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Assessing and Evaluating Player Performance & Potential: The Influence of Age

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Learning Outcomes

This workshop will allow coaches (within Youth & School, Player Development and Player Performance settings) to…

1. Understand the different types of age that may impact upon player performance and potential
2. Consider how age may impact upon talent identification and development within rugby union
3. Start to develop interventions and strategies to support player identification and player development

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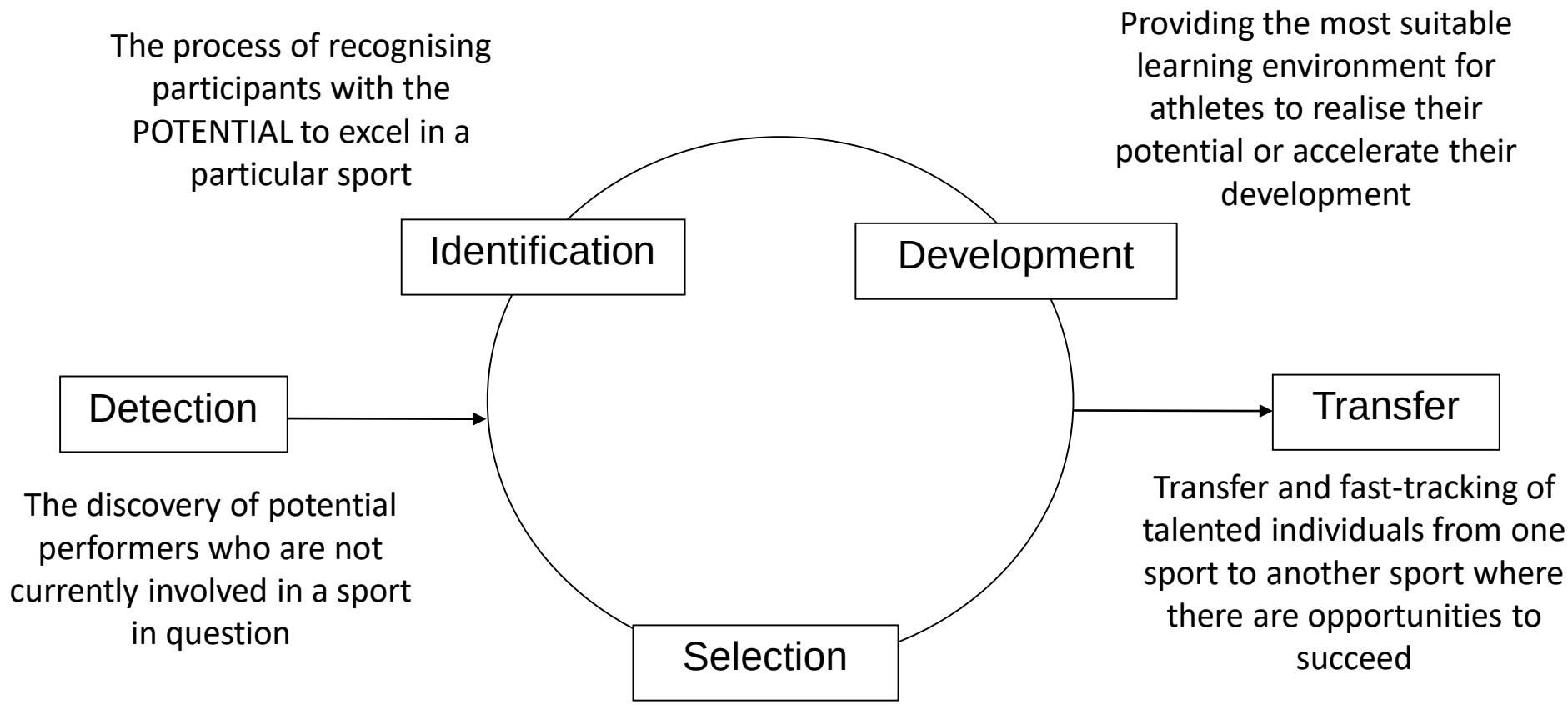
Talent ID & Development Processes



Williams, A.M. & Reilly, T. (2000) Talent identification and development in soccer. *J Sports Sci*, 18, 657-667.

How do we decide WHO gets these opportunities?

How do we Identify Talent?

1) If you were asked to identify a talented athlete from the players you coach – who would you pick? and Why?
2) In Rugby – How is talent typically identified and selected?
3) What are the biggest challenges in terms of identifying talent in your role?

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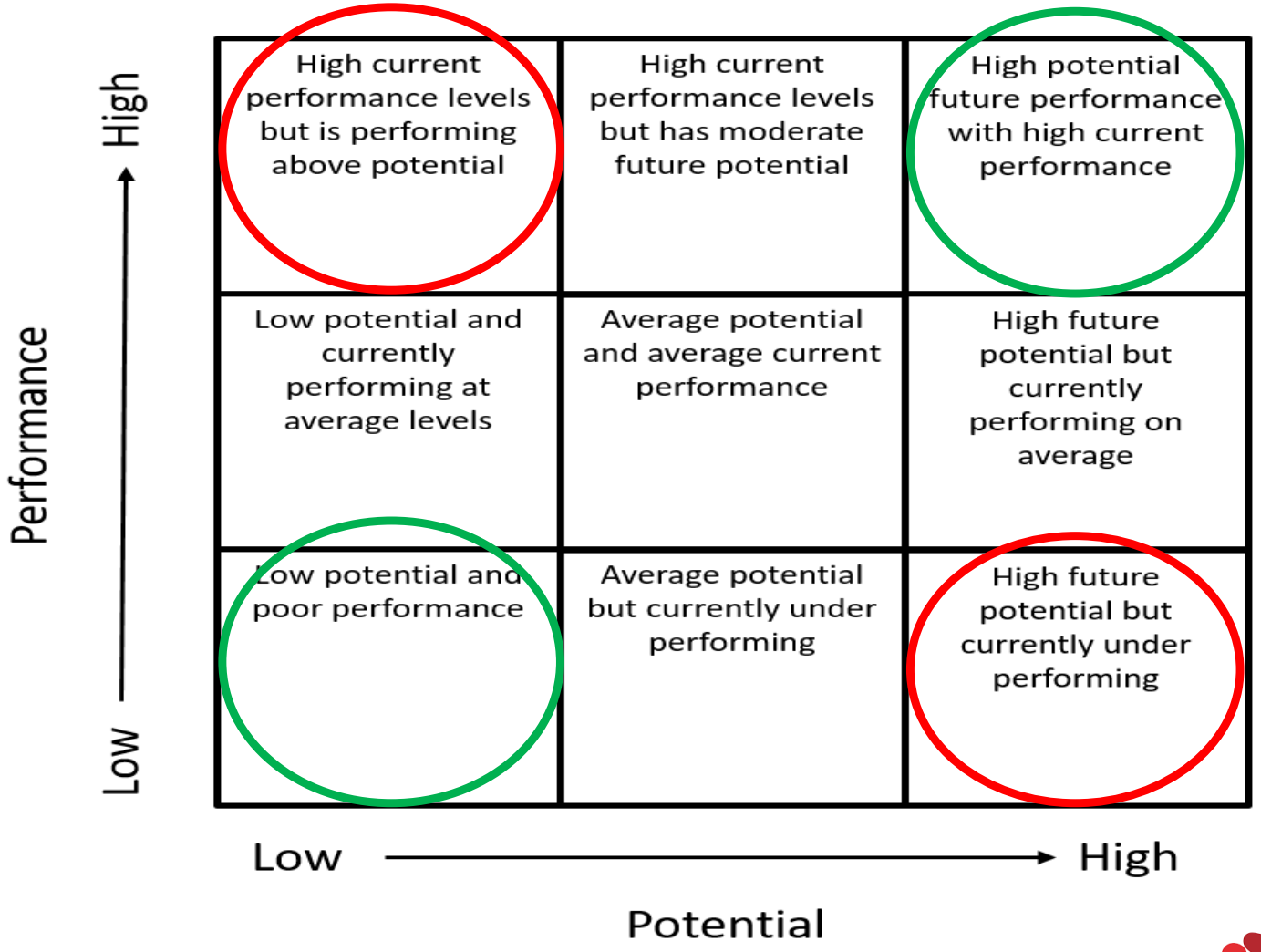
Performance vs. Potential



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Baker, J. et al. (2017) Compromising Talent: Issues in Identifying and Selecting Talent in Sport. *Quest.* 70, 48-63.

What Types of Age may Impact upon Player Performance and Potential (and how we perceive these)?

