

Understanding Youth Athletes' Readiness for Competition:
A Review of Literature and Best Practices for Coaches and Parents

A Senior Honors Thesis

Submitted in Partial Fulfillment of the Requirements for Graduation in the Honors College

By

Brianna Klinger
Sport Management Major

The College at Brockport, State University of New York
May 15, 2018

Thesis Director: Dr. Stephen P. Gonzalez, CMPC, Department of Kinesiology, Sport Studies, &
Physical Education

Educational use of this paper is permitted for the purpose of providing future students a model example of an Honors senior thesis project.

Abstract

In today's society, youth sport is a popular social practice, with about 75% of families with elementary aged children participating. However, while many of these children enjoy playing and being active, not all children are ready to participate in a competitive sport environment. Indeed, current youth trends are to start competitive athletics earlier and to specialize in one sport year round, which can cause injury and burnout. Currently, 70 percent of youth athletes stop playing sports at the age of 13, which is a discerning number. The purpose of this study is to provide a comprehensive background on the development of children to determine their readiness for competition and youth sport. Specifically, this study will review the physical, cognitive, and biological factors in child development, and factors influencing psychological and sociological behaviors during competition. Best practices for developing youth athletes will be provided to help to determine youth sport readiness.

Introduction

An estimated 45 million children are involved in youth sport, with about 75% of U.S families with school-aged children participating in one or more organized sport (Merkel, 2013). The idea that a great number of children participate in organized sport calls for a review of whether or not each child is ready to compete. According to Vealey and Chase, readiness is “the state of being prepared for something” and “in youth sport, readiness is a developmental point at which a child has the capacity to successfully learn or engage in a certain activity” (Vealey, Chase, 2016, p.90). However, while many children may exhibit some characteristics of being ready to compete, Magill and Anderson posit that “maturation, prerequisite skills, and motivation” all must align and be apparent within the child before being ready to compete in a sport (Magill & Anderson, 1996).

Currently, child development is one of the most well-known researched topics in a variety of fields today, and for good reason. The stages of development for a child are extremely important in such ways that it determines their skillfulness, and readiness for the future. As a general guide, child development is commonly categorized as infancy, early, middle and late childhood, as well as early and late adolescence (Purcell, 2005). Each of these developmental stages have common chronological age ranges. For the purpose of this review, the focus will be on early childhood, age’s two to five, as well as middle childhood, ages six to nine years. While some researchers believe that early childhood begins at three years of age, and middle childhood begins at age five, the relevance of the difference in years is minuscule when looking at the research that has been established (Purcell, 2005; Horn & Butt, 2014). As for sports, there is a great deal of research that points to evidence that a child who plays youth sport gains lifelong

skills that aren't attributed to solely exercise and physical health (Fraser-Thomas, Cote, & Deakin, 2007)

According to researchers, it is crucial to look at the neurodevelopment of a child, which “is often described in terms of specific domains or streams which progress concurrently and interdependently” and while “the sequence of progress is generally similar, [the] acquisition of specific milestones varies from one child to another” forcing the idea of readiness of sport to be determined on a single scale basis, rather than defined by age (Patel, 2017, pg. 167-173).

Research based upon the development of a child is vital in looking into the readiness of a child for youth sport and competition. Current research to be explored throughout the following sections based upon the development of a child at certain stages will cover the motor development of children, and introduce the Mountain of Motor Skill Development (Vealey, R., Chase, M., 2016), as well as discuss both the cognitive and socialization development in which helps determine a child's readiness.

Complications with determining readiness in a child lies upon the basis that each child is genetically unique, along with their environmental factors that all play a role in determining a child's readiness. However, there is adequate information and research based upon this idea of readiness. The basis of this thesis is to review, evaluate and create a best practices for understanding youth sport, and a child's readiness to compete.

Definitions and Conceptualizations of Readiness

According to the Merriam-Webster dictionary, the basic definition of readiness is “the quality or state of being ready. This covers areas as a state of preparation, prompt willingness as well as ease and facility. Readiness is a universal concept, which can be used for several topics. In sport, there are two basic readiness concepts; the readiness to compete and the readiness to

return to sport. Specifically, this literature review will cover the readiness to compete, which will look into the construct of sport, and what constitutes a child being ready and able to play youth sport.

First and foremost, the concept of youth sport is one that is known worldwide, as every year millions of children will participate in an organized sport throughout different countries. The primary focus for this review will be of youth sport in the United States, however some information is gathered from Canadian researchers. For the basis of this review, we will define youth sport as “programs that provide adult-supervised sport skill development sessions and competitive contests to children in the typical age range of five to 18 years” (Vealey, R., Chase, M., 2016, p.23). To create a smaller window within the large age range of youth sport, the primary emphasis will be on those children ages five to nine, in the middle childhood developmental stage, while also looking at early childhood, ages two to five, in regards to their physical, cognitive and social development.

According to the National Human Genome Research Institute, any organism contains a unique set of DNA which is called its genome. This genome is made up by approximately 3 billion DNA base pairs. Along with this, each person has a unique set of 23 pairs of chromosomes that are contained within a human cell (2015). The Genome News Network expresses that there are more than three million differences between one person's genome and another. However, with those differences, each individual is 99.9% DNA-wise, the same (2003). It is relevant to understand the concept of DNA when looking at whether or not a child will be youth sport ready as each child is developmentally different. The .01% difference between individuals is the cause for differences from one person to another. As each person is slightly different in their genetic makeup, it creates greater differences for their development. The

developmental differences between two people who are of relative age can be noticed and measured using age. In regards to youth sport, and the development of children, there are two subcategories of age, chronological age and biological age. Vealey & Chase (2016) define chronological age as how old a person is based upon their date of birth, while biological age (maturational age) is defined as how closely a person is to their entirely mature state. Age is an obstacle in determining a child's readiness for sport as individual children each of the same chronological age can fluctuate in biological age as much as five years. Vealey & Chase's (2016) definitions help to clarify an underlying controversy within youth sport as the differences in maturational age contributes to both positive and negative experiences. Approaching age within youth sport has created various discussions based upon the needs of a developing child and their readiness to compete. The concept of age is an ongoing problem within youth sport as the common convention for creating leagues within an organization is by grouping children by their chronological age. Due to the underlying friction between the subcategories of age, youth sport organizations have tried to construct league policies that would look towards a child's effort, ability and chronological age (Nicholls, 1989; Fry & Duda, 1997).

