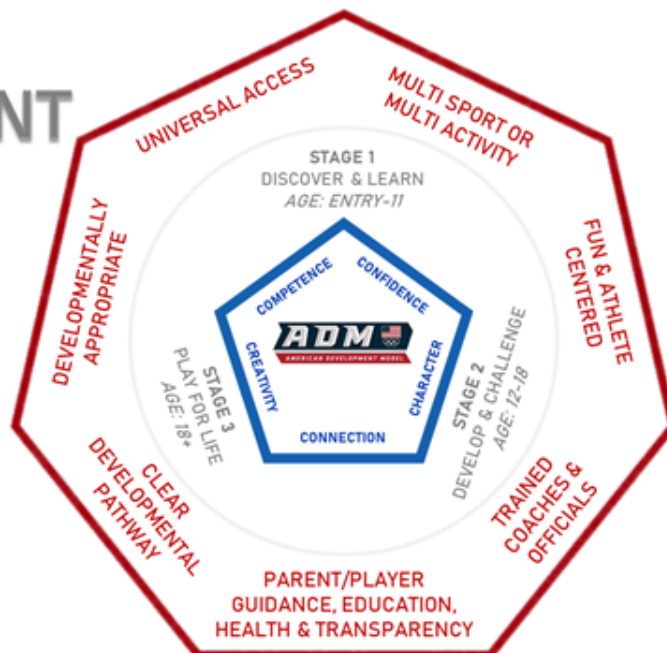
Creativity

- Development of individualized game style
- Motivation to practice and compete
- Differentiation of the wants and needs of the individual
- Coaching practice adapts to level of player

In summary, the ADM will provide a framework to inform tennis providers of best practices as they relate to the social, psychological, and developmental aspects of tennis and provide a foundation that will mature from childhood into adulthood.

The ultimate goal of the ADM is to create positive experiences for American athletes at every level.

AMERICAN DEVELOPMENT MODEL



While the ADM's principles, stages, and definitions make up the core of the model itself, the ADM impacts a variety of practices and touches many areas of tennis delivery. The following chapters highlight many of these specific recommendations, including:

Health and Wellness

- Chapter 5 Physical Literacy and Health Literacy
- Chapter 6 Health Benefits of Tennis
- Chapter 7 Understanding Growth and Development
- Chapter 8 Tennis Specialization and Sport Sampling

Tennis Programming

- Chapter 9 Tennis for All Abilities
- Chapter 10 Quality Tennis Coaching and Officiating
- Chapter 11 Tennis Parents
- Chapter 12 Tennis Modified Equipment
- Chapter 13 Tennis Competition
- Chapter 14 ADM Programming implementation

Conclusion

- Chapter 15 Top 10 USTA's ADM Takeaways

CHAPTER 5: PHYSICAL LITERACY AND HEALTH LITERACY (4)

By Dr. Paul Roetert

and

Coach

The need to develop physical literacy and health literacy is an integral part of the USTA's American Development Model. Whether an athlete wants to reach the upper echelons of tennis performance and test their skills at the U.S. Open, or play socially in their community, physical literacy is important. Discovering and progressing age- and developmentally-appropriate movement skills are the building blocks of physical literacy. Foundational movement skills are crucial for feeling confident in physical activity, whether for fun, competition, and/or attaining excellence in health throughout the full lifespan. Physical literacy is also an important component of a child's development of self-awareness and self-confidence. Similarly, competency in health literacy allows for individuals to make decisions that will lead to health promotion across the lifespan.

PHYSICAL LITERACY

Physical literacy is defined as “the ability to move with competence and confidence in a wide variety of physical activities in multiple environments that benefit the healthy development of the whole person” (Shapeamerica, 2020). Being physically literate includes the following points:

- Having the competence level and motivation to take advantage of movement potential to make noteworthy contributions to quality of life.
- Moving with poise, economy, and confidence in a wide variety of physically challenging situations.
- Being able to read all aspects of the physical environment, anticipating movement needs or possibilities, and reacting to these with intelligence and imagination.
- Having an ingrained sense of self, and when coupled with an expressive interaction with the environment, positive self-confidence, and self-esteem resulting.
- Using non-verbal communication to show fluent self-expression when interacting with others.
- Understanding the principles of embodied health, with respect to basic aspects such as exercise, rest and recovery, and nutrition.
- Recognizing the influence of culture and personal capabilities in understandings of physical activity (Balyi, Way & Higgs, 2013).

Without a solid foundation of physical literacy, children are much more likely to drop out of sport and physical activity. This movement-related time is then often replaced with activities that are more sedentary in nature (e.g., video games and other screen time), leading to unhealthy lifestyles (Kirk, 2005). An active lifestyle often starts with physical literacy developed in childhood, including the development of confidence, which in turn leads to participation. For the

population to be active and healthy, all children require a sound foundation of movement and sport skills to build on later in life, hence the importance of developing physical literacy.

The application of physical literacy within the USTA's ADM consists of:

- Assisting all children in developing their physical, psychological, and emotional capabilities relative to movement, and doing so in a caring environment that promotes a positive attitude towards physical activity so that they want to participate.
- Understanding the importance of culture when it comes to physical activity and how learning culturally appropriate activities can help children and youth fit into their communities.
- Providing opportunities for children to engage in a wide variety of activities in various environments (e.g. land, air, water, snow and ice). This will also prevent specialization too early in a single sport.
- Ensuring that children have opportunities for unstructured play so children learn to read and react in a wider range of movement situations typically found in sports play.
- Facilitating the building of self-esteem and self-confidence in children by giving tasks that are challenging to them, but also in their realms of success.
- Offering opportunities for children to show off their movement skills through a creative environment.
- Educating children about the need for exercise, nutrition, and sleep, and questioning them on their understanding.
- Ensuring all physical activity is fun and provides ample opportunities to play.

To develop complete physical literacy, children need to learn fundamental movement and sport skills in four basic sport environments:

- On the ground - the basis for most physical activities, games, sports, and dances.
- In the water - the basis for all aquatic activities.
- On snow and ice - the basis for all winter sliding activities.
- In the air - the basis for gymnastics, diving, and other aerial activities.
- The benefits of having physical literacy in fundamental skills

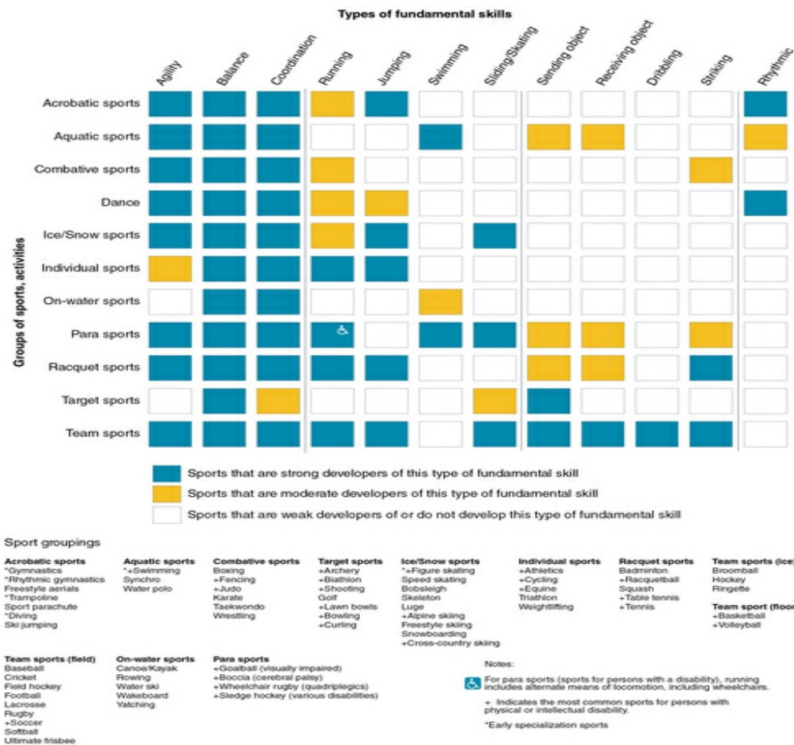


Fig. 12.1 Types of Fundamental Skills for Sports.

HEALTH LITERACY

Health literacy is defined as the simultaneous use of a complex and interconnected set of abilities to place one's health, as well as their family's and community's health, into context, and understanding which factors are influencing health and knowing how to address them. Further, a health literate individual will take responsibility for their own health as well as that of their family and community (Sorensen et al, 2012).

While physical literacy is more directly addressed within the ADM, health literacy is just as important. In striving to reach the goal of utilizing sport as a path toward active and healthy lifestyles for all Americans, health literacy allows individuals to place their physical activity within the broader scope of their lives at large. Knowledge about a variety of health-related elements will assist tennis players in maintaining overall health. Examples include:

- Understanding what types of physical activities, including tennis, are appropriate for health promotion.

- Making good decisions about how often engaging in physical activity generally, and tennis specifically.
- Understanding the impact of intensity levels, and knowing how to monitor those while engaging in physical activity.
- Engaging in physical activity for the social and psychological benefits it provides (e.g., enhanced mood states, reducing depression, enhancing confidence, etc.)
- Understanding the limits of the body and knowing when to slow down to avoid injury.

Developing physical literacy and health literacy in youth requires a teamwork approach by all stakeholders who are engaged with youth. What is also important is that the people or professionals engaged with youth have an understanding of what physical literacy and health literacy mean, and how they are developed and impacted by tennis participation. It is important to understand that children are not miniature adults. Children mature and learn at different rates, although almost all children learn their fundamental movement skills in the same sequence and go through the same phases.

A list of all the stakeholders responsible for developing physical literacy and health literacy is provided below.

- Community
- Schools
- Preschools
- Recreation leaders
- Teachers
- Parents
- National Governing Sporting bodies
- Built environment/Transportation decision makers

Understanding physical literacy and health literacy concepts and consciously applying them through USTA programming via the ADM can help in the fight against childhood obesity and the rising levels of inactivity among children that presently threatens the health of our country.

CHAPTER 6 HEALTH BENEFITS OF TENNIS (4)

By TBC
and
Coach

Tennis has long been known as a lifetime sport, and with good reason! Tennis can be played at any age, and provides a number of benefits to its participants. A recent longitudinal study found that tennis players had the greatest life expectancy gain, compared to other physical activities (Schnohr et al., 2018). Other research suggests that tennis players experience a variety of health benefits, including lower body fat, enhanced aerobic fitness, and good bone health (Pluim et al, 2007).