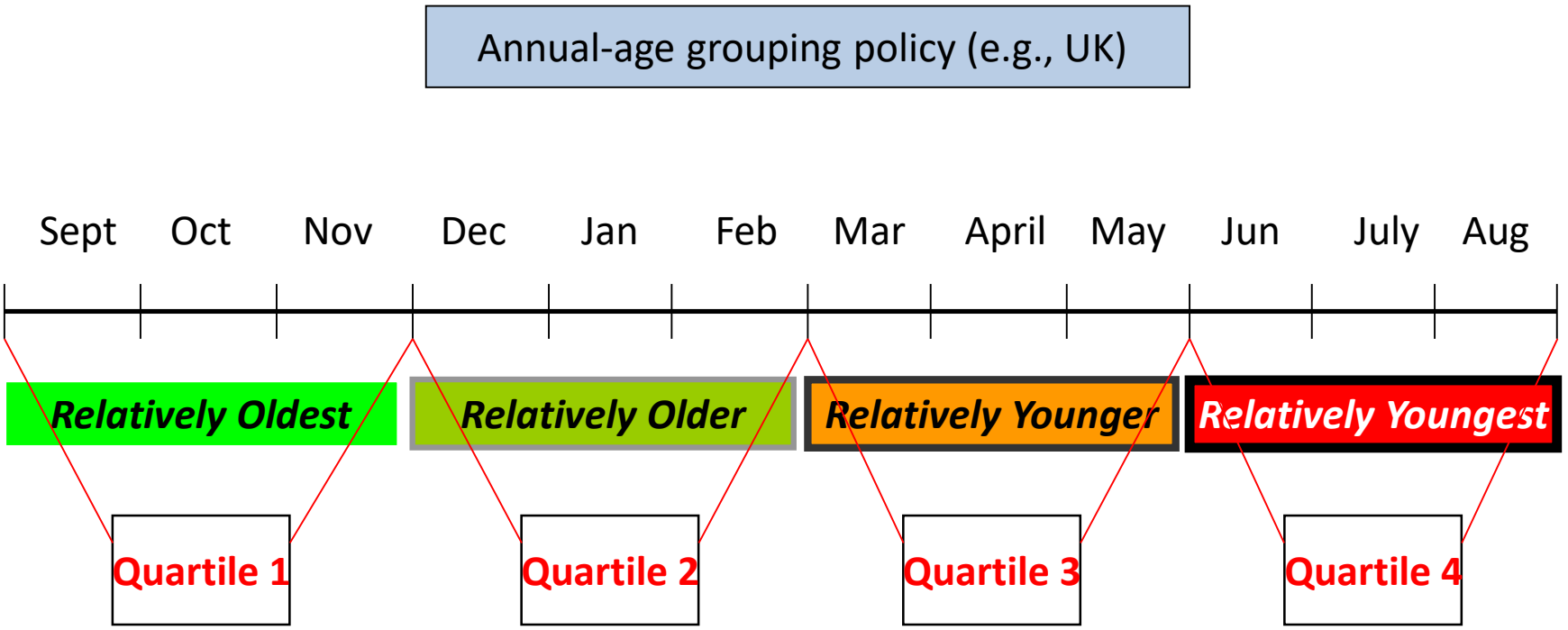
1. Chronological Age

- Time frame of number of days from date of birth to a specific date (Today)
- = (Current Date – Date of Birth) / 365
- 03/02/2019 – 03/10/1982

= 13,272 days

= 36.4 years

2. Relative Age



Relative Age = Potential differences in an age within an annual cohort.

3. Biological or Maturational Age

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4. Cognitive Age

Stages of Development According to Erik Erikson	
Approximate Age	**Developmental Task or Conflict to Be Resolved**
Birth to 1 year	*Trust vs. mistrust:* Babies learn either to trust or to mistrust that others will care for their basic needs, including nourishment, sucking, warmth, cleanliness, and physical contact.
1 to 3 years	*Autonomy vs. shame and doubt:* Children learn either to be self-sufficient in many activities, including toileting, feeding, walking, and talking, or to doubt their own abilities.
3 to 6 years	*Initiative vs. guilt:* Children want to undertake many adultlike activities, sometimes overstepping the limits set by parents and feeling guilty.
7 to 11 years	*Industry vs. inferiority:* Children busily learn to be competent and productive or feel inferior and unable to do anything well.
Adolescence	*Identity vs. role confusion:* Adolescents try to figure out, "Who am I?" They establish sexual, ethnic, and career identities, or are confused about what future roles to play.
Young adulthood	*Intimacy vs. isolation:* Young adults seek companionship and love with another person or become isolated from others.
Adulthood	*Generativity vs. stagnation:* Middle-age adults are productive, performing meaningful work and raising a family, or become stagnant and inactive.
Maturity	*Integrity vs. despair:* Older adults try to make sense out of their lives, either seeing life as a meaningful whole or despairing at goals never reached and questions never answered.

5. Training Age

Defined as the number of years an athlete has been participating in formalized training (Lloyd & Oliver, 2012)

Hypothetical Comparison

	Player 1	Player 2
Chronological Age	14	14
Relative Age	Q4	Q1
Biological Age	12	16
Cognitive Age	15	13
Training Age	5	1

(What things may we see in these players? Why?)

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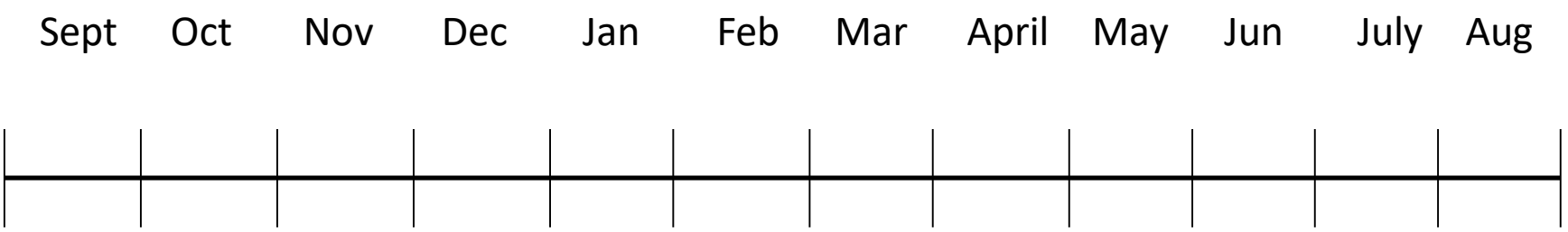
How Do These Types of Age Impact Upon Talent ID and Development within Rugby?

The Relative Age Effect

Annual-age grouping policy (e.g., UK)



Relatively Oldest

Relatively Youngest

'The immediate and long-term consequences that effect participation and selection in youth sport'