While some leagues have used an approach such as looking at ability, other organizations have understood the need for fair competition and athlete retention. Relative age has become a factor in determining whether or not there is success being achieved within sport. Relative age is the difference in age between persons born within the same calendar year (Barnsley, Thompson, & Barnsley, 1985). The relative age effect (RAE), is an anomaly in which older athletes, those born in the early months of the eligibility year, are overrepresented than those children born in the later months of the eligibility year (Barnsley et al., 1985). The RAE is a worldwide issue, which has affected youth sports such as soccer, basketball and baseball (Cobley, Baker, Wattie,

& Mackenna, 2009; O'Connor, 2011). The problem with RAE is that relatively younger children who should be ready for competition based upon their development are having difficulty competing with children who are relatively older. (Vealey & Chase, 2016). Scholars have begun conceptualizing ways in which to combat the relative age effect for many youth sport programs. However, organizing leagues by any other criteria other than chronological age is less than ideal as creating a criterion in which every issue is handled is regressive in nature.

The concept of readiness and competition can, if not properly controlled, negate the experience of youth sport. The American Academy of Pediatrics expresses that “when the demands and expectations of organized sport exceed the maturation and readiness of the participant, the positive aspects of participation can be negated” (2001, pg. 1) which explains the need for determining the readiness of each child individually. The basic idea of readiness in children looks to minimize the risks and to maximize the goals, which is both to learn the sport as well as have an enjoyable experience (American Academy of Pediatrics, 2001, para. 4).

Readiness Research in Sport

Researchers within the sport psychology domain have dealt with the concept of readiness, much of which has been done on the consideration of readiness to return to sport after injury. Other research based on readiness looks at elder athletes rather than younger children in the early and middle childhood stages. According to scholars, many questions regarding youth sport and the idea of readiness have yet to be answered by current research (Aicinena, 1992). Sport readiness is more than signing a child up for sport because their age matches the minimum age needed to play. Many factors influence a child's readiness for competition, and will ultimately affect their conscious or subconscious decision to continue playing.

Readiness will affect each child differently, however it is a universal concept for youth sport that should be taken into consideration. As of 2014, three out of four families in America had one child playing an organized youth sport, about 45 million children (Bostonglobe). Scholars and researchers that have shown that parents, coaches and medical professionals play a large role in assessing whether or not a child is ready to compete in youth sport. According to the American Academy of Pediatrics, children are beginning to train and compete in sport at earlier ages, increasing the risks of probable negative effects on both growth and maturation (2001, para. 5). Youth sport is in the current state of a continual starting age decrease (Farrey, 2008). This decrease in starting age points directly towards whether or not the younger children are ready to compete in an organized sport. According to Vealey and Chase, a child who “join[s] a youth sport team and ‘learning how to compete’ at the youngest age possible is not supported by any research” (Vealey and Chase, 2016, p. 105). Starting a child at a young age has been advised “as a obstacle to skill development” (Vealey and Chase, 2016, p. 105). Looking towards determining readiness, there is not a scientific factual equation to determine when a child should begin playing youth sport at a competitive level. With that however, the long-term athlete development (LTAD) model “offers a developmentally appropriate, systematic progression of activities for individuals to follow to optimize skill development and physical literacy” (Balyi et al., 2013). The LTAD is used to recognize “what needs to be done at each stage of human development to give every child the best chance of engaging in lifelong, health-enhancing physical activity; and for those with the drive and talent, the best chance of athletic success” (Vealey & Chase, 2016, p. 106-107; Balyi et al., 2013). The research and creation of the LTAD model looks to create lifelong success for any sport participant from childhood to adulthood. The model contains seven stages, which range from beginning sport to adulthood sport participation.

For the direction of this review, the focus will be on the original LTAD model that was created for the able-bodied athletes. The variation of the LTAD model that is used for persons with disabilities contains two supplementary stages in addition to the original seven as well as variations of the original model as to accommodate all athletes (Balyi et al., 2013).

The study of readiness, and ensuring that children are developmentally ready to start competition using the LDAT model dates back to the early 1950's with simpler, less extensive models. (Balyi et al., 2013). Dating back to 1989, a person by the name of Sanderson "introduced an athlete development model" which "took into consideration the growth and maturation processes of young, developing athletes" (Balyi et al., 2013). Looking towards the current LDAT model, it was originally developed in 1995 with four stages rather than the seven stages that was matured in 2005 to the model that is used today (Balyi et al., 2013). This model is extensive in that each of the seven stages have distinct age ranges as well as what to focus on and suggested activities. Much of understanding youth sport readiness is how a child's development will react with participating in a competitive environment that is youth sport. While many professionals encourage competition to be kept to a minimum for younger athletes there are outside forces that do not always understand what is best. Due to the brunt impact that outside forces such as parents, peers and teachers have on a child, it will be discussed in a following section. Table 1 offers a summary of the long-term athlete development model, including stages, participants, goal emphasis and suggested activities.

Stage	Participants	Goal Emphasis
1. Active Start	Birth to age 6	Play, exploration, using fun to master basic movements
2. FUNdamentals	Ages 6 to 9 in boys Ages 6 to 8 in girls	Develop fundamental motor skills agility, balance, & coordination
3. Learn to Train	9 to 12 in boys 6 to 8 in girls	Developing foundational sport skills, acquiring a wide range of skills
4. Train to Train	Kids in growth spurt 12 to 16 in boys 11 to 15 in girls	Improving sport-specific skills, acquire advanced tactical strategies, & enhance aerobic base, speed & strength
5. Train to Compete	Females 15-21 +/- Males 16-23 +/-	Optimizing sport skills & learning to compete. Specialization and development or participate at the recreational level
6. Train to Win	Females 18+ Males 19+	Intense training suitable for international competition
7. Active for Life	Young athletes can enter this stage at any age	Move around in recreational and club physical activities

Adapted from Vealey, R., & Chase, M., (2016). *Best Practice for Youth Sport*, (Champaign, IL : Human Kinetics)

Competitive Environment Development

The perception of readiness deals with the notion that once each developmental milestone is achieved a child is ready to play youth sport, however the perception of readiness to play sport, and the readiness to compete in youth sport are vastly distinctive in nature. The concept of competition can be manipulated to fit the circumstances. Respectively, from a sport psychology standpoint, competition is closely related to social evaluation. The idea of sport competition requires a sense of comparability between two specific sides, such as an individual or a team. The comparability of competition puts the two participants up against one another, or against an objective standard of excellence (Martens, 1976, p. 9-17). To continue with this view point,

Martens believes that humans compete due to the innate determinant of assessing one's ability. Marten's research indicates that a competitive situation allows for an evaluation process to occur using a rule structure in which "(a) defines the goal toward which action is directed and (b) defines the allowable means to try and achieve the goal" (Martens, 1976, p. 9-17). This innate process of competition is a complex situation in regards to children. Alfie Kohn established his basis for determining that competition is correlated with negative outcomes (Kohn, 1992). Kohn concluded in his research that competition has been identified as triggers for increased hostility, aggression and prejudice. Kohn (1992) also established a basis that competition interferes with developing positive and stable self-esteem. Vealey and Chase recommend that youth sport directors be at the forefront while enforcing rules about competition for younger children. Organized sport programs should have their overall focus on skill development rather than competition as the main objective (Vealey & Chase, 2016). Previous research regarding competition with humans as an overall population establishes a convincing argument that as a general population, humans tend to "learn better in cooperative, as opposed to competitive situations (Johnson & Johnson, 2003). The research exhibited by Johnson & Johnson give a small insight on why it is important for children to not be rushed into a competitive environment.

