While You're Waiting

Scan The QR Code To See How Good You Are At Picking What Teams Players Are A Part Of... We Will Check This During The Presentation!

Maturation, Mountain Climbing & Mismatches

A Spirit story on how our 23-24 M13's and others in our environment are tackling the challenges and changes of puberty

EPPING EASTWOOD FOOTBALL CLUB

2014
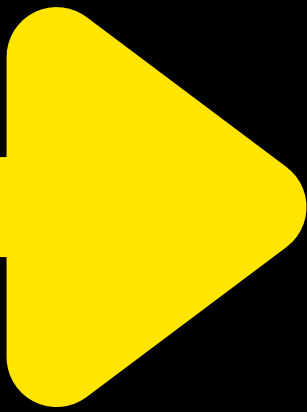
EPPING EASTWOOD FOOTBALL CLUB

2016

U12/13

U16

An old concept impacting every level of our sporting community, now with new science helping us understand what we can do to best support kids in their journeys.
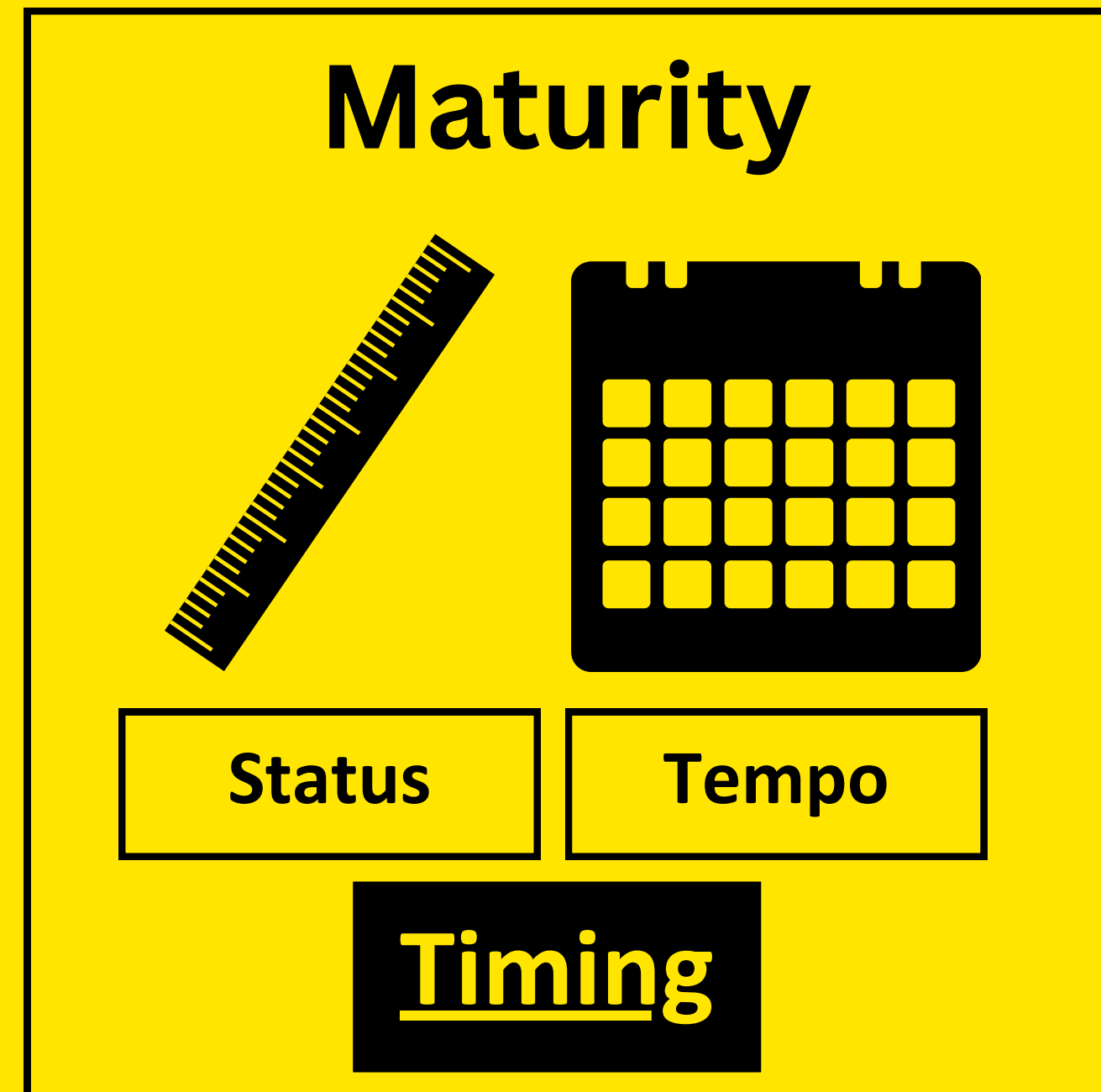
Pre-Xmas

A big mountain to climb

What is growth, what is maturity and how do they differ?

