

University of Windsor

## Scholarship at UWindsor

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Relative Age Effects: An International  
Conference

Conference Schedule

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Oct 17th, 3:45 PM - 4:15 PM

### The relative age effect in youth and elite sport: Did 20 years of research make any difference?

Werner Helsen

*Katholieke Universiteit Leuven*, [werner.helsen@kuleuven.be](mailto:werner.helsen@kuleuven.be)

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Helsen, Werner, "The relative age effect in youth and elite sport: Did 20 years of research make any difference?" (2018). *Relative Age Effects: An International Conference*. 11.

<https://scholar.uwindsor.ca/rae-conference/rae-theme/Schedule/11>


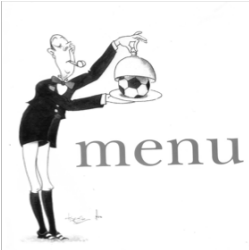
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RELATIVE AGE EFFECTS: AN INTERNATIONAL CONFERENCE

The relative age effect in youth and elite sport:  
what can we learn after 20 years of research?


Prof. Werner Helsen  
October 17<sup>th</sup>, York university, Canada

1. Introduction
2. Questions for the audience?
3. Answers to the audience!
4. Relative Age Effect (RAE): what is it anyway?
5. What about the Late Maturity Effect
6. Underlying mechanisms
7. Solutions

A gymnast from North-Korea with  
3 different birth dates

...iekfederatie (FIG) geschorst voor 30 dagen. De FIG ontdekte bij de inschrijvingen voor het WK artistieke gymnastiek in Rotterdam (17-24 oktober) dat voor turnster Hong Su Jong de voorbije jaren drie geboortedatums werden gegeven. Jong Su Jong, die in 2007 wereldkampioene werd, nam al deel aan de Olympische Spelen van Athene in 2004 en stond toen ingeschreven met als geboortedatum 9 maart 1985. In het WK 2007 werd ze echter 9 maart 1986 en voor het komende WK in Rotterdam werd het 9 maart 1989. Zowel de Noord-Koreaanse federatie als de turnster zelf is geschorst voor 30 dagen, waardoor deelname aan het WK in Rotterdam of eender welk ander internationaal of nationaal toernooi verboden is.



Hong Su Jong: 21, 24 of 25 jaar? © iip

Anderlecht one of our top and most successful teams!

A player with 4  
different birth dates

Chancel Mbemba maakte bij Anderlecht intruk als vervanger van de geschorste Kouyaté. Hoewel hij nog maar 18 is, voorbilde de Congolese al als een asoclen. In Afrika wordt dan ook beweerd dat hij een pak ouder is: 22, 23 of zelfs 24 jaar al. Anderlecht beschikt echter over wettelijke documenten die aangeven dat Mbemba wel degelijk in 1994 geboren is.

**Entourage heeft er baat bij dat Mbemba nog maar 18 is om zijn waarde hoog te houden.**

**Afrikaanse clubs hebben hem liever ouder om opleidingsvergoeding op te strijken**

**In Congo manipuleerde met leeftijd om kwalificatiematch Afrika Cup U23/Olympische Spelen te kunnen spelen**

**Mbemba zelf verklaarde ooit dat hij in 1990 werd geboren**



What about the Relative Age Effect?

Special issue December 2016

Talent Development & Excellence  
Vol. 8, No. 3, 2016: 41-51

Selection of the oldest: Relative age effects in the UEFA Youth League

Simon Takacs<sup>1,2</sup> and Michael Romann<sup>1</sup>

**Abstract:** Differences in age within annual cohorts (relative age) result in performance discrepancies between children and youths and also bias the talent selection process in many sports. The consequences stemming from the relative age approach are referred to as relative age effects (RAEs). In this study, we analyzed the prevalence of RAEs according to the playing positions and countries of 1208 youth soccer players who participated in the new UEFA Youth League. Our comparisons showed significant RAEs with medium effects. Youth players born in Q1 were 3.35 times more likely to be selected than players born in Q4. Significant RAEs were found for every age group (1996, 1997, 1998 and 1999), but younger age groups showed significantly higher RAEs than the older age groups. The analysis did not reveal any influence of playing position on the size of the RAEs. However, the results showed significant differences in relation to country, as well as the absence of RAEs in players from Belgium, Bulgaria, Cyprus and Slovenia. All in all, the UEFA Youth League is highly biased by RAEs. Thus, it seems RAEs reflect a type of developmental barrier that is preventable if appropriate solutions are implemented in the future.



