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This webinar is recorded and will be available later.

ANTHROPOMETRIC FACTORS AND BODY COMPOSITION

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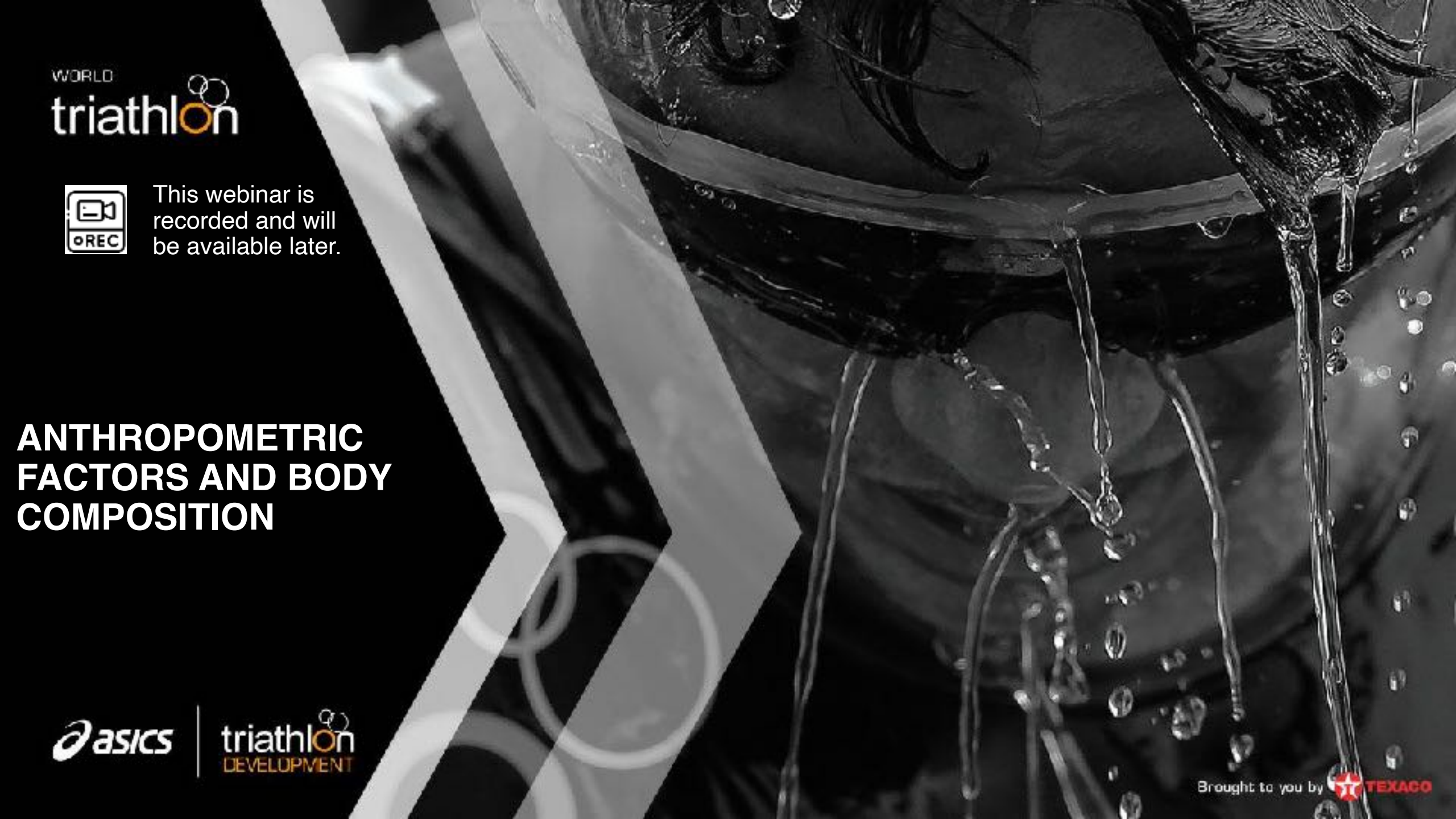