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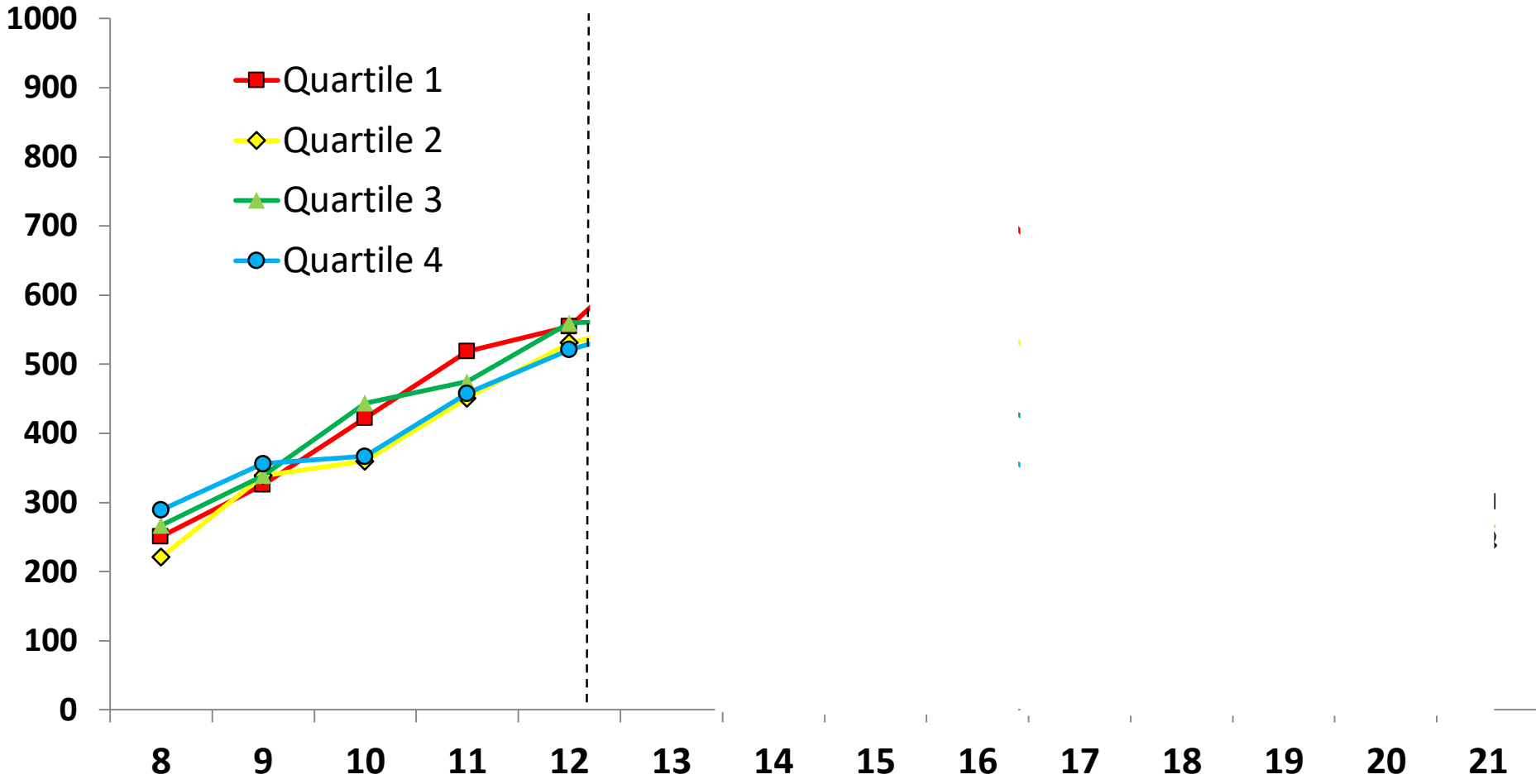
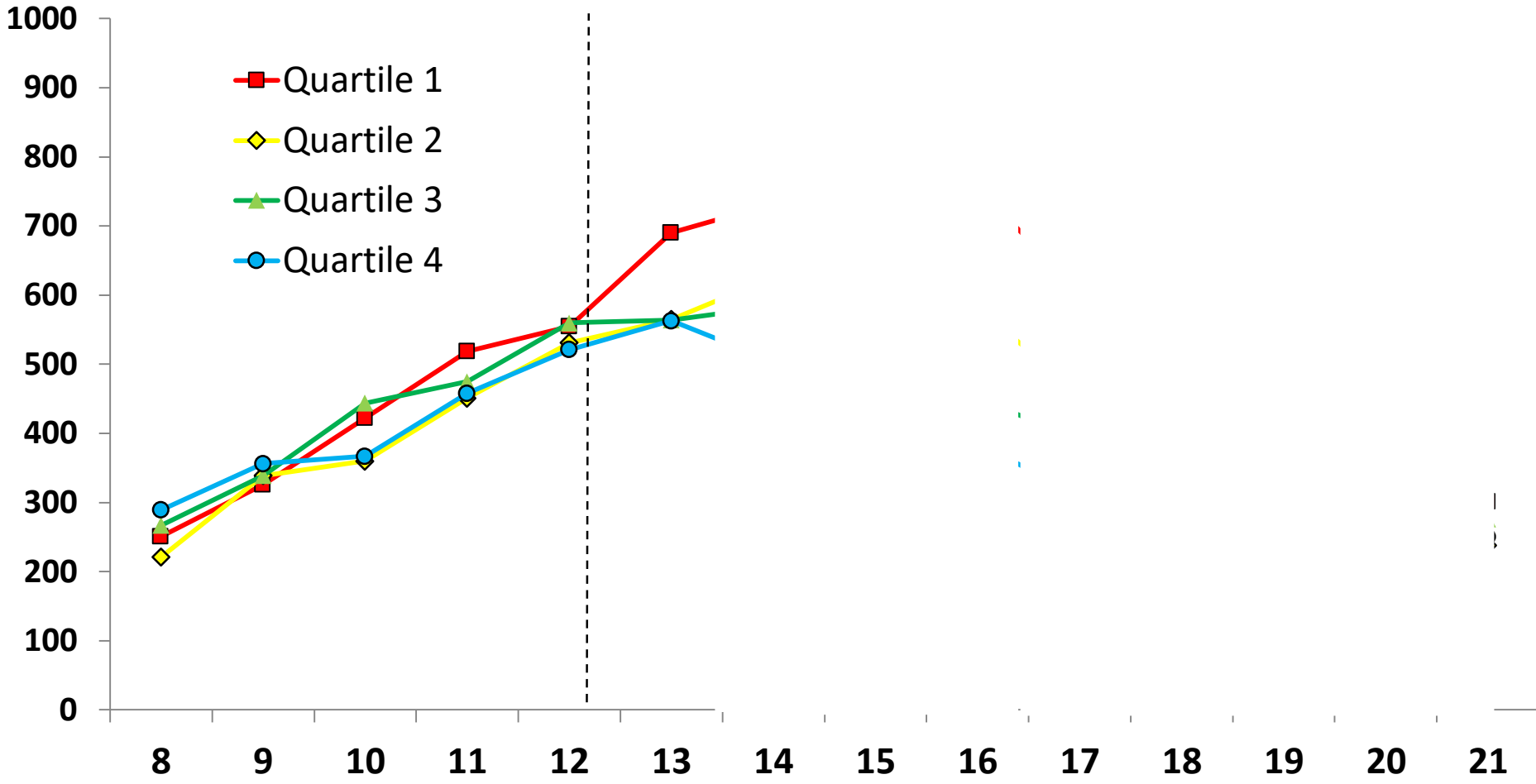
The Relative Age Effect: RL Participation



Cobley, S., & Till, K. (2017) Participation trends according to relative age across UK youth Rugby League. *Int J Sports Sci Coaching*, 12(3). 339-343

The Relative Age Effect: RL Participation



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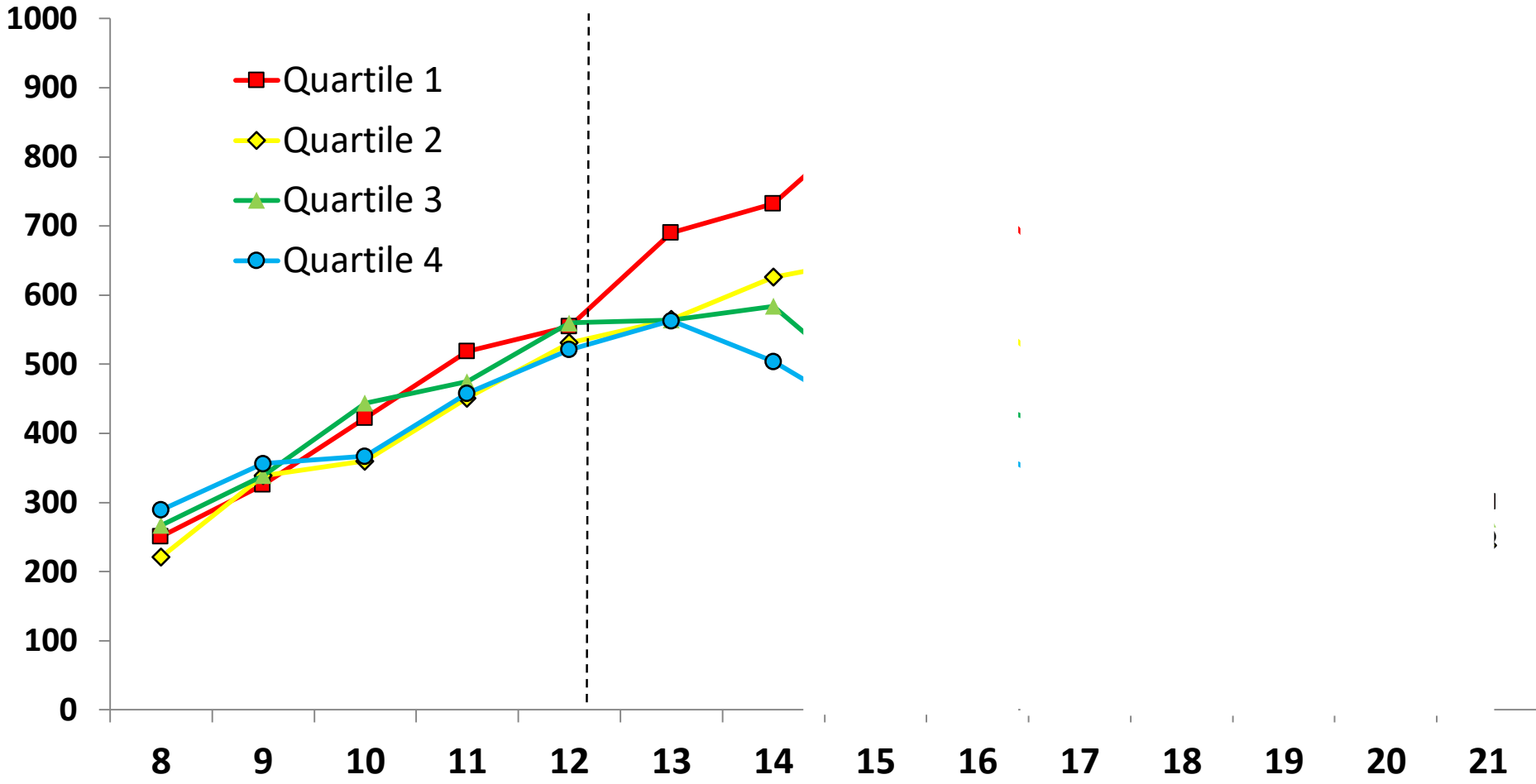