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Please use your cards to 'vote': YELLOW = YES & Red = No



1. Is football skill determined by the month of birth?

<p><b>DOMINIC ADIYIAH</b> 20.11.89 – REGGINA – AANVALLER – GHA</p> <p>De Ghanees, die door Milan is uitgeleend aan Reggina om ervaring op te doen in de Serie B, was een van de grote sterren op het WK voor min 20-jarigen in Egypte. Hij werd verkozen tot topschutter en beste speler van het toernooi, maar moet zich nu nog wettigen door te zetten bij zijn club.</p>	<p><b>TOBY ALDERWEIRELD</b> 02.03.89 – AJAX – VERDEDIGER – BEL</p> <p>Onze kindgenoot is een van de kroonjuwelen van de jongje Ajaxfeestjes, waar ook Jan Vertonghen en Gregory van der Wiel deel van uitmaken. Alderweireld heeft een goed profiel, is kopbalsterk en heeft een uitstekende inspelingspass.</p>
<p><b>HAMDAN AL KAMALI</b> 02.05.89 – AL WAHDA – VERDEDIGER – VAE</p> <p>De verdediger met bijnaam 'de roch' was de oonjonger en kapitein van de U20 van de Verenigde Arabische Emiraten die geschiedenis schreef door de kwartfinale van het WK voor min 20-jarigen in Egypte te bereiken. Is heer en meester in de eigen rechthoek.</p>	<p><b>JANO ANANIDZE</b> 10.10.92 – SPARTAK MOSKOU – MIDDELVELDER – GEO</p> <p>De middenvelder heeft op ommer 18-jarige leeftijd al meer dan 25 wedstrijden in het eerste elftal van Spartak Moskou op zijn linker sloan. Hij debuteerde ook al in de nationale ploeg van Georgië en wordt er als het nieuwe godenkind beschouwd.</p>

2. Is the month of birth decisive to play for an U21 team?



3. Is the month of birth decisive to make a successful transition from youth to professional football?



4. Is there any link between month of birth and the chances to play for the national teams?



5. Is there any association between month of birth and salaries in professional football?

## Journal of Sports Economics

<http://jse.sagepub.com>

### Selection Bias and Peer Effects in Team Sports: The Effect of Age Grouping on Earnings of German Soccer Players

John Ashworth and Bruno Heyndels  
*Journal of Sports Economics* 2007; 8; 355  
 DOI: 10.1177/1527002506287695

The online version of this article can be found at:  
<http://jse.sagepub.com/cgi/content/abstract/8/4/355>

6. Are early maturers more skilled than late maturers?



7. Does the federation/club want to lose late maturers for football?



8. Is the identification of 'talent' affected by the maturity status of a player?



9. Is the impact of the RAE nowadays greater than 20 years ago?

*Journal of Sports Sciences*, November 2012; 30(15): 1665–1671




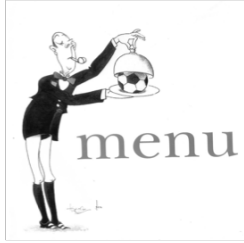
**The relative age effect in European professional soccer: Did ten years of research make any difference?**

WERNER F. HELSEN<sup>1</sup>, JOSEPH BAKER<sup>2</sup>, STIJN MICHIELS<sup>1</sup>, JOERG SCHORER<sup>3</sup>, JAN VAN WINCKEL<sup>1</sup> & A. MARK WILLIAMS<sup>4</sup>

<sup>1</sup>Department of Biomedical Kinesiology, Katholieke Universiteit Leuven, Belgium, <sup>2</sup>Kinesiology and Health Science, York University, Toronto, Ontario, Canada, <sup>3</sup>Institute for Sport Science, Westfälische Wilhelms-University Münster, Münster, Germany, and <sup>4</sup>Centre for Sports Medicine and Human Performance, School of Sport and Education, Brunel University, Uxbridge, Middlesex UB8 3PH, UK

(Accepted 14 August 2012)

1. Introduction
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### Definition of the Relative Age Effect (RAE)\*

According to Barnsley et al. (1992), "relative age" refers to the difference in ages between children in the same age category resulting from their different birth dates throughout the "sport" year. In soccer, children with August birth dates possess almost a one-year relative age advantage over children born in July of the following year. Conversely, chil-

Relative age:

- > physical
- > cognitive
- > coordination
- > technical skills
- > experience
- > maturation

Relative Age Effect (RAE)

'Relative age' or 'Relative age effect' don't exist as mesh term!  
Web search revealed 143 publications.

SCAPPS, London Ontario, October 16-18th, 2014

Age (in years)	Age (in months)	Relative age difference (in %)
5	60	20,0
6	72	16,7
7	84	14,3
8	96	12,5
9	108	11,1
10	120	10,0
11	132	9,1
12	144	8,3
13	156	7,7
14	168	7,1
15	180	6,7
16	192	6,3

Equal chances?  
or  
Totally unfair?

