



INTERNATIONAL
ICE HOCKEY
FEDERATION

JOUSTOKAUKALON VAIKUTUS VAMMOJEN EHKÄISYYN

Markku Tuominen

Suomen jääkiekkoliitto

International Ice Hockey Federation

IIHF:N VAMMAREKISTERÖINTI



- IIHF:n turnaksissa

- vuodesta 1998



- vuodesta 2006

- 10 kautta



VAMMAN MÄÄRITELMÄ



- any injury sustained in a practice or a game that prevented the player from returning to the same practice or game
- any injury sustained in a practice or a game that caused the player to miss a subsequent practice or game
- a laceration which required medical attention
- all dental injuries
- all concussions
- all fractures

VAMMALOMAKKEET



- The Team Medical Personnel Meeting
- Team Physicians
 - Game Injury Report Form
 - Individual Injury Report Form
- The IIHF Medical Supervisors





Injury Report System/IRS

(only one injury/form)



Injury Definition

The definition of an injury in the IIHF Injury Reporting System is as follows

1. An injury is considered reportable if a player misses a practice or a game because of an injury sustained during a practice or a game
2. The player doesn't return to the play for the remainder of the game following an injury
3. All concussions
4. Any dental injury
5. Any laceration which requires medical attention
6. All fractures

Country: _____ IIHF Championship: _____ Date of injury: D _____ M _____ Y _____

<p>Zone of Injury A</p> <ol style="list-style-type: none"> 1. No contact with boards 2. Contact with boards 	<p>Zone of Injury B</p> <p>Mark the area on the ice surface where the injury occurred.</p> <p>Note that Home and Visitor ends are marked to identify offensive and defensive activity</p>		<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="2">Game / Period</th> <th colspan="2">Practice</th> </tr> <tr> <td>1. warm up</td> <td>off-ice <input type="checkbox"/></td> <td>off-ice <input type="checkbox"/></td> <td></td> </tr> <tr> <td></td> <td>on-ice <input type="checkbox"/></td> <td>on-ice <input type="checkbox"/></td> <td></td> </tr> <tr> <td>2. 1st</td> <td>4. 3rd</td> <td></td> <td></td> </tr> <tr> <td>3. 2nd</td> <td>5. Ot</td> <td></td> <td></td> </tr> <tr> <td colspan="4">playing time:</td> </tr> <tr> <td colspan="4">Situation</td> </tr> <tr> <td>Even Strength</td> <td>5/3 4/4 3/3</td> <td>Penalty Killing</td> <td>4/3 3/5 3/4</td> </tr> <tr> <td colspan="4">Power Play</td> </tr> <tr> <td></td> <td>5/4 3/3 4/3</td> <td>Goalie</td> <td>1. Yes 2. No</td> </tr> </table>	Game / Period		Practice		1. warm up	off-ice <input type="checkbox"/>	off-ice <input type="checkbox"/>			on-ice <input type="checkbox"/>	on-ice <input type="checkbox"/>		2. 1st	4. 3rd			3. 2nd	5. Ot			playing time:				Situation				Even Strength	5/3 4/4 3/3	Penalty Killing	4/3 3/5 3/4	Power Play					5/4 3/3 4/3	Goalie	1. Yes 2. No
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<p>Source of Diagnosis</p> <ol style="list-style-type: none"> 1. Medical Doctor 2. Physiotherapist 3. Other _____ <p>Side / Body part: _____ fill out a separate form for each injury</p> <p>1. N/A 2. Left 3. Right 4. Both</p> <table style="width:100%;"> <tr> <td>1. Head</td> <td>10. Shoulder</td> <td>19. Chest</td> <td>28. Genitals</td> </tr> <tr> <td>2. Face</td> <td>11. Scapula</td> <td>20. Abdomen</td> <td>29. Hip</td> </tr> <tr> <td>3. Neck</td> <td>12. Upper arm</td> <td>21. Kidneys</td> <td>30. Thigh</td> </tr> <tr> <td>4. Throat</td> <td>13. Elbow</td> <td>22. Upper Back</td> <td>31. Knee</td> </tr> <tr> <td>5. Jaw/Chin</td> <td>14. Forearm</td> <td>23. Lower Back</td> <td>32. Leg</td> </tr> <tr> <td>6. Teeth/Mouth</td> <td>15. Wrist</td> <td>24. Coccyx</td> <td>33. Ankle</td> </tr> <tr> <td>7. Eye</td> <td>16. Hand</td> <td>25. Buttocks</td> <td>34. Foot</td> </tr> <tr> <td>8. Ear</td> <td>17. Thumb</td> <td>26. Pelvis</td> <td>35. Toes</td> </tr> <tr> <td>9. Clavicle</td> <td>18. Fingers</td> <td>27. Groin</td> <td>36. Other: _____</td> </tr> </table> <p>Dental:</p> <p>Mouthguard? 1. Yes 2. No</p> <p>Custom made? 1. Yes 2. No</p> <p>Knee:</p> <p>Circle the appropriate structure involved:</p> <p>1. ACL 2. PCL 3. MCL 4. LCL 5. Meniscus 6. PF*</p> <p>Grade: 1. _____ 2. _____ 3. _____</p> <p>Shoulder:</p> <p>Circle the appropriate structure involved:</p> <p>1. AC* 2. SC* 3. Glenohumeral</p> <p>Grade: 1. _____ 2. _____ 3. _____</p>	1. Head	10. Shoulder	19. Chest	28. Genitals	2. Face	11. Scapula	20. Abdomen	29. Hip	3. Neck	12. Upper arm	21. Kidneys	30. Thigh	4. Throat	13. Elbow	22. Upper Back	31. Knee	5. Jaw/Chin	14. Forearm	23. Lower Back	32. Leg	6. Teeth/Mouth	15. Wrist	24. Coccyx	33. Ankle	7. Eye	16. Hand	25. Buttocks	34. Foot	8. Ear	17. Thumb	26. Pelvis	35. Toes	9. Clavicle	18. Fingers	27. Groin	36. Other: _____	<p>Player information:</p> <p>1. Age _____</p> <p>2. Height (cm) _____</p> <p>3. Weight (kg) _____</p> <p>Position:</p> <p>1. Centre</p> <p>2. Wing</p> <p>3. Defence</p> <p>4. Goalie</p> <p>Nature of injury:</p> <p>1. Acute 2. Recurrent:</p> <p style="margin-left: 20px;">a. this season</p> <p style="margin-left: 20px;">b. last season</p>	<p>Dx/assessment:</p> <ol style="list-style-type: none"> 1. Contusion 2. Sprain (Ligament) 3. Strain (Muscle-Tendon) 4. Laceration 5. Dislocation/Subluxation 6. Fracture 7. Neurotrauma/Concussion 8. Other _____ <p>Time Lost:</p> <p>The amount of time player is expected to be out of play</p> <ol style="list-style-type: none"> 1. Return same day 2. Less than 1 week 3. 1 to 3 weeks 4. More than 3 weeks 	<p>Cause of injury:</p> <ol style="list-style-type: none"> 1. Type of Check <ol style="list-style-type: none"> a. Body Check b. Check from Behind c. Check to the Head 2. Stick Contact 3. Puck Contact 4. Unintended Collision 5. Fighting 6. Non-Contact 7. Skate 8. Other: _____ <p>Was a penalty Called on the Play?</p> <p>1. Yes 1. 2 min.</p> <p>2. No 2. 2+2 min</p> <p>3. 2+10 min</p> <p>4. 3+20 min</p> <p>5. Other: _____</p>
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<p>Diagnosis:</p> <p>ICD-code DG: _____</p>			<p>Equipment:</p> <p>1. Full Face mask</p> <p style="margin-left: 20px;">a. shield _____</p> <p style="margin-left: 20px;">b. cage _____</p> <p>2. Visor _____</p> <p>3. None _____</p>																																				
<p>PF= Patellofemoral, Kneecap AC= Acromioclavicular Joint</p> <p>SC= Sternoclavicular Joint</p>																																							

VAMMARISKI



- The injury rate was calculated using the following formula:

injuries / (# players (team) x # games x 2) x 1,000

= the number of injuries per 1,000 player-games.



Original articles:

INJURIES IN MEN'S INTERNATIONAL ICE HOCKEY

**A 7-year study of the International Ice Hockey Federation Adult World
Championship Tournaments and Olympic Winter Games**

Markku Tuominen¹, Michael J. Stuart², Mark Aubry³, Pekka Kannus⁴, Jari Parkkari⁵

Br J Sports Med 2015;49:1 30-36 Published Online First: 7 October 2014 doi:10.1136/bjsports-2014-093688

INJURIES IN WOMEN'S INTERNATIONAL ICE HOCKEY

**An 8-year study of the International Ice Hockey Federation Women's World
Championship Tournaments and Olympic Winter Games**

Markku Tuominen¹, Michael J. Stuart², Mark Aubry³, Pekka Kannus⁴, Kari Tokola, Jari Parkkari⁵

Br J Sports Med 2016 Nov;50(22):1406-1412. doi:10.1136/bjsports-2015-094647. Epub 2015 Jul 7.



INJURIES IN WORLD JUNIOR ICE HOCKEY CHAMPIONSHIPS BETWEEN 2006 AND 2015

Markku Tuominen¹, Michael J. Stuart², Mark Aubry³, Pekka Kannus⁴, Jari Parkkari⁵

Br J Sports Med. 2017;51:36–43. doi: 10.1136/bjsports-2016-095992. Epub 2016 Jun 8.

CONCUSSION IN THE INTERNATIONAL ICE HOCKEY WORLD CHAMPIONSHIPS AND OLYMPIC WINTER GAMES BETWEEN 2006 AND 2015

Markku Tuominen¹, Timo Hänninen, Jari Parkkari⁵, Michael J. Stuart², Teemu Luoto, Pekka Kannus⁴, Mark Aubry³

Br J Sports Med 2017;51:244–252. doi:10.1136/bjsports-2016-097119. Epub 2017 Feb 1.

