Relative Age Effect in Elite Youth Soccer

“initial advantage tends to beget further advantage”
(Rigney, 2010)

Dr. Ajit Korgaokar
Relative Age Effect (RAE) in Elite Youth Soccer

Today’s Discussion:

- RAE Defined
- RAE in soccer
- RAE Phenomenon
- RAE in U.S.
- RAE among females
- RAE in ECNL
- Where are we now?
- Solutions
- Questions/comments
Relative Age

- The difference in chronological age among children born in the same selection year/cohoot (e.g. January 1st – December 31st or August 1st – July 31st)

Relative Age Effect (RAE)

- Performance and participation advantages (older)
- Overrepresentation of older athletes
- Underrepresentation of younger athletes

RAEs: Soccer, ice hockey, basketball, tennis (right handed)
Relative Age Effect (RAE) in Soccer

- RAEs investigated since the 1990s
- RAEs discovered in European and non-European countries
- Systematic bias toward the youngest players (males)
- Preference for the oldest players (males)
- Unclear among female players
Relative Age Effect in Elite Youth Soccer

**Soccer Players**

![Bar graph showing the number of soccer players by month across different quartiles.](chart1)

**General Population**

![Bar graph showing the number of people in the general population by month across different quartiles.](chart2)

**Soccer Players (Quartiles)**

![Bar graph showing the number of soccer players by month across different quartiles.](chart3)

**General Population (Quartiles)**

![Bar graph showing the number of people in the general population by month across different quartiles.](chart4)
Birthdate Distribution for U15, U16, U17 & U18 National Team Players

Birthdate Distribution for U15, U16, U17 & U18 National Team Players

French Soccer Federation 2006-2007 Season

Q1 (Jan-Mar) Q2 (Apr-Jun) Q3 (Jul-Sep) Q4 (Oct-Dec)

FIFA U17 World Cup Competition 1997-2007

Components of the RAE Phenomenon Among Boys

- Growth & maturation
- Early competition in soccer
- Early identification/selection
- Physical attributes
- Developmental Pathway
- Attention
- Motivation
- Success/winning/development
RAE Among Players in the U.S.

• **Tennessee Youth Soccer Players** (Musch, 2002)
  ▪ No RAEs 7-12 yrs. (males & females)
  ▪ RAEs 13-18 yrs. (males & females)

• **Olympic Development Program Region Teams (ODP) (males)** (Glamser & Vincent, 2004)
  ▪ 69% born January-June

• **ODP & U.S. National teams** (Vincent & Glamser, 2006)
  ▪ No RAE among female ODP (state & reg) or U.S. u19s
  ▪ RAEs among male regional ODP and U.S. u17s
2012-2013 USSDA U15/16 Age Group

Q1 (Jan-Mar) Q2 (Apr-Jun) Q3 (Jul-Sep) Q4 (Oct-Dec)

Korgaokar et. al. (2013)
2012-2013 USSDA U17/18 Age Group

Q1 (Jan-Mar) Q2 (Apr-Jun) Q3 (Jul-Sep) Q4 (Oct-Dec)

<table>
<thead>
<tr>
<th>Quarter</th>
<th>U17/18</th>
<th>Gen Pop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>27</td>
<td>24</td>
</tr>
<tr>
<td>Q2</td>
<td>25</td>
<td>19</td>
</tr>
<tr>
<td>Q3</td>
<td>26</td>
<td>25</td>
</tr>
<tr>
<td>Q4</td>
<td>28</td>
<td>25</td>
</tr>
</tbody>
</table>

Korgaokar et. al. (2013)
2012-2013 USSDA U17/18 Age Group

<table>
<thead>
<tr>
<th></th>
<th>Q1 (Aug-Oct)</th>
<th>Q2 (Nov-Jan)</th>
<th>Q3 (Feb-Apr)</th>
<th>Q4 (May-Jul)</th>
</tr>
</thead>
<tbody>
<tr>
<td>U17/18</td>
<td>30</td>
<td>28</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Gen Pop</td>
<td>26</td>
<td>24</td>
<td>24</td>
<td>18</td>
</tr>
</tbody>
</table>

Korgaokar et. al. (2013)
2012-2013 USSDA U15/16 & U17/18 Age Groups

U15/16 Boys

<table>
<thead>
<tr>
<th>Quarter</th>
<th>% of Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>34</td>
</tr>
<tr>
<td>Q2</td>
<td>22</td>
</tr>
<tr>
<td>Q3</td>
<td>24</td>
</tr>
<tr>
<td>Q4</td>
<td>20</td>
</tr>
</tbody>
</table>

U17/18 Boys

<table>
<thead>
<tr>
<th>Quarter</th>
<th>% of Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1</td>
<td>27</td>
</tr>
<tr>
<td>Q2</td>
<td>19</td>
</tr>
<tr>
<td>Q3</td>
<td>26</td>
</tr>
<tr>
<td>Q4</td>
<td>28</td>
</tr>
</tbody>
</table>

Korgaokar et. al. (2013)
RAE Among Female Soccer Players

- RAE research has been equivocal among females
  - French senior professional players (no RAE)
  - French youth & senior non-professionals (RAE)
  - U.S. ODP (state & reg) or U.S. u19s (no RAE)
  - Swiss soccer players
    - Talented - **RAE** for 10-14 yrs., no RAE for 15-20 yrs.
    - National teams - **No** RAE for u17 & u19
2012-2013 ECNL U14-U18 Age Groups

Q1 (Aug-Oct) Q2 (Nov-Jan) Q3 (Feb-Apr) Q4 (May-Jul)

Korgaokar et. al. (2013)
2012-2013 ECNL U14-U18 Age Groups Q4

Q4 (May, June, July)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of Players</th>
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<tbody>
<tr>
<td>U14</td>
<td>15</td>
</tr>
<tr>
<td>U15</td>
<td>16</td>
</tr>
<tr>
<td>U16</td>
<td>17</td>
</tr>
<tr>
<td>U17</td>
<td>18</td>
</tr>
<tr>
<td>U18</td>
<td>22</td>
</tr>
</tbody>
</table>
ECNL Players in the U.S. Women’s National Teams

U.S. Women’s National Teams 2013

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of Players from ECNL Teams</th>
</tr>
</thead>
<tbody>
<tr>
<td>U15</td>
<td>64%</td>
</tr>
<tr>
<td>U17</td>
<td>72%</td>
</tr>
<tr>
<td>U18</td>
<td>71%</td>
</tr>
<tr>
<td>U20</td>
<td>82%</td>
</tr>
</tbody>
</table>

ECNL 2012-2013 Season

<table>
<thead>
<tr>
<th>Age Group</th>
<th>% of Players</th>
</tr>
</thead>
<tbody>
<tr>
<td>U14</td>
<td>U15</td>
</tr>
<tr>
<td>U16</td>
<td>U17</td>
</tr>
<tr>
<td>U18</td>
<td>U19</td>
</tr>
<tr>
<td>U20</td>
<td>U21</td>
</tr>
</tbody>
</table>
Reasons for RAE in Females

- Competition (USYSA 3,000,000)
- Maturation (PHV)
- Developmental pathway advantage
- Barrier for the youngest in the cohort

Where are we now?

- DOBs of Professional soccer players
- 10 European countries
- 10 yr. period
- No change in RAE in 10 yrs.

Solutions

• Rotate cut-off date

• Create more age categories with a smaller bandwidth (e.g. 6 months instead of 12 months)

• Change the mentality of youth team coaches (less reliance on physical characteristics)

• Balance between short-term success and long-term development
Questions?
Thoughts?
Comments?

Thank You!

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