

TALENT IDENTIFICATION AND DEVELOPMENT ISSUES IN MODERN SPORT

UDK 796.01:159.928 ; 796.077.5-056.45

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Abstract: Identifying talented young athletes and their timely integration into the process of training the sports discipline best suited to their abilities is one of the most important tasks of sports science and profession. Wrong decisions are numerous and extremely painful. The problem of talented individuals lies in the fact that their abilities are not limited to a single domain, but a number of different ones. The fundamental dilemma is related to the decision concerning the selection of a sports discipline and the time period of engagement in a specific sport. Is early engagement of children in sport beneficial or not? The answer is both yes and no! Early engagement of children in sports is a trend in modern sport. Many young talented athletes burn out too soon. Many coaches and overly ambitious parents often have quite unrealistic expectations from their children's sports results. Talented young athletes often terminate their sports career due to overly ambitious and specific training, injuries and lack of intrinsic motivation.

Keywords: *sports talent, selection, injuries, motivation, top sport*

INTRODUCTION

Success in sport depends on a number of factors coming from the athlete himself/herself or their circle. The genetic potential of an athlete and their development, adequate and systematic training process, high degree of motivation, good professional and pedagogical work are factors that eventually provide success in sport. Selectivity is one of the fundamental characteristics of sport. Talent identification is a universal interdisciplinary field of genetics, kinesiology, biomechanics, sports medicine, physiology and developmental psychology. Talent identification is closely related to giftedness – a person's talent. Who is gifted and who talented? Giftedness has a broader and talent narrower meaning (Ferbežer, 2008, Epstein, 2015). Gifted students are those

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who demonstrate extraordinary success in many fields. Talented students are those who demonstrate potential and extraordinary success in one field (George, 1997; Jurak, 2005; Ericsson, 2007; Ferbežer, 2008; Baker et al., 2012). How do we recognize a gifted, talented child or a student? How is giftedness manifested; how is talent for sport manifested, which instruments and tests do we use to identify gifted-talented children, and do we recognize real sports talent at all? How do we recognize talent for particular sport? Those are classic questions to which the science and profession of kinesiology has no definite answers. Sports talent identification and development represent a truly complex issue that authors cannot agree on (Bompa, 2000; Balyi, 2002; Vaeyens, Matthieu, Williams, Philippaerts, 2008; Baker et al., 2012; Epstein, 2015, Skof, 2016).

SPORTS TALENT

Talent for sport is defined by genetic morphological characteristics, psycho-motor and functional abilities, cognitive and social characteristics and motivation. The development of these abilities and their realization largely depend on parents, school, club, coach, immediate and wider social environment (Renzulli, 1986). Authors J. Baker, S. Copley and J. Schorer (2012) in their book *Talent Identification and Development in Sport*, define talent in football based on four groups of predictors: anthropometric, physiological-motor, psychological and social predictors.

According to Malina (2010), talent in sport represents a combination of outstanding biomotor abilities, creativity and intrinsic motivation. Talented children generally have several characteristics in common: they behave similarly, their environment is crucial for the realization of their giftedness – if giftedness is not adequately stimulated, motivation is lost, gifted children observe the world and their environment differently than their peers, their needs are different, work with them is a great challenge, but also an effort for parents, teachers and coaches. In the end, talented children deserve talented, competent and empathic coaches and teachers!

The most significant characteristics of gifted – talented children are:

Domain of school:

- Excellent success in school
- General knowledge
- Extensive vocabulary
- Fast reading and calculating skills
- Motor intelligence
- Artistic giftedness

Domain of motivation:

- High degree of aspiration
- Curiosity

- Strong interests
- High general efficiency

Social-emotional domain:

- Nonconformity
- Independence
- Empathy
- Asocial behaviour

TALENT IDENTIFICATION IN SPORT

The issue of the identification of children talented for sport is very complex. As a rule, talented children demonstrate outstanding abilities in multiple fields. Capable children quickly show multilateral talent. Sport is just one of their potential commitments. Is early engagement of talented children or children in general in certain sports beneficial at all!? Is early specialization useful? Sports practice does not provide definite answers. The problem of »young champions« lies in their premature burn out, lack of motivation, injuries and overexertion by training. The results achieved in the early stage of their development do not guarantee competitive success later in their sports career. Many talented individuals end their career due to inadequate, monotonous or overly ambitious training, which results in injuries and the absence of much needed intrinsic motivation. Contrary to this, some athletes engaged in sports quite late, still managing to achieve top results (a 100m sprint Olympic champion Linford Christie (GB) began training for a sprinter at the age of 22; a double 400m and 800m Olympic champion, Cuban Alberto Juantorena, first joined an athletics club when he was 19; Yelena Isinbayeva, a pole jump Olympic champion, abandons gymnastics at the age of 16 and begins training athletics).