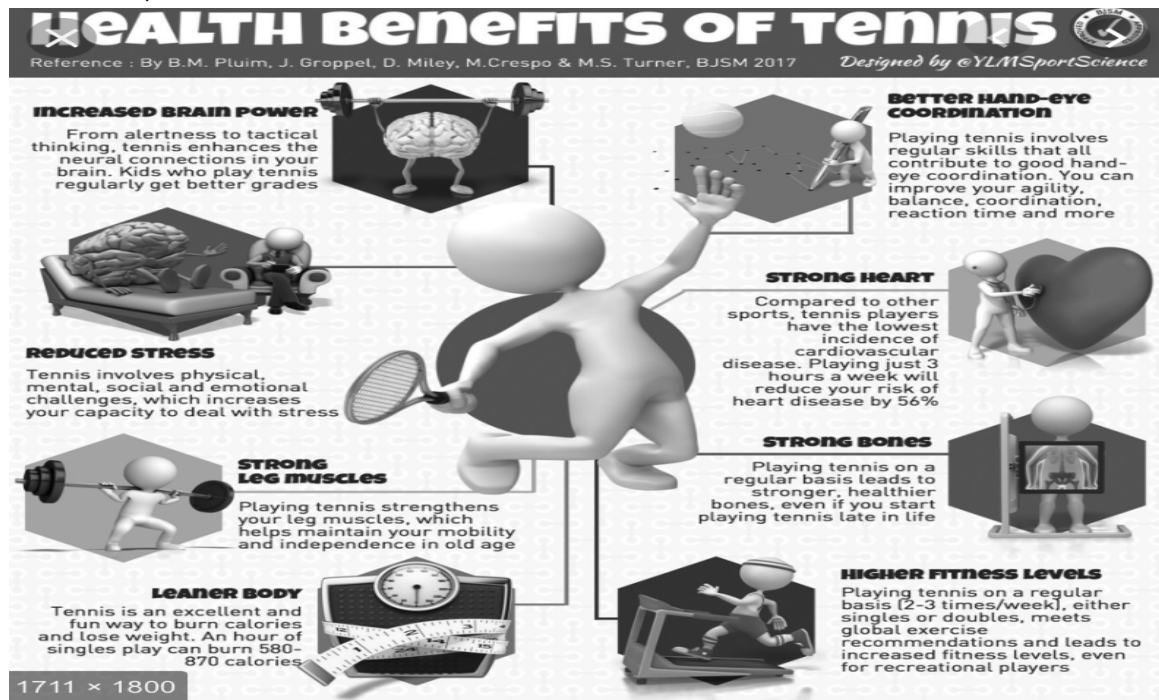


Fig. 5.1 Health Benefits of Tennis (Pluim et al., 2007)

Tennis also has many positive connections for youth and adolescents who play the game. Specifically, youth who play tennis report getting better grades and spending more time studying. They also report less disciplinary incidents in school, compared to other sport participants. Related to healthy behaviors, they are less likely to binge drink, smoke, and are less likely to be overweight or at risk for overweight.

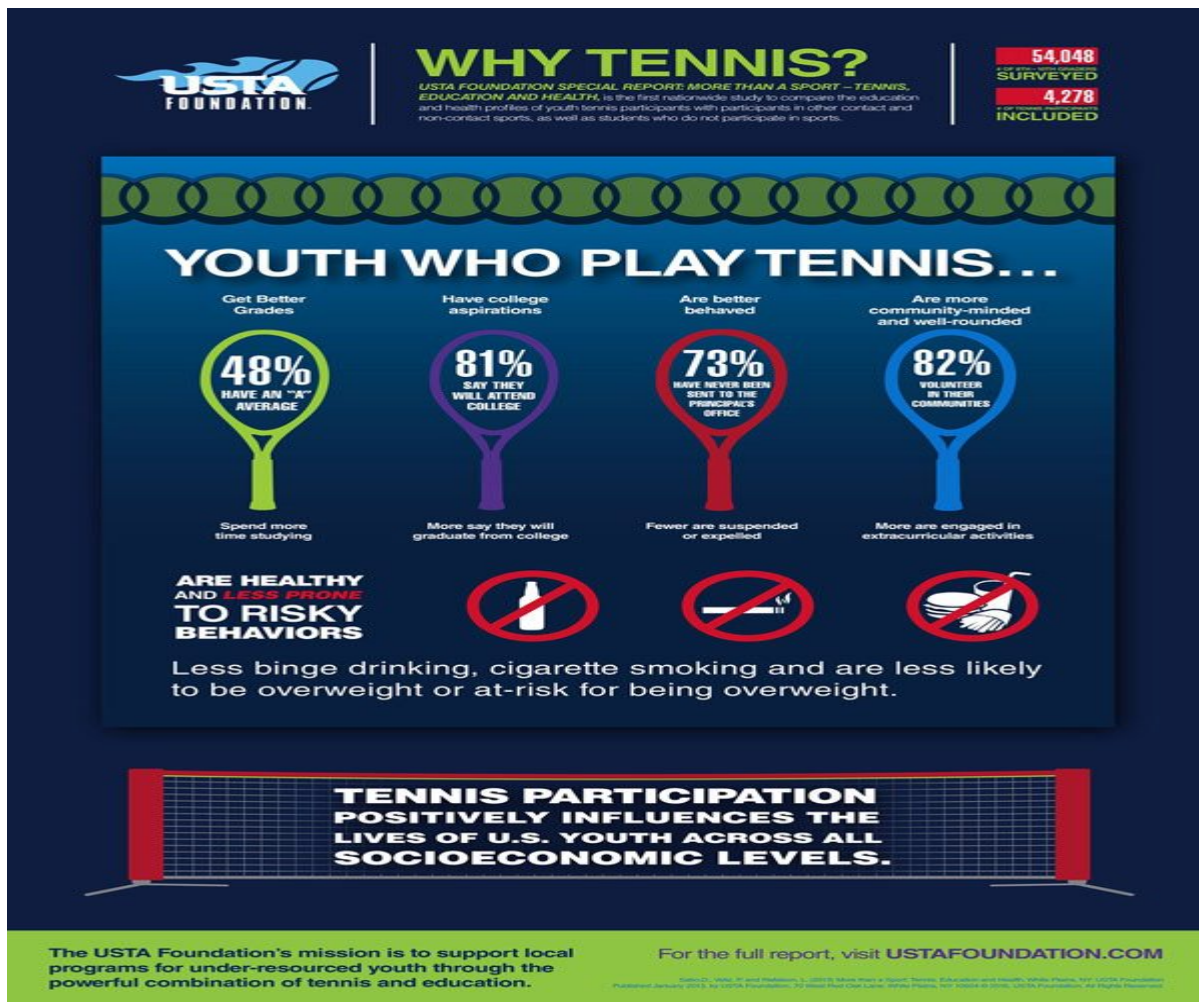


Fig 5.2 Youth who play tennis

Further, tennis is easily accessible in many communities, as many public parks have courts available for use. While it's true that tennis historically has been viewed as a "country club" sport, it is really quite inexpensive to play. With the introduction of the USTA's modified equipment program 10 and Under tennis, playing tennis has no boundaries. Makeshift tennis courts can be made in any environment like the gym, cafeteria, black top, drive way, or basically any flat surface. Beyond the court, the only equipment needed consists of racquets and balls, making tennis an easy option for healthy activity and friendly competition. Tennis also connects players across generations where it is easy for players of any age to play with each other. And compared to many other sports that require a team, tennis only requires at most one other player.

Tennis is one of the most popular sports worldwide, with millions playing every year. One of the advantages of playing tennis is that it can be played for a lifetime. Individuals aged in their 80s and 90s are playing tennis, as can be seen with the staging of competition with that age group.

A sample of the overall benefits of tennis participation in addition to typical health benefits:

- A non-collision sport
- A great way to meet people and spend time with friends
- Suitable for all ages and skill levels
- A game that can be started at any age
- A game that can be played for a lifetime
- Played all over the USA
- Gives a total body workout
- Has built-in rest periods
- Involves cognitive function
- Provides low lactic acid buildup, resulting in low levels of perceived exertion (Hainline, 2012)

The potential health benefits of consistent tennis participation are:

- Increased aerobic capacity
- Lowering of body fat
- Lowering resting heart rate and blood pressure
- Improved reaction times
- Improved muscle tone, strength, and flexibility
- Reduced stress
- Lower cardiovascular risk & mortality rates
- Increased bone health (Kovacs, et al., 2016)

The uniqueness of tennis play:

- There are no timeouts, and there are no substitutions.
- There is no clock. Matches can last anywhere from 20 minutes to a few hours.
- Players are all alone with little or no coaching allowed; in team competition, coaching is allowed.
- Tennis involves both aerobic and anaerobic capacity, and physical fatigue can affect both cognitive and emotional processes.
- Tennis's scoring system promotes mounting pressure. A lead can evaporate very quickly.
- Competitive categories are determined by age, not size or weight.
- The tennis player's brain must make hundreds of thousands of split-second calculations for him or her to make contact in the center of the strings to the intended point on the opponent's side of the court (Hainline, 2012).

CHAPTER 7 UNDERSTANDING GROWTH AND DEVELOPMENT (9)

By Dr. Paul Lubbers and Johnny Parkes

*And
Coach*

Understanding how a child grows, matures, and develops from childhood to adulthood is a complex process. As they start playing youth sport and tackling daily life tasks, there are major considerations to consider related to the natural process of growth and development that is highlighted in the USTA's ADM.

There are 4 specific considerations when it comes to growth and development through the stages of Childhood, Pre-puberty, Puberty, and Adulthood:

1. **Physical** – The need to master basic locomotor skills like walking, running, jumping, skipping, and hopping. Young person's body size, shape, and composition go through gradual changes.
2. **Cognitive (Mental)** – How the brain works and developing decision-making skills. Children learn concepts and the differences between ability and effort on the road to self-responsibility.
3. **Emotional** – Coping with the complexities of managing feelings, thoughts and emotions. The main goal is fun and how its definition adapts across age and stage.
4. **Social** – How the athlete sees themselves in relation to others. Influence ranges from adults/parents to peers to self (Malina & Bouchard, 1991).

Growth and development in an individual is a given! It will take place irrespective of tennis or any other sport or activity that a child is engaged in. Its relevance for the parent and coach is to understand the basic principles of Growth and Development which will help them recognize how changes in the individuals impact their growth as well as skills and behaviors. Genetics and environmental factors such as culture, family, education as well as nutrition and early experiences, have a deep influence on a child's growth. Development is often nonlinear-athletes the same age can vary dramatically in their maturation cycle.

Growth and development is manifested in changes to the physical, mental, emotional and social realms. It is useful to consider the changes in specific stages of development, as detailed in the Growth and Development Matrix below:

Growth refers to the increase in the size of the body as a whole and of its parts. As young children grow, they become taller, heavier, change body composition and increase the size of their various organs, along with other physiological changes.

Maturation refers to the tempo and timing of progress toward a mature biological state.

Development refers to the culture-specific acquisition of behavioral competence- the learning of appropriate behaviors and achievement of certain skills expected by society.

All three processes interact constantly and occur simultaneously at differing rates and to varying degrees.

CHRONOLOGICAL AGE, DEVELOPMENTAL AGE, AND READINESS AGE

Every parent, coach and teacher will know that children and young people of the same age can be very different in size and maturity. Two 10-year old's can be very different in height and two 14-year old's can be of totally different physique, shape and height. The main concept for parents and coaches to understand is the difference of **chronological and developmental age**, with the knowledge that other age stages also play a factor.

Chronological age is the age on the birth certificate – the child's actual age in months and years.

Developmental age is the skeletal (or physical) age and is related to the individual patterns of growth. It can be up to 2 years behind or in advance of the chronological age. It links to the readiness age (see below). It is the developmental age that should be of most interest to parents and coaches for two reasons:

- a. The late-maturer does not often achieve early success- negative consequences such as the feeling of dropping out may occur.
- b. Critical periods of trainability for players of different developmental age will also be different e.g. a child may have the chronological age of 12, however, their developmental age may be 10 or 14. You can see on the Critical Periods of Trainability table below how this may adjust the type of training your child requires. Late maturers have the advantage of being able to work on fundamental skills for longer, while early maturers have the advantage of being able to work on physical characteristics such as strength, power and speed (Higgs, Balyi, & Way, 2008).

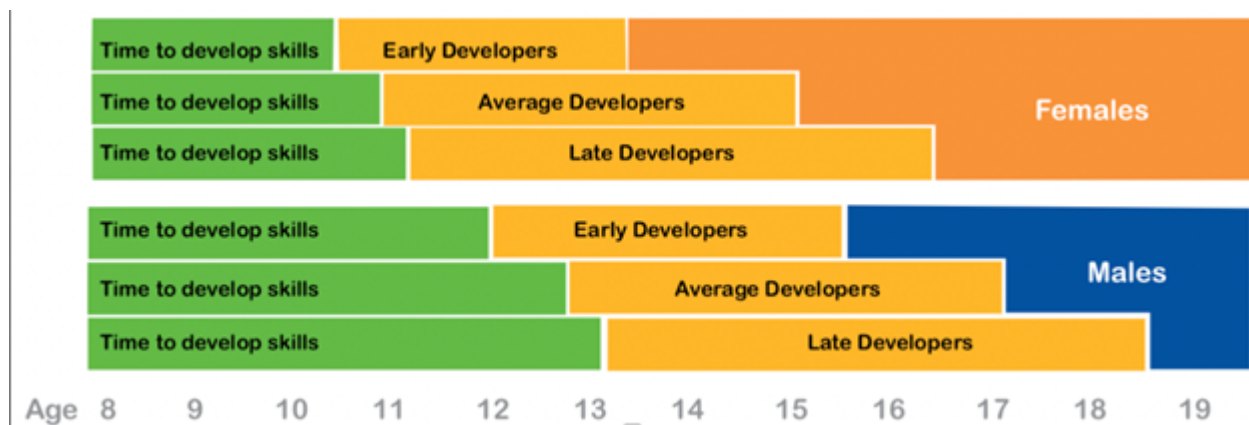


Figure 7. 1: Players Who Enter Puberty Late Have A Longer Time Period to Develop Fundamental Sport Skills (Higgs, Balyi and Way, 2008).