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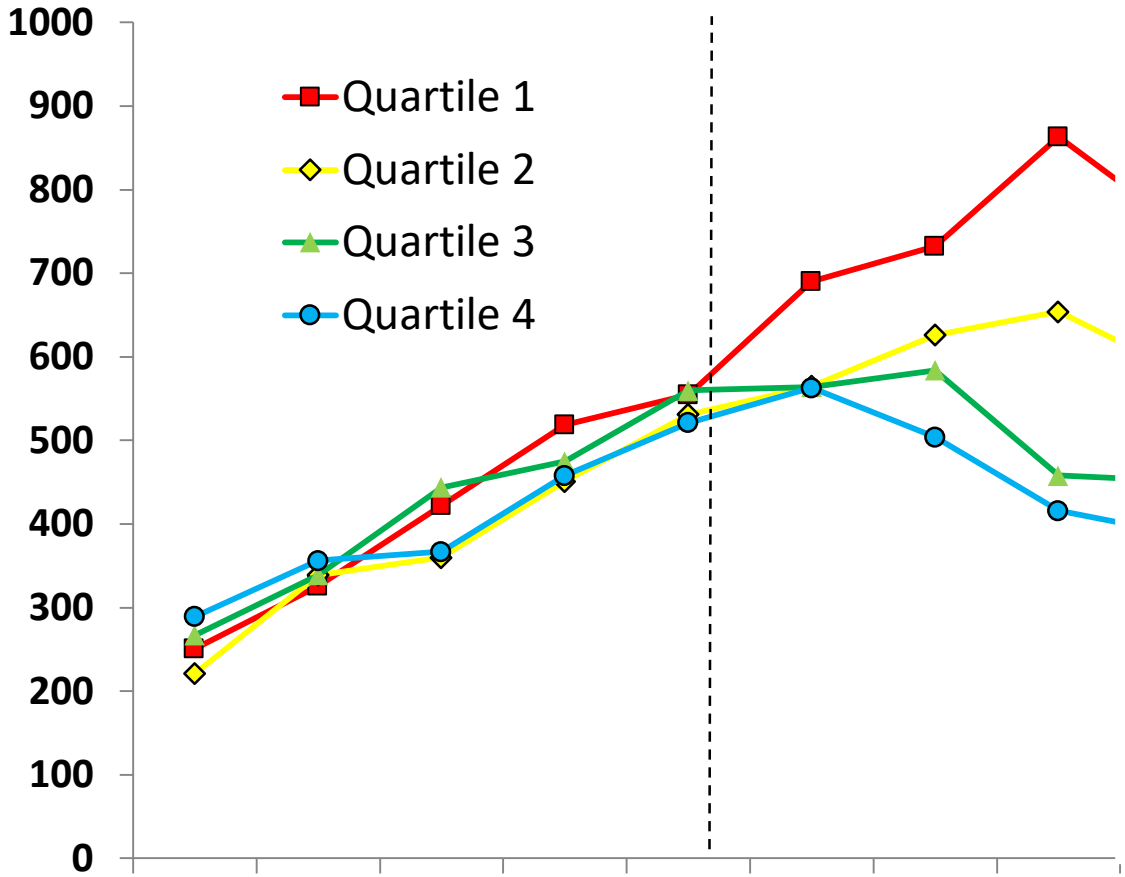
The Relative Age Effect: RL Participation