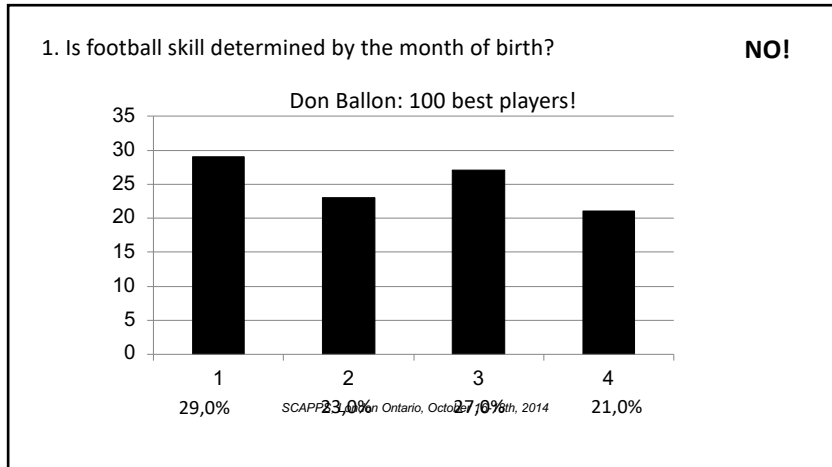
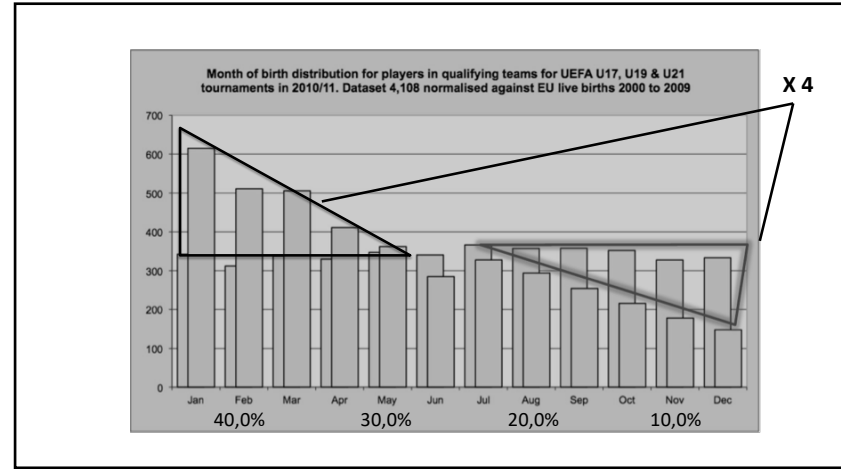
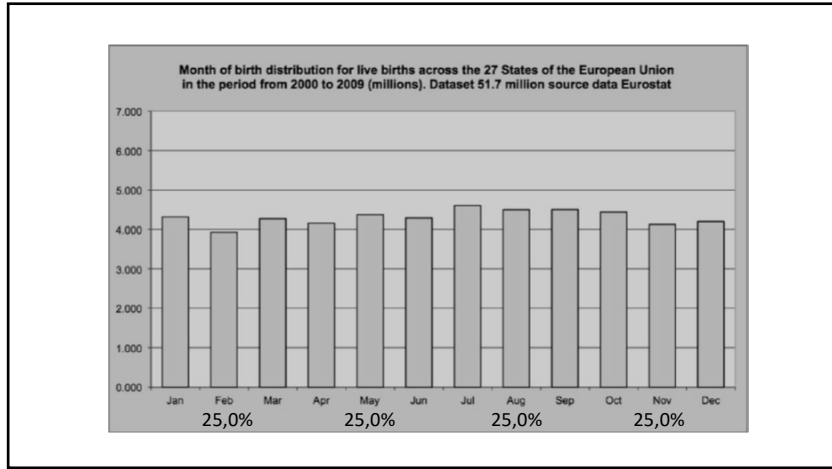
### Quite consistent across many different sports



Thomson et al 1991      Abernethy ea 2005      Barnsley ea 1992, Carling 2009, Gil 2014      Baxter-Jones 1995 Dudink 1994

Grondin et al 1984 Hancock 2017      Edwards 1994      Daniel & Raspaud 2009 Rubajcsyk 2017 JSSM Steingröver 2016      Stanaway & Hines 1995 Daniel & Janssen 1987

For a review: Coblely 2009 SM; Hancock 2013 EJSS, Wattie & Baker 2013 Psychologist, Wattie 2008 JSS



2. Is the month of birth decisive to play for any U21 team? **YES!**

U21 UEFA Championship 2016 Poland

Czech Republic	9	4	3	7	23
Denmark	11	6	6	0	23
England	7	8	4	4	23
Germany	9	7	6	1	23
Italy	7	7	5	4	23
Macedonia	14	1	6	2	23
Poland	6	10	5	2	23
Portugal	6	7	5	5	23
Serbia	6	7	4	6	23
Slovakia	5	6	5	7	23
Spain	9	6	4	4	23
Sweden	10	7	2	4	23
	99	76	55	46	276
	35,9	27,5	19,9	16,7	

3. Is the month of birth decisive to make a successful transition from youth to professional football?

AMERICAN JOURNAL OF HUMAN BIOLOGY 10:791-798 (1988)

### The Influence of Relative Age on Success and Dropout in Male Soccer Players

WERNER F. HELSEN,<sup>1\*</sup> JANET L. STARKES,<sup>2</sup> AND JAN VAN WINCKEL<sup>3</sup>  
<sup>1</sup>Katholieke Universiteit Leuven, Motor Learning Laboratory, Leuven, Belgium  
<sup>2</sup>McMaster University, Dept. of Kinesiology, Hamilton, Canada  
<sup>3</sup>Katholieke Universiteit Leuven, Motor Learning Laboratory, Leuven, Belgium

**ABSTRACT** The consistent asymmetry in the birth-date distribution of senior professional soccer players has led us to investigate whether similar asymmetries emerge throughout youth categories in soccer. Birth dates were considered for professional players, national youth teams, youth players transferred to top teams, and regular youth league players. Kolmogorov

3. Is the month of birth decisive to make a successful transition from youth to professional football?

RELATIVE AGE AND SPORT SUCCESS 795

TABLE 3. Birth-date distributions among youth players, all of whom were transferred in 1985 to a first division youth team

