

# Planning of training for long term development

“We need a long term vision to allow young boxers to develop and be prepared for the demands at the highest level”

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Santiago Nieva- High Performance Director (BFI) & Dan Jefferson- Strength and Conditioning Coach

# WHAT WILL WE COVER?

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- **Key points to working with Adolescent athletes**
- **Example case studies**
- **Early Specialisation**
- **Early Specialization: From a medical perspective**
- **The value of multi-sport exposure at a young age**
- **physical training as a youth athlete?**

# **WORKING WITH ADOLESCENTS: THINGS TO REMEMBER**

- **Children are not “Young adults” and therefore shouldn't be trained the same way**
- **The age and stage of a youth athlete is crucial when designing training sessions**
- **We need to look BEYOND performance and focus on the long term athletic development**
- **Primary movement patterns should be emphasised at youth level with more sport-specific movements following ahead in their athletic journey**
- **Multi-sport exposure should be encouraged at the youth level to allow the young athletes to experience a whole array of different movements included in sports**

# EXAMPLE CASE STUDIES



**Lomachenko** (Two-time Olympic champion and three weight world champion) is a prime example of multi-sport activity at a younger age, participating in a lot of dancing which him and his father have said play a big part in his boxing abilities



**Katie Taylor** (Olympic champion and two weight world champion also represented the republic of Ireland women's football team 11 times from the ages of 14-19



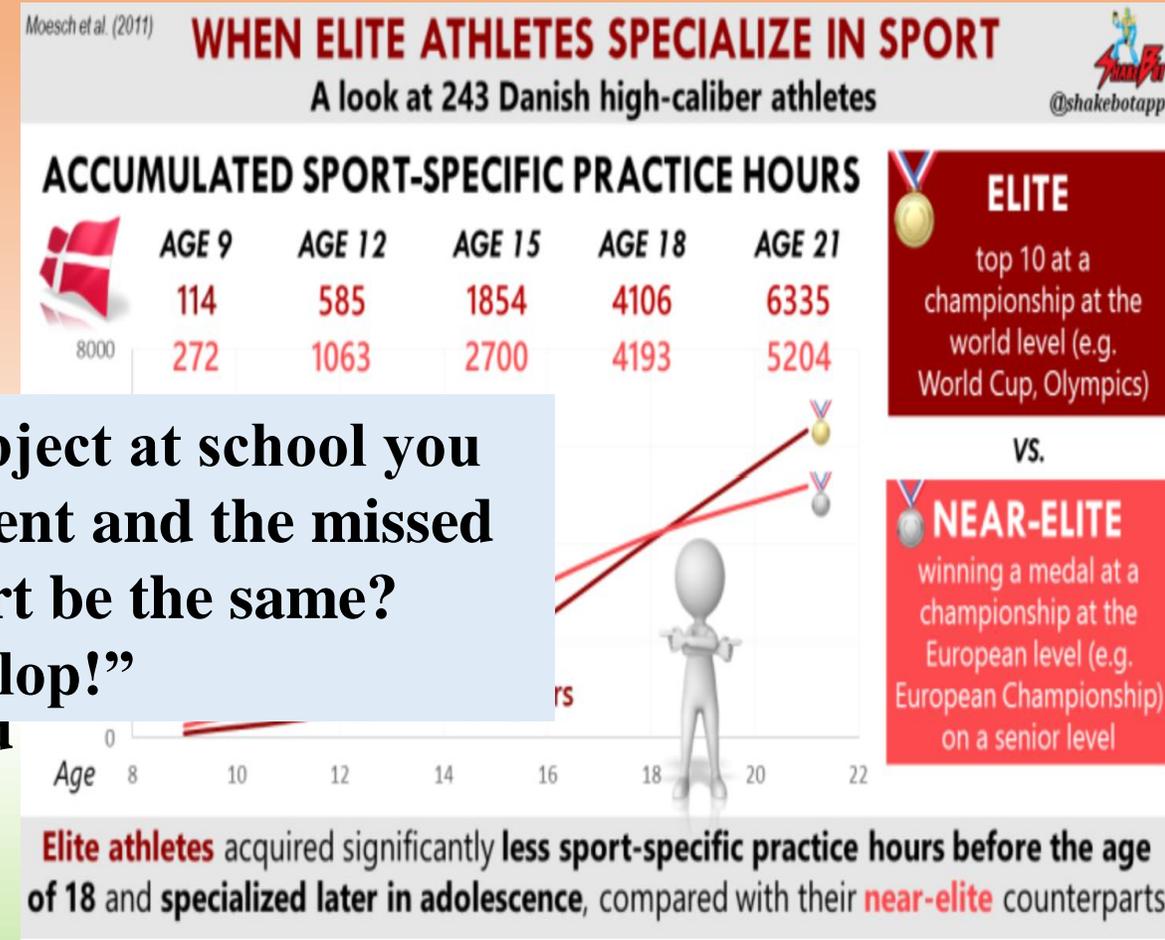
**Lewis Hamilton** world number one formula one racing driver. Was a black belt in karate as a youngster and participated in football to academy level as a teenager