Readiness age is the age when the individual has reached the biological stage of growth that correlates with what they should be able to do in each Window of Opportunity.

General Training Age refers to the number of years of training in different sports

Sport-Specific Training Age refers to the number of years an athlete has been training in one particular sport (Higgs, Balyi, & Way, 2008).

KEY POINTS:

1. Consider the whole athlete. This includes physical, mental, emotional and social developmental characteristics.
2. Understand the difference between chronological age, developmental age and tennis training age.
3. Children progress through the stages of development at their own rate. The stages are age related; they are not absolute to chronological age.
4. The age categories can be defined as 8-11, 12-15, and 16-18. This grouping corresponds somewhat to typical age groups used in tennis.
5. The single most important event in the lives of children as they prepare for adult life is the onset of puberty. Simply defined puberty is the period of time during which a child becomes a person capable of producing offspring.
6. Adolescence begins when puberty begins and typically lasts between 18 months and 6 years. Each athlete enters puberty at a specific time that is highly individualized and may be as early as 10 years or as late as 18.

7. Girls in the U.S. reach puberty at median age of between 10 and 11. Boys tend to experience a similar growth spurt between 12 and 13. Generally, puberty is now reached earlier in both boys and girls than previous generations.

8. Female tennis players like many other athletes tend to be a bit later in reaching puberty with a median age of 13. Female gymnasts show a median age of 15.

PHYSICAL SKILLS TO DEVELOP ALONG THE JOURNEY

Windows of Opportunity for Development - Accelerated Adaptation to Training or Windows of Trainability

Research (Smolish 1991, Balyi and Way 1995) has shown that there are a number of critical periods of development when the ‘trainability’ of specific abilities is at its highest. These periods are also referred to as ‘windows of opportunity.’ Essentially, they are times in the development of the individual when the combination of previous experience and training allows the optimal (fastest) progression of a specific skill. It has been shown that the same training carried out either earlier or later stage has no effect or even hinders later skill acquisition. For parents and coaches, knowledge of these windows of opportunity in relation to specific skills is key to the development of athletic potential and playing potential in tennis. The entire period of childhood can be viewed as a great opportunity for mastering fundamental movement skills (Gallahue & Donnelly, 2003).

E = excellent G = good

Age	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>
Coordination, balance, agility		E	E	E	E	E	G					G	G
Running, jumping, throwing		E	E	E	E	E							

Sliding, gliding			E	E	E	E	E							
Motor learning				G	G	E	E	E	E				E	E
Motor control				G	G	E	E	E				G	G	G
Speed of reaction				G	E	E	E	E						
Rhythm/cade nce capacity				G	G	G	G	G	E	E	E			
Spatial awareness						G	E	E	G	G				
Endurance		G	G	G	G	G	G	G	E	E	E	E	E	E
Strength						G	G	G	G	E	E	E	E	E
10			E	E					G	G	E	E	E	

Figure 7.3: The Sensitive Periods of Accelerated Adaptation to Training (Balyi and Way, 2005)

As you refer back to **Figure 7.4**, you can see the optimal times to develop overall skills are before the adolescent growth spurt, which tends to happen on average two years earlier than boys. Understanding which athletic skills to work on at the stage of growth and maturation will help in developing the physical skills appropriately at the right time.

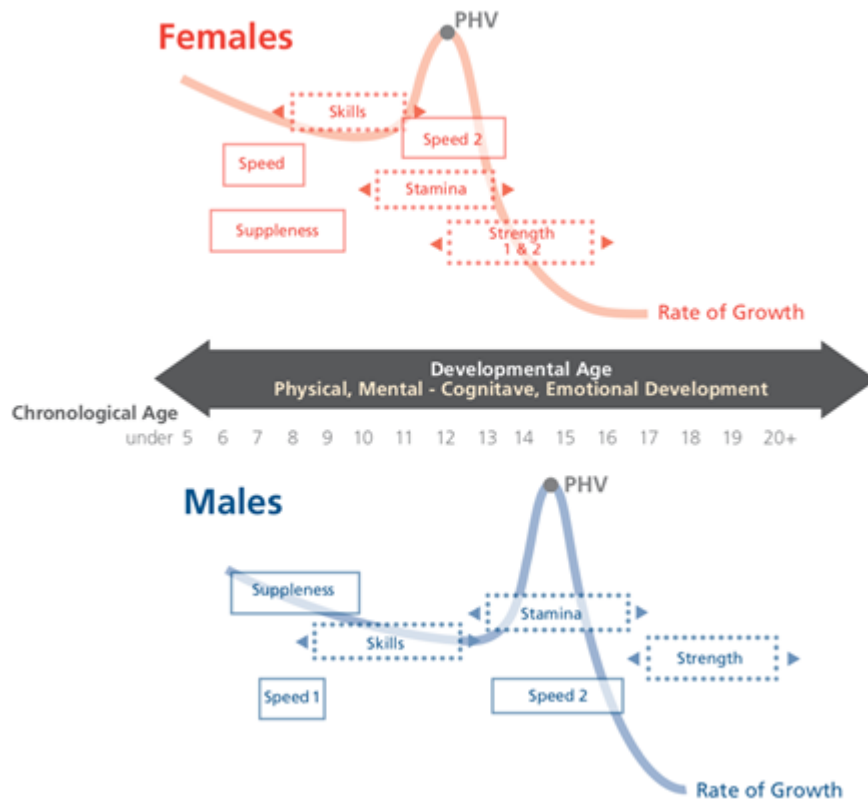


Figure 7.4: The Sensitive Periods of Accelerated Adaptation to Training (Balyi and Way, 2005)

It is recommended that parents record their children's height every 3-6 months for understanding of the onset of puberty. Making well informed decisions with the coach on the volume of training during adolescence may result in healthier outcomes physically and mentally for the child.

KEY TAKEAWAYS (Chronological ages):

1. Running, jumping and throwing skills (so important to the serve) have a critical learning time of 6 – 9 years of age
2. The fundamental skills of agility, balance and coordination, have a critical learning time from the ages of 6 -10. After this the absence or under-development of these skills will hinder future development.
3. Reaction speed has a critical learning time up to the age of 12
4. Motor skill learning has a critical learning time between the ages of 8 and 12 and another at 16/17+.
5. The development of speed has two windows, 6- 8 years of age (especially for girls) and from 6 months to a year after puberty for both males and females.

6. Most youth move through the stages of development in similar order, the rate may vary significantly between physical and mental maturing. Coaches need to be aware that a young person who appears to be physically advanced may be slower to develop in other characteristics.

7. General implications for coaches as to how to work most effectively with children and for parents to support their children as they move through the stages of development are extremely challenging. Study of trends and characteristics of each stage provide a solid foundation. Experience in working with all ages of players helps us see the natural progression and often produces more patience and tolerance for the immature player (Hainline, 2012)..

The trainability for children and youth with a disability is not well understood. Applying this information to specific athletes with a disability is a good example of coaching being an art as well as a science.

The principles of growth and development were a natural consideration in developing the USTA's ADM. The purpose is following through on one of its key principles of being developmentally appropriate: teaching, coaching, and competition. To understand how a child grows and develops is a necessity for parents and coaches to be better informed when it comes to making tennis journey decisions.

CHAPTER 8 TENNIS SPECIALIZATION AND SPORT SAMPLING (4)

By Dr. Neeru Jayanthi

And

Coach

SPORT SPECIALIZATION

Sport specialization can be characterized by intense training in a single sport at the exclusion of others and is mostly viewed as a method for capitalizing on athletic performance potential (Jayanthi et al, 2013). The key components of specialization are choosing a main sport, and perhaps quitting other sports as a result, and subsequently focusing on year-round training. In order to become an elite level tennis player, one may need to specialize in tennis at some point, but a key question is, "When?" Numerous alarm bells are ringing in U.S. society about the increased professionalization of youth sport, including early sport specialization. While it is not clear what is considered early specialization, it may be characterized by intense training in one sport prior to puberty, middle adolescence, or perhaps prior to 12 years of age (Jayanthi et al., 2013).

SPORT SAMPLING AND MULTI-SPORT PARTICIPATION

An extensive and growing body of research has led many researchers, physicians, and sport administrators to question early specialization and its role in attaining high level performance. Indeed, recent findings from studies examining youth team sports point towards an approach that supports sport sampling and diversification as opposed to youth sport specialization. In a recent rigorous review, no study supports the benefit of improved sport performance with sport specialization versus diversified sports experiences, i.e. sport sampling (Kliethermes et al., 2019).

Sport sampling is the process of exposing children to a variety of sports experiences. It includes providing opportunities for youth to focus on free, unstructured play activities, participate in a variety of sports and not focus on sports practice. Multi-sport participation is a viable pathway to high-level athletic development. In fact, a survey of U.S. Olympians found that 7 out of 10 grew up as multi-sport athletes, with almost all saying that their participation in a variety of sports contributed to their successes (The Aspen Institute, 2020).

Benefits of Sport Sampling and Multi-Sport Participation

When youth participate in a variety of sports, it benefits their overall development. In fact, a review of research highlights the following:

1. Early diversification is connected to a longer sports career and has positive implications for playing a sport for a lifetime.
2. Early diversification results in participation in a range of settings that promote positive youth development.
3. A lot of deliberate play during sampling years facilitates intrinsic regulation and solid foundation of intrinsic motivation through involvement in enjoyable activities.

4. A range of motor and cognitive experiences are generated through deliberate play in the sampling years and can be transferred to their principle sport.
5. Early sampling does not impede elite participation in sports where peak performance is reached after maturation.
6. Around the end of elementary school with the sampling of sports practice, children should be at an opportune time to specialize in their favorite sport or stay at a recreational level.
7. Through diversification, older adolescents will develop the physical, cognitive, social, emotional, and motor skills required for investing their time into highly specialized training in one sport (Higgs, Balyi & Way, 2012).

As well as being a viable pathway to elite status, the practice of sport sampling has many positive physical and psychosocial outcomes. Research from Project Play shows that samplers have increased motivation, confidence, and self-direction (The Aspen Institute, 2020). Additionally, those who sample tend to have better transfer of skills to other activities, and for those who reached elite status, they did so with fewer hours of focused training (The Aspen Institute, 2020).

Finally, it's important to note that research examining sport specialization also concludes the following:

- Athletes who participated in between 2-4 sports between the ages of 11-15 years old were more likely to reach elite team sport participation than those athletes who specialized in one.
- Ten to twelve-year-old athletes who participated in multiple sports performed better in fitness and coordination tests than single-sport athletes (Kliethermes et al., 2019).

Risks of Early Specialization

Although public awareness is increasing and much evidence exists to support the need to adopt a diversification/sampling approach, the perception of early specialization in a sport in order to excel has been well documented and popularized. There may be an essential accumulation of hours related to sport-specific activity to achieve elite status success, and sport specialization may be a method to accumulate larger amounts of hours earlier. However, it has become increasingly clear that high degrees of youth sport specialization is associated with higher rates of injury, more specifically overuse injuries (Jayanthi et al., 2019). These injuries include Osgood-Schlatter disease, patellofemoral pain and Sinding-Larsen-Johansson syndrome. In fact, serious overuse injuries that keep young athletes out of their sport for at least one month (such as spondylolysis, osteochondritis dissecans, elbow ligament injuries, and stress fractures) are even more likely to occur in those highly specialized young athletes (Jayanthi et al., 2015).