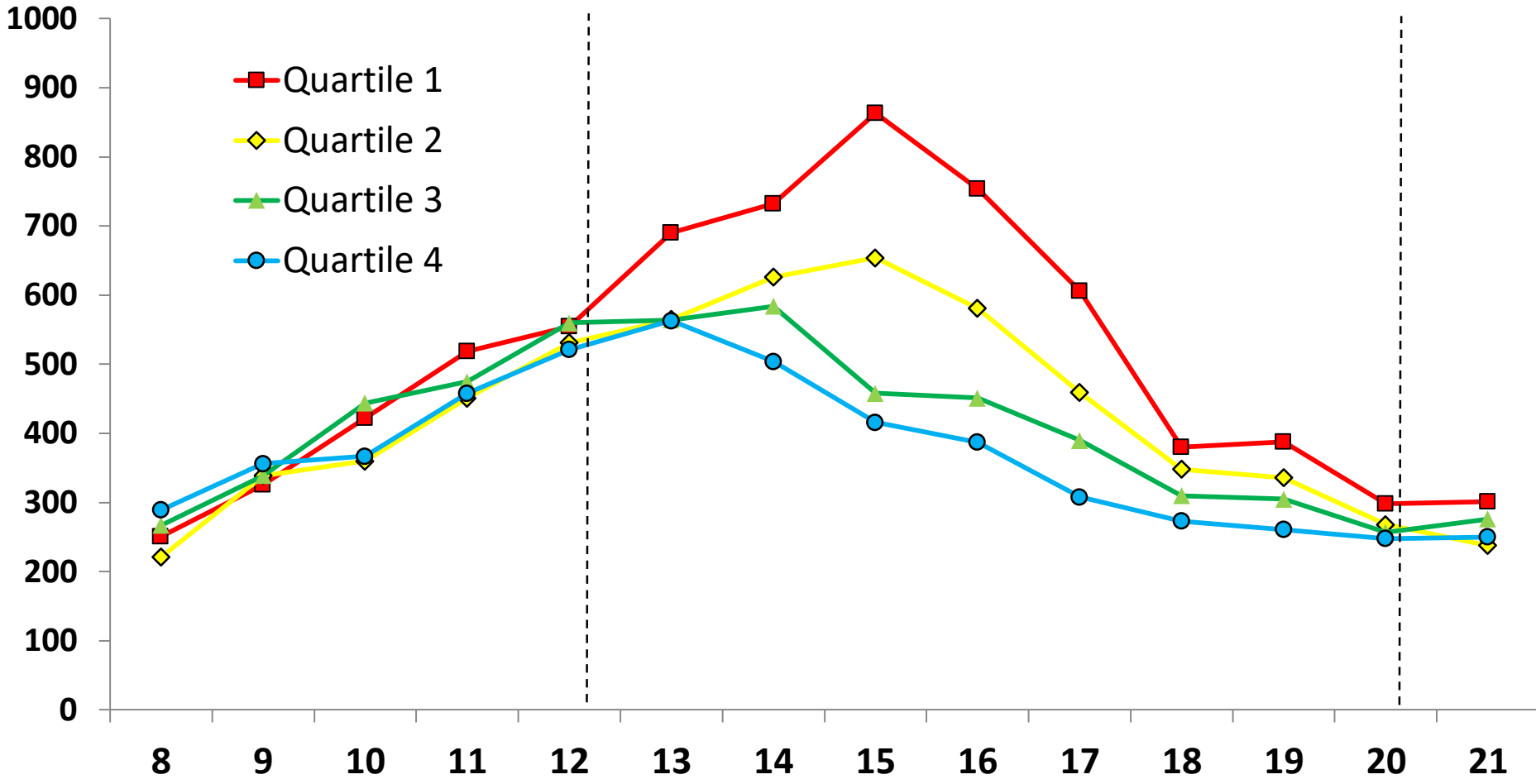


Q1 = 863

Q4 = 416

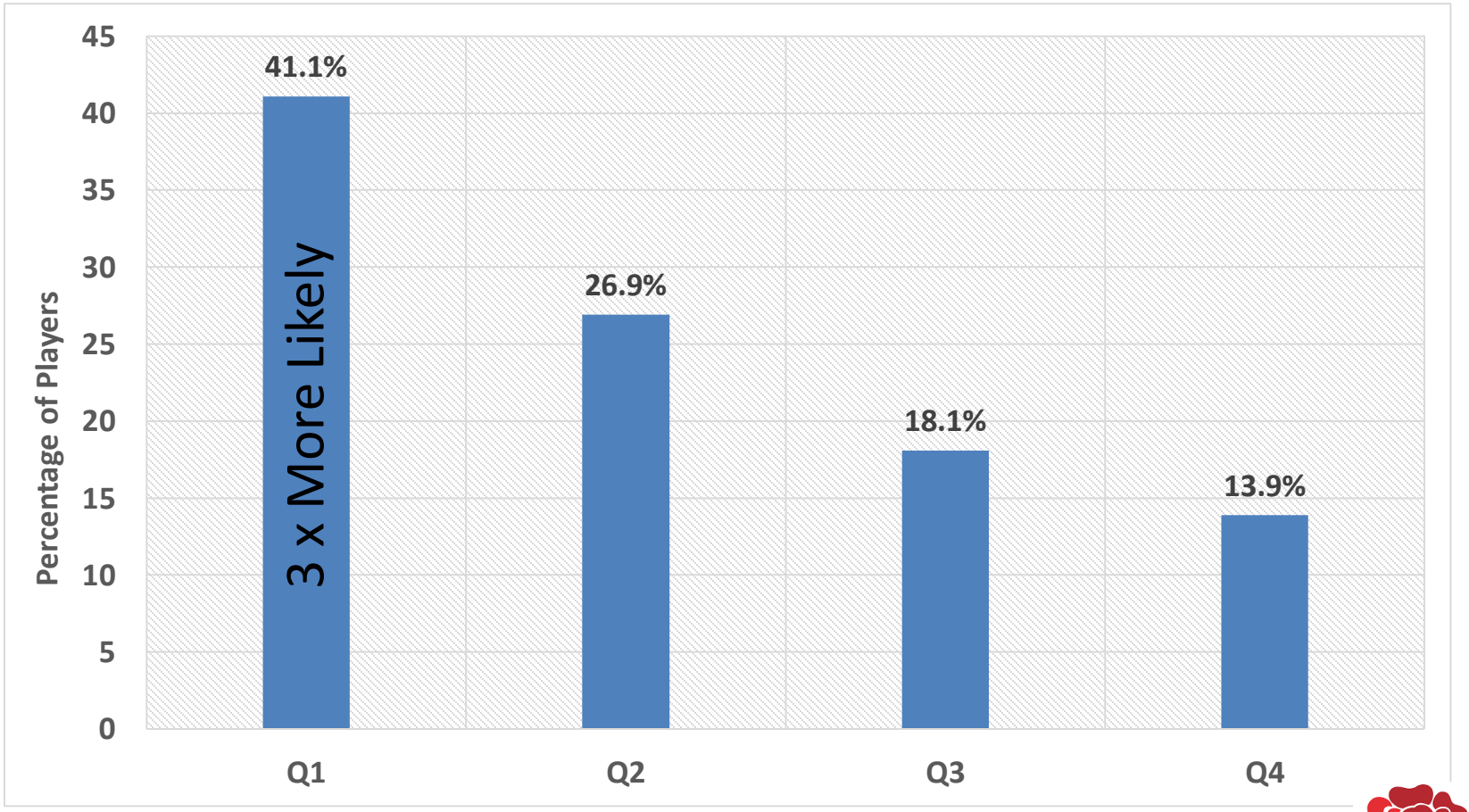
Cobley, S., & Till, K. (2017) Participation trends according to relative age across UK youth Rugby League. *Int J Sports Sci Coaching*, 12(3). 339-343

The Relative Age Effect: RL Participation



Cobley, S., & Till, K. (2017) Participation trends according to relative age across UK youth Rugby League. *Int J Sports Sci Coaching*, 12(3). 339-343

The Relative Age Effect: RFU Academies (U15-U18)



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Till, et al (in prep) Relative Age Effects in English RFU Regional Academies

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The Relative Age Effect – Females

Table 1. Chi-square analyses and birth quartile frequencies: Whole sample.

Data set	Chi-square	Effect size	Q1 *n* (%)	Q2 *n* (%)	Q3 *n* (%)	Q4 *n* (%)	Sample size
2006 WC	$\chi^2(3) = 2.47, p > .05$	$w = .09$	57 (22.2)	58 (22.6)	72 (28)	70 (27.2)	257
**2010 WC	$\chi^2(3) = 1.46, p > .05$	$w = .07$	58 (24.1)	66 (27.4)	54 (22.4)	63 (26.1)	241
2006/2010 WC	$\chi^2(3) = 0.98, p > .05$	$w = .04$	115 (23.1)	124 (24.9)	126 (25.3)	133 (26.7)	498
Canadian Developmental	$\chi^2(3) = 17.36, p < .05$*	$w = .10$	406 (27.1)	383 (25.6)	399 (26.7)	309 (20.6)	1,497
New Zealand Developmental	$\chi^2(3) = 7.86, p < .05$*	$w = .02$	3,450 (24.8)	3,476 (25)	3,602 (25.9)	3,371 (24.3)	13,899

Table 2. New Zealand developmental players.

Age	Chi-square	Effect size	Q1 *n* (%)	Q2 *n* (%)	Q3 *n* (%)	Q4 *n* (%)	Sample size
Overall	$\chi^2(3) = 7.86, p < .05$*	$w = .02$	3,450 (24.8)	3,476 (25)	3,602 (25.9)	3,371 (24.3)	13,899
4	$\chi^2(3) = 35.22, p < .05$*	$w = .35$#	107 (38.5)	73 (26.2)	55 (19.8)	43 (15.5)	278
5	$\chi^2(3) = 6.39, p > .05$	$w = .11$	152 (29.3)	126 (24.3)	125 (24.1)	116 (22.3)	519
6	$\chi^2(3) = 12.33, p < .05$*	$w = .12$	232 (29.4)	200 (25.3)	168 (21.3)	189 (24)	789
7	$\chi^2(3) = 11.34, p < .05$*	$w = .10$	305 (28.3)	283 (26.2)	251 (23.2)	241 (22.3)	1,080
8	$\chi^2(3) = 10.26, p < .05$*	$w = .08$	350 (26.5)	360 (27.2)	291 (22)	321 (24.3)	1,322
9	$\chi^2(3) = 41.40, p < .05$*	$w = .14$	559 (30)	469 (25.2)	464 (24.9)	372 (19.9)	1,864
10	$\chi^2(3) = 64.54, p < .05$*	$w = .17$	352 (17.4)	513 (25.3)	600 (29.7)	558 (27.6)	2,023
11	$\chi^2(3) = 46.39, p < .05$*	$w = .18$	425 (32.8)	290 (22.4)	297 (23)	282 (21.8)	1,294
12	$\chi^2(3) = 62.74, p < .05$*	$w = .23$	170 (15.1)	286 (25.5)	353 (31.4)	315 (28)	1,124
13	$\chi^2(3) = 3.92, p > .05$	$w = .07$	135 (21.5)	159 (25.4)	172 (27.4)	161 (25.7)	627
14	$\chi^2(3) = 2.38, p > .05$	$w = .06$	168 (27)	153 (24.6)	157 (25.2)	144 (23.2)	622
15	$\chi^2(3) = 1.47, p > .05$	$w = .04$	172 (24.2)	176 (24.8)	192 (27)	170 (24)	710
16	$\chi^2(3) = 5.50, p > .05$	$w = .08$	148 (21)	189 (26.8)	180 (25.6)	187 (26.6)	704
17	$\chi^2(3) = 54.36, p < .05$*	$w = .32$#	66 (13.1)	109 (21.6)	177 (35.1)	152 (30.2)	504
18	$\chi^2(3) = 3.37, p > .05$	$w = .13$	41 (21.9)	40 (21.4)	50 (26.7)	56 (30)	187
19	$\chi^2(3) = 1.40, p > .05$	$w = .10$	35 (25.5)	29 (21.2)	39 (28.5)	34 (24.8)	137
20	$\chi^2(3) = 2.96, p > .05$	$w = .16$	33 (28.7)	21 (18.2)	31 (27)	30 (26.1)	115

* Statistical significance.
# Moderate-to-large practical significance.