# EARLY SPECIALISATION

*What are the inherent risks if a child specialises in one sport at a very young age?*

- **Social isolation**
- **Over-**
- **Burnout**
- **Manipulation by adults through misinformed judgements**
- **Increased sport specific practice does not equal increased performance**
- **Overuse/overload injuries (joints)**

**“If your child could only study one subject at school you would be concerned at their development and the missed learning opportunities. So why let sport be the same? Let’s allow these kids to play and develop!”**



# EARLY SPECIALIZATION: FROM A MEDICAL PERSPECTIVE

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**What could be the implications of specializing in a sport at a young age?**

- **Poorer age appropriate sports skills**
- **Cannot develop wider neuro-muscular patterns (increased risk of injury)**
- **Increased risk of physical burnout**
- **Increased risk of psychological disengagement**
- **Decreased chance of developing wider coping strategies**

# THE VALUE OF MULTI-SPORT EXPOSURE AT A YOUNG AGE

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➤ Does NOT hinder elite sport participation

➤ Early diversification (sampling) allows participation in a range of contexts that most favorably affects positive youth development.

➤ High amounts of deliberate play during the sampling years build a solid foundation of intrinsic motivation through involvement in activities that are enjoyable and promote intrinsic regulation

➤ Allows learning in wider range of contexts

➤ Increases opportunity to develop wide range of motor & cognitive skills

# PHYSICAL TRAINING AS A YOUTH ATHLETE?

## YOUTH RESISTANCE TRAINING

Consensus Statement by NSCA  NATIONAL STRENGTH AND CONDITIONING ASSOCIATION By Faigenbaum et al. JSCR 2009



- 1** Provide qualified instruction and supervision
- 2** Ensure the exercise environment is safe and free of hazards
- 3** Start each training session with a 5- to 10-minute dynamic warm-up
- 4** Begin with relatively light loads and always focus on the correct exercise technique

- 5** Perform 1–3 sets of 6–15 repetitions on a variety of upper- and lower-body strength exercises
- 6** Include specific exercises that strengthen the abdominal and lower back region



- 7** Focus on symmetrical muscular development and appropriate muscle balance around joints
- 8** Perform 1–3 sets of 3–6 repetitions on a variety of upper- and lower-body power exercises

- 9** Sensibly progress the training program depending on needs, goals, and abilities



- 10** Increase the resistance gradually (5–10%) as strength improves
- 11** Cool-down with less intense calisthenics and static stretching

- 12** Listen to individual needs and concerns throughout each session
- 13** Begin resistance training 2–3 times per week on non-consecutive days



- 14** Use individualized workout logs to monitor progress
- 15** Keep the program fresh and challenging by systematically varying the training program



- 16** Optimize performance and recovery with healthy nutrition, proper hydration, and adequate sleep
- 17** Support and encouragement from instructors and parents will help maintain interest