TURNNAUKSET



- 32 **Men's** World Championships, 1 Olympic Winter Games, and 8 Olympic Qualification Tournaments
 - 41 tournaments, 844 games (436 in A-pool), and 555 injuries (329 in A-pool)
- 23 **Women's** World Championships, 2 Olympic Winter Games, and 14 World Women U18 Championships
 - 39 tournaments, 637 games (244 in WWC U18), and 168 injuries (75 in WWC U18)
- 36 Male World **Junior** U20 Championships and 33 Male World Junior U18 Championships
 - 69 tournaments, 1326 games (631 in WJ U18), and 633 injuries (272 in WJ U18)
 - 9 A-pool tournaments in both age groups



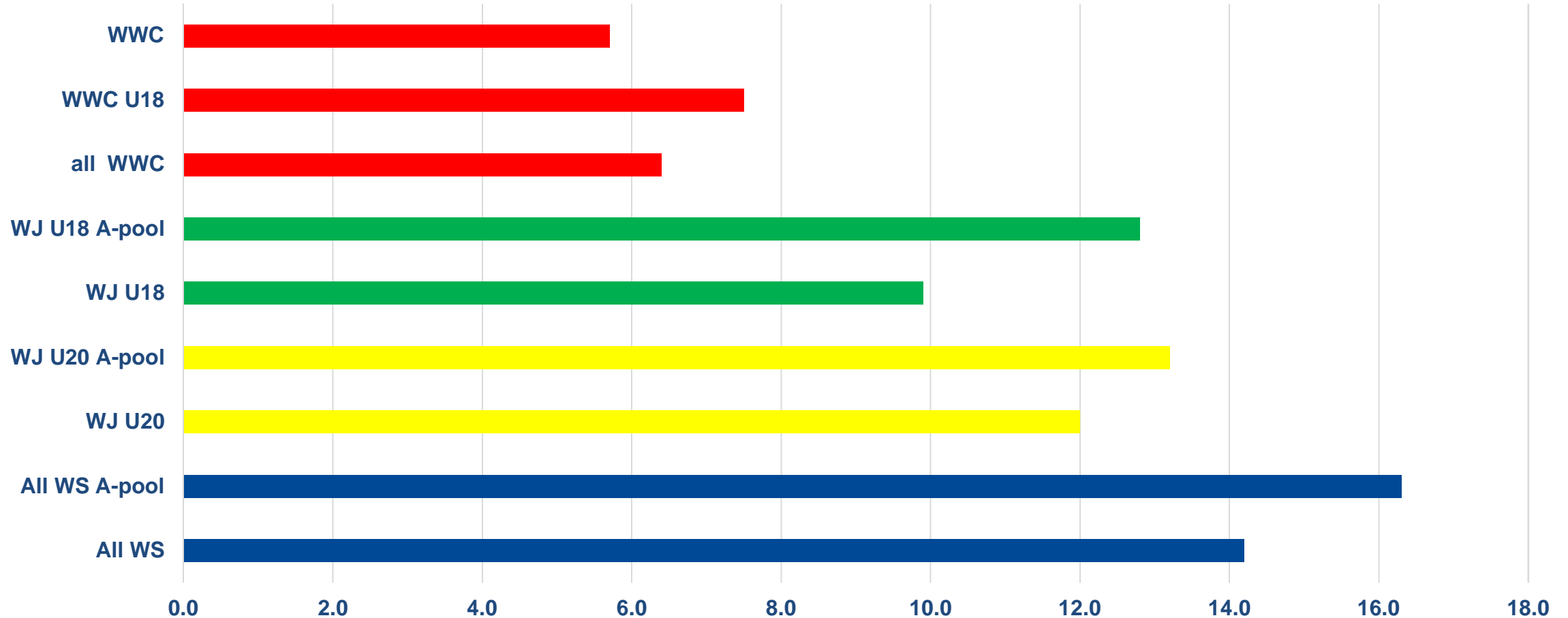
TURNNAUKSET AIVOTÄRÄHDYSTUTKIMUS



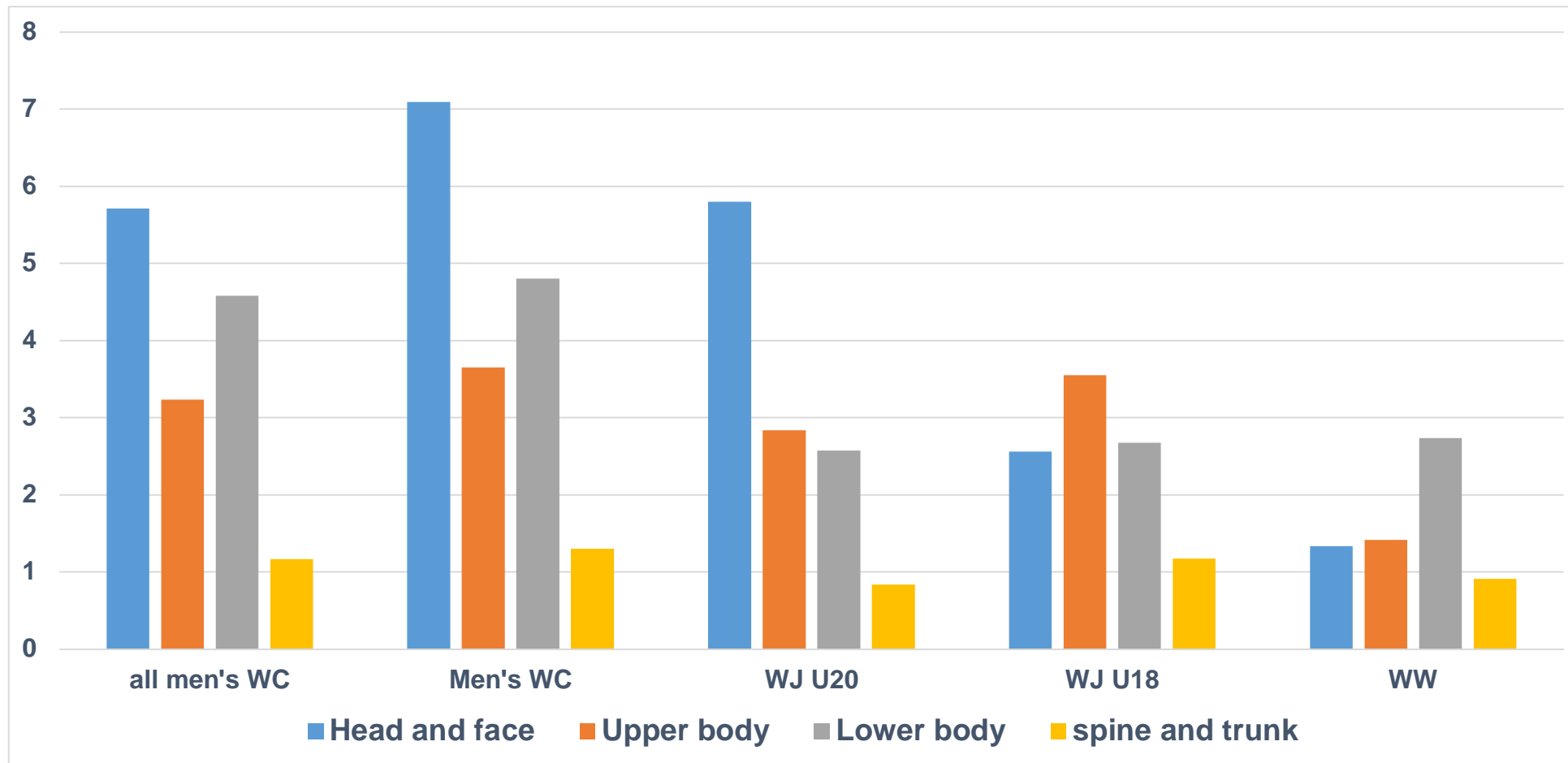
- 54 Male WS Championships and OWG
 - 10 A-pool Tournaments and 2 Olympic Winter Games
 - 8 Olympic Qualification Tournaments
- 70 Male WJ Championships
 - 19 A-pool Tournaments
- 45 World Women's Championships
 - 14 A-pool Tournaments and 2 Olympic Winter Games
 - 15 WW U18 Championships
- 3293 games
- 163 concussions
 - 160 concussions in games



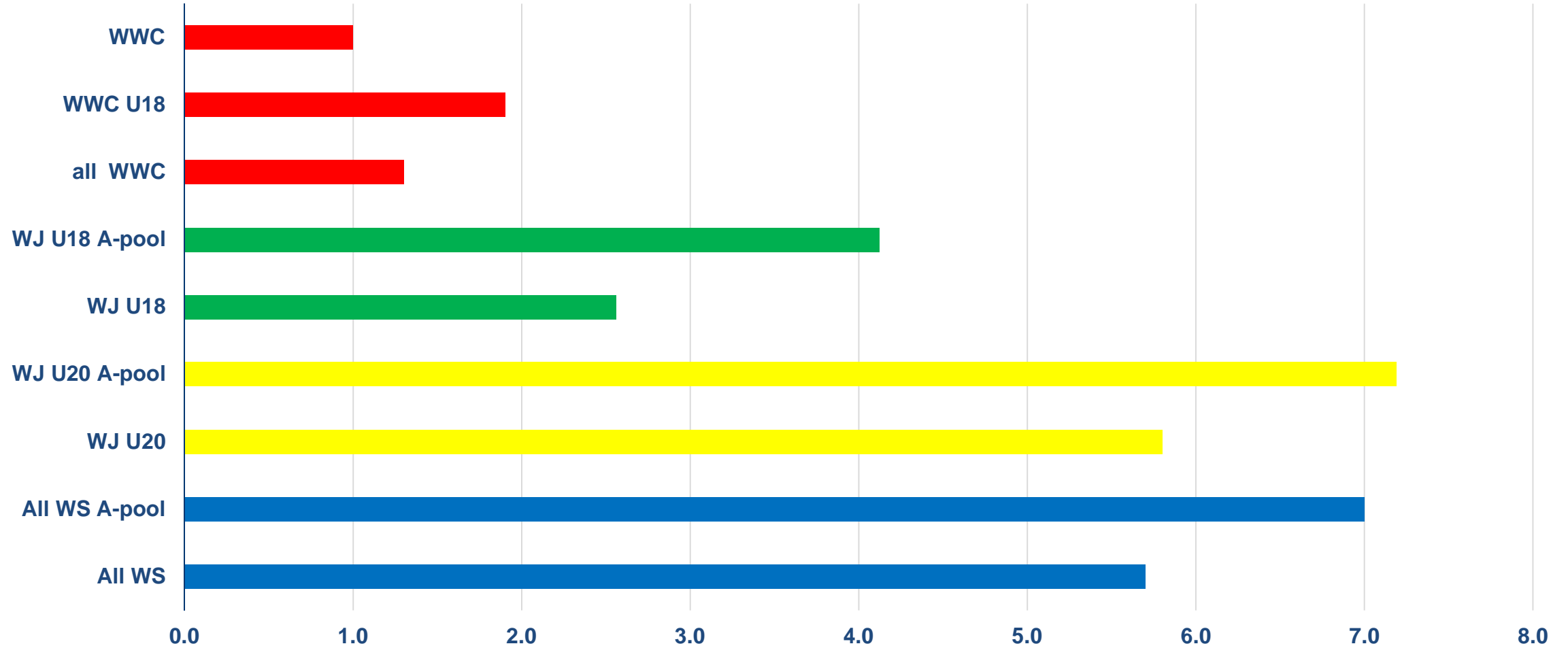
VAMMARISKI (IR) PER 1000 PELAAJAN PELAAMAA OTTELUA