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Physical Maturity Recap

- The design of any DEVELOPMENT programs must consider the level of maturation.
- The actual classification systems based only on chronological age frequently results in wrong evaluations, misjudgments, and lead coaches to take poor decisions.
- The key is not to discard any athletes who still haven't fully developed and reached the optimum level of maturation.
- The anatomical age is visible; biological age is not.
- TD programs may be missing opportunities to nuture world-class athletes by releasing them from their academies/systems during vital developmental periods.

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Anthropometry is the study and technique of taking body measurements

Athletes experience a process of body changes through their development

These changes are different for females than males and being after puberty where they are more evident

Understanding these changes are key for coaches since they have a direct influence on an athletes' performance

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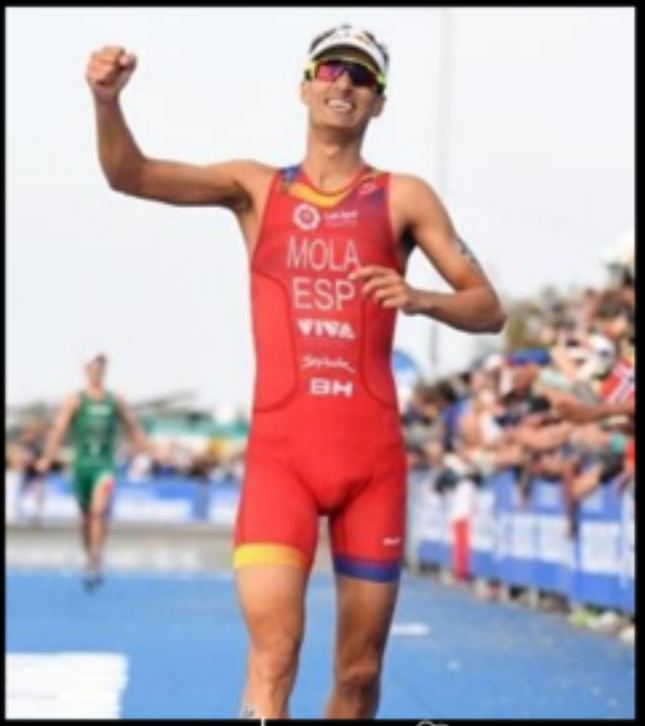
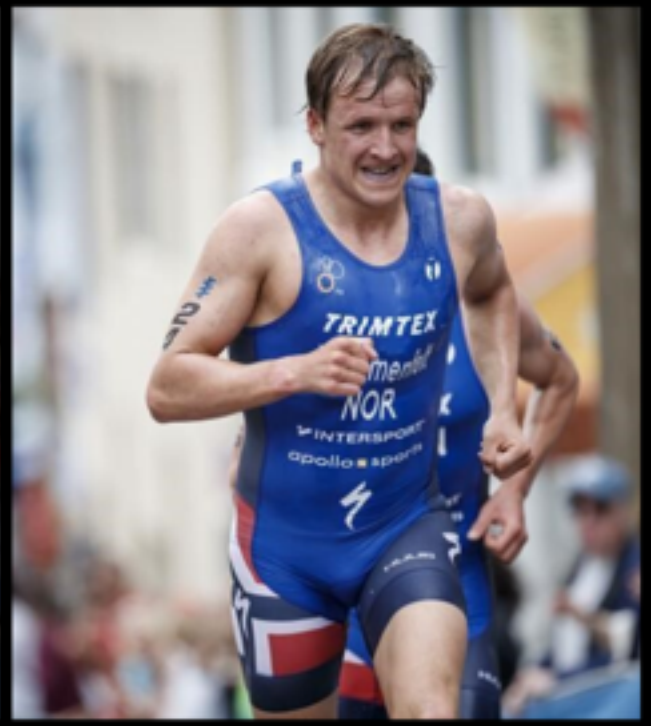
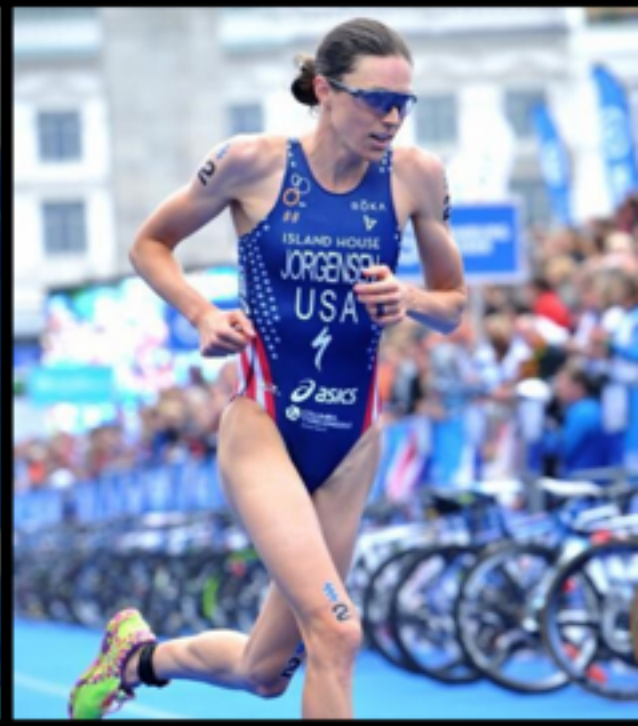
Anthropometric Factors and Body Composition