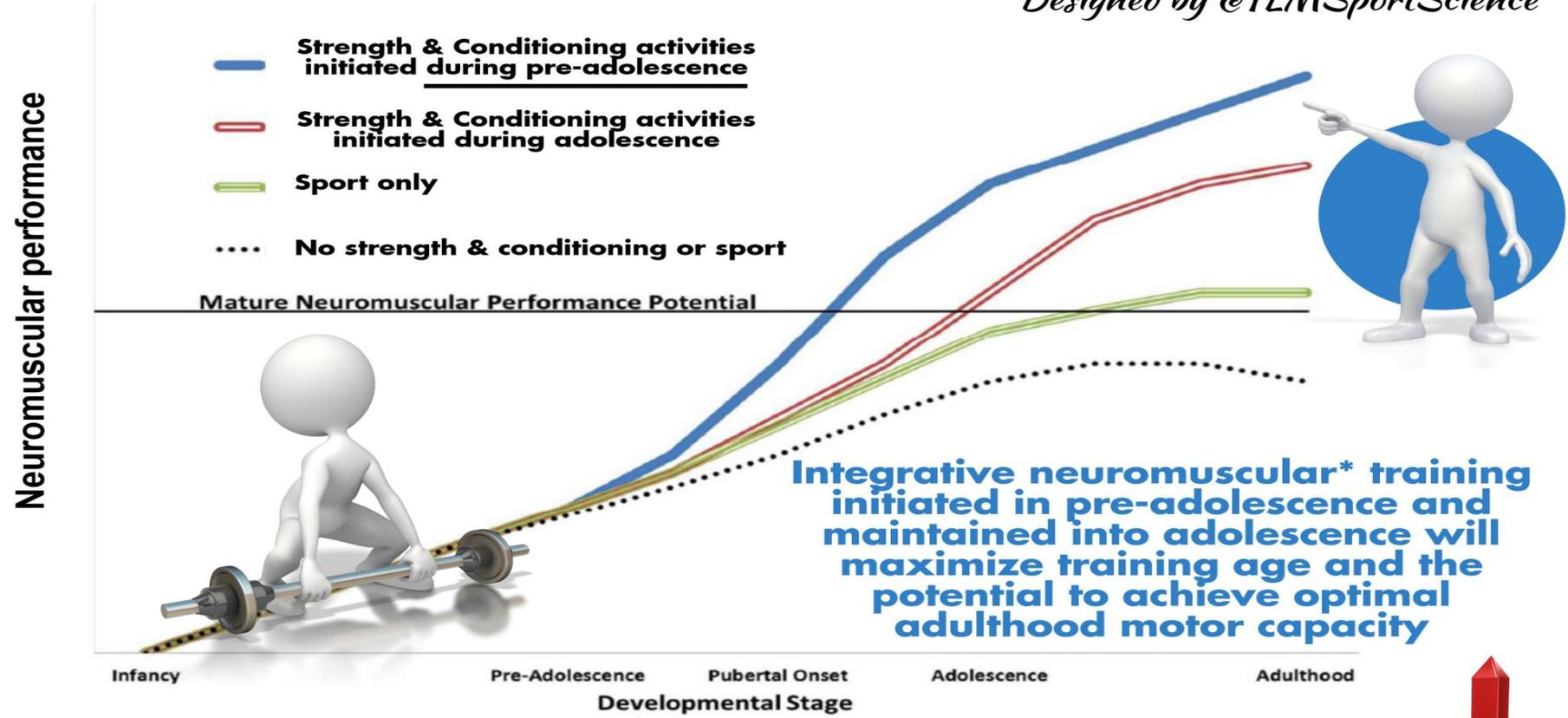
Images provided by PresenterMedia

(Faigenbaum, 2009)