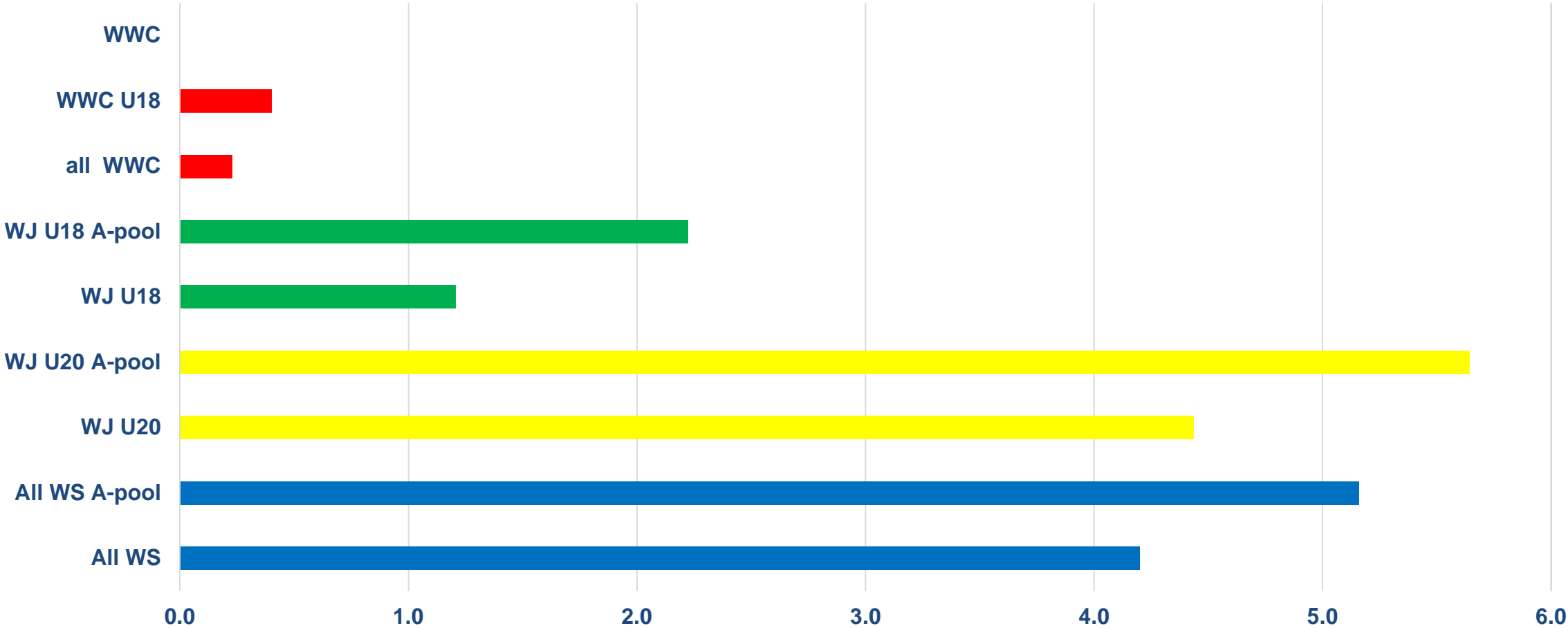
VAMMARISKI (IR) VARTALON ALUEIDEN MUKAAN



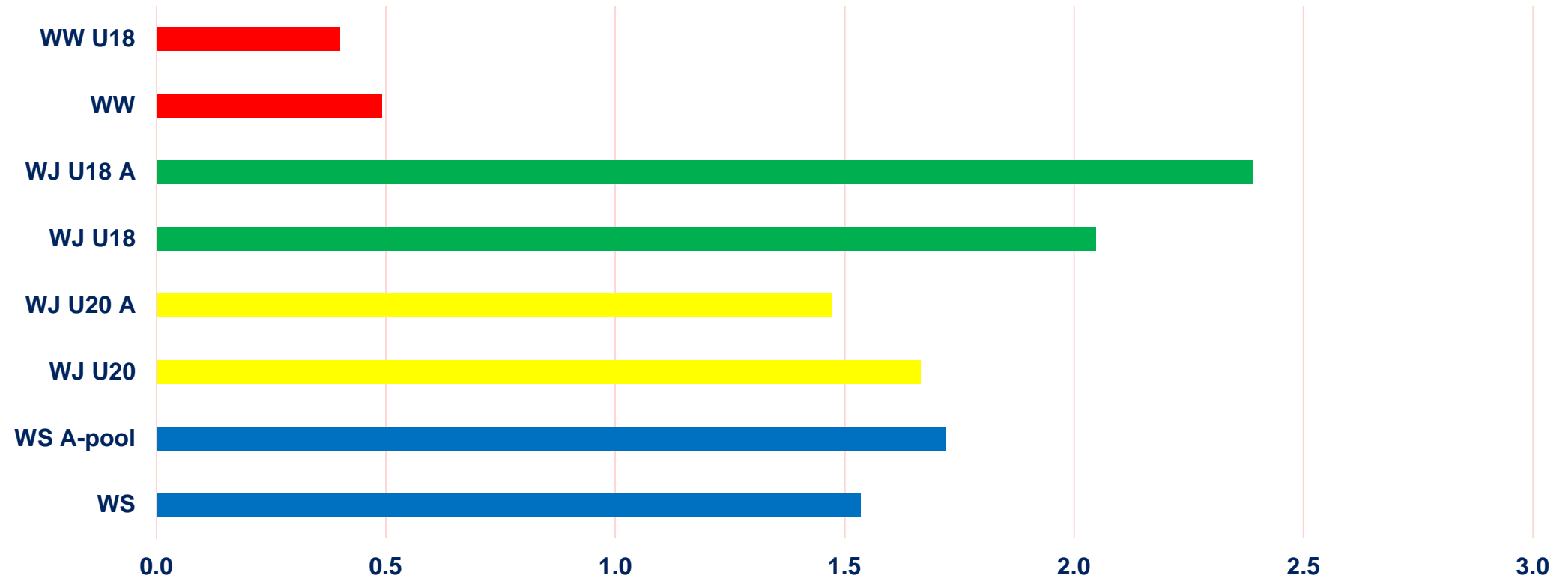
VAMMARISKI (IR) PÄÄ- JA KASVOVAMMOISSA



VAMMARISKI (IR) KASVOVAMMOISSA



VAMMARISKI (IR) OLKAPÄÄVAMMOISSA



OLKAPÄÄVAMMAT



WS

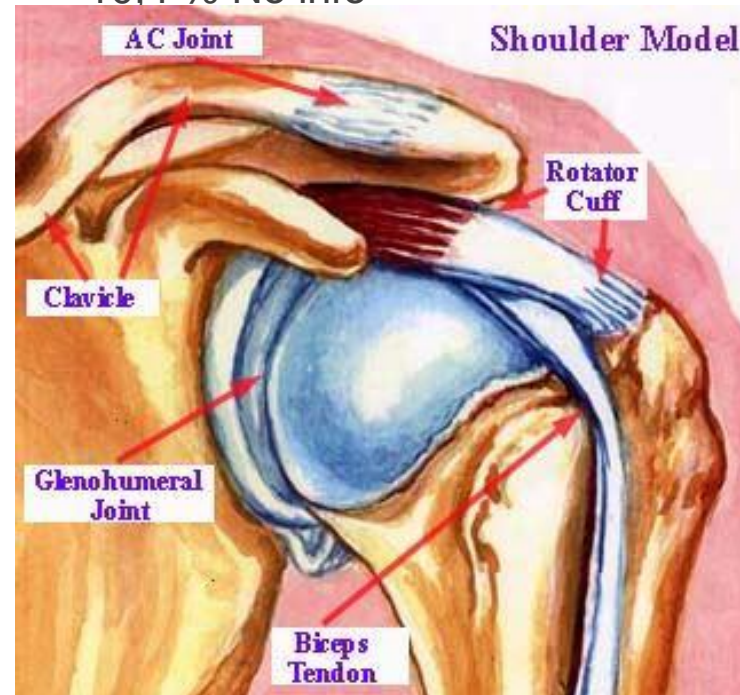
- 40,4 % Glenohumeral injuries
 - Gr. III most common
- 50,9 % AC injuries
 - Gr I most common
- 5,3 % SC injuries
- 3,5 % No info

WW

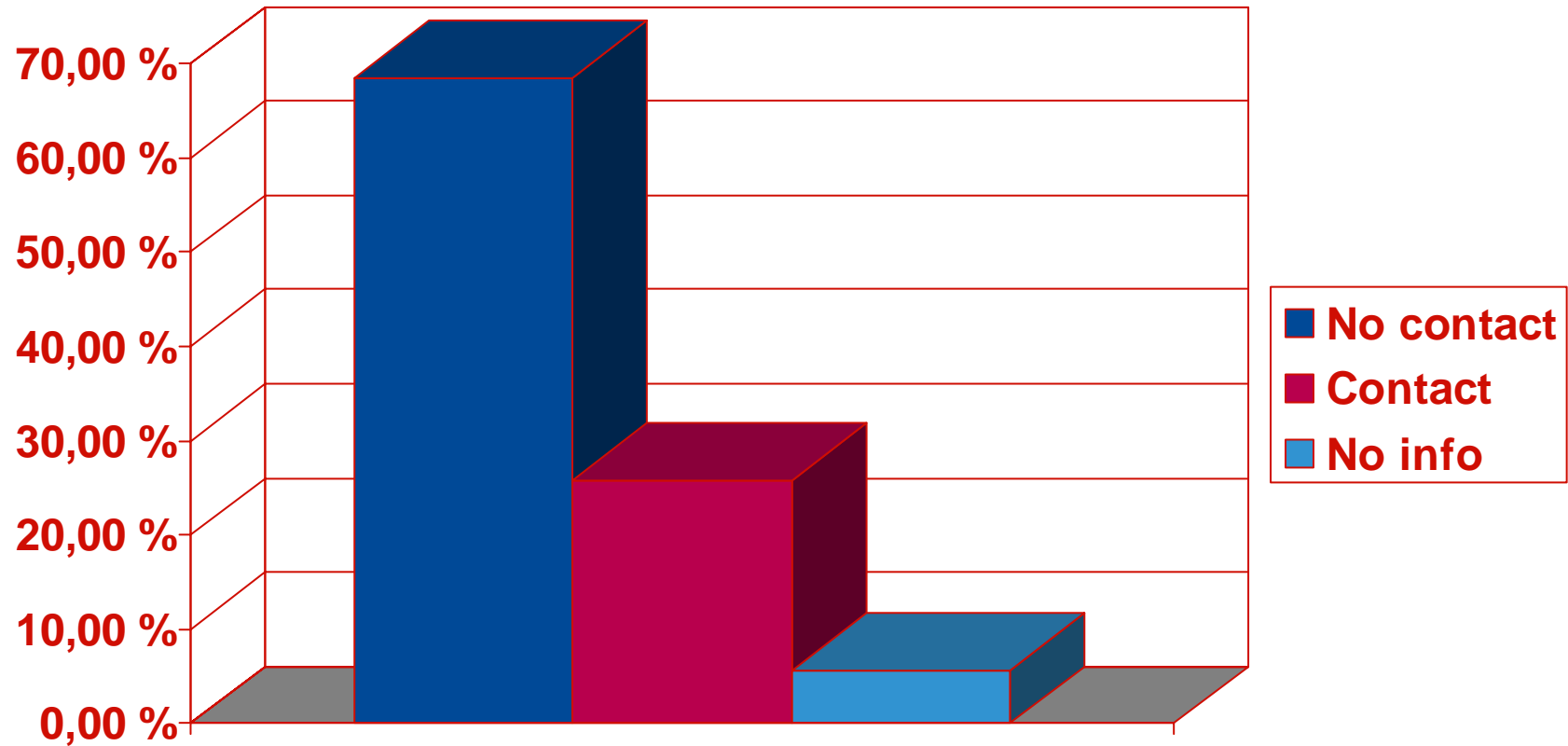
- 33,3 % Glenohumeral injuries
- 50,0 % AC injuries
 - Gr I most common
- 16,7 % No info