Children either looking to participate in youth sport, or those currently playing youth sport are considered part of a "developmental laboratory where children are gradually introduced to competition so they can gain experience in social evaluation and emotional regulation" (Vealey & Chase, 2016, p. 54). Due to the negative connotation of competition for many youth sport researchers, there have been many ways that have attempted to teach a positive and beneficial competitive environment. Vealey and Chase argue that children should be taught the "true meaning of competition" (2016, p.54) which is derived from the latin word of *competere*,

meaning “to strive together” (2016, p.54). The idea of “true competition” is “in which each party pursues excellence by attempting to meet the challenge presented by the opponent’s best effort” (Shields & Bredemeier, 2009). For children, when the true nature of competition is represented in youth sport organizations, the overall experience is far greater. According to Vealey and Chase, implementing competition into a youth sport program is encouraged only when “competition [is] for enjoyment and skill evaluation, but not at the expense of skill development” (2016, p. 55).

Child Development in Relation to Readiness

To fully grasp and understand the basics of whether or not a child is prepared to participate in youth sport and competition will depend primarily on their development. The idea of child development is a concept that intertwines with youth sport readiness as each building block of the child’s developmental process will solidify whether or not a child is ready for basic competition through organized sport. Growth in this concept is to determine how a child’s biological development affects their participation in sport. For the purpose of this literature review, “Development in this sense refers to all the physical and psychological changes that humans undergo over a lifetime” (Bukato & Daehler, 2012). While a child will not reach their full maturation potential during childhood, there is indicators when a child has reached a maturation point in where they are ready to participate. According to Malina, “Maturation refers to progress towards the biologically mature state” other times classified as “the process one undergoes to reach full adult status in terms of physical, cognitive and emotional functioning” (Vealey, R., Chase, M., 2016, p.72). The term “biological clock” is a common metaphor used to describe maturation and “individuals have unique biological clocks, with variations in the timing

and tempo of their maturation” (Malina, 2014). As children start developing, the timing and tempo of each child’s “clock” can be different, and the idea of timing affects when a child hits a certain milestone in their maturation while the idea of tempo relates to how long a person stays in the milestone phase (Vealey, R., Chase, M., 2016, p.73).

Child development in regards to youth sport is tricky because chronological age and biological age are very different concepts. Many programs set age restrictions, and determine leagues and teams by chronological age rather than a child’s biological age. The problem with setting age restrictions, and basing leagues on chronological age is that some children may have an older biological age than their chronological age and vice versa. However, for a youth sport organization to organize children by biological age would be impractical. It is then up to the youth sport leaders and directors to be able to correctly recognize certain indicators that would allow to fully immerse the child in sport. The following sections will go into detail about the different forms of development and how they directly relate to determining a child’s readiness to compete in sport.

Motor Skill Development for Readiness

Motor skill is a common word used both in child development as well as throughout youth sport programs and child physical education classes throughout elementary school. Vealey and Chase define motor skills as the “learned movements that combine to produce smooth, efficient actions to complete particular tasks” (2016, p. 93). Motor skills range from movements that a newborn is able to complete up to professional athletes such as professional gymnasts on the uneven bars. Motor skill development differs when it is broken up into smaller categories based upon the movement of the body. Gross motor skills are the movements that engage the

entire body, or the considerable larger parts of the body such as arms and legs. Basic movements to live an everyday life such as running or jumping are considered gross motor skills. In sport, gross motor skills could be kicking a soccer ball to a teammate or into a goal. The opposite end of gross motor skills are the fine motor skills that people develop as they grow. Fine motor skills unlike gross motor skills “require precise movement using smaller muscle groups” (Vealey, R., Chase, M., 2016, p.93). Fine motor skills are not basic, and require teaching. Fine motor skills take more effort for a child to learn and master as they must learn to control the smaller parts of their bodies, such as writing. In youth sport, particularly in Archery for example, a child must understand how to properly grip and release an arrow. The movement of gripping and releasing is considered a fine motor skill. Gross and fine motor skills are the two basic set of skills a child needs to participate in a variety of youth sports, as the actions needed for many sports involve the intertwining of both. In the sport world, a child needs to have the basic gross and fine motor skills to do certain activities such as throw a baseball, or grip, swing and release a bat while hitting in baseball.

Motor skills can also be characterized into three smaller, sub categories; locomotor, manipulative and stability skills. Locomotor skills is the basic building block of moving your body, and can be classified by walking, running, and jumping. Locomotor skills start developing at the newborn age while children are learning how to move their body, whether it be learning to crawl or walk. The idea of a locomotor skill is making the body travel, whether it be a short or far distance, if the body moves through space than a person is using their locomotor skills. Manipulative skills, which can also be called “object control skills” entail a person moving or projecting an object, as well as acquiring an object (Vealey, R., Chase, M., 2016, p.94). Examples of manipulative skills include catching a baseball, passing or dribbling a basketball or

hitting a volleyball. The last subcategory of motor skills has to do with the idea of body control, otherwise known as stability skills. These skills deal with a person being fully able to maintain a certain body position, regardless of the forces of gravity. These skills start developing during infancy when an infant learns to hold their head up and how to sit up on their own. Stability skills are needed in a variety of sports, but are most seen in sports such as gymnastics and figure skating when athletes must maintain positions that are going against gravity (Vealey, R., Chase, M., 2016, p.94).