The morphological characteristics of the athletes are determined as one of the factors that influence the sporting succes







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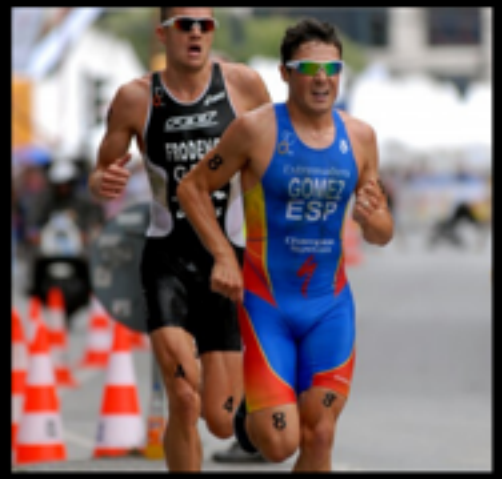
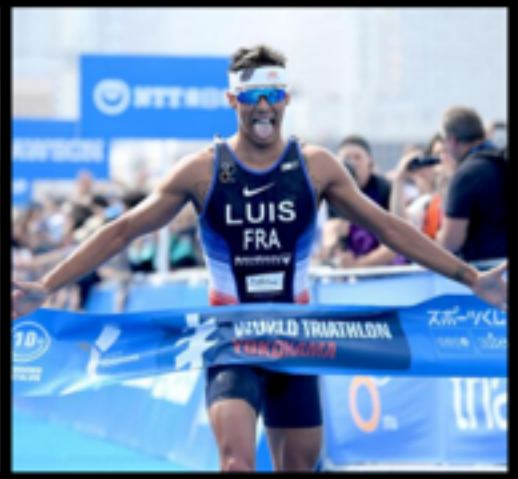
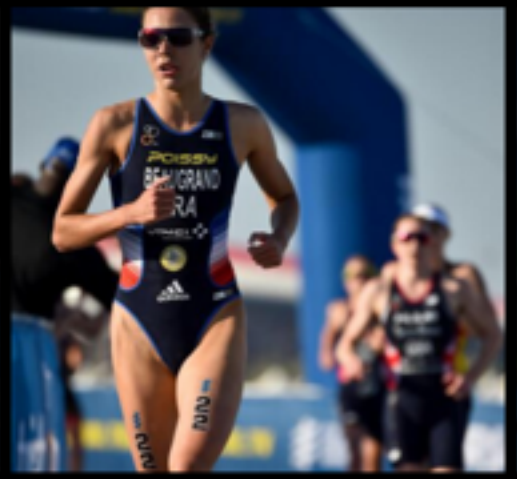
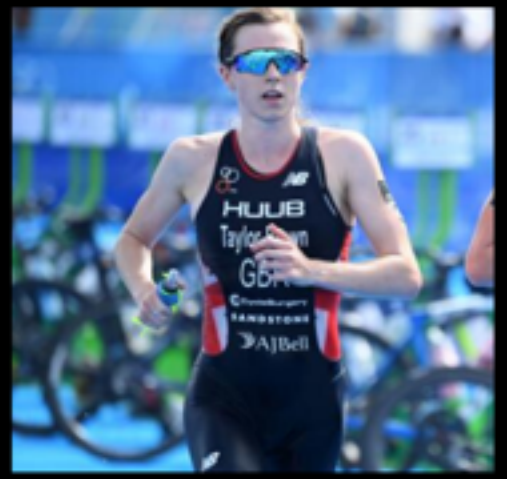
Morphological characteristics