Growth

Status | Tempo

Maturity

Status | Tempo

Timing

At the beginning of the 23-24 season, M13's had players between <u>83.9%-97.5%</u> of their predicted adult height. When the Athletic DNA team first measured this team 5 players were at the start of their growth spurt, 1 player had already finished their growth spurt while the remaining players were yet to hit their major spurt.

Can you guess which player had already finished their major growth spurt?
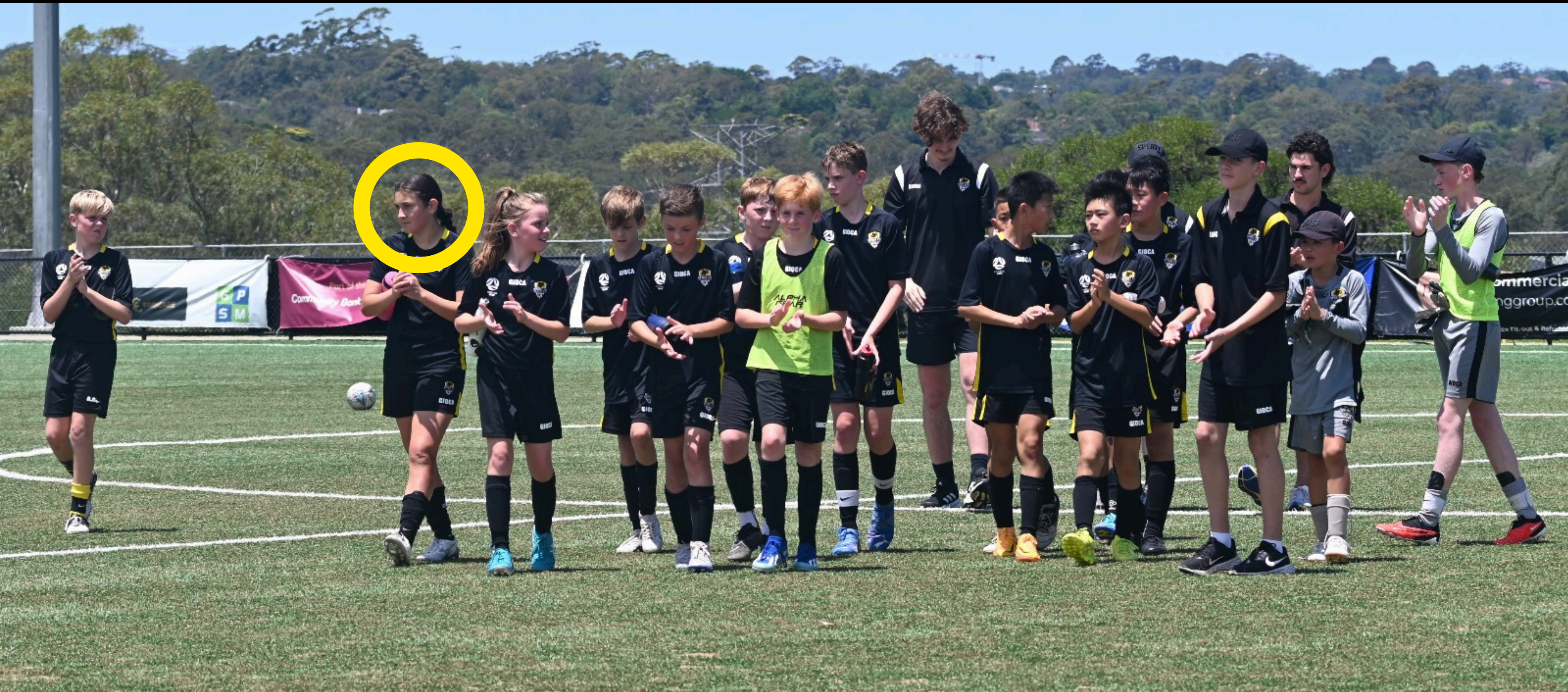
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Can you guess which player is playing their second year of 13's despite being old enough to play 14's?