Laura Purcell, a doctor with the Canadian Pediatric Society believes that during early childhood, the motor skills of children are very limited in what they are able to do and should be focused on using their gross motor skills for activities such as running, tumbling and learning the basics of throwing. Despite being older, children in the middle childhood phase are seeing their gross and fine motor skills develop, allowing them to hone in on certain skills. Children at this age are able to balance and hold, their posture better, and should be introduced to entry level sports that require the use of basic motor skills such as soccer, baseball and running. Children in both ages can look at the beginning of gymnastics, as many of the basic skills needed for gymnastics such as running, tumbling and balancing will help with the skills needed for more involved sports or higher level gymnastics (Purcell, 2005).

Many sport psychologists and youth sport researchers have created a model to easily represent the primary motor skills throughout the development. While this model is favorable to use as a basis, the idea that each child is a unique person and each child develops at different rates need to be taken into consideration as well. This model, which was published by Vealey and Chase in 2016, is directed towards child development and how it relates to youth sport. Vealey and Chase based their model upon research from Clark and Metcalf (2002), Horn and

Butt (2014), and Ulrich (1987). The model contains four levels, however in consideration of this literature review, levels one and two will be used primarily to discuss the development of a child in regards to their readiness for competition.

Level one of the mountain of motor skill development focuses on infancy, which is classified as newborn to two years of age. At this level, basic locomotor skills are seen later on such as when a child learns to crawl or walk. During this time, children are developing reflexes, which can both appear and disappear throughout the developmental period. Reflexes are defined as “involuntary movements that infants make in response to specific stimuli” and they can be “characterized orderly” (Vealey & Chase, 2016; p.95). The idea that a child’s development can be “orderly sequenc[ed]” allows for parents and professionals to determine whether or not a child is on track to develop normally. The perception of a normal development in a child is a good indicator that their biological age and their chronological age are relative to each other. Together with reflexes, a child during this stage of development should be the development of grasping and manipulative skills which is why many infants reach and grab the closest object to them. This is a normally occurring development milestone that ensures parents that their child has a close relative chronological and biological age.

While level one is very generic and does not necessarily relate to the idea of youth sport it is an important background to have. A child who is not developing properly in level one of the model will not move as quickly to level two, or they will be forced to move up a level from outside forces and not be successful. Level two is the primary focus of this literature review as it is ages two to eight years old. This model classifies the ages of two to eight together, rather than in two separate groups; early childhood and middle childhood. They will be referred to all as one unlike previously mentioned as to fully explain the model at hand. Unlike the other models that

have specific age groups learning and developing, the mountain of motor skill development makes it so that children move up the mountain as their development allows rather than grouping a child by their chronological age and saying that they must be doing this certain skill at this age. In level two, children are learning and performing basic locomotor, stability and manipulative skills. This level is focusing on the fundamental motor skills which is defined as “the basic motor movements that are minute parts of all sport skills” (Vealey & Chase, 2016; p.95). While the many fundamental skills in this stage include running, jumping, throwing and catching, this phase is also used for children to develop their fine motor skills, hand, foot and eye coordination, balance, as well as information processing and decision making (Horn & Butt, 2014). As referred to in a following section, these fundamental skills are needed to complete the “prerequisite wheel” on the “wheels of the readiness tricycle” (Vealey & Chase, 2016; p.95).

As level two ranges with such a large age group, each of the fundamental motor skills have their own stages of development; the initial stage, the elementary stage and the mature stage (Gallahue, Ozmun, & Goodway, 2012). The first stage of level two is the initial stage which marks a child’s “first attempts at movements [which] lack proper sequencing and use poor rhythm, with either exaggerated or restricted body movements.” Following this is the elementary stage, “which there is greater control and better rhythmical coordination of fundamental movements” (Gallahue et al., 2012). Many children, as well as adult athletes are unsuccessful moving past the elementary stage of fundamental motor skills. This does not mean that a child will not continue with sport, however very few children make it to the mature stage. The mature stage, which is defined as “a fundamental motor skill [that] is characterized by mechanically efficient, coordinated and controlled performance” (Gallahue et al., 2012). In an adaptation from Haywood and Getchell (2009), Vealey and Chase illustrate an interpretation of initial to mature

stages using the example of throwing a baseball. This illustration (Vealey & Chase, 2016; p.95) shows the progression of each step of overhand throwing a baseball, and how each part of throwing has their own set of initial, elementary and mature stages. This example is why Gallahue et al. (2012) have discussed previously that many children and adults will not get beyond elementary fundamental skills because a person must become proficient and hit each mature stage to be in the mature stage of throwing. This conviction goes for any skill in level two of the mountain of motor development.

Following level two on the model is level three and four, however first a child must avoid the athletic proficiency barrier, which is marked between level two and three. The “athletic proficiency barrier impedes children’s abilities to move from the fundamental motor skill stage and achieve athletic success as they transition into more formal sports and games” (Vealey, R., Chase, M., 2016, p.97). To successfully avoid this barrier, children need to be given opportunities for practice, play, gain instruction, and be given encouragement to develop the necessary skills to compete in a variety of sports (Seefeldt, 1980). Level two extends from age two to age eight, however there are times where the age can extend if a child develops later than those who are relevant to their chronological age. A child who develops later may find it difficult to surpass the athletic proficiency barrier as many fundamental skills that are learned in the early stages of this level are more challenging if trying to develop at a later stage in life (Vealey & Chase, 2016; p. 97). Childhood, ages two to eight respectively, is the most favorable time to develop these skills, and those children who have not developed as quickly or who were not given the opportunity to increase their proficiency in a certain skill are more likely to become uninvolved in sport. Balyi, Way, & Higgs have coined the “if you can’t, you won’t” principal which basically “emphasizes the essential nature of fundamental skill development in young

children”; for example a child who cannot run will not be able to play a majority of sports such as soccer or basketball, while a child who cannot throw will not be able to successfully play baseball or football. (Vealey & Chase, 2016; p.98). A child who is displaying the positive attributes of developing their gross motor skills should be considered ready to play youth sport. While each child is different, the majority of children at this phase who are showing positive developments within the mountain of motor skills are usually ready for youth sport.

Cognitive Readiness

Development in children is not solely based upon the physical development of children in regards to their readiness to compete in youth sport. As defined earlier, cognitive readiness is a child’s “abilit[y] to understand the technical and strategic requirements of a sport, particularly their abilities to process relevant information about their performance and sport environment” (Vealey & Chase, 2016; p.103). A child’s cognitive ability differs than that of the physical ability in that a child has more time to develop cognitively for sport than they do physically.