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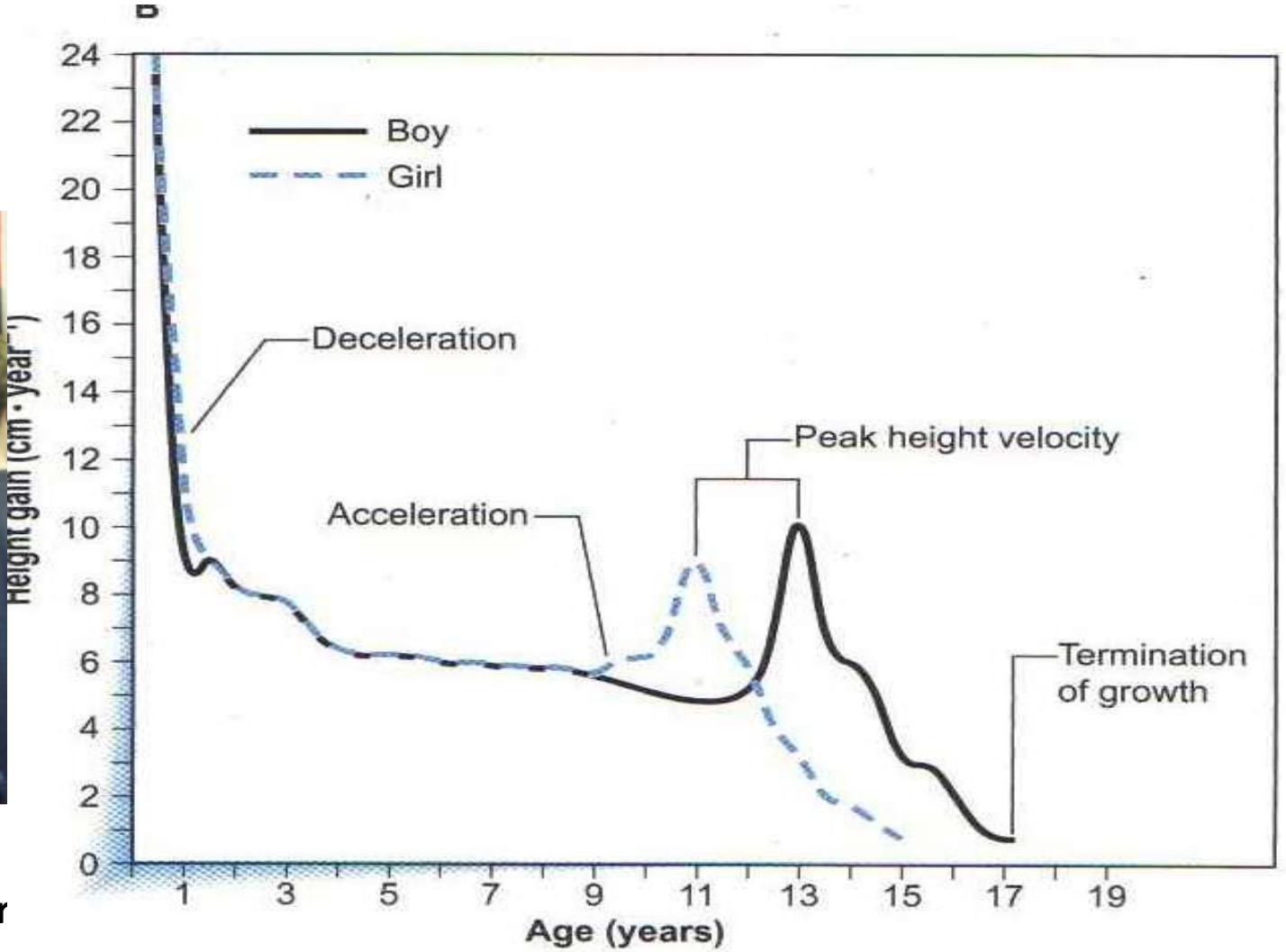
Lemez, et al. (2016) Relative Age Effects in Women's Rugby Union From Developmental Leagues to World Cup Tournaments, *RQES*

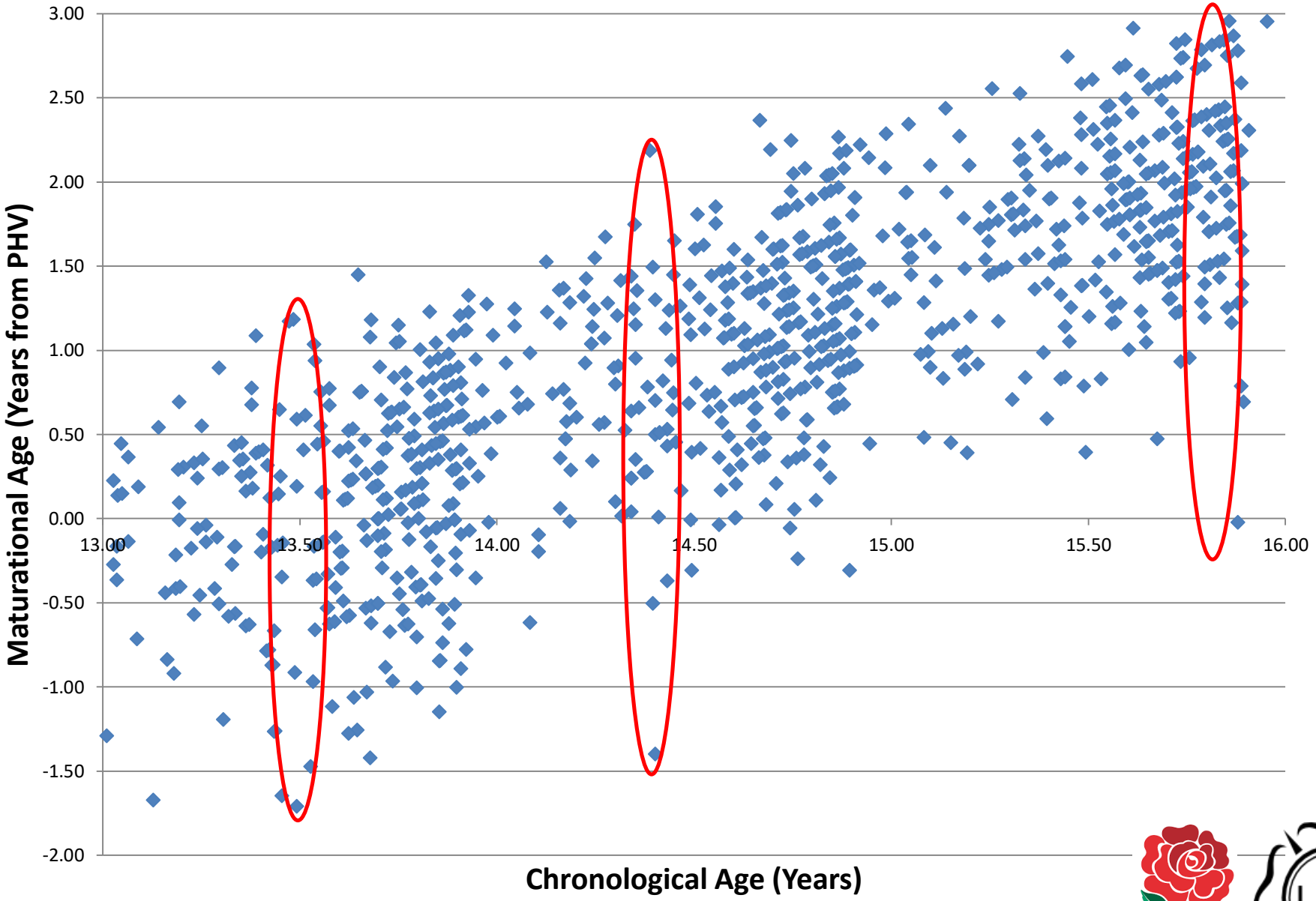
Maturation



Compar

Tanner, J.M. (1962) *Growth at adolescence*. Oxford, Blackwell Scientific

Scatter Plot of Chronological vs. Maturational Age



Till, K. (2011) Junior Rugby League Talent Identification and Selection: Age, Maturation, Anthropometry and Fitness. PhD Thesis.