Well, who's the youngest player in this photo?

Zac - November 9, 2012
Sisa - October 1, 2012
Enzo - August 20, 2012

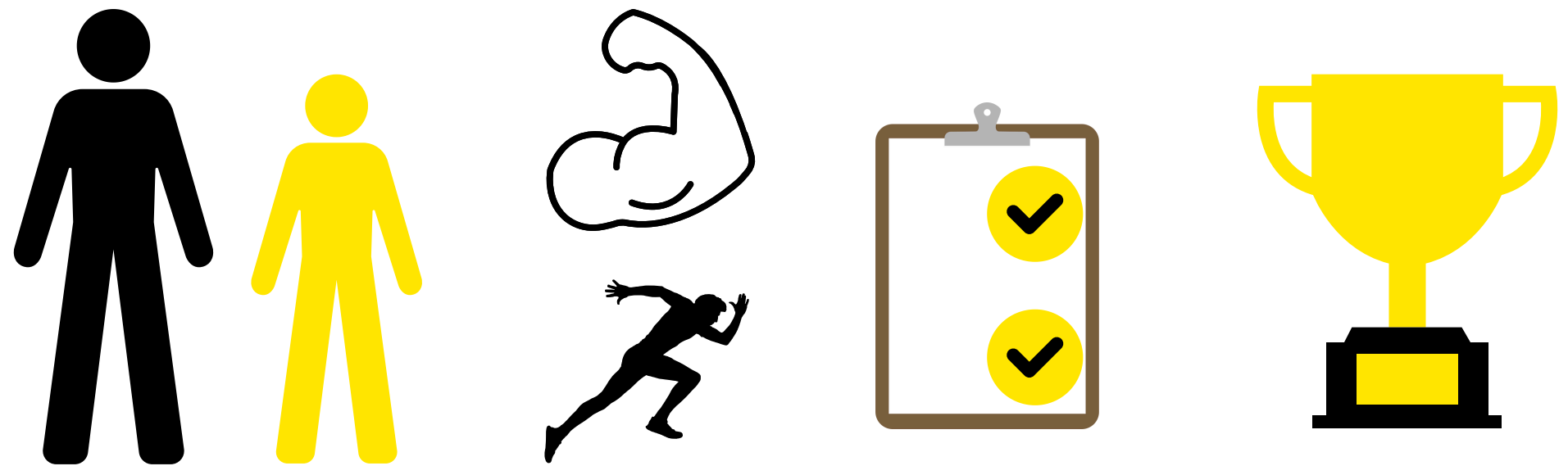# So, how can someone who's 14 turning 15 play in an U13s comp?

'Meet' Liam

The Relative Age Effect (RAE)