WJ

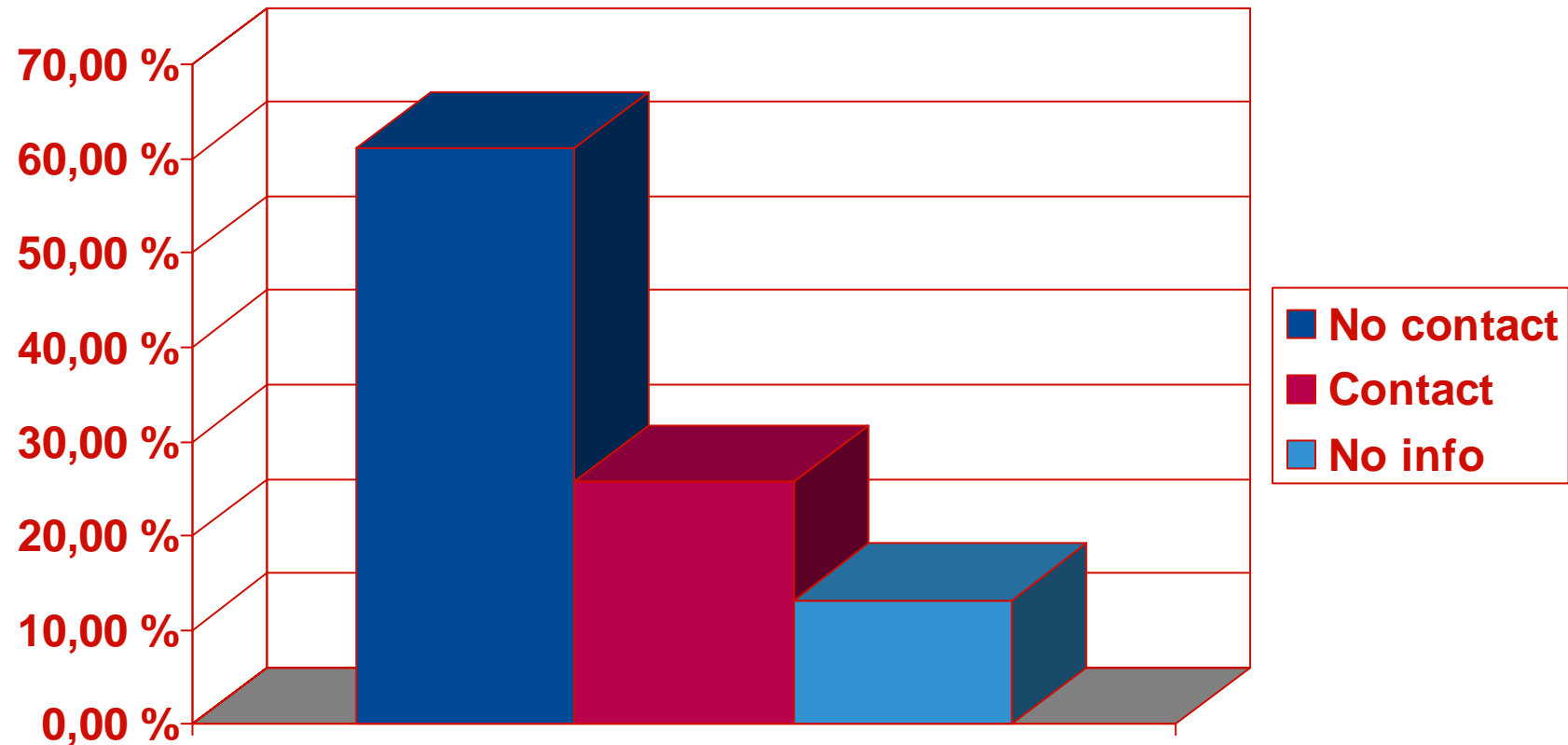
- 28,3 % Glenohumeral injuries
- 59,4 % AC injuries
 - Gr I most common
- 1,9% SC injuries
- 10,4 % No info



LOUKKAANTUMISET LAITAKONTAKTISSA (WS)



LOUKKAANTUMISET LAITAKONTAKTISSA (WW)



LAITAKONTAKTIVAMMAT



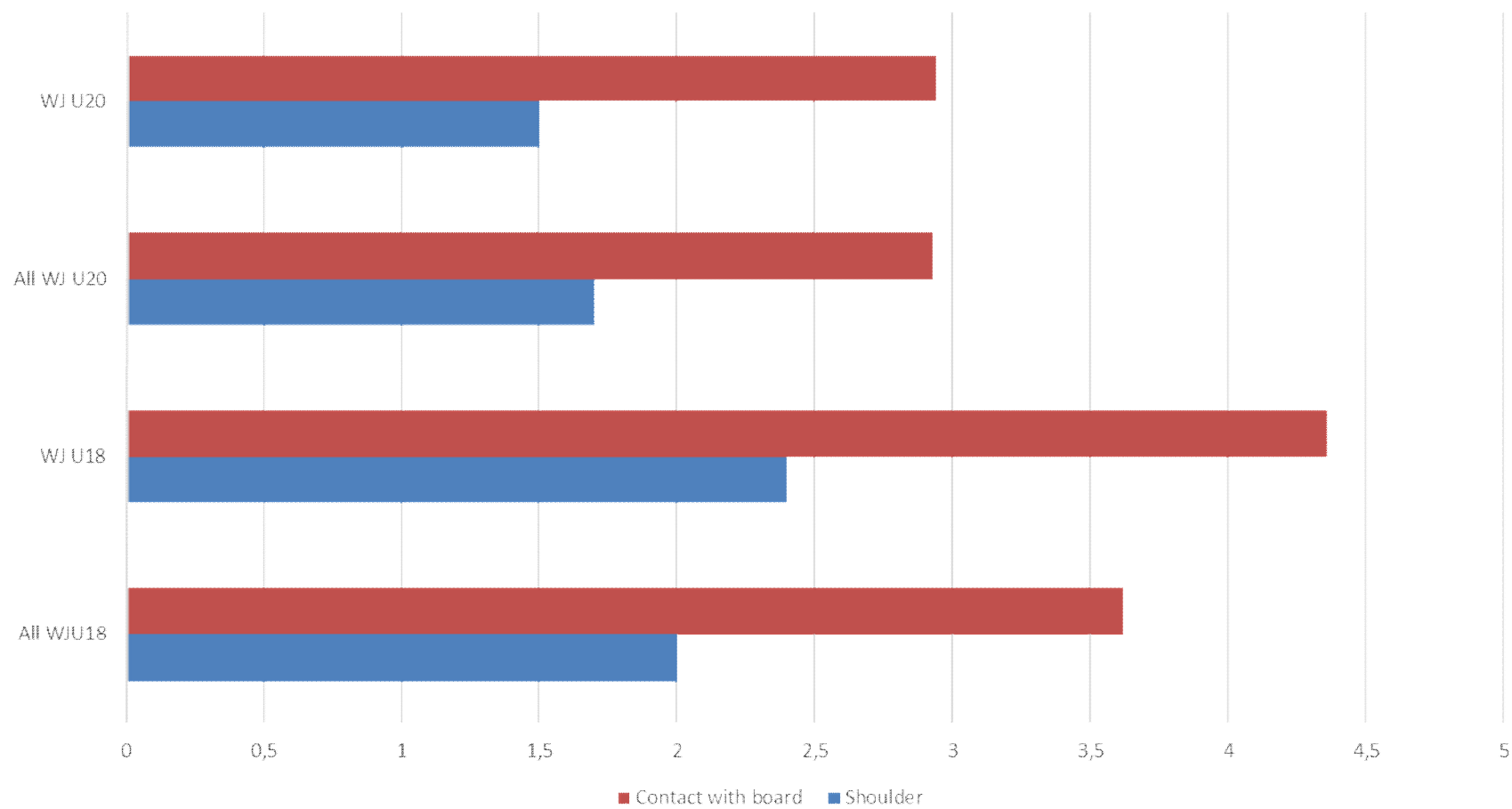
WS (WJ)

- Shoulder injuries 27,3 %
- Head injuries 16,9 %
- Face injuries 11,0 %
- 63,2 % of the shoulder injuries occurred contact with board
- 55,8 % of the head injuries occurred without board contact

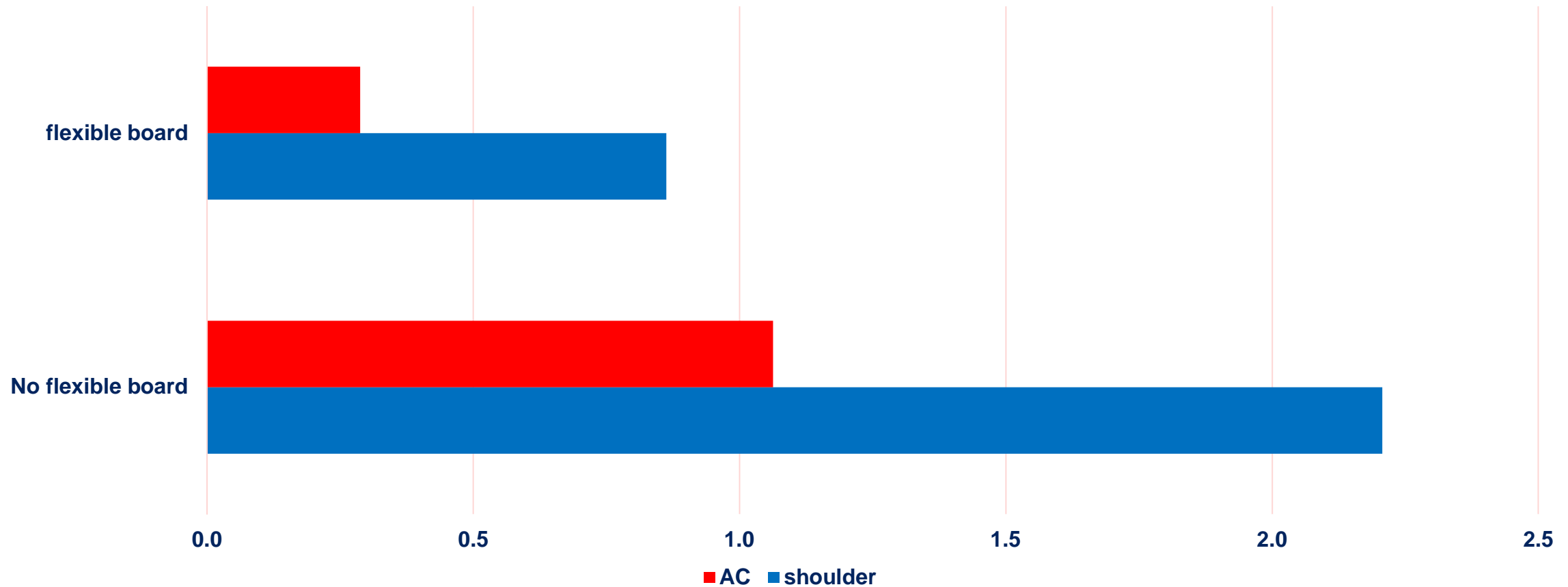
WW

- Knee injuries 18,6 %
- Head injuries 18,6 %
- Ankle injuries
- 22,9 % of the head injuries occurred with board contact