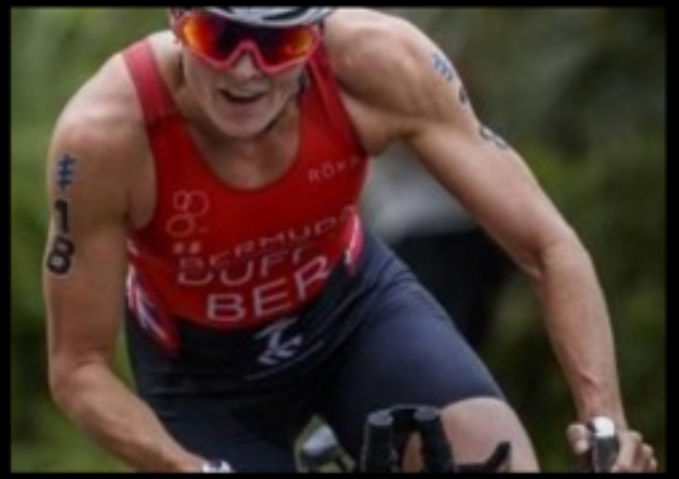








- Tall
- Long segmental lengths
- Less endomorphic
- More ectomorphic
- Lightweight
- Low % of body fat



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Anthropometric profile

Table showing average anthropometric data for elite level and junior triathletes from research papers

Reference	Category	Height		Weight		% Body fat		BMI	
		Male	Female	Male	Female	Male	Female	Male	Female
Cuba-Dorado, 2017	Senior	180cm	167cm	70kg	55kg	<10%	9.95 ± 2.82%		
Gianfelici et al., 2012	Senior	177.9 ± 5.76cm	174 ± 6cm	69.6 ± 3.1kg	59.89 ± 7.87kg	6.0 ± 1.97%	9.95 ± 2.82%	22.0 ± 1.6 kg/m²	21.83 ± 2.54 kg/m²
Canda et al., 2014	Senior		163.2 ± 5.4cm		53.8 ± 3.8kg		14.82 ± 3.07%		
Werneck et al., 2014	Junior	175.8 ± 5.8cm		65.3 ± 5.0kg		11.0 ± 2.18%			
Canda et al., 2014	Junior		166.5 ± 5cm		55.6 ± 4.5kg		21.72 ± 3.2%		
Landers et al., 2012	Junior	178.4 ± 5.5cm	167.3 ± 5.2cm	65.8 ± 6.4kg	52.8 ± 6.4kg				

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Effects of body composition on the development of young athletes in triathlon

- Female junior elite triathletes do not significantly differ from senior female elite triathletes in physical maturity.
- Weight gain or loss and changes in body composition can be the result of issues related to menstrual function, and need to be viewed in the context of hormonal changes associated with puberty.
- A high percentage of fat mass negatively affects running performance.