In addition to physical stress, additional negative factors associated with specialization may include psychological and social impacts. Youth specialization can lead to maladaptive coping strategies, loss of motivation, mood disturbances including depression, and burnout (Brenner, 2007; Hecimovich, 2004; Jayanthi et al., 2013). High levels of specialization may be associated

with higher levels of daytime sleepiness, which has a detrimental carryover effect into virtually every aspect of the young athlete's life including injury risk.

Moreover, social isolation can occur, which can hurt the healthy formation of an athlete's identity. Intrinsic characteristics, such as perfectionism, and external factors, such as parents' and/or coaches' unrealistic expectations can also cause excessive psychological stress. Perhaps the most important consequence may be the ultimate attrition from tennis, sport, and perhaps physical activity. Aside from these individual risks, when the culture encourages sport specialization, many young players may be at risk for quitting youth sports.

Specialization can be safe and a wonderful thing for a child if the child is following a plan that is laid out by a trained high performance coach following science based parameters of technique and athletic skill development and being mindful of training volume and load.

Long-Term Plans for Athletes

Tennis has unique training and athlete development needs, however all sports carry physical and psychological risks through early single sport specialization. When enrolling your child into tennis programming, ensure they are getting a healthy balance between athletic and tennis skill development.

As a tennis coach and/or parent, if your child engages in early specialization, looking for the signs of physical and mental burn-out are important for a child's development and motivation (Roetert, Woods, & Jayanthi, 2018). When it comes to your child's training program, there is no "one size fits all" model. Monitoring how much fun the child is having and their engagement in developing are good indicators. It is important the child's interests are self-motivated, and incorporate necessary time away from tennis if signs start to appear that may lead to negative outcomes. Being aware of the player/child's motivation to play and improve, their energy level associated with the sport, and how much fun they are having are key factors. Budget some time monthly to review all the data collected that relates to these factors over the past month and, as a team (i.e., parent, coach, and player) plot the next month's training plan. It is imperative that the child's experiences are self-directed and diversified and that they incorporate necessary time away from tennis (at least 2 non-consecutive months/year), particularly in the pre-adolescent stages. From a growth and development point of view, children are not self-directed under 12 years old. They aim to please adults; therefore parents, coaches, and teachers are the ones guiding their choices. A child having fun is first and foremost when choosing a sport, but, like anything to improve and learn (which is part of having fun), there must be consistency and guidance from adults.

Knowing only a few athletes reach professional tennis status, the importance of sampling is a consideration for parents and coaches. Despite some anecdotal cases, in general, early sport specialization has not, on average, improved the likelihood of elite or professional level status in most cases, although it should be noted that there are some athletes that have early specialized and found success as a tennis athlete.

Sport sampling allows athletes to focus on their chosen sport and at the same time experience variety and creativity while playing in another sport. Sport sampling increases the likelihood for athletes to continue participation into adulthood (Gallant et al., 2017). When the time is right, athletes in consultation with their support group may choose tennis to specialize and dedicate their energy, time, and effort through deliberate practice and competitive play. At this point, other sports and activities can still have an important role, most likely serving as recreation during periods of rest and recovery from tennis training. The best time for sport specialization seems to be between the ages of 12-15 (for team sports), with individual variation based on physical, emotional, mental, and social maturity.

It is in the tennis player's best interests to consider their participation with a long-term perspective. Athletes can sample in many sports and significantly train in one, like tennis, and these decisions should be child-dependent and child-directed. If a child chooses to specialize, then they must be participating in an environment with trained coaches who are monitoring their overall development. A self-directed and diversified sports experience for young tennis players will likely meet the USTA's two main goals: 1. Increase the likelihood of lifelong participation in tennis, therefore improving the overall health of the individual and 2. Increase the number of junior tennis players that allow for a larger athlete development pool to identify those who may become elite-level players.

CHAPTER 9: TENNIS FOR ALL ABILITIES (4)

By Dr. Rujuta Wilson (TBC)

And

Coach

Tennis is an extremely versatile sport, and various transition equipment and modifications allow for accommodations so that individuals of all abilities can participate. In wheelchair tennis, for instance, the only rule change is that the ball may bounce twice (with the first bounce occurring within the court). For others with mobility issues but who do not use a wheelchair, modified equipment slows the game down and smaller courts with lower nets allow people to adequately cover the court. For those who are visually impaired, tennis balls with bells inside allow individuals to track ball movement. And for those with cognitive, processing speed, and/or sensory or stimulation issues, both catered and inclusive tennis opportunities exist (e.g., Special Olympics, Aceing Autism, etc.). The ADM takes ability into account and includes “years of experience” as guideposts for stage progression, thus providing pathways for those of varying abilities.

STAGES	ATHLETE	ATHLETE WITH DISABILITY
DISCOVER & LEARN	Age: Entry-11	0-3 years of athletic experience*
DEVELOP & CHALLENGE	Age: 12-18	3-6 years of athletic experience*
PLAY FOR LIFE	Age: 18+	6+ years of athletic experience*

*Number of years of athletic experience for an athlete before and after acquiring a permanent disability per US Paralympic guidelines

ATHLETES WITH DISABILITIES

Any person with a disability can participate in tennis for fun, excitement, and health reasons. An organized para-sport that focuses on high performance can be designed for all types of disabilities.

The Paralympic Games, the pinnacle level of sport for athletes with disabilities, is organized by the International Paralympic Committee (IPC). These Games are traditionally every four years, two weeks after the Olympic Games and in the same city. Along with these Games, the ITF (International Tennis Federation) officially recognizes Wheelchair Tennis at all four Grand Slam tournaments (the Australian Open, the French Open, Wimbledon, and the U.S. Open) as part of these professional events. There is also a year-end Masters Series Championships for singles

and doubles. These tournaments coincide with their able-bodied counterparts' year-end World Championships each year.

The United States Olympic and Paralympic Committee (USOPC) offers the following types of disabilities for wheelchair tennis athletes to compete:

Wheelchair user

Wheelchair Tennis can be for those individuals who use a wheelchair for mobility. The individuals that use a wheelchair may have a spinal cord injury, may be amputees, or may have other types of disabilities that require wheelchair use.

Amputee

Amputees are individuals that lack limbs or limb segments. An individual must have a lower-body amputation which requires use of a tennis wheelchair in order to participate in wheelchair tennis.

Congenital, Neurological, Viral/Bacterial Disease, Traumatic...

The most common examples of these situations/conditions could be: cerebral palsy, spina bifida, muscular dystrophy, multiple sclerosis, transverse myelitis, polio, arthritis, arthrogyposis, stroke, and infection.

Classification

Classification is a necessary part of participating and competing in sports for athletes with disabilities. The reason to have classification in wheelchair tennis is to facilitate the need for each athlete to compete against others with almost the same degree of disability. Regardless of the nature of the disability, there is always a full spectrum of levels of disability from minimal to very severe.

Early in the careers of athletes with a disability, they are more likely to be classified by "self-classification" or by local, less qualified classifiers, and most likely an error can be made in classification. It is essential for athletes right from the beginning to be classified accurately ([Rules and Regulations | ITF](#)).

Equipment

Specialized equipment, such as tennis-specific wheelchairs ("all-sport" are acceptable) and prostheses (if needed) are required to play wheelchair tennis for athletes with a disability. Sometimes this involves adapting regular sports equipment so athletes can make maximum use of their physical capabilities. Although this could pose a problem for adult athletes, it is a common problem for children and youth with disabilities, who can outgrow expensive artificial limbs or wheelchairs. Consideration is required for youth as there could be no child-sized equipment available. Ideally, for parents and coaches, they should seek modified equipment in the beginning stages of playing wheelchair tennis (Balyi, Way & Higgs, 2013).

Accessible Facilities

To ensure a positive sporting experience, athletes with a disability require access. Access is needed for all parts of the facility, not just the playing area. The following areas are shared as a starting point (Balyi, Way & Higgs, 2013):

Entrance

Does the entrance to the facility have steps that would make it difficult/challenging for a wheelchair user to enter? Would a “ramp” be necessary for complete accessibility?

Changing facilities

Is it easy for an athlete with a disability to enter the changing rooms, shower facilities, and toilets, and is it possible for this athlete to obtain privacy if needed?

“Internal” Accessibility/Function

Is it easy to get from the changing facility to the tennis court? Is accessibility considered “reasonable and functional” throughout the entire facility?

Signage

Does the signage allow for barrier-free routes?

Welcome

Does the tennis facility have “welcoming” signs for athletes with a disability?

KNOWLEDGEABLE COACHES AND OFFICIALS

Traditionally, individuals working with athletes with disabilities came from disability groups. Overall, they were very knowledgeable about disability and adapting physical activity, but not well versed about sport and coaching. Recently, with more awareness and professionalism of disability in sport, tennis being no exception, athletes are working with able-bodied coaches with more knowledge and tennis specific expertise (Gregan, Bloom, & Reid, 2007). Coaches are currently moving towards a holistic approach to knowing more about disability in general and how to coach a person that may have a specific set of needs, depending upon the disability that they have.

In the first stage of the ADM (Discover and Learn), athletes with disabilities require coaches with positive attitudes, as well as technical and tactical knowledge to give them the right fundamentals. As the athlete develops their skills through the second and third stages of the ADM, the attention goes towards quality coaching and correctly prescribed periodized training programs become imperative. At the highest levels of para-sport, athletes may train under the same coaching staff as their able-bodied counterparts. Athletes with disabilities require officials to understand the rules specific to para-sport. This way they can best interpret and apply the rules at a level consistent with the athletes’ stage of development (Balyi, Way & Higgs, 2013).

COMPETITION

Meaningful competition for athletes with disabilities can be challenging to achieve. The difficulty stems from the system of classification used in para-sport and the lack of the number of athletes participating at that level in a community.

To allow level-based play competition for athletes with a disability, athletes need to compete against others with the same degree of disability. In small and medium-sized communities, the number of athletes that have the same degree of disability and the same playing level is meager. To overcome this, coaches and tournament organizers need to be creative in allowing those who would not regularly compete against each other do so.

In able-bodied sport, we are aware that achieving high performance takes time, roughly 8-12 years of practice. This is the same in disability sport, with some exceptions being an individual's experience and aptitude for athletics pre-injury/disability, which may allow that individual to be competent enough to progress very quickly and compete at an international level.

Participation in sport for an athlete with a disability is more like an able-bodied sport than it is different. The USTA's vision statement, "Tennis is a sport for a lifetime" resonates true as well in wheelchair tennis. Whether beginning the sport as a junior player or entering the sport later in life, wheelchair tennis can be associated with not only an improved social life, but helping each individual's physical well-being, as well as leading a healthy lifestyle (Balyi, Way & Higgs, 2013).

CHAPTER 10 QUALITY COACHING AND OFFICIATING

By Christopher Snyder

And

Coach

Quality of coaching directly affects the quality of the athlete's sport experience. The appropriate coaching can assist athletes obtain their full potential and inspire a long love of sport and physical activity. Inappropriate types of coaching can have the opposite effect, leading to burnout, dropout, injury, and loss of enthusiasm. The right kind of coaching should therefore become standard practice for all American athletes in all sports.

Quality coaching has three different components: essential coaching knowledge, athlete-centered outcomes, and contextual fit (coaching environment). All three components are needed to deliver quality coaching in any particular situation (United States Olympic & Paralympic Committee, 2017).

ESSENTIAL COACHING KNOWLEDGE

Coaches require knowledge in a multitude of areas, as coaching is complex with many roles and responsibilities. There are three broad types of coaching knowledge.