# PHYSICAL TRAINING AS A YOUTH ATHLETE?

## How Young is "Too Young" to Start Training?

Designed by @YLMSportScience



- ↑ Strength
- ↑ Sport performance
- ✓ Injury prevention

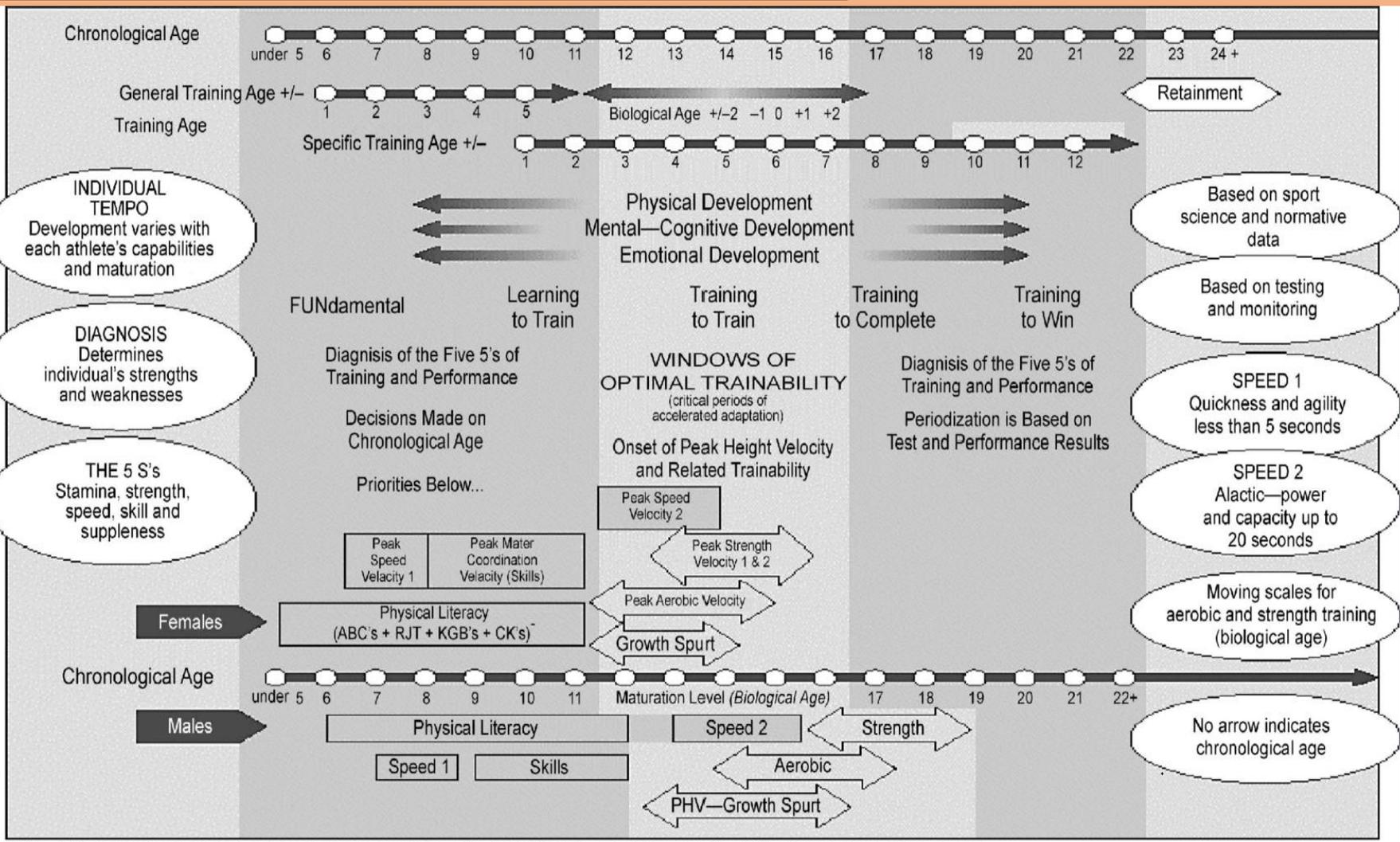
### Reference

by Myer, Lloyd, Brent & Faigenbaum, ACSMs Health Fit J 2014

\*Resistance training, dynamic stability exercises, core focused training, plyometric drills and agility training



# PHYSICAL TRAINING AS A YOUTH ATHLETE?



\*ABC's - Agility Balance Coordination Speed + RJT = Run Jump Throw + KGB's = Kinesthesia Gliding Bouyance Striking with object + CK's = Catching Kicking Striking with body

## The Long-Term Athlete Development model: Physiological evidence and application

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### Abstract

Within the UK, the "Long Term Athlete Development" (LTAD) model has been proposed by a variety of national governing bodies to offer a first step to considering the approach to talent development. The model, which is primarily a physiological perspective, presents an advancement of understanding of developing athletic potential alongside biological growth. It focuses on training to optimize performance longitudinally, and considers sensitive developmental periods known as "windows of opportunity". However, it appears that there are a number of problems with this theoretical model that are not necessarily transparent to coaches. Principally, the model is only one-dimensional, there is a lack of empirical evidence upon which the model is based, and interpretations of the model are restricted because the data on which it is based rely on questionable assumptions and erroneous methodologies. Fundamentally, this is a generic model rather than an individualized plan for athletes. It is crucial that the LTAD model is seen as a "work in progress" and the challenge, particularly for paediatric exercise scientists, is to question, test, and revise the model. It is unlikely that this can be accomplished using classical experimental research methodology but this should not deter practitioners from acquiring valid and reliable evidence.