Biological Maturity Selection Bias

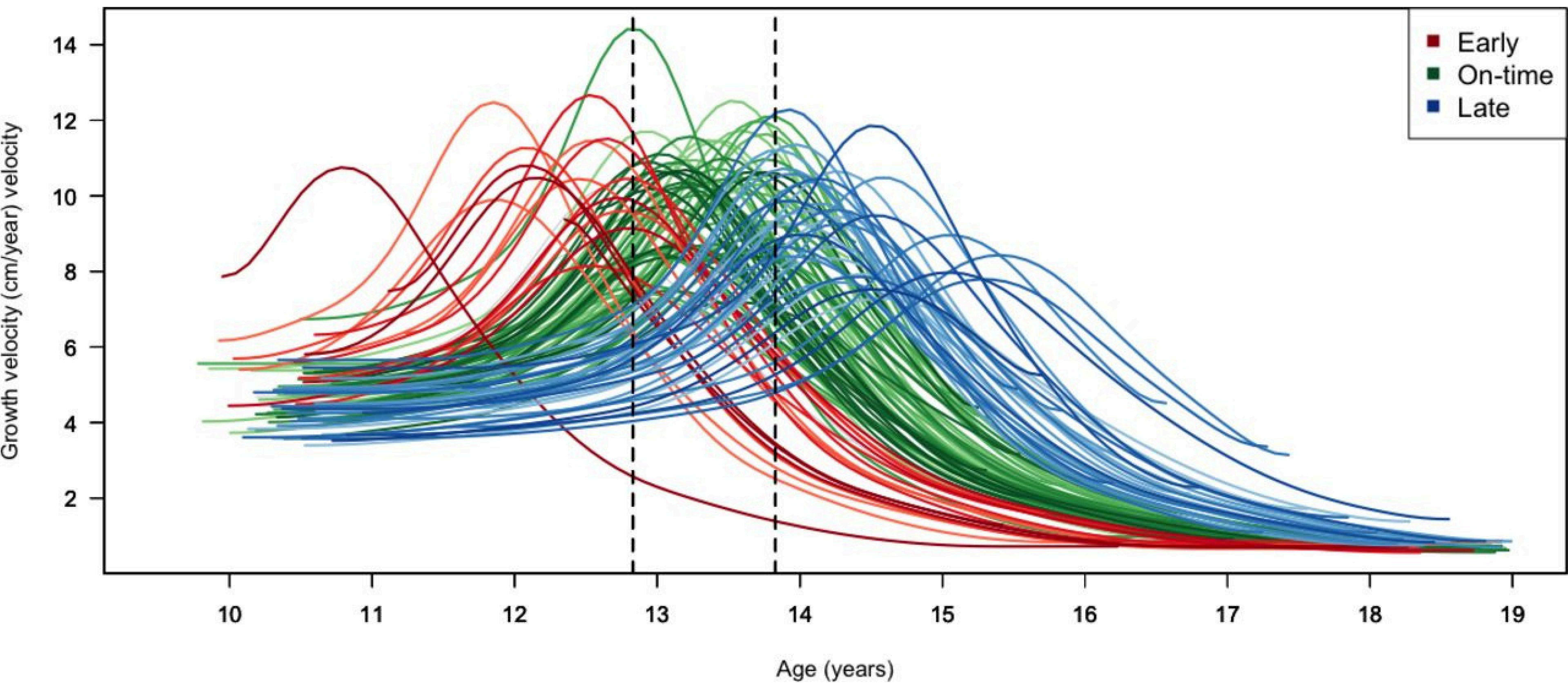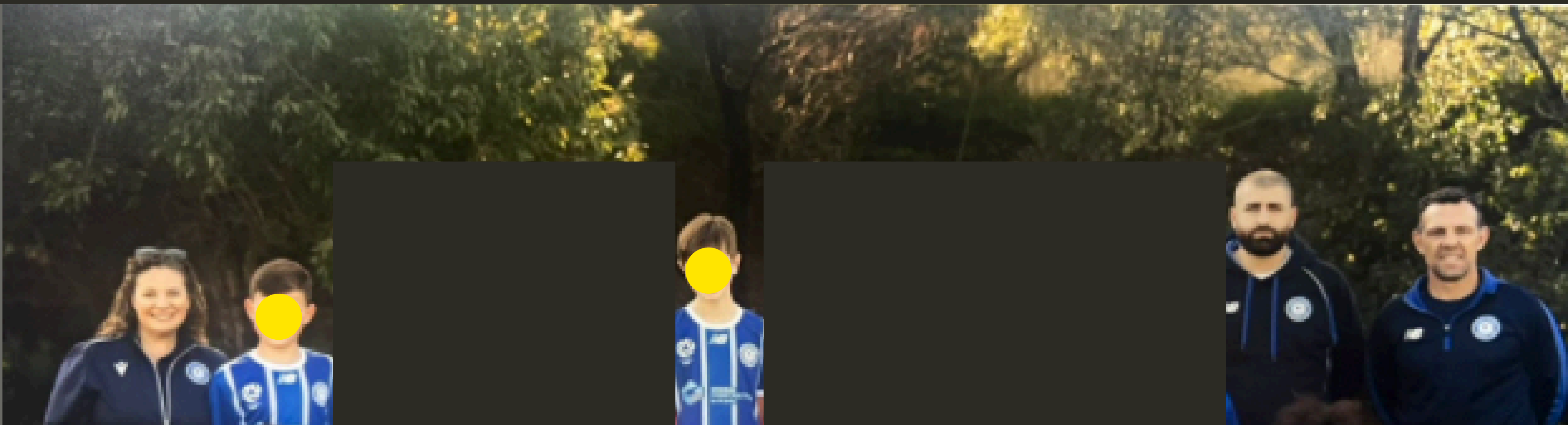**Firstly, lets go and review the results of the first activity...**