Professional Knowledge: Know your sport and how to teach it

Coaches should:

- Have a good understanding of the sport's culture, tradition, rules, and history;
- Be aware of the skills, tactics, training, and safety requirements of the sport;
- Perceive athletes' development and learning needs, and
- Be able to apply their knowledge (USOPC, 2017).

Interpersonal Knowledge: Know how to relate to and lead others

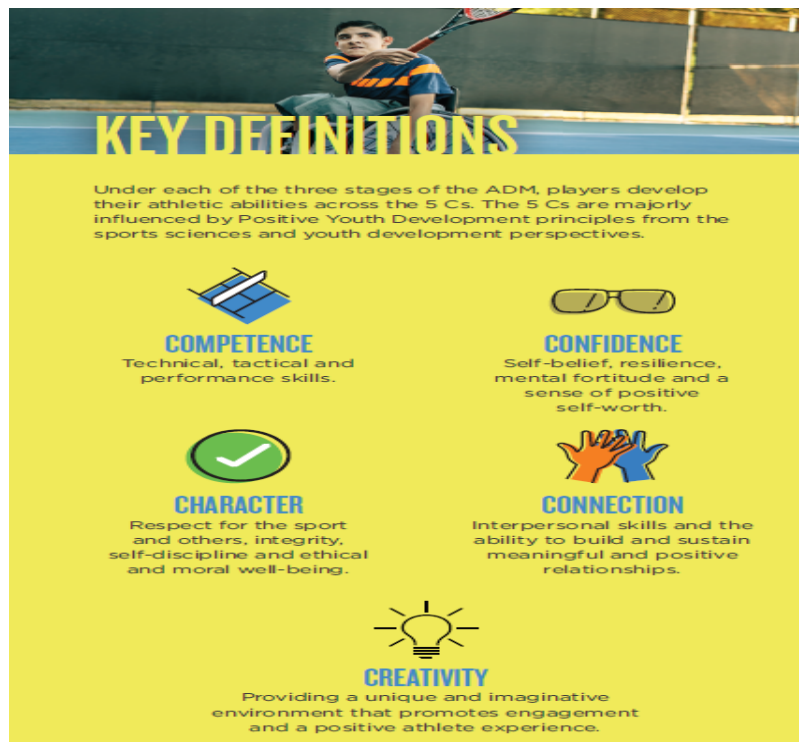
Coaches should have the ability to engage and work effectively with all stakeholders in a sports setting, including officials, administrators, parents, and programmers. They should also be cognizant of and be in control of their emotions, as well as show great leadership skills (USOPC, 2017).

Intrapersonal Knowledge: Know yourself and how to sustain improvement efforts

Coaches require a clear set of core values and a strong sense of purpose, and must continually be able to maintain perspective and balance. They need to be aware of their strengths and weaknesses, and have the desire to reflect and strive for improvement.

ATHLETE-CENTERED OUTCOMES

The need to develop the whole athlete should be a consideration for all coaching objectives and actions. Coaching for an athlete's holistic development and well-being requires taking into account the emotional, personal, cultural, and social identity of each athlete and how this identity influences sports development and performance. This applies to the entire athlete development spectrum - from young children to master athletes. A common framework for setting comprehensive athlete outcomes is the Four C's model (USOPC, 2017). The USTA, within the ADM's key definitions, has added a fifth C, creativity. The USTA believes in the benefits and power of allowing athletes to define their tennis experience and shape their tennis game in a way that fits their strengths and personality.



CONTEXTUAL FIT

These days, in the age of the internet, there are numerous coaching and training activities available online. These prescriptive coaching sources, although very accessible, should not be implemented without attention to context. Quality coaching entails the ability to adjust one's coaching knowledge to the specific requirements of the athlete, and align with the specific coaching context (USOPC, 2017).

CONSTRAINTS-LED APPROACH

The ever-changing game conditions in tennis suggest that decision-making and action be defined on a moment-to-moment basis. The USTA's belief is that the constraints-led approach is the optimal framework for coaches to use when structuring practices, and as such, this

approach has been built into the Net Generation curriculum. Within this approach, the coach is a designer/manipulator of various constraints on the players. These constraints are designed to help the players in acquiring new skills and refining existing ones, with the goal of ultimately improving their play.

Constraints, which concurrently interact to channel behavior, can occur in three main categories: (1) the task, (2) the environment, and (3) the player or learner. When learning tennis, the modified equipment used is an example of environmental constraint. Slower balls, smaller racquets, and smaller courts are used, and learning activities are designed with various task constraints. For more skilled players, coaches can apply constraints to shape the practice situation, thus focusing learning and/or improvement on targeted areas. During a tennis rally, the opportunities to act are offered by the situations that arise from the continuous relationship between the player and his/her opponent, and the player must be perceptually in tune with the match characteristics that inform how and when to act to achieve a goal. It is important to acknowledge that the player does not passively receive information, but seeks it. Improving the ability to act successfully results primarily from increasing the perceptual attention to relevant properties of the environment, thus guiding action to achieve a goal (Davids, Button, & Bennett, 2008).

OFFICIATING by Officiating Department

Positive consumer experience must also include the fair play theme - USTA Officials ensure that each competition is fair for players involved. They ensure a positive experience for players, providers, and spectators. While knowledge and application of rules and regulations are important skills for USTA officials to have, the USTA focuses on developing well-rounded officials. The USTA includes training on communication strategies, conscious and unconscious bias, and conflict resolution, with an aim for officials to have the skills to provide a positive consumer experience. Officials are not just adjudicators but also educators and ambassadors of the game.

Education and Training Resources

The USTA provides a diverse selection of educational resources and experiences for officials. An online learning center containing 13 courses is complemented by in-person workshop experiences held around the country. Live and recorded webinar events are also offered with the goal of making education and training accessible to all officials.

For Community Officials who aspire for a professional career, the USTA provides Centers of Excellence in the disciplines of Roving Umpire, Referee, Chair Umpire, and Line Umpire. These officials are expected to take their Center Of Excellence knowledge back to their local communities to help improve officiating consistency across the country.

Similar to the development of the athlete, the USTA provides coaching and mentoring to officials to help them grow.

Values

USTA Officials have a set of core values that they live and breathe each time they take the court to officiate a match. The essence of the Officiating Manifesto is that officials are always striving to create the ultimate tennis experience for all participants.

WE ARE USTA OFFICIALS
THE ULTIMATE TENNIS EXPERIENCE BEGINS WITH US
WE DON'T JUST MAKE CALLS
WE MAKE OUR SPORT FUN AND FAIR
WE DON'T JUST OVERSEE THE GAME
WE ARE AMBASSADORS FOR THE SPORT

WE TEACH
LEARN
LISTEN
LEAD

OUR DIVERSITY GIVES US STRENGTH → **OUR MISSION UNITES US ALL**

SET THE STAGE FOR TENNIS AT ITS BEST

USTA OFFICIATING

The graphic is a dark blue rectangle with white and light blue text. It features a large 'WE' in the background. A dotted arrow points from 'OUR DIVERSITY GIVES US STRENGTH' to 'OUR MISSION UNITES US ALL'. The USTA Officiating logo is at the bottom right.

Fig. 6.1 USTA Officiating

Development Opportunities

Just as players increase their competency as they progress through the competition pathway, officials do as well. Starting in Net Generation play events, trained Play Facilitators focus on ensuring a great first experience for young players through education and youth targeted communication. USTA Officials begin working in the competitive structure where they adapt their approach to the level of play. Officials' performance is evaluated and for aspiring officials, the lure of officiating at the highest levels of community tennis and the professional game is available. Providing a fair and enjoyable experience through officiating is paramount to the growth of tennis.

CHAPTER 11: PARENTS

By Dr. Dan Gould

And

Coach

Being a parent of a child who plays sports is no easy task and is a much larger responsibility than just being a parent. Considering the parenting chores of clothing, feeding, loving, supporting (materially and emotionally), and educating children, the added responsibility of being a sporting parent includes financing children's sport, providing the necessary sporting attire, transporting them to practices and competition, volunteering time, and guiding them through the emotional roller coaster that is apparent in youth sports. Other factors to consider include the toll on the family financially and emotionally, the marriage, the opportunity costs the family incurs, and parent and sibling needs and interests.

We see parents as a resource to enhance children's performance, enjoyment, motivation, and overall positive youth development. The parent-child sports relationship is essential because when children perceive their parents as supportive, they experience increased enjoyment and motivation, higher levels of performance, and an improved parent-child relationship. With the strategies and tools outlined in this support guide, we hope that parents will be empowered to assist coaches and sport practitioners in creating a positive learning environment for the young athlete(s). We believe children will potentially fall in love with youth sports in general and tennis due to the many health benefits, individual and team formats of participation, and the ability to play for a lifetime.

YOUTH SPORTS

Playing sports can be a unique environment in which to raise children. The benefits they receive from athletic participation are plentiful. Children experience the brilliant benefits of physical health and activity, including exercise, fitness, vitality, and mastery. Children also learn more about themselves, including how to think, how they feel, and how they conduct themselves and perform in a variety of sport-related settings.

Psychological and emotional areas in which sports assist children, to name a few, include:

- Understanding their passions
- Commitment
- Confidence
- Focus
- Discipline
- Resilience

The knowledge gained through sports experiences can play a significant role in how children grow and whom they become as adults. An active life can shape their self-identity, self-esteem, goals, and future directions their lives take. Sports can also impact children's social

development. The opportunities young athletes face in terms of teammates, coaches, teamwork, competition against opponents, and rival teams can have a considerable effect on how they learn to communicate, respond to conflict, and develop relationships as they progress toward adulthood. The mentorships they build with coaches and the friendships that transpire with teammates can leave a lasting impression. More importantly, the relationship you develop with your child can leave them with a lifetime of family memories and also provide the foundation for lifelong connection based on love and common interest. Playing sports, children develop the ability to learn and practice, and they ingrain essential physical, personal, and social skills in preparation for adulthood. Sports, in general, can resonate deeply with children.

Playing sports is just plain fun. Sport is a form of organized play, and children love to play. The simple act of playing sports, whether running, jumping, throwing a football or baseball, kicking, hitting a tennis or golf ball, impacts children in such a wholesome and untouched way that is evident in their smiles and laughter.

Playing sports is a beautiful way to help your children grow into successful, happy, and accomplished people.

Values

The values you as a parent convey to your children provide a lens through which they view their sport participation. With that in mind, we recommend that you are thoughtful, deliberate, and proactive in introducing your children to values. These values will lead them to fulfill an enjoyable athletic experience, a positive lifelong relationship with sports, and a strong influence of sports in their personal and social development outside of sports.

In terms of your child's sports involvement, their values will dictate how they think. For example, if you impart the importance of effort and fun over winning, they will focus on those values when they approach competitions, just like if you prescribe the values of winning over trying their best.

The thinking that transpires from the values your young athletes hold will produce specific emotional reactions when they participate in their sport. Keeping with the previous example, if the emphasis is on effort and fun, they will likely experience emotions like excitement and pride as they approach competitions.

The values that your children show and express in their sport participation will clearly define the following statements:

- This is who I am.
- This is what I value.
- This is what I stand for.
- This is what guides my sports participation.
- This is how I will behave.
- This is what I want out of my sports participation.

The following list of values will serve your children as they get involved in their active lives and leave youth sports experiences behind them:

- Honesty

- Commitment
- Strong work ethic
- Pursuit of personal experience
- Love of sport
- Fun
- Respect of self and others
- Sportsmanship
- Humility
- Teamwork
- Patience
- Perseverance
- Resilience
- Best effort
- Embrace failure
- Balance in life
- Physical health

A suggestive way to introduce your children to the importance of healthy sport values is to also identify unhealthy values in sport and assist them in distinguishing the differences between positive and negative values. Some negative values:

- Winning is the ultimate goal
- Bravado
- Selfishness
- Machismo
- Winning at any cost
- Demeaning the opposition
- Pursuit of fame and fortune

To understand what values you have as a parent and what you communicate with your children regarding their sport experiences, pose the following questions to yourself:

- What values were you raised on in terms of sports participation?
- What do you value in your child's sports participation?
- How do you spend your money and time related to sports?
- Will the values you've identified bring your children meaning, satisfaction, and enjoyment in their athletic lives?