Cognitive readiness is not necessarily used to participate in the sport motor skill wise, but can be used to determine a child’s readiness to play with other children. A young athlete who is looking to play at a competitive level must have the cognitive ability to understand that they have teammates and they have opponents. Youth1 argues that a child, before participating in any form of youth sport, must have the cognitive ability to both follow simple directions as well as interact in a positive manner with teammates (Youth1, 2016). A young athlete looking to play competitive sport must understand that each sport comes with a set of fundamental rules, and many children during the early childhood stage do not understand the fundamental rules, making it hard for them to be ready for competition.

Opportunities are an outside factor that will influence a child's cognitive readiness to compete. Children during the early and middle childhood stages are developing at different rates than each other however according to Haywood and Getchell, children who are considered "non expert; those not participating in junior elite sport) differ from older athletes" (2009). A child who is given opportunities to experience different scenarios, as well as a child who is taught about a sport will develop their cognitive proficiency at an accelerated rate than those children who were left to either learn it on their own or learn secondhand. This is most often seen when a younger child plays on an older team because they are physically ready. However, this child may not be at the same cognitive stage as his teammates. When this happens, that child will not learn and develop as quick because the focus has been moved away from that in this new level of play. A child who is physically mature but not cognitively mature needs to be given the opportunity to become ready on all levels. With the younger children, teaching cognitive strategies is a big part of getting them ready to play at a competitive level and this can be done by teaching children "labeling" which is "the use of a verbal label or cue to prove a mental image of the correct performance" (Vealey & Chase, 2016; p.103). Unlike gross motor development that is innate to a person and must be trained, cognitive development in regards to sport must be learned, and taught to fully excel in sport.

Socializational Readiness

A big part of a child's development is their socialization with others, both with their age as well as adults. Many people understand how socialization for elementary school is important, through free time, recess and play dates however when looking at a child being ready for competition in youth sport, socialization is overlooked. The common phrase "there is no I in

team” is used generously in sport by players, coaches and for many, parents as well. The phrase “there is no I in team” verbalizes the need for social interaction before a child is ready for competition. Socialization is not taught in the same sense that rules and strategies are in sport, socialization deals with different agents of the athlete whether it be family, peers, media, the community or their school (Eitzen & Sage, 1989; Leonard, 1988; Podilchak, 1981).

Socializational readiness, or relatedness is “our need to be connected to those around us and to experience a sense of belonging” (Vealey & Chase, 2016, p. 134; Baumeister & Leary, 1995).

Many parents and teachers believe that socialization within school settings are important, however to create a positive experience, especially for younger athletes the socialization aspect should be taken into great consideration. Research has found that children who have positive connections with teammates and friends while participating in youth sport acquire a higher perceived competence and self-worth, as well as greater enjoyment during participation. It was also found that many children felt less stress and had a more substantial commitment to the continuation of participation (Smith, Ullrich-French, Walker, & Hurley, 2006). As readiness is being determined, the social aspect should be considered so as a child who is socially ready will have a greater chance at succeeding in a competitive youth environment than a child who may not be socially ready.

Determining Factors of Readiness

Researchers have developed a readiness model strategy to determine the essential aspects that determine the readiness of a child. As previously stated, in relation to youth sport, “readiness is a developmental point at which a child has the capacity to successfully learn or engage in a certain activity” (Vealey & Chase, 2016; p. 90). To condition whether a child is ready to engage

in participation, three factors must be considered as such; maturation, prerequisite skills, and motivation (Magill & Anderson, 1996). Readiness to compete and assessing readiness should be a continuous and repetitive process as those in leadership positions of youth sport should strive to “assess [the child’s] readiness for different challenges and types of activities as they move through youth sport” (Vealey & Chase, 2016; p. 90). Vealey and Chase use the metaphor of a tricycle, as each factor; maturation, prerequisite skills and motivation, are the wheels needed to establish a basis of readiness (2016, p. 91).

The first “wheel” (Vealey & Chase, 2016; p. 91) deals with a child’s maturation process and how they develop into a child ready to play organized sport. As discussed in previous sections, “maturation refers to progress toward the biologically mature state (Malina, 2013). Vealey and Chase refer to maturation as an important part of readiness as children are not the same as adult athletes. As compared to adults, “children are smaller and shorter...with less strength, power and coordination” (Vealey & Chase, 2016; p. 91). As this applies to readiness, children may not have the ability to physically participate in some sports and thus must be modified to fit the age range and skill level. Suggestions based on maturation level and readiness will be explored more thoroughly in the following sections of the best practices. Maturation deals with the concept of motor skill competency as well, and “parents, teachers, coaches and youth sport directors should carefully consider the maturational demands of [activities] and attempt to introduce [them] at the most optimal times” (Vealey & Chase, 2016; p.91). Adults who are part of a child’s sporting life should take into consideration that motor skill competency is “gained through repeated practice” and is “initially not well learned” as “errors naturally occur” (Vealey & Chase, 2016; p.91) however as adults, it is important to determine whether or not the child's error is based upon the learning process or a “lack of maturational abilities”

(Vealey & Chase, 2016; p.91). If a child's error is based upon the learning process than it is encouraged to continue to teach the child the skill and allow them to make errors however if the error is based upon the lack of maturational ability than it is important not to push the child and come back to the skill at a later time. A continuation of a skill before a child is ready may discourage them from wanting to continue the skill when they have the maturity to be ready.

Following the need to maturation comes the idea of "prerequisite skills" that are needed to be successful in a chosen activity (Vealey & Chase, 2016; p.91). Vealey and Chase (2016) define prerequisite as "required beforehand" meaning that all activities have a set of skills that should be known before starting an activity (p. 91). As youth sport leaders it is important for children to learn to develop these skills before being driven into a competitive environment that they will not be successful in. In many youth soccer programs throughout the United States, the "focus [is] on competition, team play and winning over early individual skill development" (Farrey, 2008). Many youth researchers have looked at the problems with youth sport, stating that much of the focus is on competition rather than skill building. An example of this is teaching young children to "pass, pass, pass" rather than teaching "young players [the] need to try and dribble" (Woitalla, 2014). Professional basketball player Kobe Bryant expresses that while playing youth sport in Italy, "it was about fundamentals, footwork, spacing, back cuts" (McCollum, 2013; p. 39) rather than competition.

Lastly, the idea of motivation is the final wheel of readiness. Motivation is defined as "the desire, intent, or drive to do something" (Vealey & Chase, 2016; p.93). Youth sport, and motivation in children to play youth sport are driven not only by the "desire, intent or drive" but rather various "interacting internal and external forces that induce people to behave in various ways" (Vealey & Chase, 2016; p. 116). In youth sport, and in children, the idea of "motivational

orientations [which] are those internal characteristics, such as beliefs, values, needs, attitudes, goals and self-perceptions, that predispose people to think and act in certain ways in achievement or goal-directed activities” (Vealey & Chase, 2016; p. 116). To assess this correctly for looking at the readiness of a child to compete in sport, research refers back to a child’s development, this time looking at their psychosocial development.