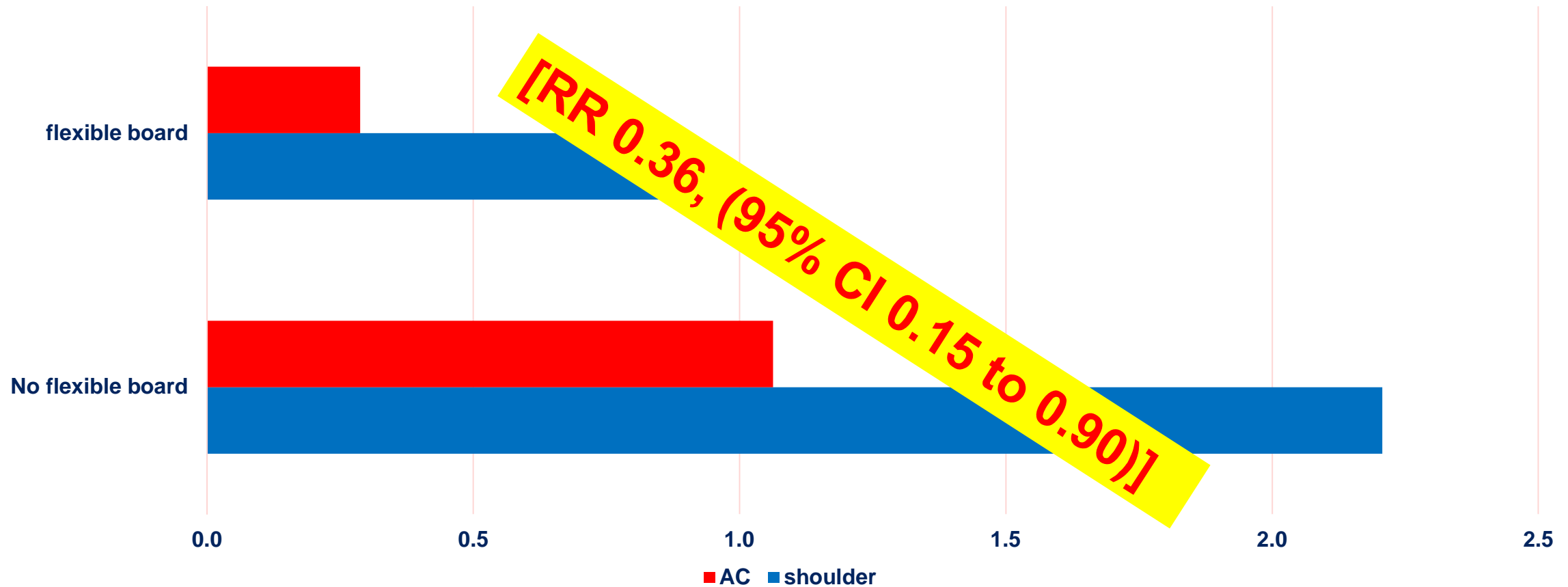
LOUKKAANTUMISET LAITAKONTAKTISSA (WJ)



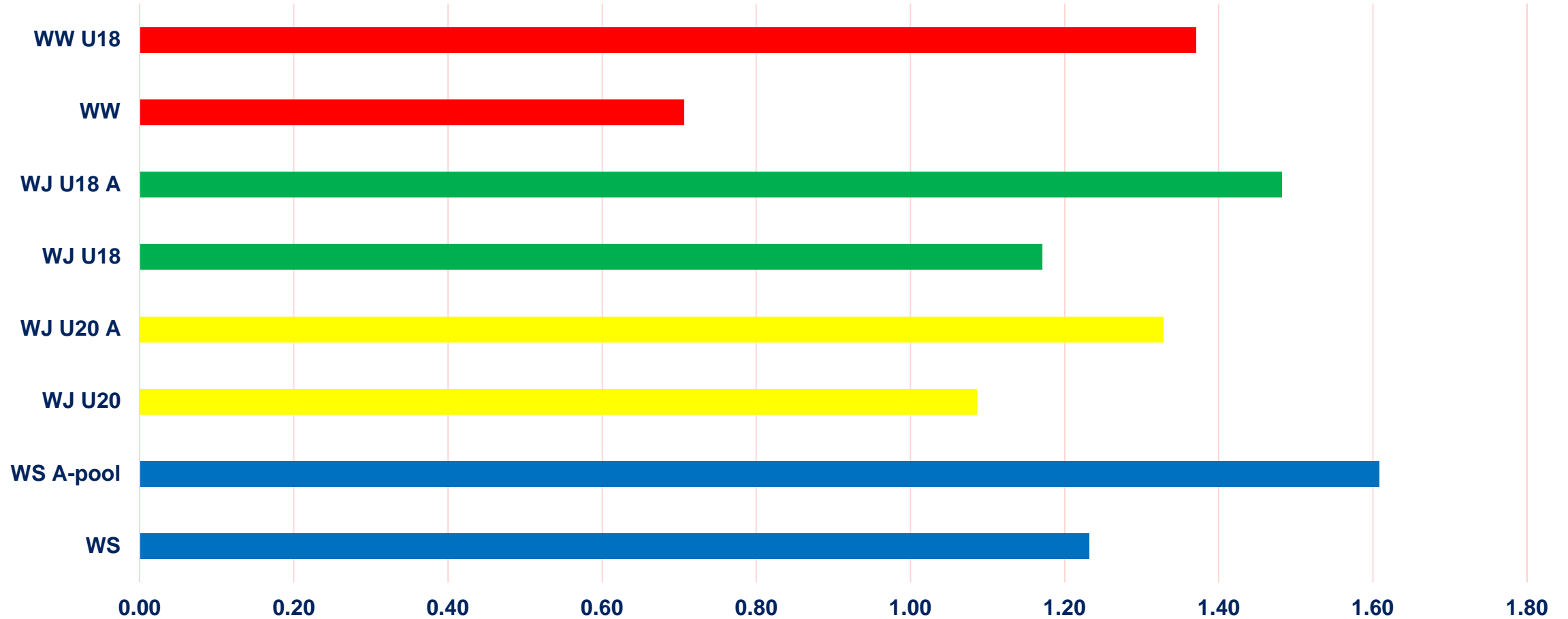
VAMMARISKI AC-NIVELEN JA OLKAPÄÄN VAMMOILLE: perinteinen vs. joustokaukalo



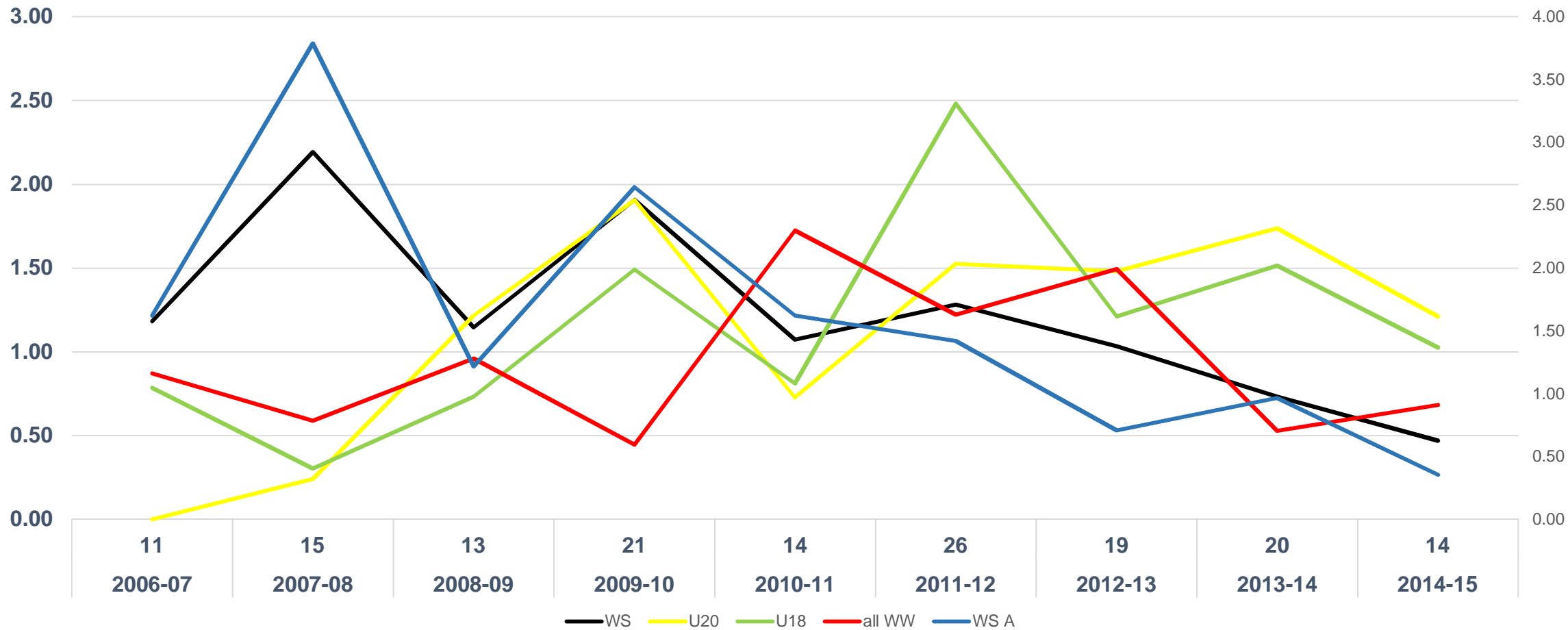
VAMMARISKI AC-NIVELEN JA OLKAPÄÄN VAMMOILLE: perinteinen vs. joustokaukalo