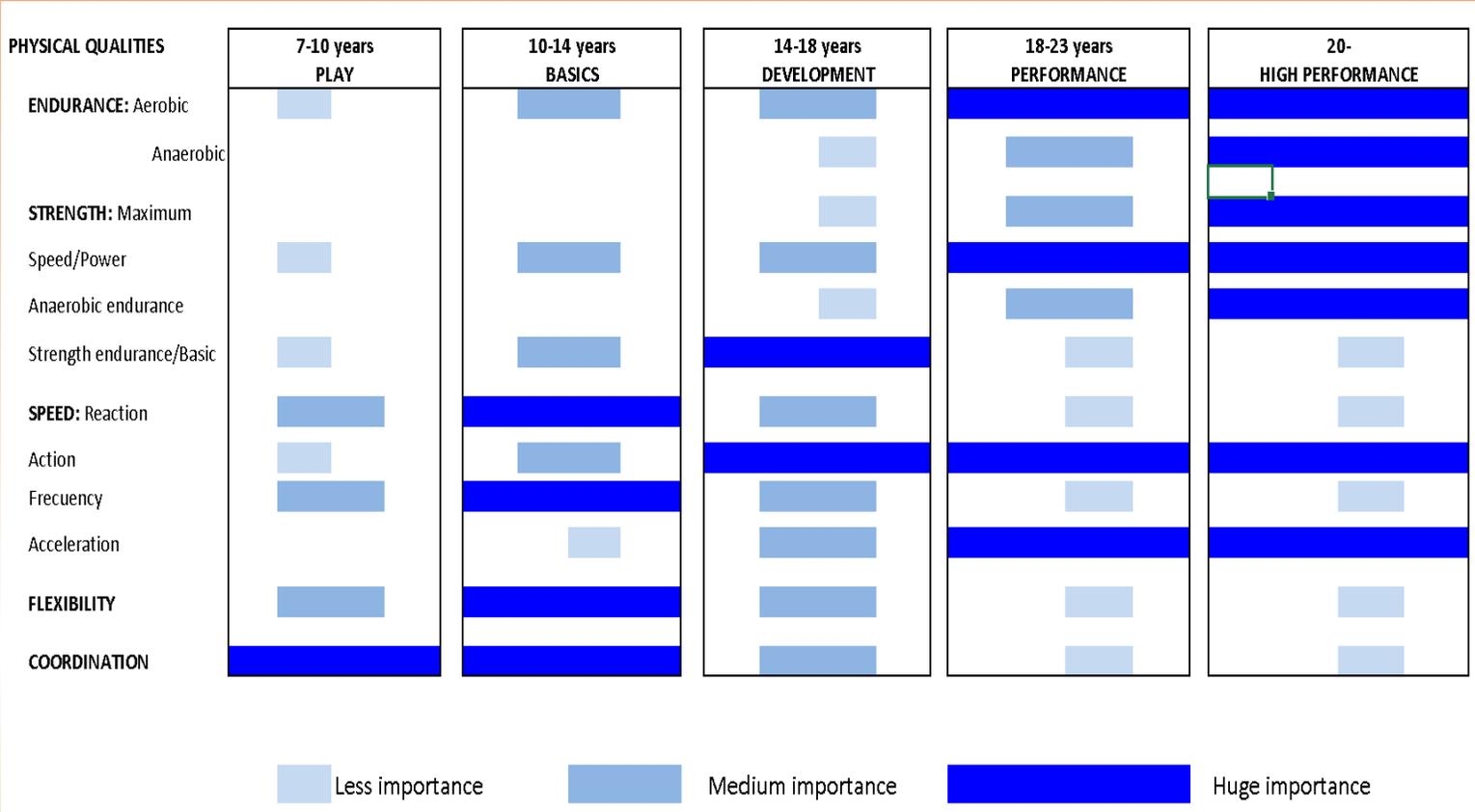
**Keywords:** Long-Term Athlete Development Model, growth and maturation, youth athletes