Identifying and directing talented children toward sport, as well as their timely integration into a systematic training process, best suited to their abilities, represents one of the most important challenges of modern sports science. Selection issues are very specific, related to numerous abilities and characteristics that define sports results. Genetic material, morphological characteristics, basic and specific abilities, psychological and psychosocial characteristics, and eventually, motivational environment undoubtedly generate potential success in selected sports discipline.

Does genetics matter in sport? Sports science does not provide a definite answer to this question. It does matter, but it is not crucial. Is there such a thing as »sports gene«? Jamaica, that small Caribbean country, inhabited by three million people, represents a synonym for sprinting in athletics. At the 2012 London Olympics, they won 12 medals, at the ones in Beijing they won 11 medals, mostly for sprinting. Is that a coincidence, or a result of the genetics in that region? It is known that the alpha actinin 3 (ACTN3) gene generates the

ability to develop fast power. According to research, this gene is largely present in the inhabitants of the region (Eynon, 2013). Apart from genetic dispositions, Jamaica cherishes the cult of athletics, and thousands of kids enter sprinting competitions every year.

Today, there are different methods of identifying and selecting children talented for sport. The simplest and most basic method is the natural one – spontaneous selection. This method bases the selection of children on the current competitive achievements of individuals. Those achievements may be results of different quantity and intensity of training. Sports achievements can also be a result of faster biological maturation, not talent. Chronological and biological age can differ by two or more years. This method proved to be rather unreliable. For a young athlete, biological age can be a major advantage or a major disadvantage. Biological age generates motor potential, which is manifested in competitive achievements. As a rule, they are just momentary. Those who win in youth are not always those who win in senior categories (Malina, 2010; Eynon et al., 2013; Skof, 2016).

Another group of methods for identification and selection of children are scientific methods. The international space recognizes several methods. The best known ones are (Skof, 2016):

- *Talent Identification and Development Programmes in Sport (TIDPS)*
- *Talent Intelligence, Personality, Skills – TIPS*
- *Speed, Understanding, Personality – SUPS*
- *Differentiated Model of Giftedness and Talent – DMGT*
- *Talent – SLO*

It must be underlined that all these methods are not highly reliable. There is no method based on which a mature athlete's achievements could be predicted with a degree of certainty. This only proves that identification, selection and prediction of success in sport is a complex issue. Success in sport depends on a number of intrinsic and extrinsic factors. A combination of motor abilities, psychological factors, cognitive abilities, biological and psychosocial development affects the different rate and dynamics of individual sports development. This only proves that people are complicated »biological machines«, which act according to unpredictable principles.

EARLY SPECIALIZATION OF CHILDREN IN SPORT

Is early engagement of children into sport beneficial and necessary? There are numerous examples of negative practice. Early specialization does not provide anticipated positive results. Many talented children who excelled in a certain sport in early youth, could not keep the level up later. There are certain exceptions, too. Tiger Woods began playing golf when he was three, Novak Đoković started playing tennis when he was four and Andre Agassi began winning his peers when he was six; Jennifer Capriati was a child prodigy in

tennis at the age of five, Ana Ivanović began playing tennis when she was six, while Janica Kostelić was a serial winner in her category at the age of 11. Early engagement in sport is a trend in modern sport. The competition among sports to attract young talented athletes is enormous. Early sports specialization is related to specific training and specific loads. The consequence of such training in young athletes are injuries. Early specialization implies the pressure coming from the environment, the coach and the parents in an attempt to achieve excellent results. This creates pressure, the feeling of great responsibility and stress for a young athlete. Many times, coaches and overly ambitious parents have unrealistic expectations from their children's results. When success and winning become an imperative, training must be intense, specific, unilateral, and that will sooner or later lead to injuries or overexertion by training and sport in general. That is a professional error – young athletes must observe training and competitions both rationally and emotionally. Unilateral training does not develop wider motor preparation, which is a condition for latter specific training. There is no problem with children engaging in sport early; what is disputable is that such sports activity prevents spontaneous socialization of a child with their peers through play. If a child is overexerted at the time of their major body growth, they will never achieve their optimal body height, which will also prevent other systems in development from functioning optimally (Baker et al., 2012).