VAMMARISKI (IR) AIVOTÄRÄHDYKSILLE

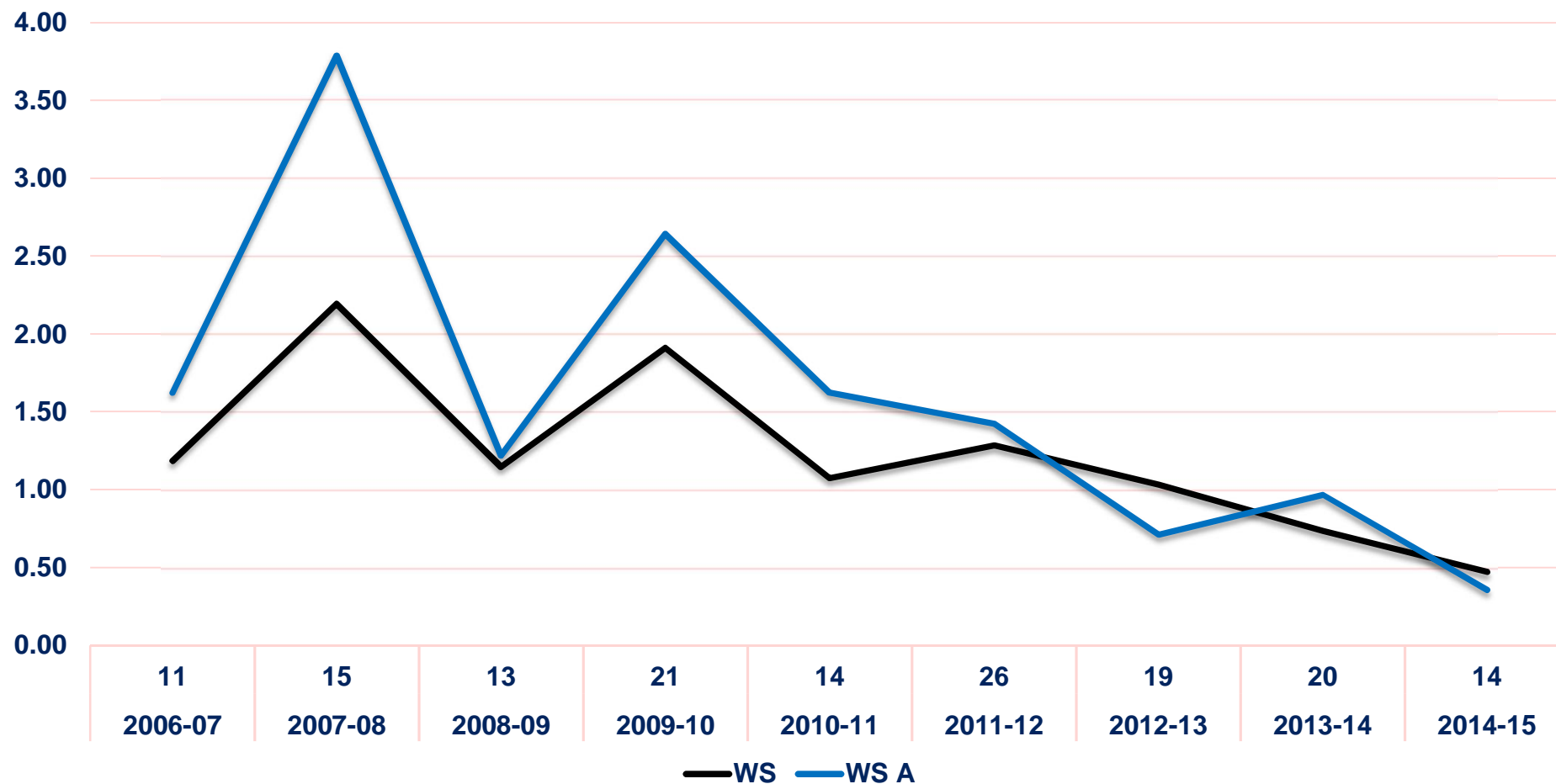


VUOSITTAINEN AIVOTÄRÄHDYSRISKI



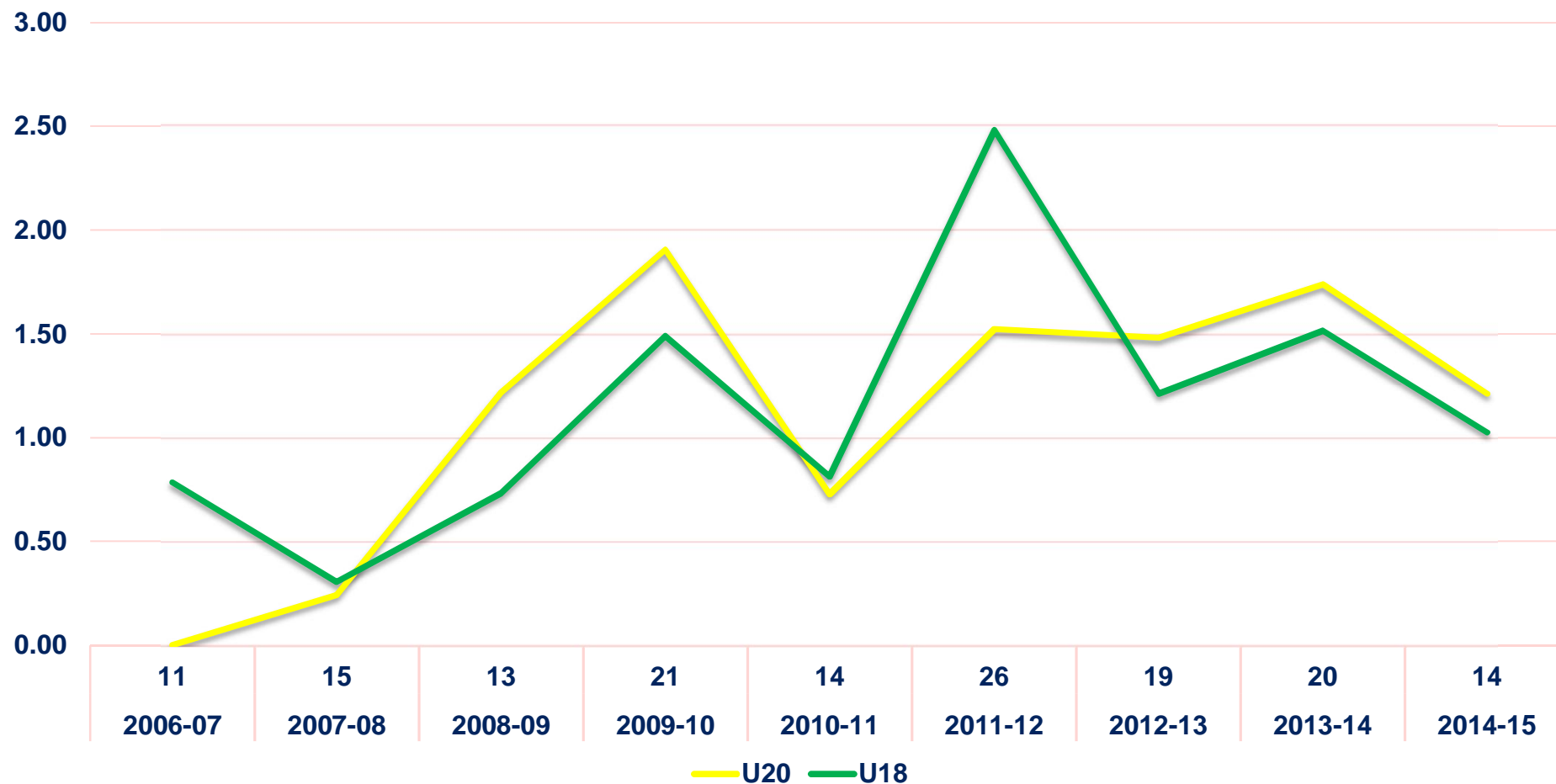


VUOSITTAINEN AIVOTÄRÄHDYSRISKI (WS AND WS A-pool)



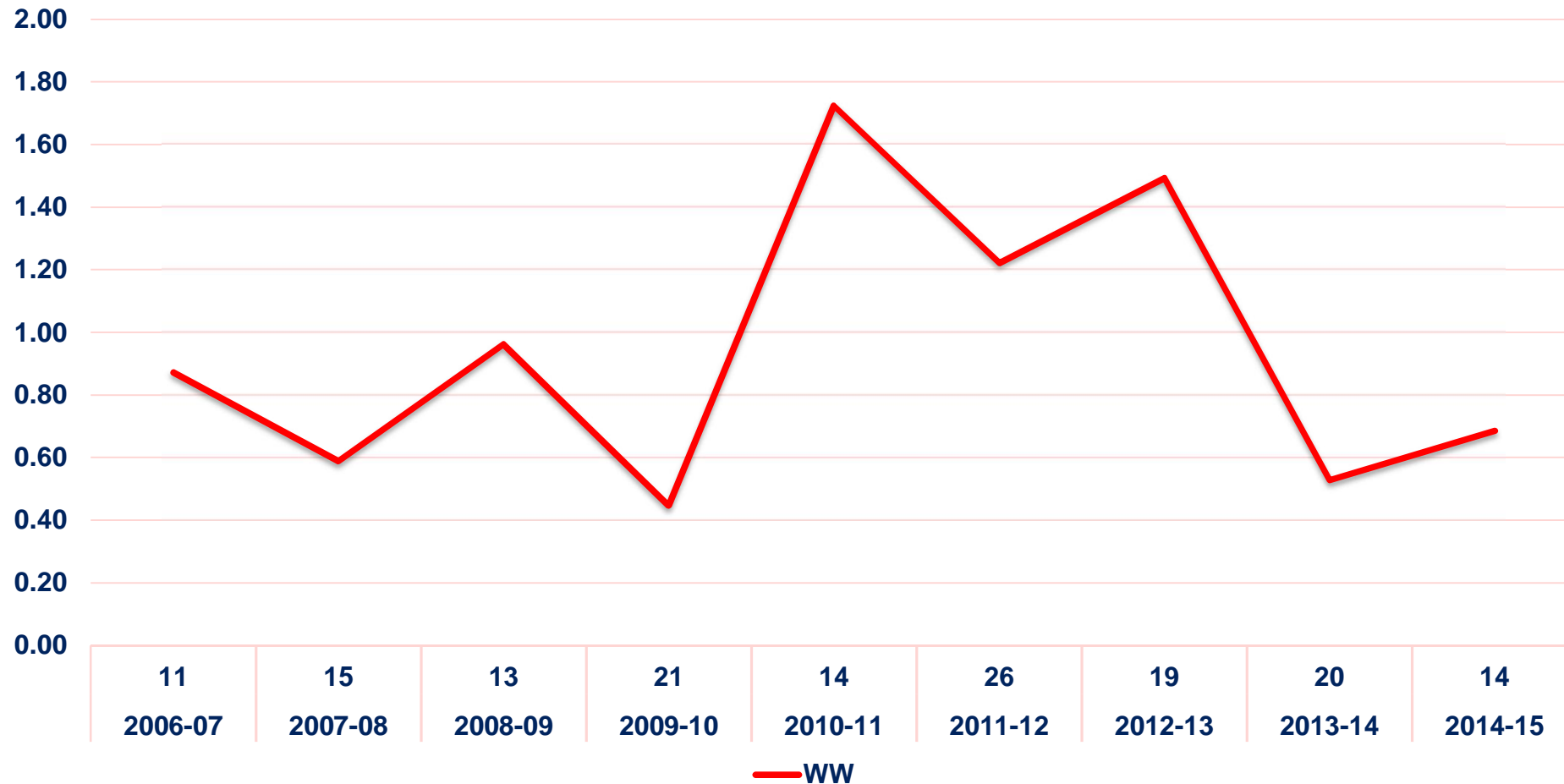


VUOSITTAINEN AIVOTÄRÄHDYSRISKI (WJ U18 AND WJ U20)