A child’s psychosocial development is “the influence of social experiences, with parents, siblings, peers, teachers, coaches, and even popular media, on how individuals come to view themselves” (Vealey & Chase, 2016; p. 137). Motivational climate for youth sport “refer[s] to the ways in which various social aspects of a situation are conducted, which in turn influence motivation” (Vealey & Chase, 2016; p. 116). Much of youth sport and the children’s desire to play, continue playing, or stop playing comes from the motivational climate that is created. The idea of creating a motivational climate which stimulates excitement and enjoyment for learning new skills in the sport is one of the most important factors that youth sport leaders must consider. In youth sport, ages five to eighteen, the main reason for playing is “to have fun” (Murphy, 1999; Sit & Lindner, 2006). Opposing that, “not having fun is the top reason given by kids for dropping out of youth sport” (Sabo & Veliz, 2008). Other motivational factors for children include “to learn/improve my skills and to be with friends/be part of a team” (Weiss & Williams, 2004). Motivation is complex, and is different for every child in regards to their internal and external forces. Coaches and youth sport influencers should be aware of these forces and look to help facilitate the motivation for children towards sport.

Best Practices

Scholars have looked into what makes a child ready to compete in sport and have thus created suggested activities and learning focus points most often regarding a child's age. However, while many researchers organize their research and suggestions based upon a person's chronological age, the following recommendations about youth sport programs, and organizing upon biological age are based upon extensive research of a child's readiness and should be regarded as an educated opinion in accordance with the previously stated research. The succeeding suggestions and concepts about youth sport readiness have been created using educated reasoning based upon research from the above scholars, as well as adapted and then modified from Ginsburg's three-step approach to navigating youth sport (2006); (1) know your child, (2) know the youth sport environment, (3) know yourself (Vealey & Chase, 2016, p. 109).

1. Understand the difference between biological and chronological age

The difference in biological and chronological age can create the barrier between whether a child is ready to compete versus should they stay in an organized sport geared toward fun and learning. A child's biological age does not equal their chronological age in every instance and understanding that will allow for a greater understanding of youth sport and creating an enjoyable environment for children to thrive in youth sport.

2. Understand the child

As a parent, coach, teacher or other youth sport personnel, there is a certain level of knowledge about each individual child that the adults in the child's life should understand. Whether a parent who spends every day with their child, or a coach who only spends a couple hours a week it is important to understand children on an individual basis rather than as a collective group. Each child has a different set of genes, a different set of DNA that makes up

who they are from their hair color down to their developmental patterns. To truly decide whether a child is ready for a competitive sporting environment comes down to knowing if a child has hit the developmental marks talked about in the earlier sections. These developmental marks not only include physical development, but also social development and cognitive development as each factor determines a child's readiness. While a child's peers may be ready to compete in sport, some children take longer and that is okay, but as a parent, coach, teacher, etc., it is their responsibility to learn, understand and accept the child's readiness development. A child may be ready earlier or later than expected, neither are a problem as it be necessitated that either evaluation is accepted. A decision based on readiness must come from those who interact and know the child, while also looking at the child individually, lacking the input of the peers in the child's life.

3. Understand the differences between introductory sport & competitive sport environments

The basis of understanding the different types of sporting environment will allow for a child to be placed in an environment suitable to their developmental process. An introductory sport environment is good for a child who needs to learn the basic skills of a sport, fine tune their gross motor skills, as well as learn social cues and emphasize cognitive development through understanding different situations throughout sport. This type of sport environment is best for a child who is interested in a sport however is not ready for winning or losing. There are many leagues and programs such as these for early childhood, ages 2-5, which offer classes for parents and children, as well as programs designed to get children moving and interested.

On the other hand, a competitive sporting environment is suitable for children who have the fundamental skills mastered for sport, and are looking for more than just skill development.

These programs are geared towards middle to late childhood. When a child is ready for this type of program depends on the child's developmental process, and their biological age. Many youth sport organizations offer this type of program and most often classify teams and leagues under a child's chronological age. This is where it is important to understand a child because while their chronological age may match up with what the program offers, their biological age could be either much lower or higher.

The most successful, and most positive youth sport programs promote an environment that encourages the development process first and foremost. Those programs that are able to create a youth sport organization geared toward development for early childhood also continue to focus on a child's development in sport throughout their competitive years as well. A successful program should continue to fine-tune the children's skills throughout their athletic career, rather than change the primary focus from development to competition as a child who is able to continuously develop their skills will have a better chance of staying in youth sport as they will continue to grow through the sport.

4. Understand that it is the child playing the sport, not the adult

As parents and coaches, it is sometimes difficult to remember that the idea of youth sport is for children to participate and not only develop athletically but also gain enjoyment. When asked, many kids choose to play youth sport for fun and contrary to that, the main reason for a child to have stopped playing youth sport is that it was no longer enjoyable. What this means is that, as the adults in charge of youth sport, it is imperative that the objectives of any program are focused on children. Many parents and coaches look at a child's peers to determine whether or not a child is ready to compete, which could end up hurting the child in the end if they are not developmentally ready to compete in comparison to a peer. The main goal for parents and

coaches is to create a sporting environment that is beneficial to the children. The main focus is for the child to gain the maximum potential out of youth sport, and that can only be done if the adults involved are not clouded by their own judgements, predispositions, and aspirations.

5. Support, Teach, and Encourage

For a youth sport program to be successful, the three words: 1) support, 2) teach, and 3) encourage, all go hand in hand in making sure that youth sport is a positive experience for children. Parents, coaches, teachers and youth sport directors must support a child throughout their youth sport experience. If a child feels as though they aren't being supported in their choices, the likelihood of continuing sport is slim. This also goes along with the fact that some children do not have the physical capabilities or motivation to want to continue on and play competitive sport and it is the responsibilities of the adults in that child's life to support whatever decision is being made by the child.

In a youth sport program, one of the number one responsibilities that adults who participate have is to teach the children. Teaching should include fundamental skills needed to play most sports, as well as teaching and facilitating socialization and cognitive development through sport. Teaching for sport is not limited to sport, and should be used to teach lessons that can be used outside of youth sport as well. As parents and coaches, children often look up to these figures as role models so teaching correct behavior during sport is a big factor in this as well. A child who does not know how to interact with other children will not do well in a competitive environment for a team sport such as baseball or soccer where all of the children need to work together. Teaching proper behavior during sport, such as sportsmanship will also help a child become ready for competition as they will continue to learn that the outcome of a competition leads to a clear winner, and a clear loser. An adult who portrays poor sportsmanship

in front of a child will most likely promote that same behavior in the child, thus creating a negative situation when that child moves to competitive sport.