Post-Xmas

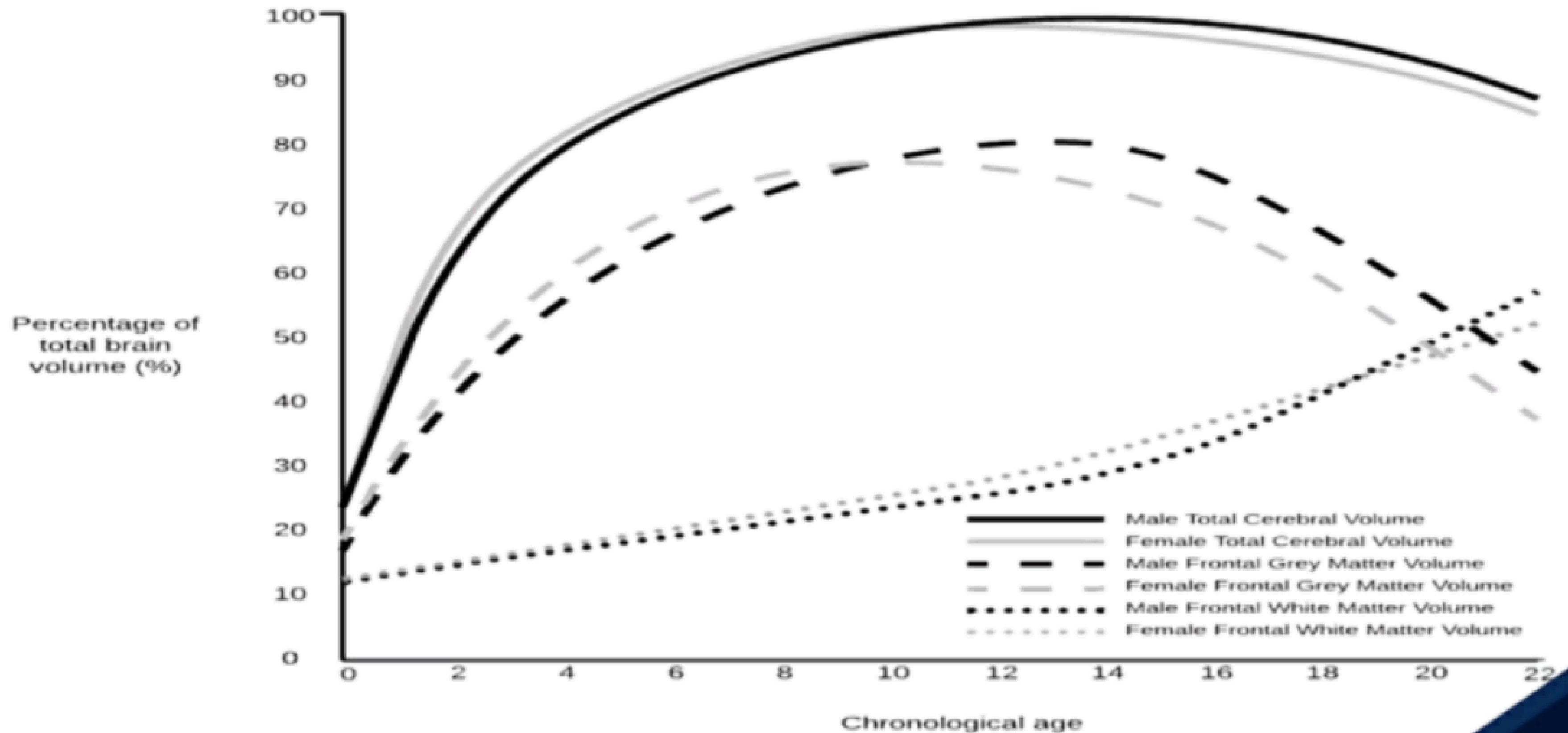*From little things, **big** things grow**

Central Nervous System

How do boys develop physically through puberty?

Start growing	Stop growing	PHV	PWV
14	18	9.5cm/yr	9-10kg/yr

Other associated male specific physical changes			Higher % muscle mass
Broadening shoulders	Deepening voice	Jaw squaring	Typically within PHV

How do boys develop psychosocially & cognitively?