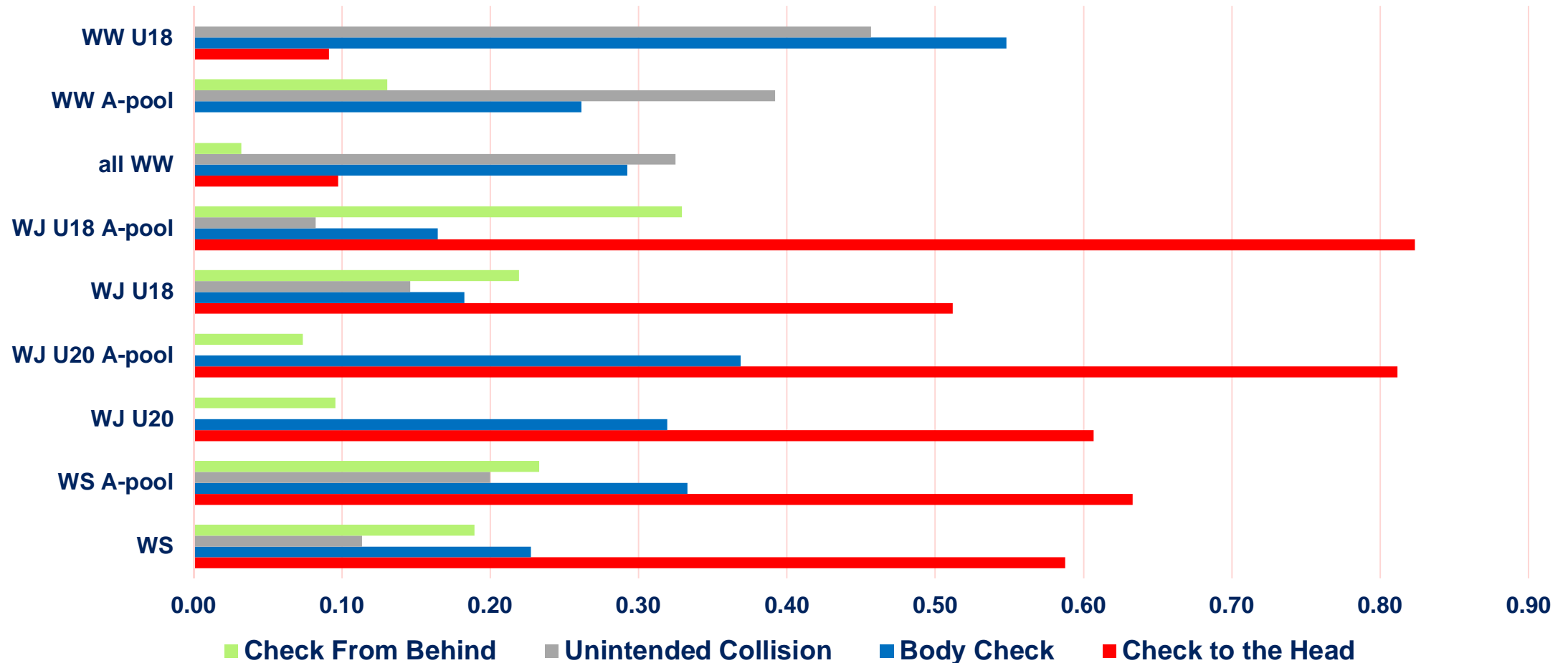




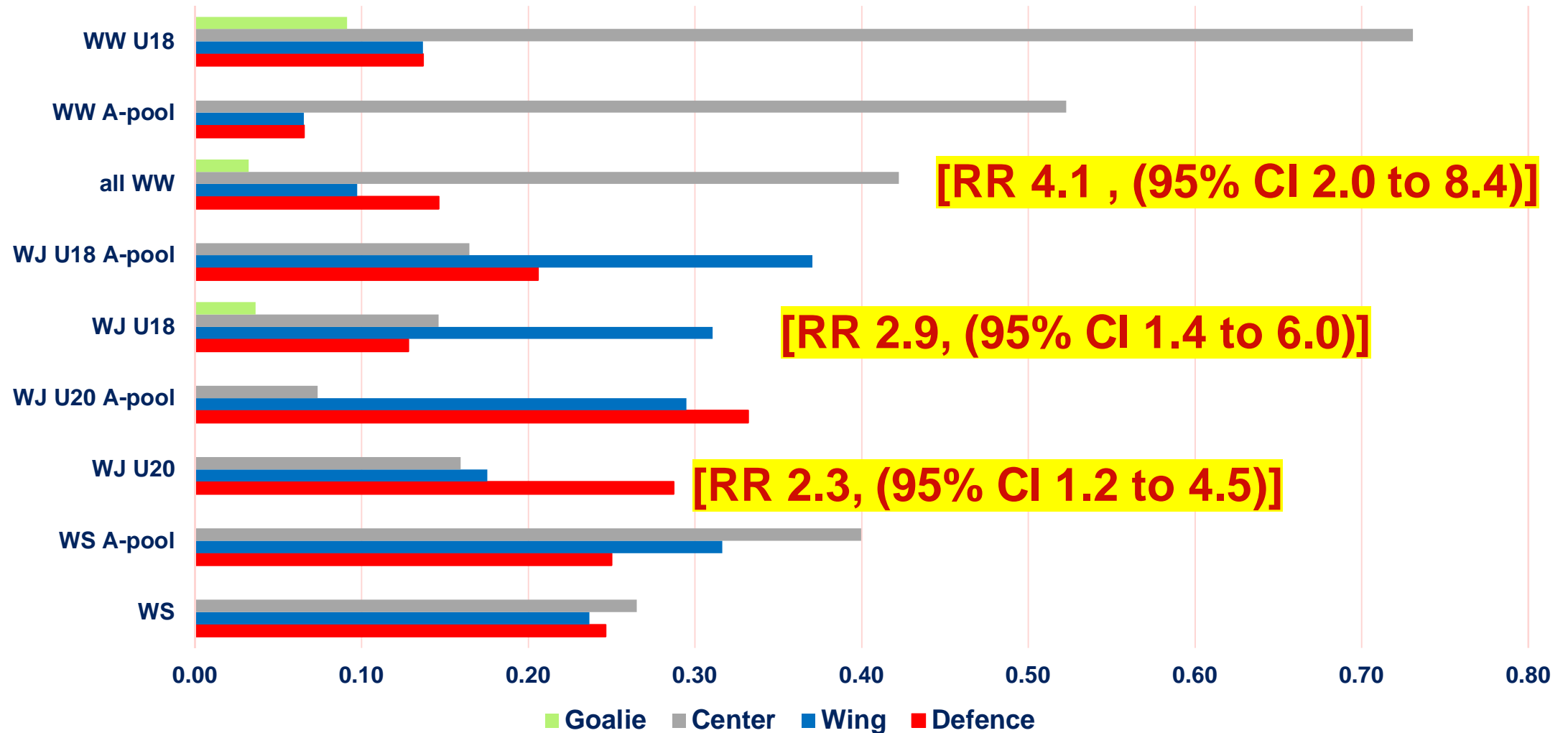
VUOSITTAINEN AIVOTÄRÄHDYSRISKI (WW)