Month no: Month:	Birth-date months												Kolmogorov Smirnov Sign.	
	1 Aug	2 Sep	3 Oct	4 Nov	5 Dec	6 Jan	7 Feb	8 Mar	9 Apr	10 May	11 Jun	12 Jul		
Age groups 6-8 years	10 N = 20 (45.5%)	7	3	5	2	3	2	5	4	1	1	1	N = 3 (6.8%)	P < 0.05
8-10 years	21 N = 44 (38.6%)	11	12	10	13	10	9	8	12	0	3	5	N = 8 (7.0%)	P < 0.01
10-12 years	16 N = 49 (31.2%)	21	12	9	15	19	14	12	12	13	11	3	N = 27 (17.2%)	P < 0.05
12-14 years	16 N = 40 (32.8%)	12	12	14	5	13	11	8	9	5	9	8	N = 22 (18.0%)	P < 0.10
14-16 years	7 N = 20 (41.7%)	6	7	1	4	6	6	3	2	3	2	1	N = 6 (12.5%)	P < 0.05

3. Is the month of birth decisive to make a successful transition from youth to professional football?

Journal of Sports Sciences, June 2005; 23(6): 629-636



### The relative age effect in youth soccer across Europe

WERNER F. HELSEN<sup>1</sup>, JAN VAN WINCKEL<sup>1</sup>, & A. MARK WILLIAMS<sup>2</sup>

<sup>1</sup>Department of Kinesiology, Katholieke Universiteit Leuven, Leuven, Belgium and <sup>2</sup>Research Institute for Sport and Exercise Sciences, Liverpool John Moores University, Liverpool, UK

(Accepted 24 July 2004)

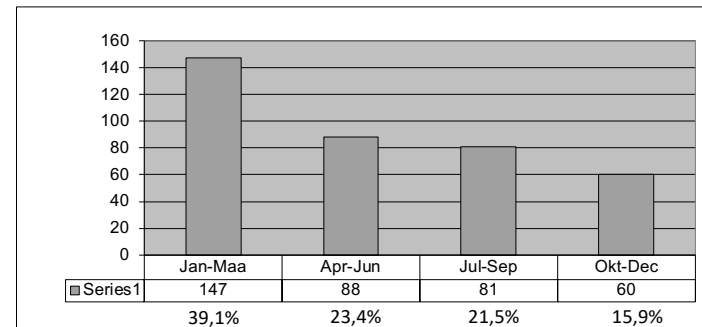
**Abstract**

The potential asymmetries in the birth-date distributions of youth soccer players across ten European countries (2175 age citations) were considered. First, we examined the birth-dates of players representing national youth teams in international competitions. Second, the birth-dates of players representing professional club teams in international youth tournaments were analysed. Kolmogorov-Smirnov tests were used to assess differences between observed and expected birth-date distributions. Regression analyses were employed to examine the relationship between month of birth and number of players in the different samples. The results showed an over-representation of players born in the first quarter of the selection year (from January to March) for all the national youth selections at the under-15 (U-15), U-16, U-17 and U-18 age categories, as well as for the UEFA U-16 tournaments and Meridian Cup. Players with a greater relative age are more likely to be identified as "talented" because of the likely physical advantages they have over their "younger" peers. Some options for reducing the relative age effect are offered.

**Keywords:** Performance, player selection, seasonal variation, talent identification

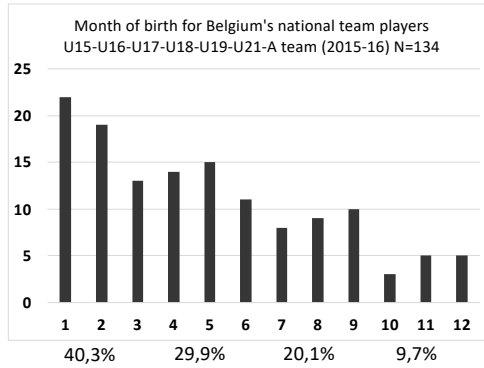
3. Is the month of birth decisive to make a successful transition from youth to professional football?

**YES!**





4. Is there any link between month of birth and the chances to play for the national teams?



**YES!**  
**Dropout?**  
**YES!**

5. Is there any association between month of birth and salaries in professional football?

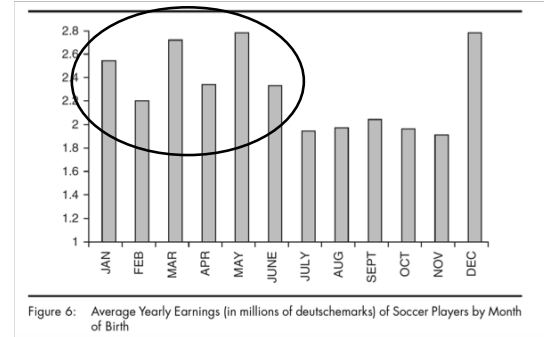


Figure 6: Average Yearly Earnings (in millions of deutschemarks) of Soccer Players by Month of Birth

Players born late at the end of the selection year (cut-off date August 1<sup>st</sup>) earn systematically more!