Relationships	Status	Mental health	Stress
More dense social networks as friends are more likely to befriend others. Greater understanding of social power. Shorter, more frequent interactions.	Care more about popularity. Tend to have more status oriented that promote self interest like presenting in a +ve light, maintaining privacy and controlling social situations.	COMPLEX, but pubertal timing on both ends seems to at least be a risk factor for some psychopathy disorders such as depression and anxiety. Though more research is required.	Boys are more likely to cope with stress through diversion and distraction. These can manifest through humour, playing a sport or participating in leisure based activities.

'Meet' Ivy

'Meet' Maddi

'Meet' Inez

How do girls differ in how they develop physically?

Start growing	Stop growing	PHV	PWV
12	16	8.3cm/yr	8-9kg/yr

Other associated female specific physical changes			Higher % fat mass
Age at menarche	Widening of hips	Breast development	Can lag behind PHV

How do girls differ in how they develop psychosocially & cognitively?

Orientational style	Relationships	Stress	Mental health
Care more about interpersonal friendships & feel more empathy. More concerns about peer evaluation & relationship status	Relationships are more dyadic, with a greater focus on closeness and dependency and worry about abdandonment, loneliness, & hurting others.	More likely to experience dependant stress, report higher levels of friendship stress, experience stress from others & seek support for their problems	COMPLEX, but particularly early pubertal timing, both perceived and actual, seems to play a role in development of symptomatology in adolescence which can hold into young adulthood.

Prior to puberty, there are NO sex differences in height or body segment lengths. Additionally, there isn't sex differences in relative physical ability (strength, speed, fitness), despite variation in height and weight. However, this drastically changes with the onset of puberty.

Competitive Season

Welcome to the 'big' leagues

What links the following players?

Seen as a late developing player at the age of 14s, ended up making his 1st team debut at 16.

Thibaut ended up being 200cms tall (6'7"), despite being considered a late developer at 14.

Alex played 2 years of 14's due to his late physical development. He later debuted for the 1st team at 16.

"He has got no chance – he's a midget" - Sir Alex Ferguson upon watching Paul Scholes at 16

'He was a little one. He had asthma. No strength. No power. No athleticism. No endurance. "You've got a bleeding dwarf,"- MU Academy Director
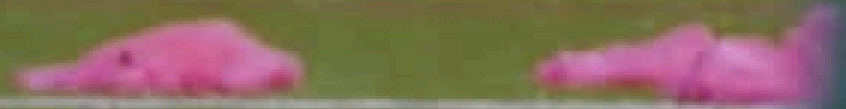
Bale survived a 3-2 vote for being released due to being in his growth spurt from medical team flags.