The main reasons for early specialization are:

- The role of parents and their ambitions
- Exquisite talentedness
- Sports scholarships and other benefits
- »Manager« scholarships
- Early financial deals with young athletes
- Sponsorship deals in sports industry
- Young athletes' competitions
- Sports categorization
- The influence of the media

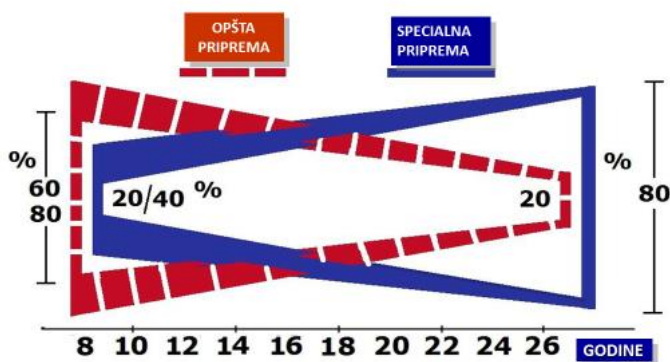
The risks of early specialization:

- Excessive dependence on sports achievements
- Social isolation – segregation of young athletes
- The burn-out syndrome
- Absence of education opportunities
- Manipulation by coaches and parents for the purpose of achieving »goals«
- Absence of intrinsic motivation for training and competing
- The syndrome of overexertion by sport
- Mental stress
- Putting a young athlete's development and health at risk
- Micro-injuries and specific injuries
- Coordinating school and sports obligations

MODELS OF DEVELOPMENT OF YOUNG ATHLETES

The road to top sports results is long, strenuous and uncertain. On average, it lasts from 8 to 10 years, or 10,000 to 12,000 hours of practice. The author of this theory is a Swedish physiologist from the University of Florida, Anders Ericsson. This theory has a multitude of supporters and opponents alike. The models of athlete development are different from the aspect of specificity of each sport. Apart from the classic model of athlete development by means of early specialization, a so-called divergent model – a multilateral model with late specialization - has been increasingly applied. This model implies beginning with a versatile – multidimensional training (Bompa, 2000), versatile exercising, engagement in different sports, the development of elementary motor and functional abilities (Picture 1).

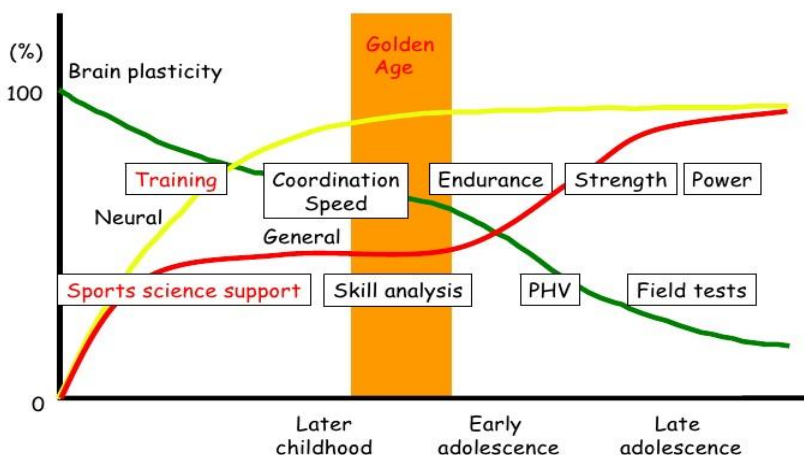
Picture 1. *Multilateral development of athletes (Bompa, 2000)*



The accent is on humane, holistic approach to training children. Training must be a game based on motivation and positive emotions (Bompa, 2000; Malina, 2010; Skof, 2016). The divergent model is based on modern principles of neurophysiology of nervous system development in children. A child's intellectual and motor development peaks at the age of 4 to 12. A person's intellectual capacity depends on the number of neurons and their connections, synapses. Neurons and synapses create neural networks which have motor programs built in as a consequence of moving. A child's biological potential is directly related to the amount of motor programs. This period is justly defined as the »golden age« in the development of psychomotorics. (Kinugasa, 2009) – Picture 2.