**YES, but!**

6. Are early maturers more skilled than late maturers?



**NO!**

7. Does the federation/club want to loose late maturers for football?

**NO!**

Early maturers:


- Physical advantage  
> strength, power, speed
- More important for 'winning'  
> infiltration, shooting, heading

Late maturers:

- **Develop more creativity & decision making**  
> **positional, tactical**
- **Technically more skilled (more harmonic)**
- Need to be strong mentally
- Need to avoid physical challenges



7. Does the federation/club want to lose the late maturers for football?

	Inhabitants Licensed players	80.600.000 6.800.000	<b>8,5 %</b>
	Inhabitants Licensed players	16.800.000 1.200.000	<b>7,1 %</b>
	Inhabitants Licensed players	11.000.000 420.000	<b>3,8 %</b>

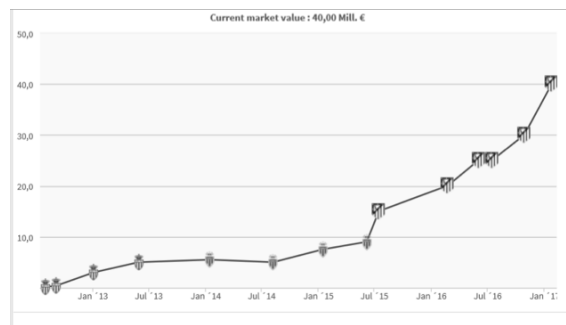


7. Does the federation/club want to lose the late maturers for football?

U16 Futures Belgium (1993)  
(late mature players)



7. Does the club want to lose the late maturers for football?



In 2 years : from 8 mill € → 40 mill €

8. Is the identification of 'talent' affected by the maturity status of a player?

### Importance of Peak Height Velocity Timing in Terms of Injuries in Talented Soccer Players

Authors

A. van der Sluis<sup>1,4</sup>, M. T. Efferink-Gemser<sup>1,2</sup>, M. S. Brink<sup>1,2</sup>, C. Visscher<sup>1</sup>


Affiliations

<sup>1</sup> Center for Human Movement Sciences, Rijksuniversiteit Groningen, Groningen, the Netherlands  
<sup>2</sup> School of Sport Studies, Hanzte University of Applied Sciences Groningen, the Netherlands  
<sup>3</sup> HAN University of Applied Sciences, Nijmegen, the Netherlands  
<sup>4</sup> Kennispraktijk for Sports, Health and Education, Ede, the Netherlands


### High performer versus high potential

**Talent Identification in Football**

- Mostly based on **HIGH PERFORMERS**
- Instead of **HIGH POTENTIALS**
- For immediate competitive needs
- Advantage of **'relative' OLDER** player
  - More powerful, physically stronger
  - he can make a difference physically !
  - More hours of practice
- Advantage of **'more' MATURE** player
  - More powerful, physically stronger
  - he can make a difference physically !




*Youth coaches want to WIN the GAME, but the club loses TALENT !*



9. Is the impact of the RAE nowadays bigger than 20 years ago?

*Journal of Sports Sciences*, November 2012; 30(15): 1665–1671

 Routledge  
Taylor & Francis Group

### The relative age effect in European professional soccer: Did ten years of research make any difference?

WERNER F. HELSEN<sup>1</sup>, JOSEPH BAKER<sup>2</sup>, STIJN MICHIELS<sup>1</sup>, JOERG SCHORER<sup>3</sup>,  
JAN VAN WINCKEL<sup>1</sup> & A. MARK WILLIAMS<sup>4</sup>

<sup>1</sup>Department of Biomedical Kinesiology, Katholieke Universiteit Leuven, Belgium, <sup>2</sup>Kinesiology and Health Science, York University, Toronto, Ontario, Canada, <sup>3</sup>Institute for Sport Science, Westfälische Wilhelms-University Münster, Münster, Germany, and <sup>4</sup>Centre for Sports Medicine and Human Performance, School of Sport and Education, Brunel University, Uxbridge, Middlesex UB8 3PH, UK

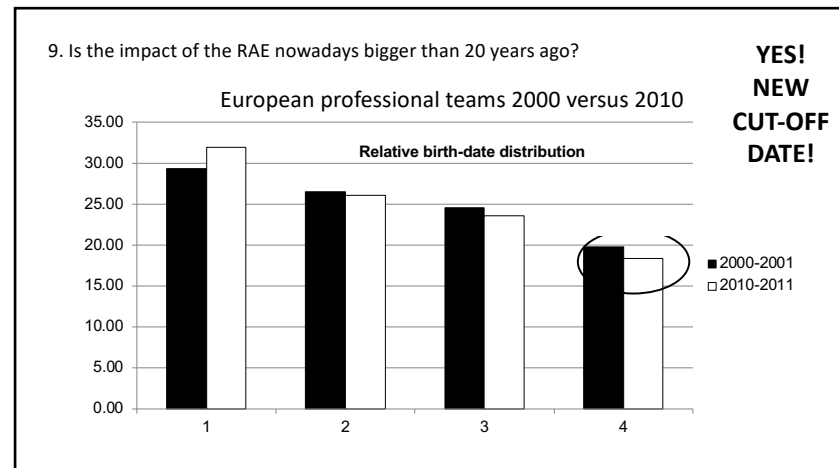
*(Accepted 14 August 2012)*

9. Is the impact of the RAE nowadays bigger than 20 years ago?

Country	'home' players		Foreign players		Total		% foreigners	
	2000	2010	2000	2010	2000	2010	2000	2010
England								
Portugal								
Germany								
Belgium								
Italy								
Netherlands								
Spain								
France								
Denmark								
Sweden								
Total								

European professional teams 2000 versus 2010

SCAPPS, Kelowna, October 19th, 2013



The new 'cut-off date' of January even increased the RAE!

