

Growth & Maturation

An NZC-AUT Research Project

2/08/2020



What is Growth & Maturation

- Growth:

Changes in size, shape, body composition, physique



What is Growth & Maturation

- Maturation:

Process of conception through to mature adult state – end point



What does this all mean?

- Discussions with experts in this field indicated some sports systems in Europe had a bias towards early maturing boys.
- This bias was driving:
 - De-selection of late maturing players.
 - Player drop out and injuries at youth level.
 - Lack of development for early maturing players.
 - Lack of coaching for late maturing, de-selected players.
 - Sports systems investing in early maturing players were losing out on 25% of their talented players. E.G. Belgium Football



So what did we (NZC) do?

- Measured the maturity of our U19 training squad in 2018.
- Measured all boys attending the National U17 tournament in 2018.
- Measured school teams participating in the ANZ Junior boys tournament in 2019.
- The Khamis-Roche method was used to calculate maturity.
 - Amongst other information it indicates the current % of their predicted adult height.

What were the results?

- **U19 Training Squad & U17 National Tournament were the same**
 - Bias towards early maturing boys.
 - Those on time, were trending towards early.
 - No Late maturing boys.
- **ANZ Junior Boys Tournament**
 - There were some late maturing boys in teams.
 - The dominant players were early maturing boys.

What does early, late and on time mean?

On average girls go through their growth spurt or PHV (Peak Height Velocity) at 12 years and boys at 14 years.

Early maturer means they go through their PHV earlier than the average.

Late maturer means they go through their PHV later than the average.



How deep does this bias extend into our system?

NZC and AUT partnered to research Maturity and Bio-banding

The study consisted of three phases and all conducted in Auckland

Phase 1 – Maturity of Eastern District Winter Training squads (11-19 years old)

Phase 2 – Data from ACA Year 7/8 Camp (12 & 13 years old)

Phase 3 – Maturity of ACA boys U15 regional tournament

What have we learnt about maturity?

- Phase 1 – 76% on time & 24% early, 0% late.
- Phase 2 – 55% on time & 43% early, 2% late.
- Phase 3 – 76% on time & 24% early, 0% late.
- Late maturing players are under represented
- More mature players have advantages in strength and power which enables them to bowl faster, throw further and hit more boundaries in the V.
- Current talent selection methods fail to consider the relative maturation of junior players and highlights the need for new approaches.

What have we learnt about Bio-banding?

- Bio-banded games were viewed favourably by both players and coaches.
- Biggest benefits for late maturing players.
- Support for Bio-banding in junior cricket.
- Highlights how stage of maturity influences the skills that players develop.



https://www.youtube.com/watch?v=odcP9Grw6h0&feature=emb_err_woyt

Thank you