A parent's role in determining the sports experience of their child is one of support and guidance. In the context of the USTA's American Development Model, the below are recommendations to help children receive a positive experience with tennis:

- Inquire to see if the facility being considered has trained and certified coaches with a Safe Play certificate.
- Encourage the child to sample multiple sports to help their physical literacy and prevent burnout and overuse injury.
- Recognize and celebrate children's efforts and improvements over wins. Support and model good sportsmanship.
- Seek out age-appropriate programs and activities to promote healthy progression and improving skills before playing competition.
- Keep track of the amount and duration the child is training and competing on a weekly and monthly basis to facilitate the right time for rest and recovery.
- Stay connected to the tennis coach to be aware of each child's progress and development. Net Generation has tools that can assist coaches in giving parents skill development evaluations.
- Ensure children are having fun in tennis and other sports. Fun is a huge determinant of continued participation in a sport.
- Tennis is a safe, healthy, lifetime sport that encompasses players of all ages and playing levels.

Parents, as with the case of coaches, are an integral component for youth to have a great experience playing tennis. Supporting parents with developmentally appropriate education is a key consideration for the USTA's ADM. This chapter only provides an overview; more detail will be provided through other resources directly targeting parents of youth tennis players.

CHAPTER 12: MODIFIED TENNIS EQUIPMENT (5)

By Dr. Karl Davies

And

Coach

Modified tennis equipment has been used over the past 40 years. It started receiving more attention worldwide in 2007, including from the USTA, with the International Tennis Federation's Play and Stay Campaign. This campaign looked at the promotion of modified equipment with players starting to play the game. In recent years, the research into the benefits and reasons of using modified equipment has intensified. The findings have been overwhelming in support of the use of modified equipment to engage beginner tennis players. The reason for its inclusion in this manual is to present the need to use modified equipment and ensure more athletes are retained and are able to keep playing for a lifetime.

From growing concerns and physical demands imposed on children by adult constraints in sport, the need to scale equipment and modify games to match the physical capabilities of children was first introduced in the 1970s (Winter, 1980). Combined with a focus on competition, and especially on winning rather than skill acquisition and fun, sports organizations realized that this accounted for the increasing proportion of children dropping out of the sport before reaching adolescence (Australian Sports Commission, 1991). Therefore, modified games and scaled equipment were encouraged in school sports programs (Winter, 1980).

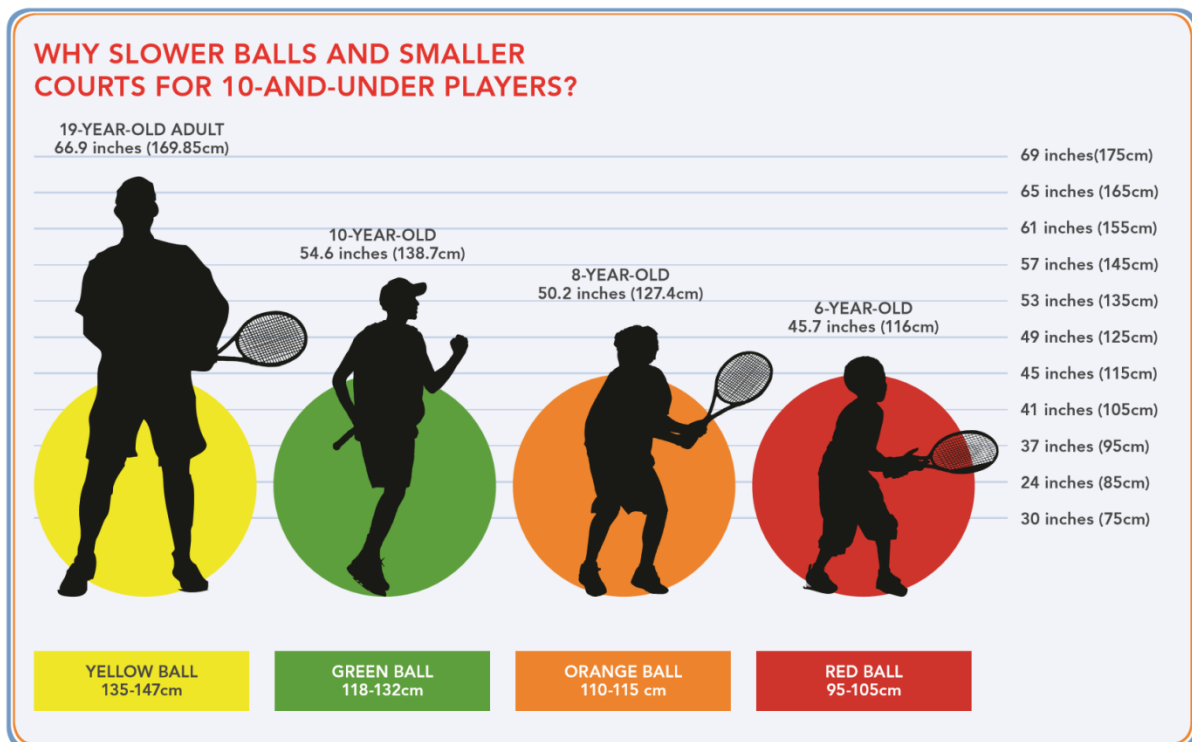
The justification of scaling sports for children is strong. Consider seven year-olds playing basketball on a full-scale court with a full-sized ball, or six year-olds playing tennis on a full-size court, with a full-sized racket, and a ball that bounces over their heads. In both examples, children will experience difficulty in achieving successful play (Buszard et al., 2016).

Equipment modification has occurred in many sports in recent years, and tennis is no exception. Modifying equipment looks at adapting the full version of a sport in a manner that corresponds with the growth and development of children (Guggenheimer & Larson, 2013). Modified equipment use in tennis was mostly an area without investigation, but recently the topic has been given some attention. Considering the importance of adapting tennis to the varying needs of children, researchers to date have shown that the use of modified court and equipment has facilitated improved skill acquisition and resulted in more fun (Farrow & Reid, 2010), more implicit learning (Buszard et al., 2014), improved forehand performance (Guggenheimer & Larson, 2013), increased rally speed, lower strike height on groundstrokes, and more play at net in elite junior tennis level (Kachel et al., 2014).

Specific to tennis, modified equipment, consisting of low-compression balls, lighter and shorter racquets, reduced net heights, and smaller courts have been in use for several decades (Winter, 1980). However, many of these modifications have been introduced based on the argument of a need for modified equipment and not from scientific evidence. Since 2010, there have been numerous studies around this topic, and the findings fully supporting the use of modified equipment with beginner tennis players of all ages (Buszard et al., 2014; Farrow & Reid, 2010; Guggenheimer & Larson, 2013; Kachel et al., 2014). Using a tennis ball that

bounces lower compared to a traditional ball allows children to contact the ball at a more suitable height. Therefore, because children can hit the ball at a more appropriate height, it increases the chances of developing suitable movement patterns for tennis groundstrokes.

Researchers who have studied task/equipment scaling in tennis (Buszard et al., 2014; Farrow & Reid, 2010; Guggenheimer & Larson, 2013; Kachel et al., 2014) have shown potential benefits for children using lighter racquets on smaller courts with low compression balls. A lower compression ball travels slower through the air and bounces lower than a standard ball. This enables the player to hit the ball with better technique and more power despite the fear of the ball traveling out of the court (Farrow & Reid, 2010).



Average height of males and females combined (World Health Organization, 2007). ITF rebound height specifications for approved balls.

Fig. 8.1 Average height to rebound height of approved tennis balls (ITF, 2012).

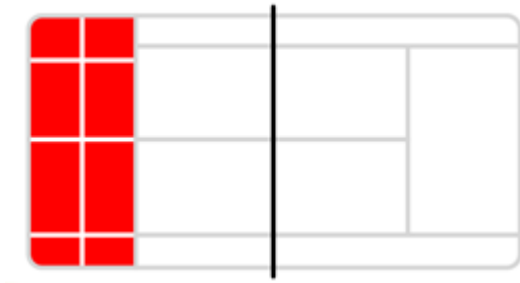
The use of modified equipment has taken a roller coaster ride throughout the tennis community worldwide. Much criticism has come from coaches who feel that the method previously followed (no use of modified equipment) was good enough and helped with players of all levels. Coaches who have tried to adopt scaled equipment with their tennis players, because of a lack of experience or knowledge, are unaware of what competencies are needed or what it means for a player to move from one stage to the next (through each ball color, for example). As part of the USTA's Net Generation youth brand, curricula have been created following established competencies for each stage of a modified equipment program. By having competencies for each stage, coaches are able to guide their athletes as they take their personalized journey to the yellow ball.

RED BALL

The tennis journey starts with red. Red balls can be made of foam or felt, are larger, bounce lower and travel slower than the standard yellow ball, making it easier to learn and acquire skills.

Court size: 36' x 18'

Red Courts are short and narrow, making it easy for players to focus on learning the fundamentals of the game.



RACKET SIZES

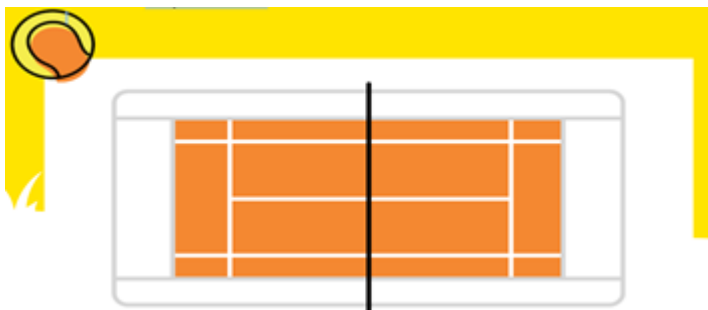
19"-23" racket sizes

ORANGE BALL

Orange balls travel through the air a little faster and farther than the red ball, but are the same size and still bounce lower than a yellow ball.

Court size: 60' X 21' - OR - 60' X 27' (Doubles)

Slightly smaller than the full-size 78' court, Orange Courts are ideal for players who are still developing their athletic, technical, and competitive skills.



RACKET SIZES

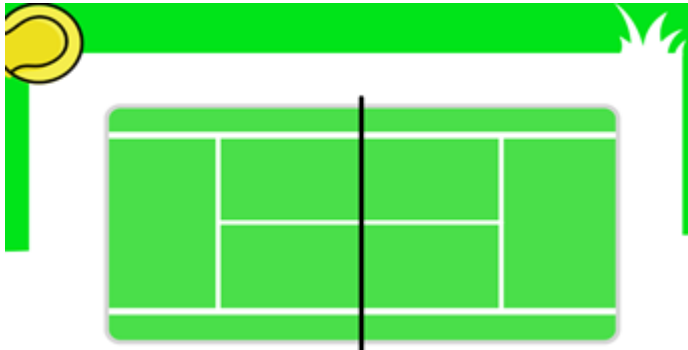
23"-25" Racket sizes

GREEN BALLS

Green balls have a slightly reduced bounce compared to the yellow ball, making the transition to a full-size 78' court much easier.