Along with teaching is the idea of encouragement, which should be automatically engrained in a youth sport program as children need positive reinforcement. Learning new skills and different sporting scenarios will be easier for children if they are shown encouragement. Encouragement could be positive praise, cheering as well as rewards such as games for a well done practice. In the early stages of sport, such as developmental leagues and clinics, it is important to consistently praise a child when they perform a skill well as they will remember this praise as they move into more difficult skills. However, parents and coaches need to be warned that over praising a child, and an excess amount of encouragement will be damaging as a child moves to more difficult skills which may need correction. There is no mathematical formula for the amount of encouragement that a child should receive, it is up to the discretion of those in charge of the youth sport program.

Upon understanding the major goals of the best practices for youth sport, the following chart should be used as a guide in which to determine readiness based upon biological age, and developmental markers, while using chronological age as a guide and reference. The following information is based upon extensive research and educated opinions regarding youth sport readiness. It should be noted that on Table 2, much of the chronological age ranges overlap, and extend further than the chronological age ranges. This is due to the fact that each child is biologically different, and that children of the same chronological age range can differ in biological age by as much as five years in either direction (Vealey & Chase, 2016, p. 75).

TABLE 2. Determining Readiness based upon Biological Age and Development Markers

Developmental Marker	Biological Age Range	*Common* Chronological Age Range	Suggested Activities	Focus as related to Youth Sport
Basic Locomotor Skills, Reflexes, Learning to control body movements	Infancy to 6 years old. Developmental problems can start to be noticed here	Birth to 2 years of Age	Grasping, rolling, crawling, learning to hold body weight Play and games that use their bodies and creativity	Learning the basic body movements. Some children may be developing later which may lead to certain sport exclusions based upon this. Children who progress to organized sport should be gaining instruction and practice with minimal to no competition.
Fundamental Motor Skills	Infancy to ten years	Two years to eight years old	Motor skill development such as throwing and catching.	Children in this age range should be learning through instruction such as a developmental youth sport program. Practice should be encouraged with little competition. Focus on enjoyment Multiple sports, trying out different activities.
Skills needed to participate in Transitional sports & games, cognitively understand basic concepts of sport	Ages five to fifteen	8-13	Slightly modified version of sport. Youth sport is not the only option (school & club). Understanding strategy & tactics of sport. Most children are ready to start sports not solely focused on development	Children are starting to become cognitively aware of strategy needed to play certain sports. Focus should still be on development, and how to use the skills to compete to be a good athlete rather than use the skills to compete to win. Encouragement of continuing to try new activities, less encouragement on specialization.
Physical Skill Literacy and mature body development	Ages 10 to Adult	14-18	Many sports are in adult form, regarding rules, tactics and strategy. Training the body to become stronger or faster.	Youth sport at this time is typically over. School and club sport have taken over and the goal is to win. Skills should be mastered at this point, and many children look to specialize in one or two sports.

Source: *Adapted and modified from Vealey & Chase, 2016, p. 94, Figure 5.2, p. 108 Table 5.2, p. 97 Table 5.1, p. 57 Table 3.1, p. 73 Table 4.1; Purcell, 2005, p.3 Table 1.*

Conclusion

Youth sport readiness is a fairly recent topic, with research dating back about thirty years. Many scholars have looked passed studying readiness in children for competitive youth sport as it is hard to determine a true outline of what makes a child ready to compete. Studies have found that there are constructs that help shape readiness, such as maturation, prerequisite skills and motivation however there can be no single way to determine readiness. As children develop, they biologically differ from one another, creating a difficult situation if trying to determine as a whole a working theory based on readiness. Controversy occurs within the realm of readiness when determining how a youth sport program should be organized due to the fact that chronological age and biological age of children differ until they hit their fully maturational state. Researchers must look to create common themes and suggestions based upon readiness looking not only at chronological age, but biological age as well. Nonetheless, environmental factors such as location, program availability as well as income all create complications when looking to determine readiness. Furthermore, as researchers look to determine a basic mold for readiness, coaches and parents must be made aware of the troubles that readiness can bring to youth sport, in regards to both a child being ready and starting late, as well as a child starting in a competitive environment before they have reached a point of readiness. Finally, the common determinate for youth sport readiness for parents, coaches, medical professionals as well as researchers is to base the decision of readiness on an individual child rather than on a collective group.

References

- A Brief Guide to Genomics. (2015, August 27). Retrieved April 17, 2018, from <https://www.genome.gov/18016863/a-brief-guide-to-genomics/>
- Aicinena, S. (1992). Youth sport readiness: A predictive model for success. *Physical Educator*, 49(2), 58.
- Atkinson, J. (2014, May 04). How parents are ruining youth sports - The Boston Globe. Retrieved from <https://www.bostonglobe.com/magazine/2014/05/03/how-parents-are-ruining-youth-sports/vbRln8qYXkrrNFJcsuvNyM/story.html>
- Bukato, D., & Daehler, M.W. (2012). *Child Development: A thematic approach* (6th ed.). Belmont, CA: Wadsworth
- Balyi, I., & Way, R., & Higgs, C. (2013). *Long -term athlete development*. Champaign, IL: Human Kinetics
- Barnsley, R.H., Thompson, A.H., & Barnsley, P.E. (1985). Hockey success and birthdate: The relative age effect. *Canadian Association for Health, Physical Education, and Recreation*, 51, 23-28.
- Baumeister, R., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motive. *Psychological Bulletin*, 117 497-529.
- Clark, J.E., & Metcalf, J.M. (2002). The mountain of motor development: A metaphor. In J.E Clark & J.H Humphrey (Eds.). *Motor Development: Research and reviews* (Vol. 2, pp. 163-190). Reston, VA: National Association for Sport and Physical Education.
- Cobley, S., Baker, J., Wattie, N., & McKenna, J. (2009). A meta-analytical review of relative age effect in sport: The emerging picture. *Sports Medicine*, 39, 235-256.

Committee on Sports Medicine and Fitness and Committee on School Health

Pediatrics Jun 2001, 107 (6) 1459-1462; DOI: 10.1542/peds.107.6.1459

Eitzen, D. S., & Sage, G. H. (1989). *Sociology of North American sport* (4th ed.). Dubuque, Iowa: Wm. C. Brown.