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Size & Maturation Biases in RU

14-16 years old in One RU Academy

- Mass between 90th & 97th percentile
- Height between 75th & 90th Percentile
- 7 Early Maturers
- 44 On Time Maturers
- 0 Late Maturers

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Howard et al. (2016) Biological maturity-associated variance in peak power output and momentum in Academy rugby union players, *Eur J Sports Sci*

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Maturation & Physical Performance

3000
2750
2500
2250
2000
1750
1500
1250
1000
750

-4 -3 -2 -1 0 1 2 3 4

Years from PHV

Morris, R., et al (2016) Isometric mid-thigh pull characteristics of elite youth soccer players. International Conference on Strength Training, Kyoto, Japan

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What does this mean for Rugby?

Chronological Annual Age Grouping

+

Individual variation in biological maturity

+

Relationship between maturation and performance

=

Children and adolescents may be (dis)advantaged within Talent ID in Youth Rugby

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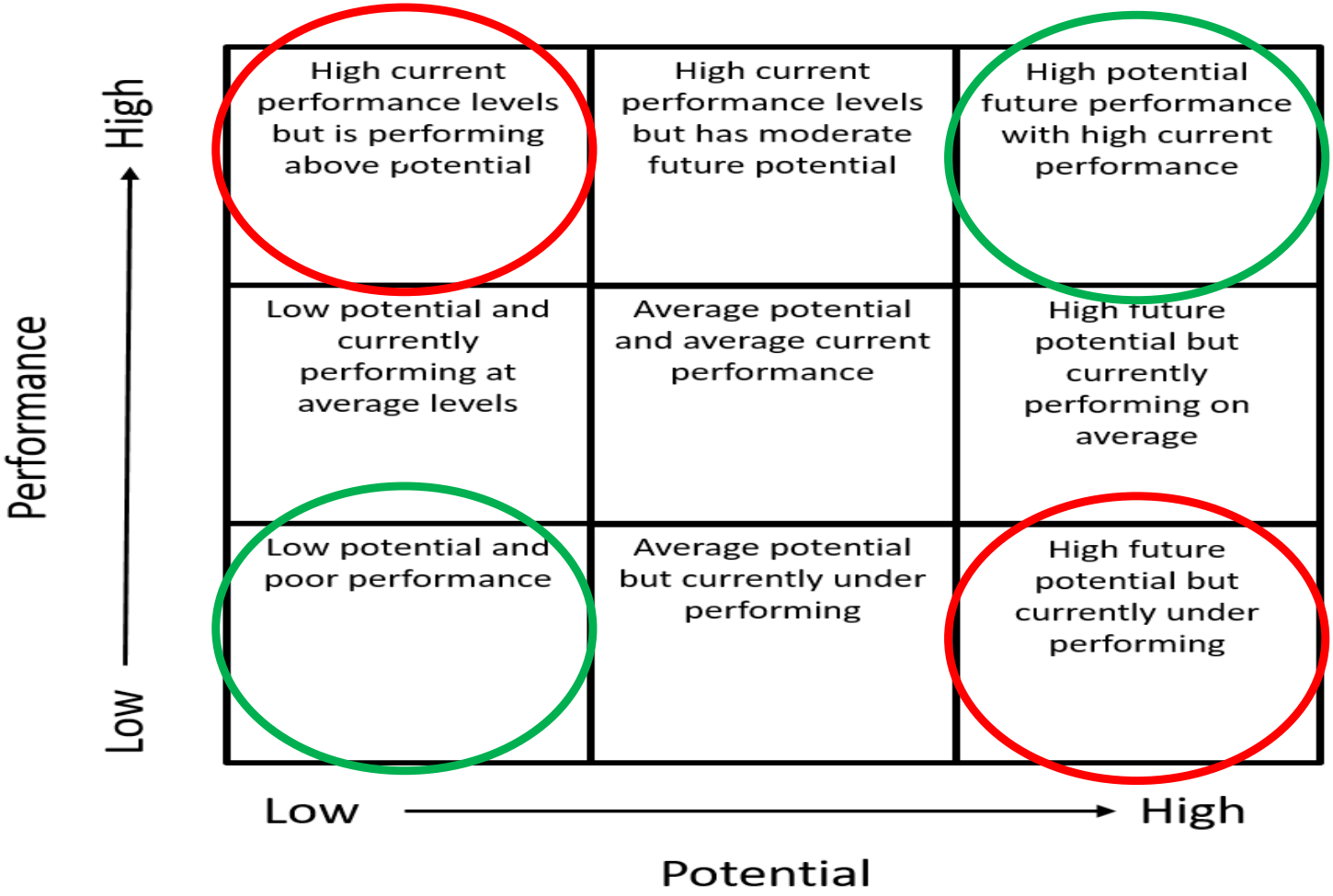
Assumptions