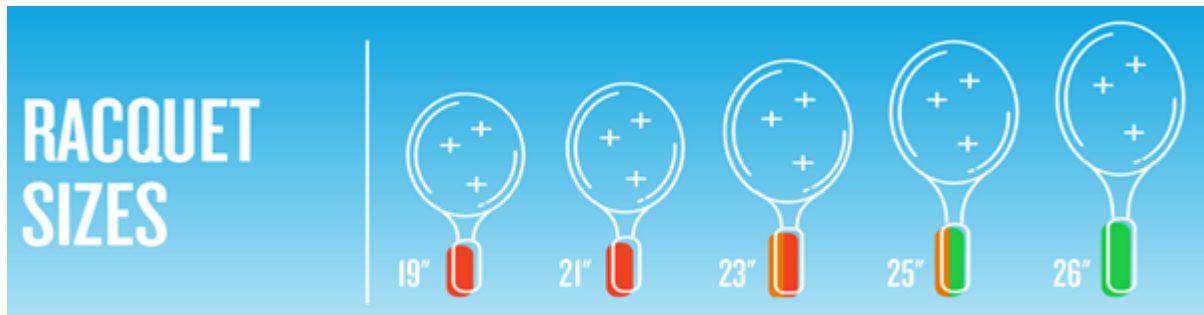
Court sizes: 78' X 27' - OR - 78' X 36' (DOUBLES)

At this stage, while continuing to improve their tactical and technical skills, a player's size does not hinder their ability to cover a full-size tennis court.



RACKET SIZES

25"-26" Racket Sizes



TOP 6 REASONS TO USE MODIFIED EQUIPMENT

Why using modified equipment is great for children learning to play tennis

1 MORE FUN



Using modified equipment is more fun! [1, 2, 4, 9, 13, 17]

2 MORE SUCCESS

Slower balls allow beginners to hit more shots in the court, more often. [1, 2, 5, 6, 10, 18]



3 BETTER LEARNING

Players learn more and faster. [2, 5, 10, 11, 12, 18]



4 SMARTER TACTICS

It helps players to make better decisions. [5, 12, 18]



5 BETTER TECHNIQUE

Players develop better swings, contact points and make less errors. [1, 2, 5, 6, 10, 12]



6 SAFER TO PLAY

The right equipment can prevent injuries. [7, 11, 14, 15, 16, 19]



References
 [1] Buszard et al (2014); [2] Buszard et al (2016); [3] Coldwells & Hare (1994); [4] Farrow & Reid (2010); [5] Fitzpatrick et al (2016); [6] Gagen et al (2005); [7] Groppel & DiNubile (2009); [8] Haake et al (2000); [9] Hamilton & McFarlane (2005); [10] Hammond & Smith (2006); [11] Ishihara et al (2017); [12] Kachel et al (2015); [13] Larson & Guggerhetmer (2015); [14] Pluim et al (2007); [15] Pluim et al (2017); [16] Reid et al (2018); [17] Stanbridge (2003); [18] Timmerman et al (2015); [19] World Health Organisation (2017).

Fig 8.2 ITF Top 6 Reasons to Play with Modified Equipment

The use of modified equipment is an influential component of introducing the game of tennis to beginner and intermediate players of all ages for the USTA's ADM. A comprehensive approach was taken when putting the curriculum together to engage coaches of all profiles from PE teachers, to non-certified coaches, and certified coaches. The justification of this approach is hopefully understood after reading this chapter.

CHAPTER 13: COMPETITION (6)
By Tracy Davies and Megan Rose
And
Coach

The importance of having competition fit the playing level and objectives of the athlete is paramount under the USTA's American Development Model (ADM). This is the case not only for tennis but for all sports. Research suggests that one of the reasons for the large number of youth leaving sports is because playing sports is not fun (Knight, Harwood, & Gould, 2018). While "fun" may have different contexts, upon further analysis, sports have lost their fun because they have become too serious and stressful (Visek, Achrati, Mannix, McDonnell, Harris & DiPietro, 2015) This is largely due to the way competition is structured. The competition formats for youth have become more aligned with an adult model of delivery, but children don't have the same capacity to understand the adult model of competition (Hainline, 2012). More understanding and application is required to make sure that competition meets the needs of kids. The USTA is addressing this concern by ensuring players are playing in the right competitive events designed for their developmental level. This process was embarked upon in 2018 when the USTA engaged the University of Central Florida (UCF) to make an analysis of its competitive pathway. A few of the findings and needs that resonated and have been used to change the landscape of USTA competitive pathway are:

- A competitive pathway that is easy to find and register for, that supports local play, is affordable, is a blend of rankings and ratings, and supports multi-sport participation
- Competitive events that are well-run and officiated
- Better-trained coaches to help with participation in competition
- Youth progression that is based on skill development
- A team competition pathway for all skill levels (UCF, 2018)

Some important guidelines to share when it comes to the development of a tennis competitive pathway are:

COACHES DEVELOP THE SKILLS OF THE ATHLETES TO TRY THEM OUT IN COMPETITION

The essence of competition is winning and losing, and coaches train based on the format of the competition. If the competition is skill-based, coaches will train skills. If athletes are rewarded for fair play, coaches will encourage fair play (Gimeno et al., 2013). Therefore, under the USTA's ADM, a hard look is taken in terms of how the USTA offers competition. It is an essential goal for the USTA to offer developmentally appropriate competition.

ENSURE THAT COMPETITION IS MEANINGFUL

The word "meaningful" in this context implies an opportunity to challenge oneself as well as experience success in a variety of competitive areas, including but not limited to winning (Balyi, Way, & Higgs, 2013). Giving youth players the opportunity to strive to achieve success, while

not focusing exclusively on the outcome (winning), helps to keep the competitive elements in perspective and develops strong resiliency and work ethic. When there is an uncertainty of the outcome, sport development, excitement, and enjoyment are the byproducts.

AWARENESS OF TRAINING-TO-COMPETITION RATIOS

There are many factors to consider in establishing training-to-competition ratios; ultimately, playing a sport that involves training and competition should be a fun and fulfilling experience. USTA Player Development have the below training and competition recommendations as per the model's three development stages.

Stage 1 Discover and Learn	Stage 2 Develop and Challenge		Stage 3 Play and Compete
Ages 0-11	Pre-Puberty: Girls ages 11-13 Boys ages 11-15	Post-Puberty: Girls ages 12-16 Boys ages 15-18	Girls 15+ Boys 18+
Training Time Recommendations			
Days / Week			
2 - 5	3-6	4-6	5-6
Tennis Training time/day			
0.5 - 1.5 hrs/day	1.5 - 3 hrs/day	3-4 hrs/day	3-4 hrs/day
Tennis Training hrs / week			
	Age +1 effect: 12 - 16 At least 1-2 days off/week	Age +1 effect: 13-19 hrs/week At least 1-2 days off/week	Age +1 effect: 16-20 hrs / week At least 1 day off/week
Athletic Development / Multi-sport time / day Strength and Conditioning / Injury Prevention time/day			
30 mins/day	45 mins/day At least 1-2 days off/week	45 mins - 60 mins/day At least 1-2 days off/week	45mins - 90 mins/day At least 1 day off/week
Ratio Tennis: Athletic Development			
1:1	2:1	3:1	4:1
TOTAL hrs / week			
2 hrs - 10 hrs	14-20	16-22	*Total number of hours based off individual needs.
Number of Events Per Year			
up to 12	up to 15 for 11 - 13 year olds (up to 60 matches)	15 - 18 for 12 - 15 year old (60 - 80 matches)	20 - 30
	up to 18 for 14 - 15 year olds (up to 80 matches)	20 - 25 for 16 - 18 year olds (70 - 90 matches)	
Win/loss ratio (consider quality of matches)			
	2 to 1 or 3 to 1	2 to 1 or 3 to 1	2 to 1

ENSURING COMPETITIONS ARE DESIGNED FOR KIDS

All stakeholders need to understand the purpose of competition, and this understanding must be acquired within the developmental lens (Hainline, 2012). Participation in competition is largely seen as a way to promote retention but is also a cause to kids dropping out of sports. Understanding how kids grow and develop is necessary when staging competition to promote lifelong participation in sports.

ENDORING THE NEED TO WIN AT THE RIGHT TIME

Research suggests that children in sport rate fun, love of the game, and social connections ahead of winning as reasons for playing. When staging competition, it is essential to consider the athlete's objective of participating in competition in mind. A consideration when staging competition is making sure it is developmentally appropriate when it comes to positioning the need to win. It is recommended in the first stage of Discover and Learn (Entry-11 years old) to have little emphasis on winning. As the athlete becomes older (Develop and Challenge stage-12

years and older) their coping skills develop and are better to understand the need to win (Balyi, Way, & Higgs, 2013).

THE NEED FOR COACHES TO ASSIST AND GUIDE THE ATHLETE THROUGH THE COMPETITION PROCESS

Understanding the need for skill development and winning is important for players, parents, and coaches to understand. Recognizing that striving to win, learning to compete, and the commitment to effort even when things are hard are more important for long-term athlete development than winning (Lauer, Gould, Pierce, Wright & Nalepa, 2016). The tennis journey is a long term process and understanding how competition fits into that developmental pathway is necessary for all stakeholders.

The following points provide more understanding on the development and winning characteristics of playing competition. How they work together is important in the context of competition. Coaches need to take into consideration both aspects in their player's development (Balyi, Way, & Higgs, 2013):

Development

- Play many game situations
- Let players make the decisions
- Develop and practice skills
- Work on athletic development
- Include everyone in team competitions
- Ensure fun and development
- Reduce the amount of stress
- Keep track of retention rates

Winning

- Specialize
- Directive instructions
- Practice and work on tactical situations
- Focus on the best and talented players
- Play games
- Awareness and focus on win-loss record

Appreciate the purpose of sport as a way of being healthy

Kids participate in sport for different purposes. Some reasons stem from a love of the game, others to be active and/or develop their athletic skills, and others to be with their friends (Taylor, 2016). Coaches need to understand the reasons their athletes play. And ideally, competition will be positioned based on these reasons.

Ultimately, sports serve a purpose to maintain a healthy lifestyle while gaining valuable life lessons, as well as facilitating youth in becoming good decision-makers in education, business, and family life (Hainline, 2012). It is the role of competition to make sure it is staged with the lens of keeping youth engaged in sports. Having competition as a facilitator of negative experiences because of a lack of developmentally appropriate understanding is not an attribute of the ADM. As per one of the key principles of the ADM having developmentally appropriate competition is a major consideration for its framework.

CURRENT TRENDS IN COMPETITION

The overall goal of the ADM is twofold: (a) to increase years of healthy living for all US citizens, and (b) to increase the pipeline of elite level players (USOPC, 2020). With this backdrop, it is important to look at current trends within the competition landscape that detract from this goal. Some of these are controversial issues, but they need consideration to ensure youth can and will choose to play sports for a lifetime (Balyi, Way, & Higgs, 2013).

Specifically, point chasing/ranking and ratings will be addressed:

Point Chasing/Ranking

Offering points based on winning causes the following situations that, if not done in a controlled environment, could lead to adverse outcomes.

- Athletes' development is potentially limited as they are too focused on winning and therefore minimizing risk and curtailing creativity.
- In order to achieve more ranking points, an athlete is, in some cases, over-competing.
 - Tournament directors seek sanctions so they can take advantage of the point chasing race to encourage participation.
 - Athletes with more financial resources can afford to play more events to attain those ranking points.
 - To be able to satisfy the demand of chasing ranking points, more tournaments are needed.
 - Athletes who live farther from ranked events are at a disadvantage to those who live closer.
 - Sometimes undue pressure is asserted by parents to the coach in order for their child to have a better ranking and indirectly win, which can in some cases, be a detriment to their long-term development as a player.

Rating

An alternative to the point chasing/ranking approach is the rating approach, creating level-based play. This approach facilitates the best experience by matching players of similar ability to

compete against each other (Hainline, 2012). A person's rating is based on performance and they have the ability to play up in a higher rating or age group.

Strengths of the Rating approach

- Meaningful competition
- Safer as it is not solely based on wins
- Better experience due to level based play
- Increased retention as competition is based around level of play
- More opportunities to succeed
- Increased recruitment as more understanding of the nature of competition

- Pathway to excellence

Weaknesses of the Rating Approach

- Athletes labeled a certain level, and perception is that they cannot move up
- Tough on the psyche when a rating drops
- Not enough competitions at relative rating
- Children separated from friends with different playing levels

- Lower rated players not able to play against high rated players

HOW IS COMPETITION STRUCTURED TO REWARD DEVELOPMENTALLY APPROPRIATENESS?