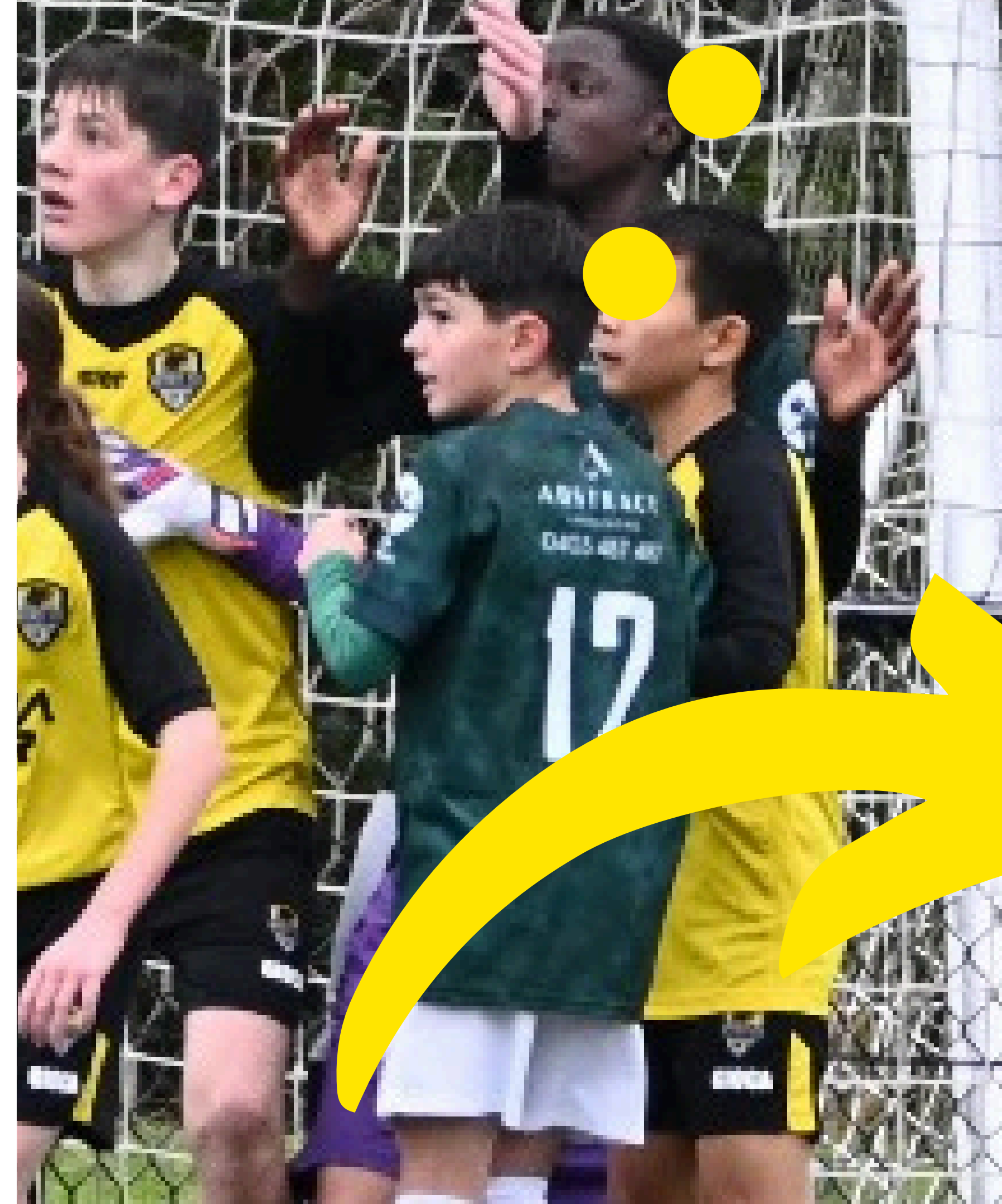Scott, at 17 years of age was 5"6'. Over the next 18 months he would grow 26cm.

'Meet' Hayden

Delayed Developing Players

Underdog Hypothesis
- Resilience
- Technical mastery
- Might be more successful when transitioning into senior football* ?

What are we doing to support these players?
- Firstly, by simply identifying later developing people we can offer more tailored support.
- Once identified, if the player is struggling to cope with the demands for a prolonged period it may mean an adjustment in their training menu. This is to find an appropriate challenge level for training and games.

