

Relative Age Effects

Implications for
Performer Participation
and Development

**YOUNG
LEADER**

Introduction

Many sports use the academic year (1 September to 31 August) as the registration dates for entry into school, community, governing body talent pathways, and some professional competitions within the UK. While mirroring the educational system, these specific annual-age groups provide consistency for friendship groups and continuity for youngsters, and attempt to avoid large differences between children within sport to try to ensure equal competition and opportunities.

However, this structure still leads to some children being almost one year older than others within the same annual-age group (eg a September birth compared to an August birth). This difference in age within an annual-age group is defined as **relative age**, with the consequences being the **Relative Age Effect**. The Relative Age Effect results in participation and selection differences favouring the relatively older participants and occurs in most youth sports, including football, rugby league, rugby union, basketball and tennis (Cobley et al, 2009). This means that a greater number of players born closer to the 'cut-off' date of 1 September participate and are selected for teams, clubs and competitions. However, being relatively older may not be an advantage for all sports, with no Relative Age Effect shown in golf, and reversed Relative Age Effects favouring the relatively younger individual apparent in sports such as gymnastics.

Relative Age Effects are evident in grass-roots sport from as early as the under-sevens age category through to the professional sporting arena. It is therefore essential that all people engaged in youth sports, from parents to coaches to talent pathway managers, are aware of the Relative Age Effect and the impact it can have on a participant's development. Increasing awareness and educating all involved in the sporting landscape would enable more participants to firstly engage and secondly develop the skills necessary to be successful within their chosen sport(s). What follows is a consideration of three developmental periods in relation to the growth, maturation and development of children. Top tips on raising awareness of the Relative Age Effect and how to limit the effects associated with it (eg limited participation and [de]selection) are included.



Pre-maturation (6-12 Years)

Important for: coaches and parents.

Overview

During these young years, a difference in age of up to one year can be significant. At six years of age, a participant could realistically be 20% older than his or her peer! Sports can often be dominated by the bigger and relatively older performers. Therefore, it is important during these age groups to ensure participation numbers are kept as high as possible and performers are developing their technical and fundamental movement skills.

Tips

- Be aware of the birth dates of all your performers.
- Ensure all performers receive similar playing time and involvement within a game.
- Play performers in a number of positions, and play on both sides of the field (ie left, right and centre) if appropriate for the sport.
- Educate parents and help them to set realistic expectations for their children.
- Focus on enjoyment and positive experiences through praise. Openly and actively reward and praise effort and persistence over immediate success and winning.
- Concentrate on performers improving their performance and not the winning.
- Use competition in training based on skill and not physical attributes (eg skill carousels, relay races, skills courses). Award points for high levels of skill and achieving a task within the game, rather than winning. Some examples include awarding points for keeping possession, providing points on the improvement of their throw rather than who threw the furthest, and rewarding good technique and decisions as consistently as goals, baskets and wins.
- Remember that participants want to please the coach at this age; they will focus on what they believe you think is important. What you emphasise, reward and comment on will be the areas that they focus on. Consider this in your practice structure.
- Focus your praise around effort, task achievement and progress rather than winning and outcomes. Encourage performers to take satisfaction in their progress and development over winning.
- Challenge every performer to develop all the attributes to be successful in the chosen sport.
- Make training fun and varied, with the focus on skills within games and competitions.



Adolescence (13-16 Years)

Important for: coaches, parents, talent identification staff (scouts), talent pathway managers and performance analysts.

Overview

During the adolescent period, the Relative Age Effect can become more pronounced due to the effect of maturation. Performers advanced in age are usually also advanced in maturation. In males, maturation usually occurs at approximately 14 years of age, and in females, occurs at 11–12 years of age, but the timing and tempo of maturation can vary considerably between individuals (+/- 2–3 years – Lloyd et al, 2014). During this period, coaches must also consider the maturation of participants, as well as relative age.

For example, a performer born in September could have an age at peak height velocity (PHV, commonly known as the growth spurt) at 13.5 years of age compared to an August birth date with an age at PHV of 14.5 years. This means although these performers may be one year apart in chronological age, there is actually a difference of two years in terms of their maturation. Alternatively, consider a performer born in September whose age at PHV is 14.5 years and a performer born in August who reaches PHV at 13.5 years – these performers now have a very similar maturational age.

Research suggests that the older, bigger and earlier-maturing participants have advanced selection opportunities in many sports (Meylan et al, 2010). Therefore, it is important for those involved in the identification, selection and development of young people in sport to be aware of the Relative Age Effect and maturation in their coaching practice, structure and selection of squads and teams.