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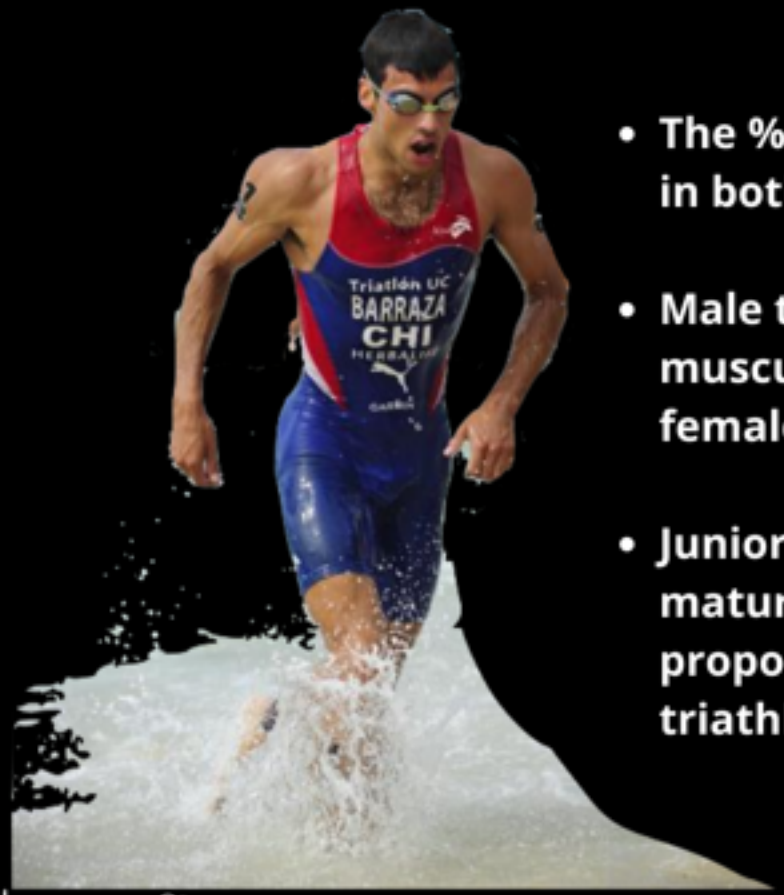
Effects of body composition on the development of young athletes in triathlon



- The % of fat mass correlates negatively with performance in both swimming and running.
- Male triathletes possess a larger muscle mass, greater muscular strength, and lower relative body fat than female triathletes.
- Junior male athletes haven't reached full physical maturity yet, but they possess many of the proportional physical characteristics of the senior male triathletes.