### Introduction

Talent development is holistic in nature due to the complex interaction of interdisciplinary issues that directly impact on athletic opportunity and progression. Such concepts have been critically acknowledged and documented in a recent comprehensive report (Bailey et al., 2010). Bailey and colleagues (2010) discuss such interactions methodically and recommend future considerations to sport and physical activity stakeholders who wish to enhance participation and performance levels. Such discussion has also been documented in recent review articles (Burgess & Naughton, 2010; Phillips, Da-

based upon physiological principles and which will be the sole focus here. The requirement to identify new methods by which talent can be nurtured (which in itself is contentious as to its definition) is paramount for coaches and practitioners. In particular, direct techniques to advance paediatric sporting development are of significant interest. However, within this specific population there are many extraneous factors (including degree of maturation, and anatomical, neurological, hormonal, and musculoskeletal changes in structure) that must be incorporated within the planning of any form of physical training (Malina, Bouchard, & Bar-Or, 2004; Tihanyi, 1990). These factors relate to an

# PHYSICAL TRAINING AS A YOUTH ATHLETE?



- **Certain physical qualities are more important at specific time points**
- **Gradual progression throughout each stage is critical and there is NO RUSH**
- **Youths are individuals and therefore will progress at different stages, there is no test that will tell you when to progress**

# PHYSICAL TRAINING AS A YOUTH ATHLETE?

“Movement mastery is key for a young athletes development. Don’t progress them too quick”

Early childhood	Late childhood	Adolescents	Adulthood
female: 6–8 years male: 6–9years	female: 9–11 years male: 10–13 years	female: 12–18 years male: 14–18 years	female: >18 years male: >18 years
<b>biological age</b>			
Tanner stage I	Tanner stage I–II	Tanner stage III–IV	Tanner stage V
<b>maturity</b>			
Pre-pubertal (pre PHV)	Pre-pubertal (pre PHV)	Pubertal (mid PHV)	Post-pubertal (post PHV)
<b>stage of long-term athlete development</b>			
FUNDamentals	Learning to train	Training to train	Training to compete
<b>long-term development of muscular fitness (strength, power, endurance)</b>			
<div style="display: flex; justify-content: space-between; align-items: center;"> <span>Low</span> <span>Resistance Training Skill Competency</span> <span>High </span> </div>			
<ul style="list-style-type: none"> <li>- coordination training</li> <li>- agility training</li> <li>- balance training</li> <li>- muscular endurance training with own body mass/ training tools (e.g., medicine ball) with a focus on exercise technique</li> </ul>	<ul style="list-style-type: none"> <li>- balance training</li> <li>- plyometric training as part of deliberate play (e.g., rope skipping) with a focus on correct jumping and landing mechanics</li> <li>- core strength training</li> <li>- muscular endurance training with own body mass/training tools (e.g., medicine ball)</li> <li>- free weight training with a focus on exercise technique</li> </ul>	<ul style="list-style-type: none"> <li>- balance training</li> <li>- plyometric training (depth jumps from low drop heights)</li> <li>- core strength training</li> <li>- free weight training at light to moderate loads</li> <li>- heavy resistance strength training (hypertrophy)</li> <li>- eccentric resistance training</li> <li>- sport-specific resistance training</li> </ul>	<ul style="list-style-type: none"> <li>- balance training</li> <li>- plyometric training (depth jumps from moderate drop heights)</li> <li>- core strength training</li> <li>- free weight training at moderate to high loads</li> <li>- heavy resistance strength training (neuromuscular activation + hypertrophy)</li> <li>- sport-specific resistance training</li> </ul>
<b>Training-induced adaptations</b>			
Neuronal adaptations		Hormonal / Neuronal / Muscular / Tendinous adaptations	

# KEY TAKEAWAY POINTS

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- It is encouraged that young athletes are exposed to multi-sport activities alongside their “Main sport”
- Ensure the FUN element stays alive in the programme
- Think of youth development as a marathon and not a sprint
- Evidence informed practice
- Build solid foundations

**"WE CANNOT  
ALWAYS BUILD  
THE FUTURE FOR  
OUR YOUTH, BUT  
WE CAN BUILD  
OUR YOUTH FOR  
THE FUTURE."**

**FRANKLIN D. ROOSEVELT**

# RECOMMENDED READING