In order for the USTA to offer a developmentally appropriate competitive pathway, a holistic approach is required. This holistic approach involves consideration of a variety of concepts, as detailed below.

As youth tennis players move through their tennis journey, their experiences, from both training and play perspectives, should change and adjust to help them improve their abilities (i.e., for optimal long-term development). Competition can and should always be a part of that journey, but it needs to be structured appropriately depending on where the player is on the journey (Hainline, 2012).

The following points should be well thought out with regard to modifying competition for youth and are encompassed within the USTA's pathway:

- Optimal sport-specific competition ratios are needed for all stages of the ADM.
- The level and duration of the competition should be in tune with the changing needs of athlete programming.
- The developmentally appropriate competition is crucial to technical, tactical, and mental development at all stages of the ADM
- The teamwork environment needs to be set between coach and parent in making the appropriate competition choices.

- Traditional, current structures of competition should be adapted to facilitate the training and performance of the athlete.

It is important to consider how to structure and administer competition, as it needs to be relevant to the athlete's development. Introducing kids to high-pressure competition before they have developed the skills and capacities necessary for coping will likely have a negative impact and could cause dropout.

The pressure can come from the child, but more often, it comes from parents or coaches who determine success on wins and losses, not the holistic development of the child (Lauer, Gould, Pierce, Wright & Nalepa, 2016). For children and youth, sport should not be all about winning. Emphasis should be on development, inclusion, and positive experiences. This is not to say that competition should have no part in youth's sport development, however creative formats are needed to keep the engagement of the athletes. Many aspects of competition should be considered and modified if children are to develop appropriately and want to stay playing sport.

CHAPTER 14: ADM PROGRAMMING IMPLEMENTATION

By Dr. Jason Miller

And

Coach

This section provides information on how the USTA will work to have organizational alignment to assist both individual and stakeholder progress through the long-term athlete development pathway. The American Development Model is an athlete-centered approach developed to satisfy the needs of athletes and is implemented through policies and program design. The alignment of USTA systems is developed across the organization and identifies four key sectors of health, education, recreation, and sport, including their interactions (Higgs, Balyi & Way, 2013).

In addition to the focus on athletes, ADM programs are coach driven and administration, sport science, sponsor, and parent supported. Long-term athlete or participant development is the core business of sports organizations, irrespective of whether they are community or performance-driven. Within the ADM framework, organizations can, on their terms, dictate how they can contribute to the sport and also better understand how they can complement other organizations (Higgs, Balyi & Way, 2013).

With ADM's proposed impact on tennis delivery, full integration across providers, including schools, communities, and clubs, in addition to national, regional, state, and community-based organizations, is required and expected. This section justifies the need for the ADM across these systems and offers considerations for growing the game of tennis throughout the USA.

SYSTEM ALIGNMENT FROM AN ATHLETE'S PERSPECTIVE

The following information is positioned as a guide to assist coaches, sports leaders, and parents in making better decisions about developing athletes, administering sport and physical activity, and remaining active for life themselves. The ADM looks at the needs of athletes as they travel through their physical activity and sporting experiences. With this ADM framework, sports organizations can align their visions, missions, mandates, and policies. Through this process, they can develop partnerships with other sectors such as health, recreation, and education agencies (Higgs, Balyi & Way, 2013).

Discover and Learn (Entry to 11 years old)

Ages Birth to 5 years old

At birth to 5 years old, infants and children are learning to move and use their bodies. This typically occurs at home and/or in child care, and then in early childhood education. The emphasis for these children should be on providing an environment that allows for sufficient physical activity (approximately 180 minutes/day spaced throughout the day) and is fun, but with minimum focus on any skill development (Higgs, Balyi & Way, 2013).

Questions to Consider

In the home: Are kids able to explore moving, growing, and discovering? Is screen time limited to one hour a day?

In early childhood education: Is there a development requirement of physical literacy? How much of their time at school is spent moving? Given the overall recommendation of one hour of screen time per day, does the provider collaborate with parents regarding screen time?

In recreation: Do children have free play options that include physical activity?

In sport: Are coaches educated and Safe Play compliant? Does the program develop fundamental movement skills?

In all cases: Are the children having fun? Are children engaged in both structured and unstructured physical activity within their ability, for a sufficient time (180 minutes/day, spaced throughout the day)?

Ages 6-11

For this age group, children continue to develop their foundational movement skills. This typically occurs in school and during recreational and/or scheduled activity time (e.g., sports programs, organized after-school programs, etc...). These youth should have at least 60 minutes of physical activity/day, including both structured and unstructured activity (Higgs, Balyi & Way, 2013).

Questions to Consider

In the home: Are parents encouraging an active lifestyle, and do they encourage experiencing nature? At sports, are parents supporting and not yelling instructions from afar? Is screen time-limited? Do kids have a balanced diet?

In education: Is physical education delivered by a physical education teacher? Do kids have an opportunity to move during their breaks? How much of the day is spent moving? Is there a limit imposed on screen time?

In recreation: Are kids safe and able to take advantage of free play activities to engage their creativity?

In sport: Are the kids playing multiple sports? Are the coaches trained? Do coaches focus on the development of fundamental sport and decision-making skills? Is there an equal playing time and practice in a variety of positions? Is the focus on development over winning? What is the program philosophy of the sports organization? Are the programs kid-centered? Are training and competition developmentally appropriate?

In all cases: Are the kids still having fun?

Stage 2: Develop and Challenge

Ages: 12-18

Kids have already gone through or about to go through puberty. They have hopefully developed adequate rates of physical literacy and are keeping their physical activity rates up. Athletes should understand how they continue to enjoy physical activity and sports. In this stage, kids are starting to understand more their focus on physical activity and sports. Do they want to participate for competitive or recreational reasons, or alternate between the two? Some

teenagers show a lot of promise and choose to play multiple sports and not specialize in one, while others decide to specialize in one sport. Both of these tactics can require establishing a balance between school play and club/facility play. Others feel a need to develop their athleticism through non-competitive physical activity. This stage should have the ability to engage newcomers to tennis. well...

Question to consider

Challenge in Sport

- Do the qualified coaches facilitate a holistic high school sport experience? Tennis coaches are so focused on competing and training.
- Is there a harmonious relationship between the school sport and the club/facility program that preaches enjoyment? Are levels of competition challenging the athlete appropriately?
- Is parent engagement focused on supporting the child and the lessons learned to enrich their lives?

Foundations for life

- Does the program have qualified instructors?
- Are parents supporting their child participation in healthy physical activity?
- Are adolescents developing the skills, attitudes, and perspectives that will lead them to a life of healthy living?

Stage 3: Play for Life

Ages 18-35

The transition into adulthood corresponds with moving from educational establishments into the workforce, which is influential to physical activity and sports participation. This time of life is an important time to be active, particularly because parental involvement and support decline and individuals have more control over their time. Social groups are instrumental in affecting activity, along with the challenges of self-directed education or work (Higgs, Balyi & Way, 2013).

Questions to Consider

Challenge in Sport

- Is there a link pathway at the youth sports club to continue as an adult?
- Is it possible to balance education and work with competitive schedules?
- Do colleges and universities offer sport and intramural programs that promote engagement and socializing?

Foundations for Life

- Do physical activity programs provide balance for those working and/or pursuing education?
- Are there opportunities to join peers in physical activity?

Ages 30+

Most folks at this stage focus on work and building a life around a family which has implications on time availability in sports and physical activity participation. Starting a family increases time pressures, and education and work take a back seat due to the attention required by partners

and children. Sport and physical activity could be perceived to be social glue (Higgs, Balyi & Way, 2013).

Questions to Consider

Challenge in Sport

- Do sporting facilities have age group based competition to keep adults engaged?
- Is there a balance between work, family life, and competitive schedules?
- Given challenges on time due to work and family life, do providers offer options and solutions for easy sign-up and participation?

Foundations for Life

- Do physical activity programs have the flexibility to accommodate work commitments?
- Do fitness providers offer child care?
- Is there a way to balance participation and family commitments?

Having a method to implement is necessary in order to follow through and realize the purpose behind the ADM. Working as a team will be imperative for all of USTA's stakeholders. Making a change is not always easy but with the research included in the ADM, success is achievable.

CHAPTER 15: TOP 10 ADM TAKEAWAYS

By USTA

The American Development Model (ADM) with its key principles, development stages, and key definitions, offers an opportunity for the USTA to look at sport, physical activity, and health and wellness through a new lens. It is hoped that all individuals, irrespective of their tennis journey, can find their pathway to take that will enable them to play tennis for a lifetime. The ADM is based on research and the best sports scientific principles. It is important to keep this in mind as the USTA provides support and leads the way in helping all vested parties make their tennis programs and organizations the best they can be.

In conclusion, acknowledging that the ADM itself is a massive undertaking, the USTA would like to conclude with 10 Key Takeaways:

1. **Kaizen**- This version of the ADM is the first, but it is certainly not the last. As things change in the tennis landscape, the ADM will change and adapt in making sure tennis is well positioned to become a leader in sports and physical activity. We need to ensure as a team that we progress towards a vision of quality that promotes developmentally appropriate sport for all, sport for life.
2. **The establishment of Three key outcomes**- The ADM will facilitate a healthier, happier, and more successful society if the following three outcomes are achieved:
 - a. Tennis as a sport helps all children become physically literate..
 - b. Athletes are able to reach higher levels of excellence through a clear development pathway of developmentally appropriate training and competition.
 - c. More people play the game of tennis and continue to play for a lifetime, and because of that are more physically active and healthier as individuals.
3. **Physical literacy**-Physical literacy is the foundation of the ADM model. Physically literate individuals are able to do the following:
 - a. Be able to show a variety of basic human movements, fundamental movement skills, and foundational sports skills with competence, confidence, and creativity in many different sporting environments.
 - b. Develop the motivation and ability to understand, communicate, apply, and analyze different forms of movement.
 - c. Be able to make the right choices when it comes to sport and physical activity.Physical literacy is the cornerstone for both participation and excellence in sport.
4. **Developmentally appropriate**- ADM programs are based on developmental age and not chronological age, and this is fundamental to the success of tennis nationwide. ADM challenges sport coaches and administrators to maintain quality training and competitive environments for all athletes.
5. **Focus on the process**-Taking account of the performance and not the outcomes is imperative with the ADM. The key is to deliver high-quality sport experiences on a daily basis.
6. **Person first, athlete second, player third**: ADM believes in developing a whole person and not focusing only on athletic development. The mental, cognitive, social, and

emotional development of athletes is just as important as physical, technical, and tactical development.

7. **One team drives success:** There are many stakeholders responsible in making sure more children are physically active and developing their skills. To be more efficient and effective, sport, recreation, education, and health organizations need to work as a team at the local, regional, and national levels to ensure that youth and adults are offered an opportunity to reach their potential.
8. **Quality matters:** To create a high standard of tennis delivery, implementation must be laid out based on a solid set of values and led by qualified coaches, officials, and administrators. Tennis leaders need to point questions at the challenges that are faced.
9. **Catalyst for change:** The combination of theory and practice is the greatest strength of the ADM and also is its biggest weakness. The model is attempting to be a global framework and not be the answer to every detail.
10. **Simplicity-**Even though the ADM is very comprehensive as a model to follow to attract, engage, and retain more athletes and keep them playing for a lifetime, focusing on all aspects is not feasible due to its difficulty in application. The ADM will be positioned to pull out appropriate aspects at certain periods to ensure simplicity for all stakeholders. This will show the adaptability and effectiveness of the ADM.

The USTA's aim is to empower people to make tennis a better sport by improving the quality of the sport and demonstrating how it's the lifetime sport that everyone knows it to be. This will be achieved by everyone being on the same page and following a teamwork approach to making the sport of tennis a fun and enjoyable experience through the lens of the ADM.

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