Growing pains: How growth & maturation influences injury risk

Injury Pattern

Proximal

Distal

↑

Injury Burden

A U14 male example

→ **Advanced**

→ **Delayed**
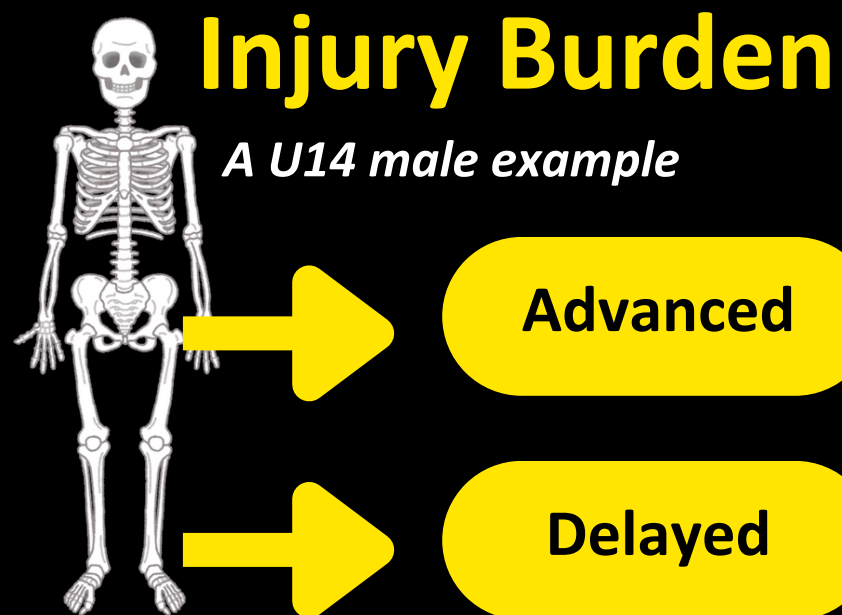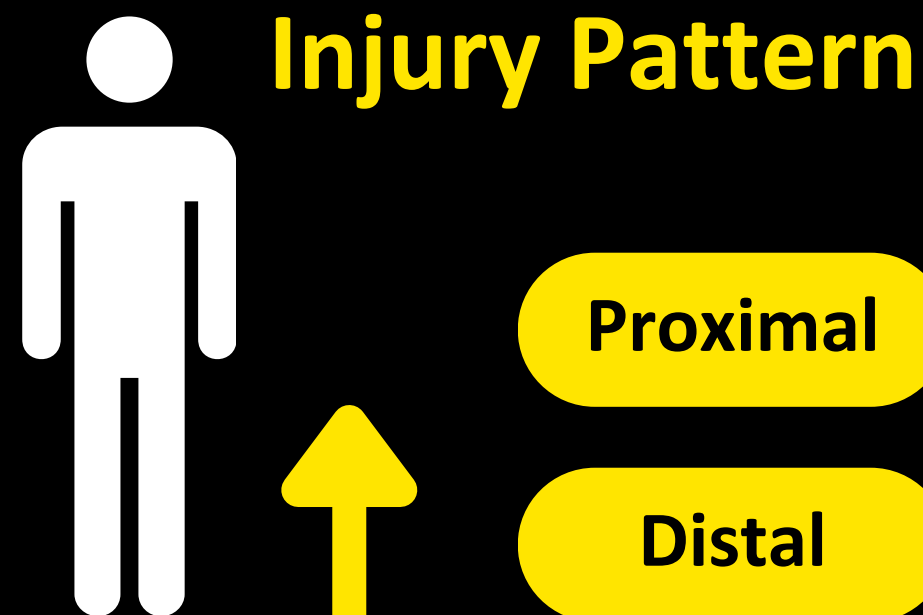
Why might this happen?

Skeletal immaturity & asynchronous musculoskeletal growth timing and tempo

Transient changes in coordination from rapid growth

Reduced neuromuscular control which may contribute to altered biomechanical movement patterns

Intensive training programs without appropriate rest

Rate of growth & maturity status

Those with higher growth rates are at higher risk for growth related injuries independently of maturation status (Pre/Circa/Post PHV). With these injury sites corresponding with the distal to proximal growth pattern.

Even those who are past their adolescent growth spurt have been found at moderate growth velocities (3-7.2cm/yr) to have a higher incidence of growth related injuries.

Risk Factors

>7.2cm/year or 0.6cm/month total stature change

>3cm/year growth in legs

88-94%PAH

Those who are 'behind' physically or delayed developers

Coach, Medical or AthleticDNA observation of athlete

Moderate Risk	High Risk	Very High Risk
1 Risk Factor	2 Risk Factors	3+ Risk Factors

"He was the size of a 12 year old at 15"

"He then grew really rapidly and ... stress fractures in his back... he was out of football for 18 months"

Connor Metcalfe
St Pauli (BuLi) & Socceroo Midfielder

How can we best support <u>all</u> players throughout their individual journeys within the context of their physical development?

Being mindful of our language - For example, players don't play 'up' or 'down', they play across teams.

Understand and reinforce that development is **non-linear** in nature. **Youth success ≠ senior success.**

At times, **less is more** when it comes to the amount of physical activities they have across a week, **particularly around growth spurts.**

Develop athletic qualities such as muscular strength that are **protective against injury**.

Scott McTominay speaks on his massive growth spurt

I was I was five foot six

EVERY WINNER WAS ONCE A BEGINNER

NWS Spirit G&M Process

1. A link will be sent out through managers for parents/players to complete ASAP. This will be for W11-14 and A/M 13-16.

2. A-DNA coaches will analyse and comment on the data and feedback to parents/coaches via a report

3. Measurements will be taken during January / April / July / September. These will be done in the ticketing office to ensure privacy when capturing this sensitive information.

4. Based on where players are, there may be adjustments to their training load over the course of the season to minimise risk of injury.

🐨 A **BIG** thank you for listening