AMERICAN JOURNAL OF HUMAN BIOLOGY 12:729-735 (2000)

Effect of a Change in Selection Year on Success in Male Soccer Players

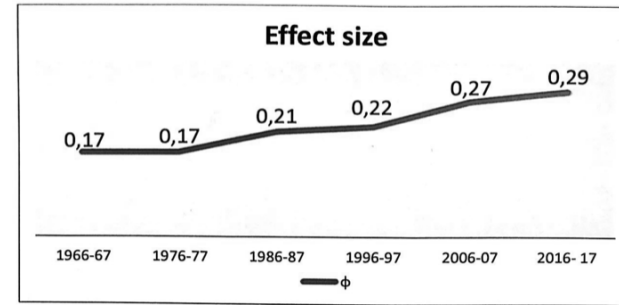
WERNER F. HELSEN,<sup>1\*</sup> JANET L. STARKES,<sup>2</sup> AND JAN VAN WINCKEL<sup>1</sup>  
<sup>1</sup>Department of Kinesiology, Katholieke Universiteit Leuven, Leuven, Belgium  
<sup>2</sup>Department of Kinesiology, McMaster University, Hamilton, Canada

**ABSTRACT** Since 1997 and following the guidelines of the International Football Association, the Belgian Soccer Federation has used January 1st as the start of the selection year. Previously, August 1 was the start. This shift prompted an investigation of changes in birth-date distributions throughout youth categories for 1996-1997 compared to the 1997-1998 competitive years. Birth dates were considered for national youth league players, ages 10-12, 12-14, 14-16, and 16-18 years. Kolmogorov Smirnov tests assessed differences between observed and expected birth-date distributions. Regression analyses examined the relationship between month of birth and number of participants both before and after the August to January shift. Results indicated that from 1996 to 1997, youth players born from January to March (the early part of the new selection year) were more likely to be identified as "talented" and to be exposed to higher levels of coaching. In comparison, players born late in the new selection year (August to October) were assessed as "talented" in significantly lower proportions. Specific suggestions are presented to reduce the relative age effect. Am. J. Hum. Biol. 12:729-735, 2000. © 2000 Wiley-Liss, Inc.

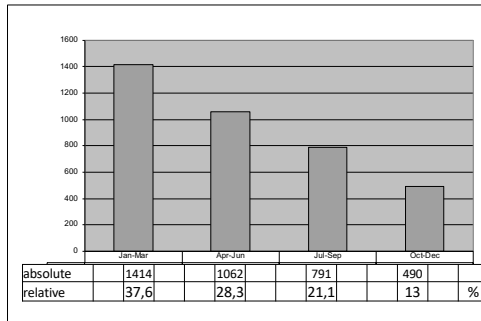
9. Is the impact of the RAE nowadays bigger than 20 years ago?

YES!

Italian elite youth players championship 2016-17

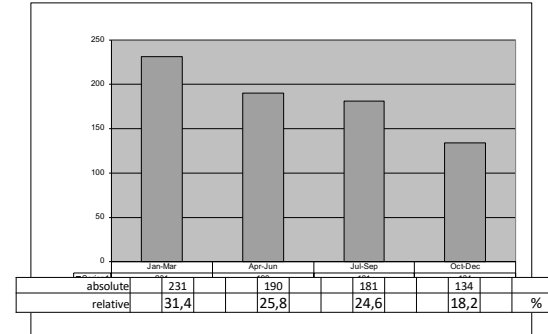


UEFA F4F workshops 2017-18: The RAE across associations (MEN = 3757 players)




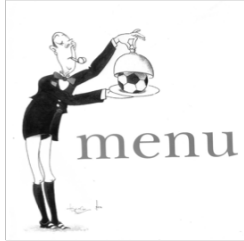
YES!  
 Similar  
 for  
 Women!

The RAE in the World Cup (MEN = 736 players)




YES!

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6. Underlying mechanisms
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Differences in age and maturation!

HIGH ABILITY STUDIES, 2016  
<http://dx.doi.org/10.1080/13598139.2016.1242063>





**Relative age effects in a cognitive task: A case study of youth chess**

Werner F. Helsen<sup>a</sup>, Joseph Baker<sup>b</sup>, Joerg Schorer<sup>c</sup>, Christina Steingröver<sup>c</sup>, Nick Wattie<sup>d</sup> and Janet L. Starks<sup>e</sup>

<sup>a</sup>Department of Kinesiology, Movement Control and Neuroplasticity Research Group, KU Leuven, Belgium; <sup>b</sup>School of Kinesiology and Health Science, York University, Toronto, Canada; <sup>c</sup>Department of Sport and Movement Science, University of Oldenburg, Oldenburg, Germany; <sup>d</sup>Faculty of Health Sciences, University of Ontario Institute of Technology, Oshawa, Canada; <sup>e</sup>Department of Kinesiology, McMaster University, Hamilton, Canada

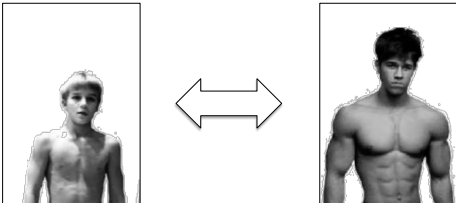
Biological (or skeletal) maturity

- **Early mature players** : biologically speaking far more mature (difference up to 2 years with average mature players)
- **Average mature players** : biological and calendar age are the same
- **Late mature players** : biologically speaking less mature (difference up to 2 years with average mature players)
- How big is the impact of the Late Maturity Effect?