Picture 2. *The development of motor abilities in biological stages*
<https://www.slideshare.net/umekinu/early-specialization-in-youth-athletes>

Biological Approach for Training



Different sports thus stimulate the development of a greater number of motor programs, which serve as a basis for motor intelligence. Brain is an organ that has always adapted to its environment throughout human evolution. Thanks to new technologies and lifestyle, it is adapting today as well. The most intense period of brain development is between two and six years of age. New neurological and neurophysiological discoveries indicate that the number of neurons (nerve cells) result from genetics, while the number of synapses – connections between neurons – relies on a person's motor and intellectual activities. By the age of five, people form 50% of synapses between nerve cells; by the age of seven, this number increases to 75%, while by the age of 12 it amounts to 95% of connections between neurons (Rajović, 2015). The more connections we have, the thicker the neural circuits which directly affect a person's motor intelligence. Diverse training (multilateral training) creates the best conditions for developing a young athlete's motor potential, which is essential to future specific training.

One of the best known models of long-term – functional development of an athlete is the Canadian model by author I. Balyi (Picture 3). This model envisages five stages in the development of an athlete:

1. The playing stage – fundamental training (*Fundamentals*)
2. The learning stage (*Learning to Train*)

- 3. The stage of fundamental sports preparation for the selected sport (*Training to Train*)
- 4. The competition preparation stage (*Training to Compete*)
- 5. The stage of training for sports achievements (*Training to Win*)

Picture 3. *The long-term sports development model* (Balyi, 2002)



This model envisages a holistic development of the morphological characteristics and motor abilities of an athlete, based on the biological and psychosocial principles of the human kind.

Potential Consequences of Early Specialization in Sport

Early specialization in sport implies unilateral, intensive training of young athletes for competitive achievements. The main imperative is success. The consequence of this is an overly ambitious, specific training which puts their health and normal functional bodily development at risk on the long run. Specific training in early childhood does not fulfil children’s social needs. The American Academy of Paediatrics cautioned that children who intensively engage in just one sport are deprived of numerous motor and psychosocial skills (Malina, 2010, Skof, 2016). Narrow specialization, great ambitions of coaches, parents and closer social environment often create enormous pressure, social isolation and stress for a young athlete. Sport is no longer a game, but a heavy burden which carries a fear of failure. Due to the feeling of responsibility and a fear of failure, a young athlete fails to develop the necessary self-confidence, creativity and ambition. Failure reduces their ego and their enjoyment in sport. Also taking into account the issue of coordinating school and sports obligations, as well as social isolation, all this combined often results in sport career termination.

The biggest risk of early specialization, due to specific and unilateral loads, are injuries, which often partially or completely block young athletes' careers. The injuries of the locomotor system in some individual and team sports are frequent due to overly ambitious training, fast growth during adolescence, or its specificity. In athletics, gymnastics, hockey and sports games the most frequent injuries are: stress fracture on tibia and metatarsal bones, knee cartilage injuries, apophysitis, patellar inflammation, Achilles tendinitis, foot arch inflammation, the patellofemoral syndrome (Skof, 2016).

Great competition- and achievement-related ambitions of young athletes are frequently connected to issues with body weight and overeating. The issues of overeating are present in young athletes in certain, weight-sensitive sports: gymnastics, acrobatics, martial arts, aesthetic sports. Due to hormonal changes in adolescence, the general motor efficiency changes, especially among female population, and the amount of ballast mass increases while the amount of muscle mass reduces. All the aforementioned factors of biological development and early specialization affect young athletes' sports activity. That is why so many »young champions« never managed to fulfil expected achievements in the senior category.

CONCLUSION

The road to top sports results is long and very demanding. It is open to those who possess extraordinary predispositions for a certain sport, specific character traits, strong motivation, work habits and good professional support. Work with young talented individuals requires a specific approach. What matters above all is humane work, based on young athletes' personal and social development. There is no overtaking or shortcuts in youth competitive sport. The young are not adults' miniatures. The young observe, think and feel in their own way. The primary motive of engagement into sports cannot lie exclusively in a competitive result. Only humane sport is a true sport.

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