Performance vs. Potential

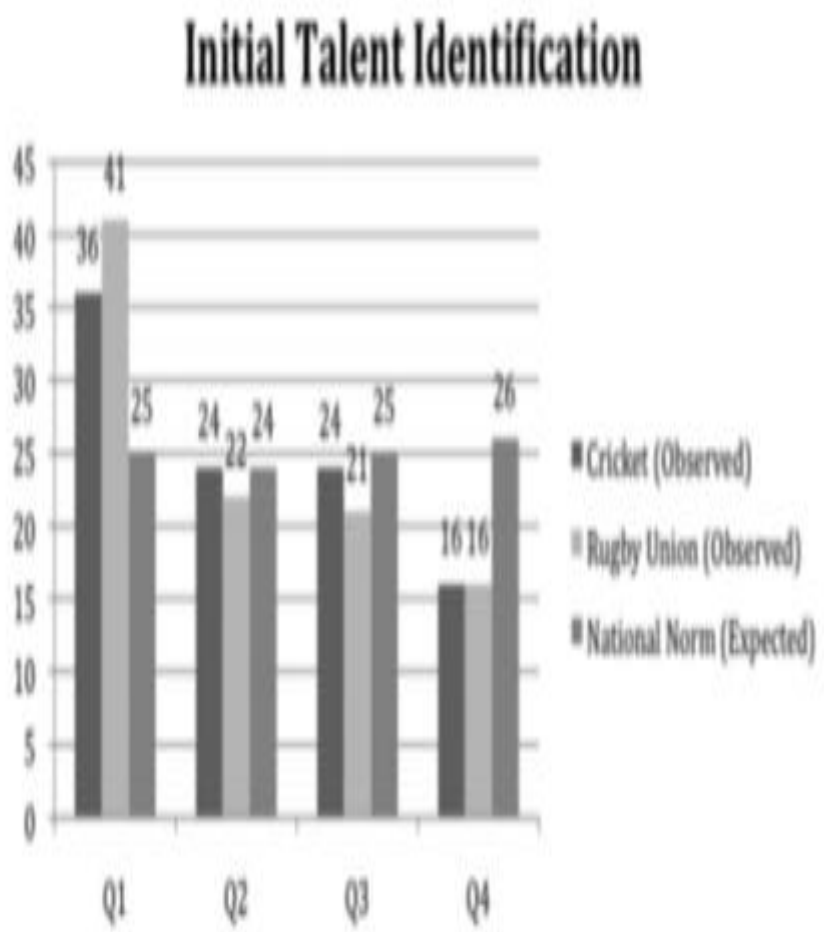


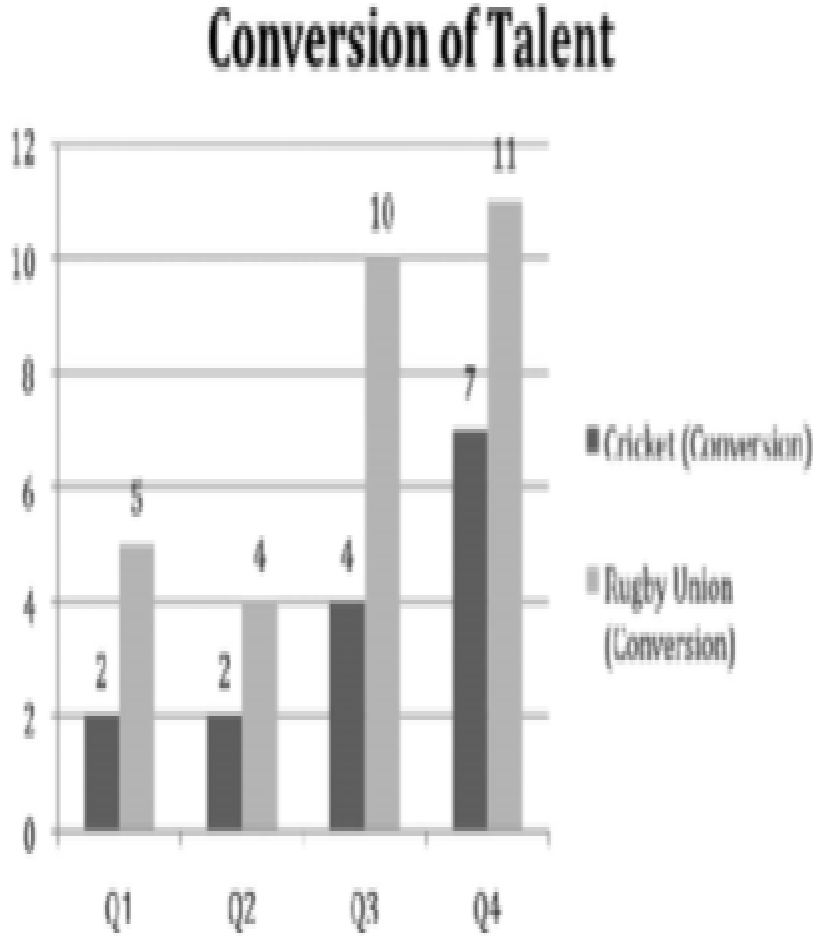
How does relative age & maturity status (and training age) influence decisions on performance and potential?

Baker, J. et al. (2017) Compromising Talent: Issues in Identifying and Selecting Talent in Sport. *Quest.* 70, 48-63.

Do advanced age and maturation influence future career attainment in rugby?

It appears to support the younger and later maturing player





McCarthy et al. (2015) Start hard, finish better: further evidence for the reversal of the RAE advantage, *Journal of Sports Sciences*

It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276		
Q2	141		
Q3	109		
Q4	54		

Till, K., et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Science,* 34(13), 1240-1245.

It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276	155 (56%)	
Q2	141	85 (60%)	
Q3	109	51 (47%)	
Q4	54	40 (74%)	

Till, K., et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Science,* 34(13), 1240-1245.

It appears to support the younger and later maturing player

Relative Age	PPP	Academy	SL
Q1	276	155 (56%)	32 (12%)
Q2	141	85 (60%)	12 (9%)
Q3	109	51 (47%)	10 (9%)
Q4	54	40 (74%)	14 (26%)

Till, K., et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Science,* 34(13), 1240-1245.

It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145		
Pivots	107		
Props	91		
Backrow	138		

Till, et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Sciences*

It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145	84 (58%)	
Pivots	107	73 (68%)	
Props	91	45 (49%)	
Backrow	138	85 (62%)	

Till, et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Sciences*

It appears to support the younger and later maturing player

	PPP	Academy	SL
Age at PHV	13.61 ± 0.58	13.64 ± 0.56	13.74 ± 0.65

	PPP	Academy	SL
Outside Back	145	84 (58%)	16 (11%)
Pivots	107	73 (68%)	26 (24%)
Props	91	45 (49%)	5 (5%)
Backrow	138	85 (62%)	16 (12%)

Till, et al. (2016) The influence of age, playing position, anthropometry and fitness on career attainment outcomes in rugby league. *Journal of Sports Sciences*

Identifying & Developing Talent of the Future…

In groups, discuss strategies or interventions you could apply for identifying and/or developing players in your context

So, what can I do about it?

IDENTIFICATION	DEVELOPMENT

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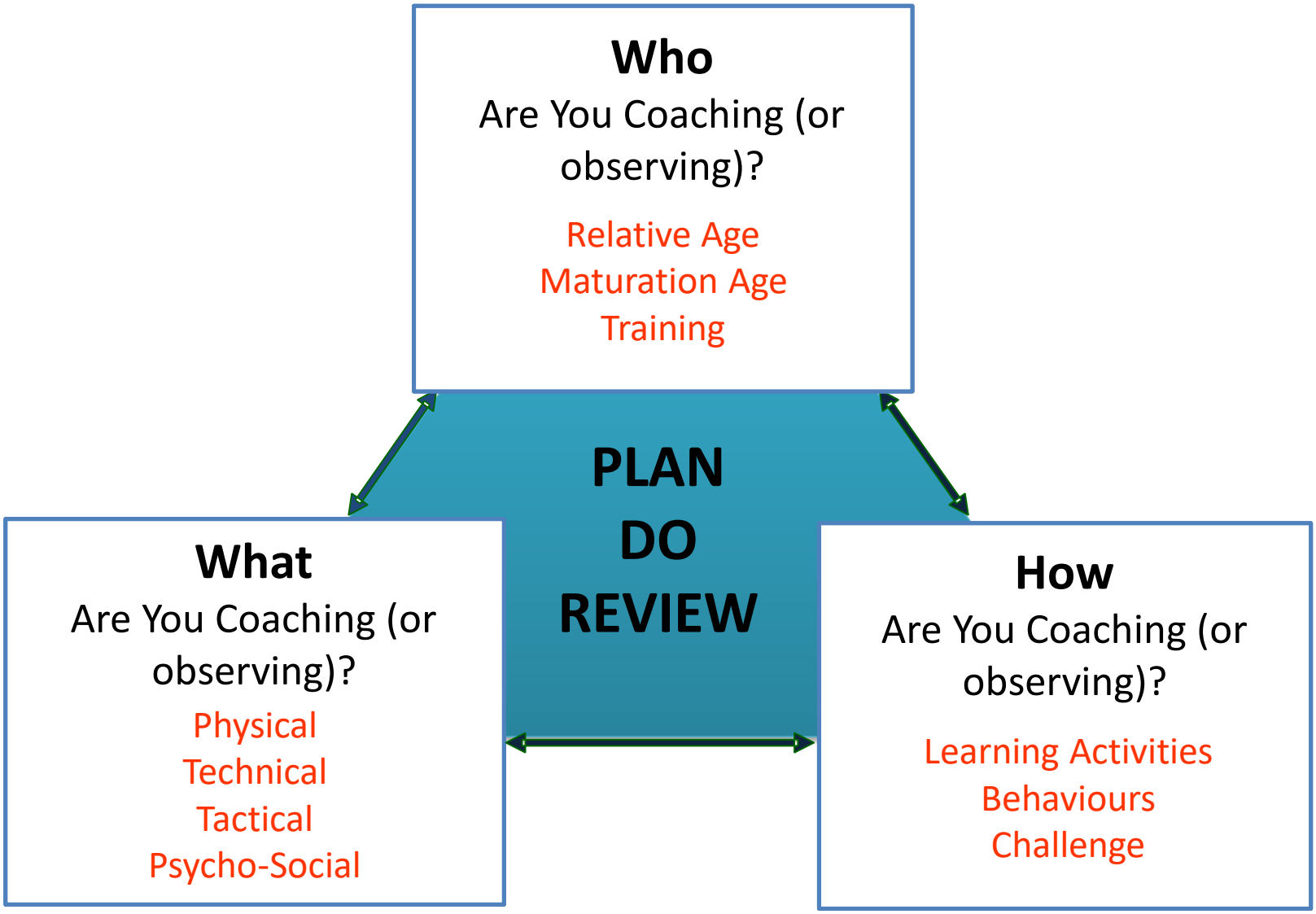
So, what can I do about it?



A Short Story about... Little Jonny

MONDAY

School

training, big

match

Wednesday

TUESDAY

Academy training, can't miss that!...

WEDNESDAY

Game day.....

54-0 win!!!

5 tries

THURSDAY

Weights, don't want to get left behind

FRIDAY

Training, big game tomorrow, only light though – no contact

SATURDAY

Game day.....

68-5 win!!!

6 tries

SUNDAY

Weights, don't want to get left behind...

Little Jonny **didn't make it.**
He was the quartile one, early maturing **big kid** in school. He **played too much** and **didn't develop** the required **skills** or **psycho-social skills** when everyone caught him up physically. Little Jonny stopped playing rugby

His **Team(s) Won** but
Little Jonny Lost

To be continued…….

Take Home Messages

- Player Performance and Potential is influenced by **Relative**, **Maturational**, **Cognitive** and **Training AGE**
- Advanced age MAY be an indicator of **CURRENT PERFORMANCE** but MAY NOT be an indicator of **FUTURE POTENTIAL**
- Knowing the **WHO** will help you understand the **WHAT** and adapt the **HOW** in your coaching practice
- Remember **LITTLE JONNY**, its not always about the late maturing players – **SUPPORT & CHALLENGE EVERYONE!**

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Thank You for listening!

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