Biological maturity

**Unequal battle between early and late mature/born players**



If 31/12  
+ very late mature (- 2y)

If 01/01  
+ very early mature (+ 2y)



Scand J Med Sci Sports 2014; 24: 569-576  
doi: 10.1111/sms.12033

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SCANDINAVIAN JOURNAL OF  
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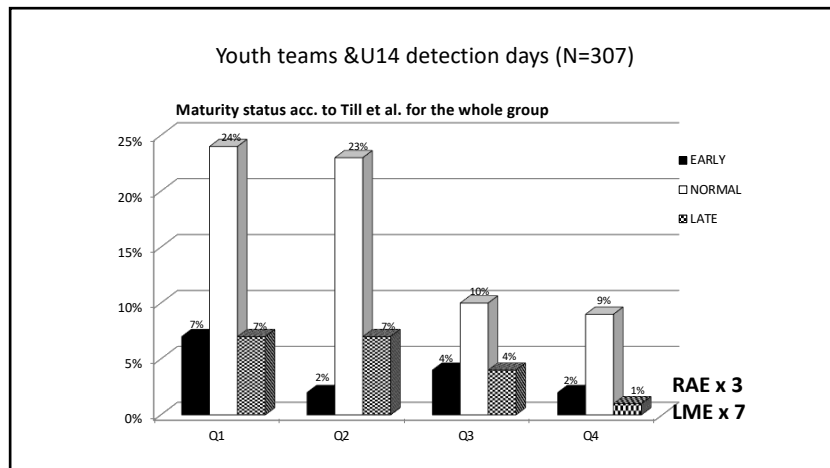
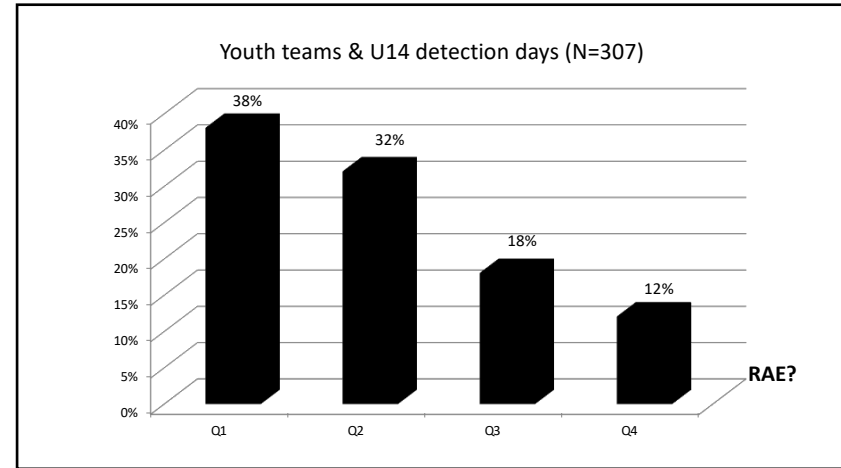
Date of birth Date Age Height Height (bench) Height seated Weight

### Considering maturation status and relative age in the longitudinal evaluation of junior rugby league players



K. Till<sup>1</sup>, S. Coble<sup>2</sup>, J. O' Hara<sup>1</sup>, C. Cooke<sup>1</sup>, C. Chapman<sup>3</sup>

<sup>1</sup>Carnegie Research Institute, Leeds Metropolitan University, Leeds, West Yorkshire, UK, <sup>2</sup>Faculty of Health Sciences, The University of Sydney, Sydney, New South Wales, Australia, <sup>3</sup>Rugby Football League, Leeds, UK  
Corresponding author: Kevin Till, Room 103, Fairfax Hall, Carnegie Faculty of Sport & Education, Headingley Campus, Leeds Metropolitan University, West Yorkshire, LS6 3QS, UK. Tel: +44-11 01132-832600 Ext: 25185, Fax: +0113 812 7575, E-mail: k.till@leedsmet.ac.uk

Accepted for publication 9 November 2012



1. Introduction
2. Questions for the audience?
3. Answers to the audience!
4. Relative Age Effect (RAE): what is it anyway?
5. What about the Late Maturity Effect
6. Underlying mechanisms
7. Solutions