Farrey, T. (2008). *Game on: The All-American race to make champions of our children*. New York: ESPN Books.

Fry, M.D., & Duda, J.L. (1997). A developmental examination of children's understanding of effort and ability in the physical and academic domains. *Research Quarterly for Exercise and Sport*, 68, 331-344.

Gallahue, D.L., Ozmun, J.C., & Goodway, J. (2012). *Understanding motor development: Infants, children, adolescents, adults*. New York: McGraw-Hill.

GENOME VARIATIONS. (2003, January 15). Retrieved April 17, 2018, from

http://www.genomenewsnetwork.org/resources/whats_a_genome/Chp4_1.shtml

Gill, D. L., & Deeter, T. E. (1988). Development of the Sport Orientation Questionnaire. *Research Quarterly for Exercise and Sport*, 59, 191–202.

Haywood, K.M., & Getchell, N. (2009). *Life span motor development* (5th ed.). Champaign, IL: Human Kinetics.

Hetherington, E. M., Parke, R. D., & Locke, V. O. (1999). *Child psychology: A contemporary viewpoint* (5th ed.). New York, NY, US: McGraw-Hill.

Horn, T.S., & Butt, J. (2014). Developmental perspectives on sport and physical activity participation. In A. Papaioannou & D. Hackford (Eds.), *Fundamental concepts in sport and exercise psychology* (pp.4-19). New York: Taylor & Francis.

Jessica L. Fraser-Thomas, Jean Côté & Janice Deakin (2007) Youth sport programs: an avenue to foster positive youth development, *Physical Education and Sport Pedagogy*, 10:1, 19-40, DOI:

[10.1080/174089804200033489](https://doi.org/10.1080/174089804200033489)

Johnson, D.W. & Johnson, R. (2003). *Cooperative, competitive, and individualistic efforts: An update of the research*. Research Report, Cooperative Learning Center, University of Minnesota, Minneapolis.

Kohn, A. (1992). *No contest: The case against competition* (Rev. ed.). Boston: Houghton Mifflin.

Leonard, W. M. (1988). *A Sociological Perspective of Sport* (3rd ed.). New York. Macmillan.

Magill, R.A., & Anderson, D.I., (1996). Critical Periods as optimal readiness for learning sport skills. In F.L Smoll & R.E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp. 57-72). Indianapolis: Brown & Benchmark.

Malina, R.M. (2014). Top 10 research questions related to growth and maturation of relevance to physical activity, performance, and fitness. *Research Quarterly for Exercise and Sport*, 85, 157-173.

Martens, R. (1976). Competition: In need of a theory. In D. M. Landers (Ed.), *Social problems in athletics* (pp. 9–17). Urbana: University of Illinois Press.

McCollum, J. (2013, February 25). Laker chaos. *Sports Illustrated*, pp. 36-40.

Merkel, D. L. (2013). Youth sport: positive and negative impact on young athletes. *Open Access Journal of Sports Medicine*, 4, 151–160. <http://doi.org/10.2147/OAJSM.S33556>

Murphy, S. (1999). *The cheers and the tears: A healthy alternative to the dark side of youth sport*. San Francisco: Jossey-Bass.

Nicholls, J.G (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.

- O'Connor, D. (2011). Factors influencing talent identification and athlete development in youth sport. In S. Georgakis & K. Russell (Eds.), *Youth sport in Australia* (pp. 193-210). Sydney: Sydney University Press.
- Patel DR, Soares N, Wells K. Neurodevelopmental readiness of children for participation in sports. *Translational Pediatrics*. 2017;6(3):167-173. doi:10.21037/tp.2017.05.03.
- Podilchak, W. (1981). Boy's perceptions of adult and peer organized games. Paper presented at the 1st regional symposium of the International Committee for the Sociology of Sport, Vancouver, Canada
- Purcell, L., Canadian Paediatric Society, Paediatric Sports and Exercise Medicine Section; Sport readiness in children and youth, *Paediatrics & Child Health*, Volume 10, Issue 6, 1 July 2005, Pages 343–344, <https://doi.org/10.1093/pch/10.6.343>
- "Readiness." *Merriam-Webster.com*. Merriam-Webster, n.d. Web. 17 April 2018.
- Sabo, D., & Veliz, P. (2008). *Go out and play: Youth sports in America*. East Meadow, NY: Women's Sports Foundation.
- Seefeldt, V. (1980). Developmental motor patterns: Implications for elementary school physical education. In C. Nadeau, W. Halliwell, K. Newell, & G. Roberts (Eds.), *Psychology of motor behavior and sport, 1979* (pp. 314-323). Champaign, IL: Human Kinetics.
- Shields, D., & Bredemeier, B. (2011). Contest, competition, and metaphor. *Journal of the Philosophy of Sport*, 38, 27–38.
- Shields, D.L., & Bredemeier, B.L. (2009). *True competition*. Champaign, IL: Human Kinetics.
- Sit, C.H.P., & Lindner, K.J. (2006). Situational state balances and participation motivation in youth sport: A reversal theory perspective. *British Journal of Education Psychology*, 76, 369-384.

- Smith, A.L., Ullrich-French, S., Walker, E., & Hurley, K.S. (2006). Peer relationship profiles and motivation in youth sport. *Journal of Sport & Exercise Psychology*, 28, 362-382.
- Sport readiness in children and youth. (2005). *Paediatrics & Child Health*, 10(6), 343–344.
- Ulrich, B. (1987). Developmental perspectives of motor skill performance in children. In D. Gould & M.R Weiss (Eds.), *Advances in pediatric sport sciences: Behavioral issues* (Vol. 2, pp. 167-186). Champaign, IL: Human Kinetics.
- Vealey, R. S., Chase, M. A., (2016). *Best Practice for Youth Sport*. Champaign, IL: Human Kinetics.
- Vealey, R. S. (1986). Conceptualization of sport-confidence and competitive orientation: Preliminary investigation and instrument development. *Journal of Sport Psychology*, 8, 221–246.
- Weiss, M.R., & Williams, L. (2004). The why of youth sport involvement: A developmental perspective on motivational processes. In M.R Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 223-268). Morgantown, WV: Fitness Information Technology.
- Woitalla, M. (2014). Coach Egidio’s New York success story. Retrieved April 20, 2018, from www.usyouthsoccer.org/coach-egidio's-new-york-success-story.
- Youth1. (2015, March 24). *Sports Readiness*. Retrieved April 10, 2018 from <https://youth1.com/article/1296782916-sports-readiness>