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Calculating Somatotype

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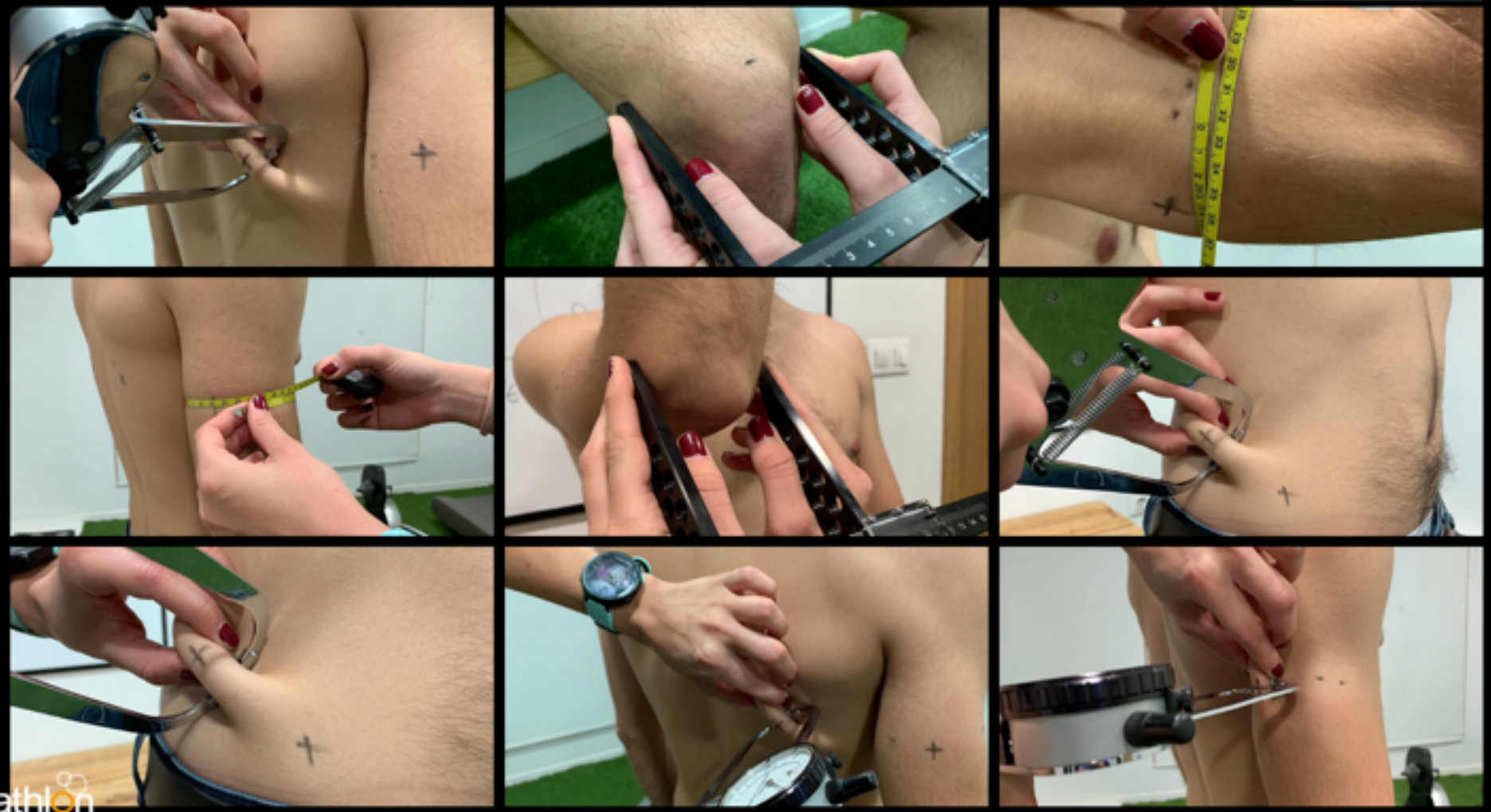

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Medical issues and Caution

- Health first, performance follows.
- Coaches have to be extremely careful when dealing with athletes and all the matters regarding their body composition.
- Avoid focussing on body weight as a means to performance improvements'

Practical Coaching Applications

Heat

Race profile

Strengths and weaknesses

Nutrition

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Take Home Message

- The morphological characteristics (physical structural) of the athletes are determined as one of the factors that influence the sporting success
- There is no clear pattern that determines the performance in competition, but some components are usually present in most elite triathletes.
- Height, body mass, percentage of body fat, and the body mass index have a direct influence on an athlete's performance.
- The growth and maturity status influences the body composition of young athletes.
- Weight gain or loss and changes in body composition in females can be the result of issues related to menstrual function.
- Coaches need to understand all the stages they are going through and prescribe the training accordingly to these stages.

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Q & A

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Thank you!