Tips

- Be aware of a performer's birth date – highlight quarter one and four participants on your profiles.
- Try to ensure equal opportunities for all participants in positions, roles, responsibilities, training and competition.
- Assign playing positions and roles based on skills and qualities, not necessarily on physical size. Performers should also continue to experience a variety of playing positions both in training and during games.
- Emphasise skill development alongside development of physical fitness.
- Focus your praise around effort, task achievement and progress, rather than winning and outcomes. Encourage performers to take satisfaction in their progress and development over winning. This develops a growth mindset and learning approach, which not only develops the performer's approach to training and progression but also to setbacks and failure.
- Assess maturational status where possible. (Measure height, sitting height, body mass and birth date, and enter into the form at http://taurus.usask.ca/growthutility/phv_ui.cfm?type=1)
- Consider relative age and maturational age in the assessments of participants' performance and testing.
- During PHV (growth spurt), performers can literally grow overnight, and subsequently, their brain needs time to adjust and 'grow' into their body. This can affect their coordination and balance, and fundamental tasks can be harder to achieve as perception and timing can be altered. As their limbs are longer, if using an implement, it can impact on accuracy, and they can be more susceptible to injury as the muscles and tendons have not had time to adjust to the increased length. During this time, continue to work on skills. Explain that it is normal as they adjust, and focus on gross motor skills over fine motor skills whenever possible.
- Make comparisons of performers based on relative, maturational and training age. Consider a performer in quartile four with a performer in quartile one in the younger age group. How did their skill, timing and decision making compare? Are they similar in stature and physical size?
- Develop all aspects of the participant, and encourage them to work on performance behaviours. Develop aspects of the programme that do not rely on maturation and growth (bio-psycho-social development through an interdisciplinary approach).

- Select performers on three- or six-month age categories instead of annual ones for training squads (eg same % of performers from each quartile or half of year).
- Consider having a squad for quartile four performers. Enable performers to play down as well as up an age group and potentially have a 'wild card' place in programmes and squads for younger and later-maturing performers.
- During this age, quarter one performers may find it difficult to cope with other performers catching them up physically. This is often a period when these performers can have low self-esteem and self-worth as they have been valued for their physical prowess, rather than technical and tactical ability, and struggle to cope. Working on skill development, encouraging physically advantaged performers to develop new skills, and conditioning them to use other qualities and attributes significantly reduces this impact. Performers may become fixed in their mindset and may 'quit' as a way of coping and saving face as a teenager.
- Quarter four performers who are retained in the talent pathway have often developed coping strategies and resilience along the way as they progress to the end of this stage of development. These performers have overcome setbacks and challenges, often created by their physical and emotional stage of development; as they begin to 'catch up', they have developed essential approaches to coping.
- During this stage of development, coaches may find the 50% rule useful to put maturation and growth in context for performers and parents. The principle is that 50% of the performer is skills and abilities, and 50% is behaviours and attitudes; performers can focus during this time on their attitude and behaviours while they are physically waiting to develop. They are investing in their future, rather than missing out. While it is a simple concept, the reframing helps performers and their parents to cope and focus their energy positively.



Post-maturation (16-18 Years)

Important for: talent pathway managers, performer performance managers, academy coaches, talent identification staff (scouts) and performance analysts.

Overview

After adolescence, youths reach the mature, adult state. However, between the ages of 16 and 18 years, maturational differences can still be evident. Some performers may be mature and reach their adult height, while other performers may still be growing and developing. Therefore, it is again important to be aware of, and continue to monitor, the age and maturation of your participants.

Tips

- Be aware of participants' birth date.
- Continue to monitor size (height and body mass) and maturation (as outlined previously) on a regular basis into adulthood.
- Consider the training age and experience of your performers. Remember that many participants may have missed coaching opportunities previously, especially in representative structures, and as such, their experience and practice time can be considerably lower.
- Remember that, often, as a participant progresses through the talent pathway, they receive a greater number of contact coaching hours, access to a greater level of practice time and more experienced coaches. This provides them with a developmental advantage and should be considered. Is the individual you are comparing them to achieving in spite of their lack of support, formal coaching and opportunities? How much more of their potential has gone untapped?
- Assign roles and positions on technical skills, tactical awareness and physical development, but let them (and encourage them to) continue to experience a range of positional roles in training.
- Emphasise both skill and physical fitness development.
- Consider maturational age in assessments of individuals' performance and testing. Consider potential against actual – where are their opportunities to develop and grow as a performer? They may have 20% more development, whereas a peer may be a little stronger, faster or more experienced with 5% of their development left.
- Make comparisons of performers based on relative, maturational and training age.

References

Cobley, S., Baker, J., Wattie, N. and McKenna, J. (2009) 'Annual-age grouping and athlete development: a meta-analytical review of Relative Age Effects in sport', *Sports Medicine*, 39 (3): 235–256.

Meylan, C., Cronin, J., Oliver, J. and Hughes, M. (2010) 'Talent identification in soccer: The role of maturity status on physical, physiological and technical characteristics', *International Journal of Sports Science and Coaching*, 5 (4): 571–592.

Lloyd, R., Oliver, J., Faigenbaum, A., Myer, G. and De Ste Croix, M. (2014) 'Chronological age vs biological maturation: Implications for exercise programming in youth', *Journal of Strength and Conditioning Research*, 28: 1454–1464.

Chris Chapman
Development Lead Officer
(Talent & Performance Coaching)
sports coach UK

Kevin Till
Senior Lecturer
Sports Coaching
Leeds Beckett University





To find out more about sports coach UK, the vision and mission of the organisation, please visit our website at **www.sportscoachuk.org**

If you have any questions or queries, please feel free to call us on **0113-274 4802** or email us at **coaching@sportscoachuk.org**