### Solutions

1. Awareness to provide equal chances to all children
2. Talent detection & selection process (what are the 'key' attributes?)
3. Organisation of youth sport by federation (and clubs)
  - Age range (average age in the middle of the 2-year age band)
  - Quota system (wild cards for late born/maturers in the elite schools)
  - Show the month of birth
  - Organisation per 6 months rather than 12 months
  - Training by biological age, rather than chronological age
  - Classification on biological age (Future teams of only late maturers)
  - Rotating cut-off dates
4. Technical changes to decrease physical impact (field hockey, futsal, table tennis, volleyball) & competitive character (American football) in younger age categories
5. Change in mentality: 'Learning isn't everything, it's the only thing'
6. T E A M work makes the dream W O R K

SCAPPS, Kelowna, October 19th, 2013

### Show the month of birth!

JOURNAL OF SPORTS SCIENCES, 2017  
VOL. 35, NO. 8, 784-790  
<http://dx.doi.org/10.1080/02640414.2016.1189588>

**Routledge**  
Taylor & Francis Group

#### Age-ordered shirt numbering reduces the selection bias associated with the relative age effect

David L. Mann and Pleun J. M. A. van Ginneken

MOVE Research Institute Amsterdam, Department of Human Movement Sciences, Faculty of Behavioural and Movement Sciences, Vrije Universiteit Amsterdam, Amsterdam, The Netherlands

**ABSTRACT**  
When placed into age groups for junior sporting competition, the relative differences in age between children leads to a bias in who is evaluated as being talented. While the impact of this relative age effect (RAE) is clear, until now there has been no evidence to show how to reduce it. The aim of this study was to determine whether the selection bias associated with the RAE could be reduced. Talent scouts from an elite football club watched junior games and ranked players on the basis of their potential. Scouts were allocated to one of three groups provided with contrasting information about the age of the players: (1) no age information, (2) players' birthdates or (3) knowledge that the numbers on the playing shirts corresponded to the relative age of the players. Results revealed a significant selection bias for the scouts in the no-age information group, and that bias remained when scouts knew the players' dates-of-birth. Strikingly though, the selection bias was eliminated when scouts watched the games knowing the shirt numbers corresponded to the relative ages of the players. The selection bias associated with the RAE can be reduced if information about age is presented appropriately.

**ARTICLE HISTORY**  
Accepted 10 May 2016

**KEYWORDS**  
Expertise; talent identification; talent development; sports; football

### Compose 2 teams per semester rather than 2 teams per birth year!

AS it IS      U10 age group (2 teams per birth year)

TO BE      U10 First half      U10 Second half

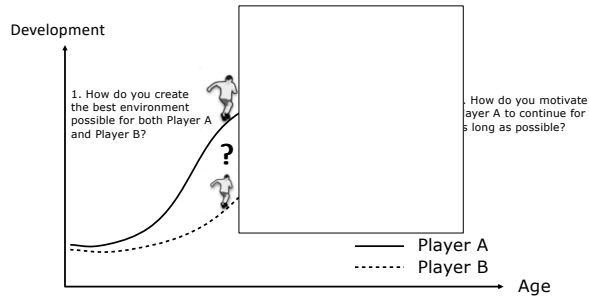
U10 age group (2 teams for each semester)

### Future teams!

**It works!**

- Since 2008
  - U16 F tournaments (Denmark, Sweden, Czech Republic, Belgium)
    - Minimum of 50% playing time for each player
    - Great experience and challenge for the players against other "future" players
    - International level
    - Maximum development chances in powerful learning environment

“As many as possible, for as long as possible, in the best environment possible”



Rotating cut-off dates!

Preview of the 21-month grouping system season X

Categorieën:	U10	U12	U14	U16
Kwartalen:				
1. Most Advantaged	Apr (10) Mei (10) Jun (10)	Jul (12) Aug (12) Sep (12)	Okt (14) Nov (14) Dec (14)	Jan (15) Feb (15) Maa (15)
2.	Jul (10) Aug (10) Sep (10)	Okt (12) Nov (12) Dec (12)	Jan (13) Feb (13) Maa (13)	Apr (15) Mei (15) Jun (15)
3.	Okt (10) Nov (10) Dec (10)	Jan (11) Feb (11) Maa (11)	Apr (13) Mei (13) Jun (13)	Jul (15) Aug (15) Sep (15)
4.	Jan (9) Feb (9) Maa (9)	Apr (11) Mei (11) Jun (11)	Jul (13) Aug (13) Sep (13)	Okt (15) Nov (15) Dec (15)
5.	Apr (9) Mei (9) Jun (9)	Jul (11) Aug (11) Sep (11)	Okt (13) Nov (13) Dec (13)	Jan (14) Feb (14) Maa (14)
6.	Jul (9) Aug (9) Sep (9)	Okt (11) Nov (11) Dec (11)	Jan (12) Feb (12) Maa (12)	Apr (14) Mei (14) Jun (14)
7. Most disadvantaged	Okt (9) Nov (9) Dec (9)	Jan (10) Feb (10) Maa (10)	Apr (12) Mei (12) Jun (12)	Jul (14) Aug (14) Sep (14)

T E A M work makes the dream W O R K



Take home message!

The RAE and the LME still have a clear impact on:

- > Talent detection & selection
- > Transition from youth to senior teams
- > National teams
- > Drop-out
- > Injuries
- > Salaries
- > Post-career opportunities

RAEs represent a persistent, unfair and unacceptable inequality in elite youth and professional football we all need to be aware of and take our responsibility for!

*Schorer et al. (2013) Plos One*