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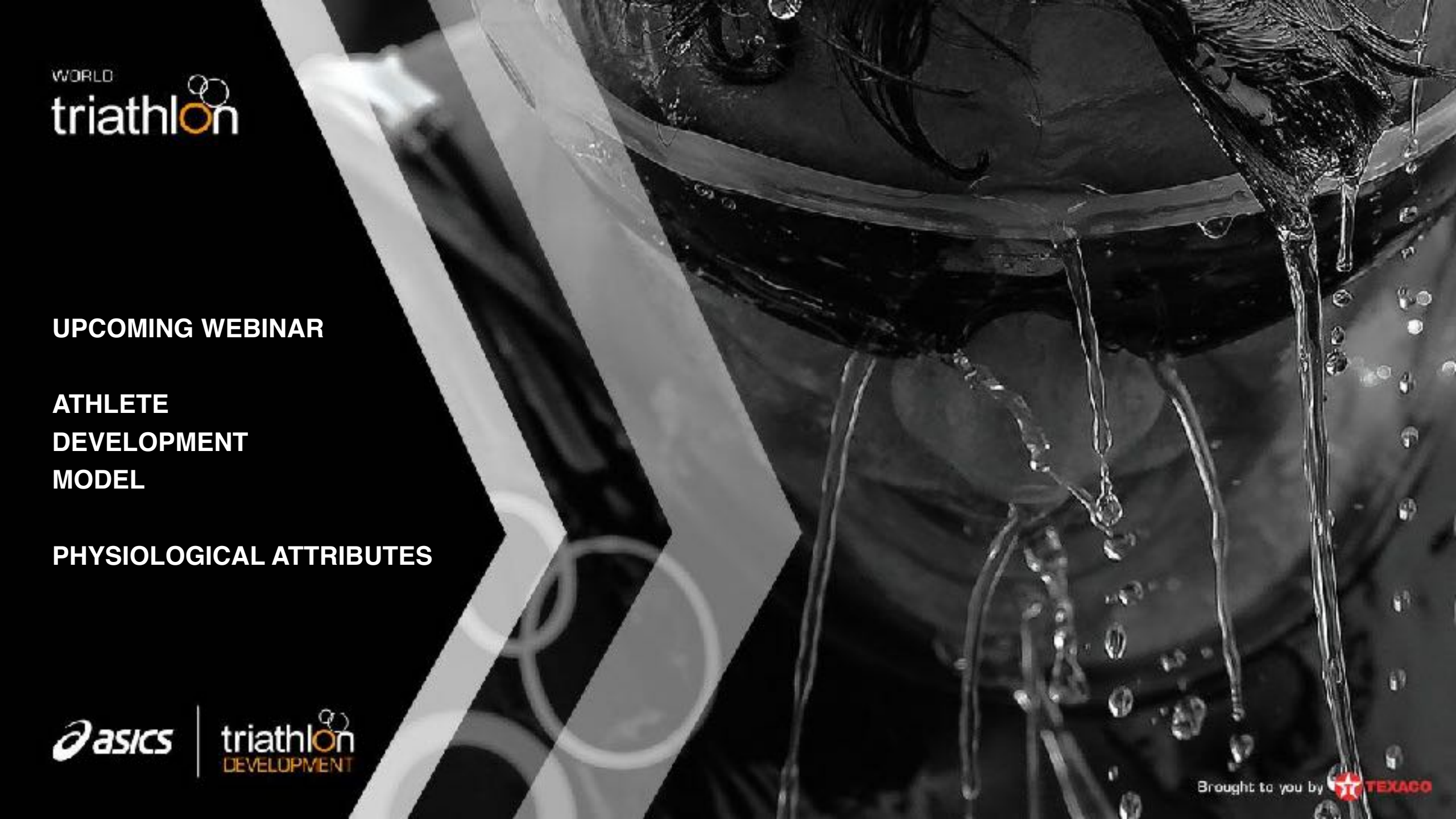
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