AIVOTÄRÄHDYKSEN YLEISIMMÄT AIHETTAJAT

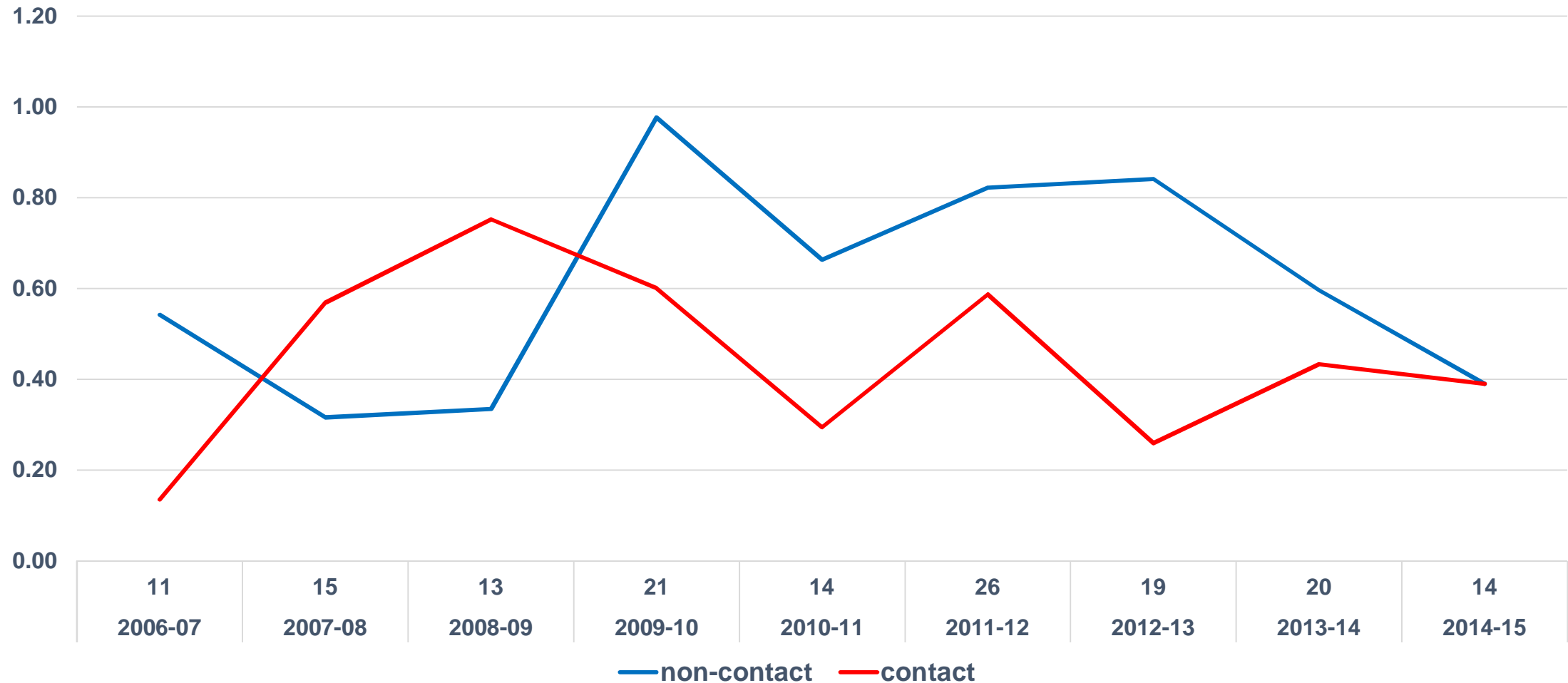


AIVOTÄRÄHDYSRISKI PELIPAIKAN MUKAAN

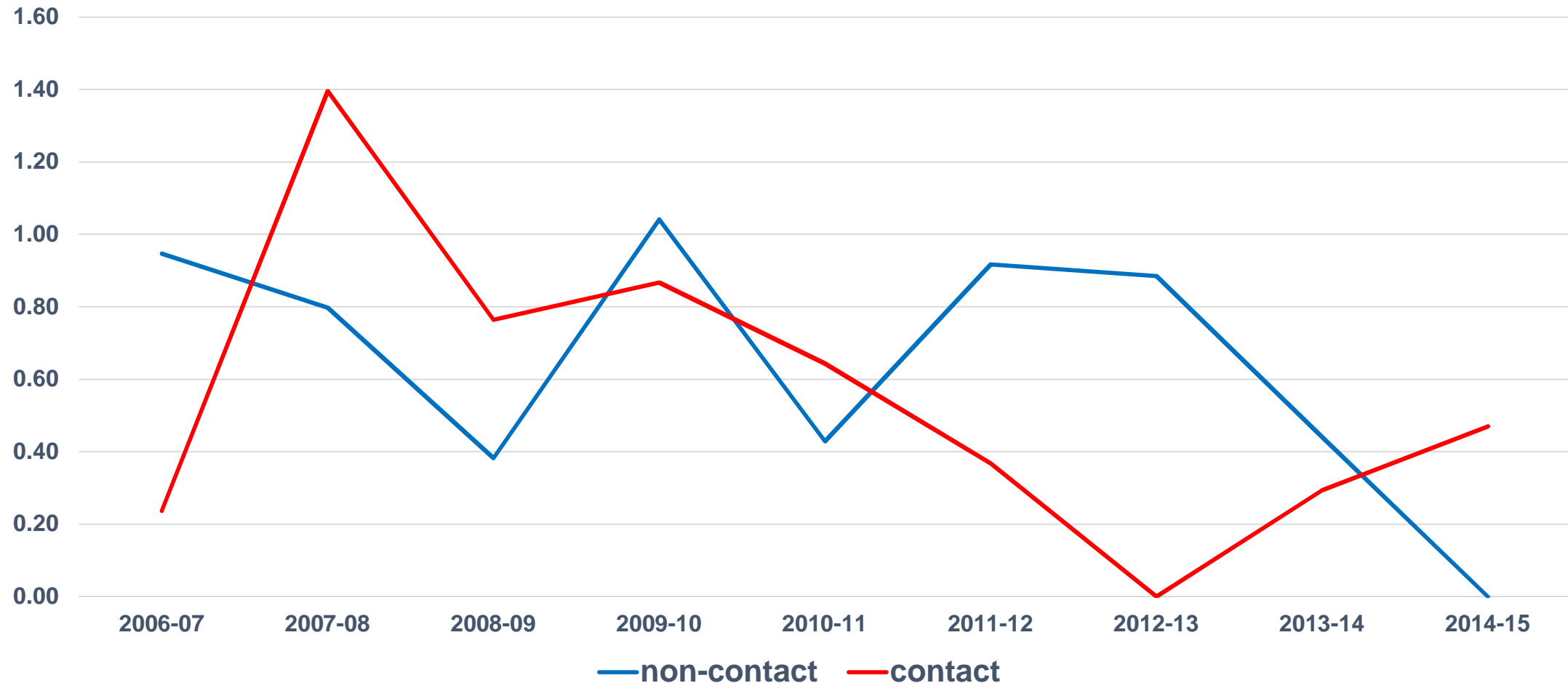


VUOSITTAINEN AIVOTÄRÄHDYSRISKI

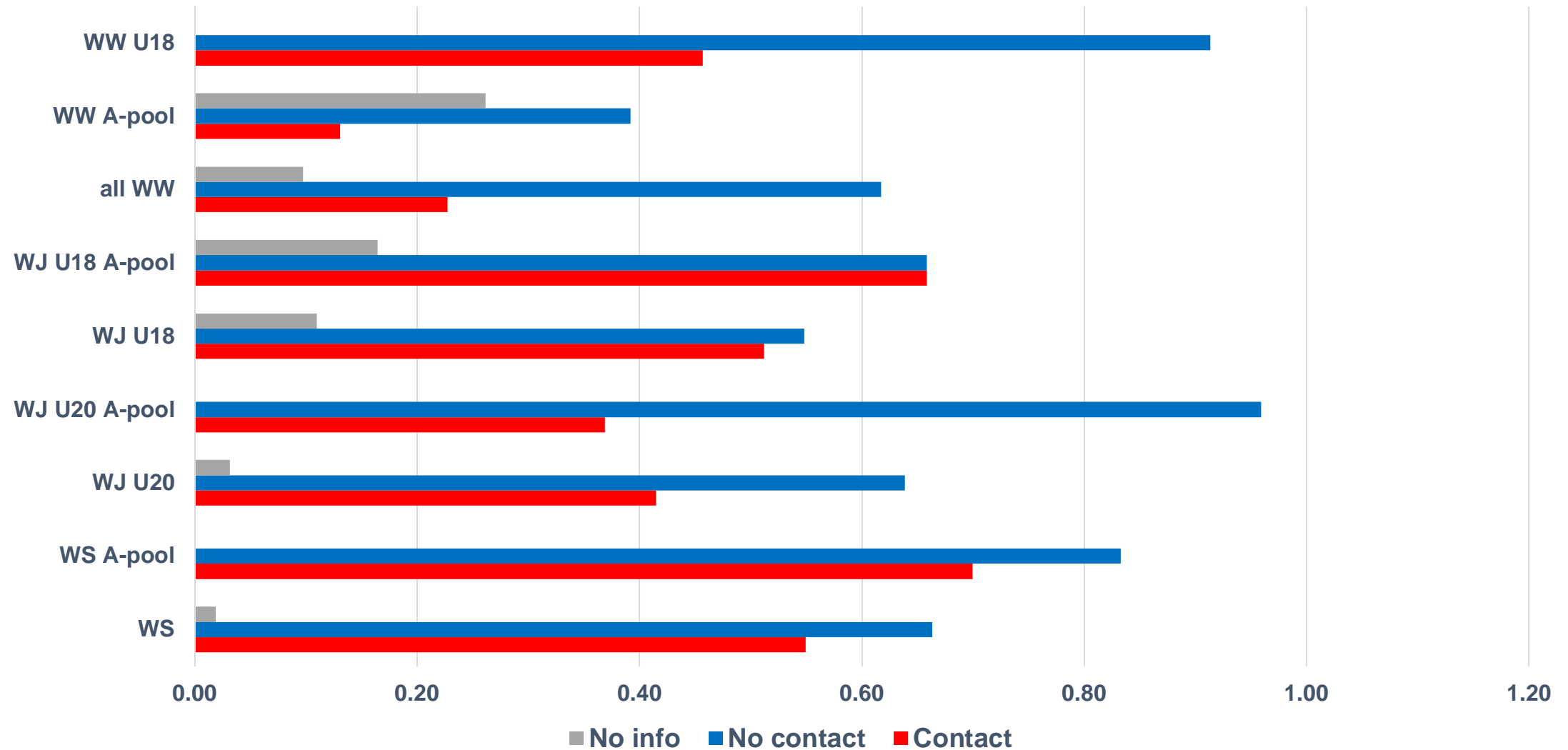
laitakontakti vs ei laitakontaktia



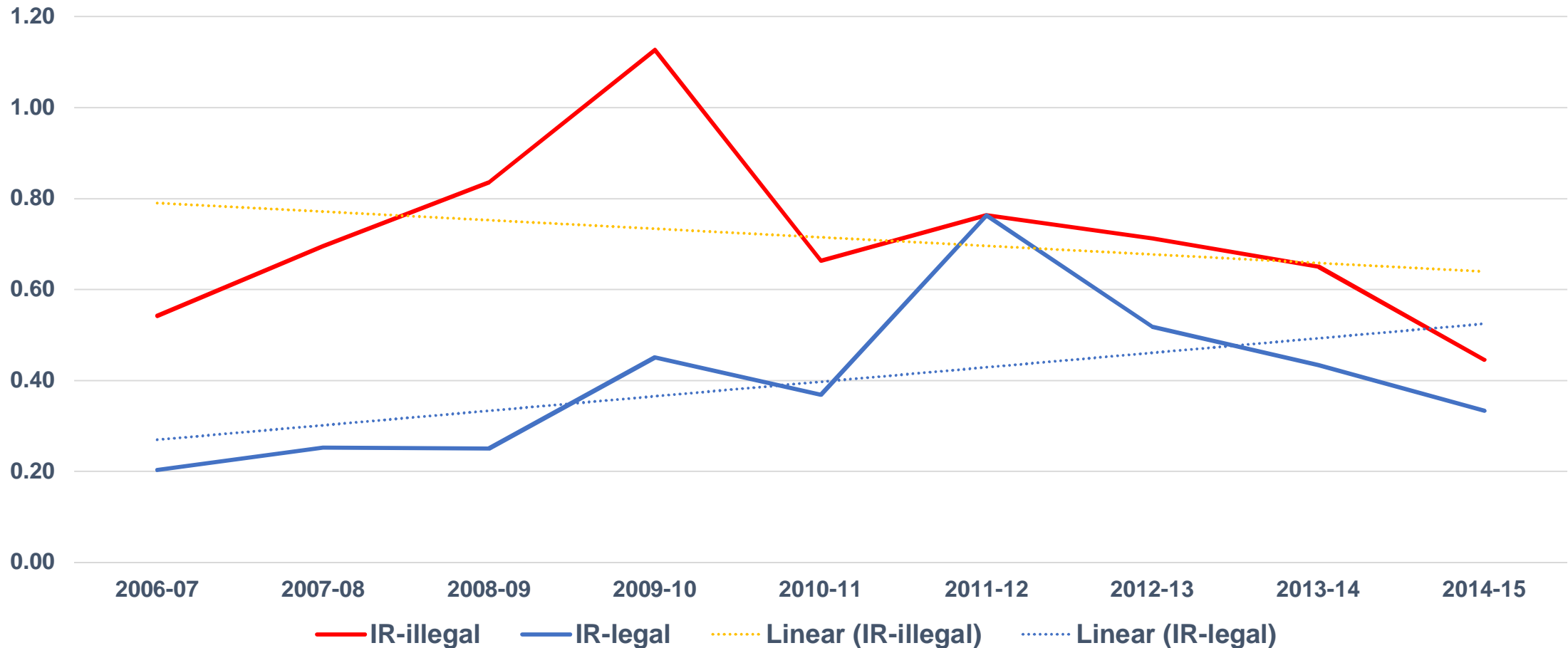
VUOSITTAINEN AIVOTÄRÄHDYSRISKI (WS) laitakontakti vs ei laitakontaktia



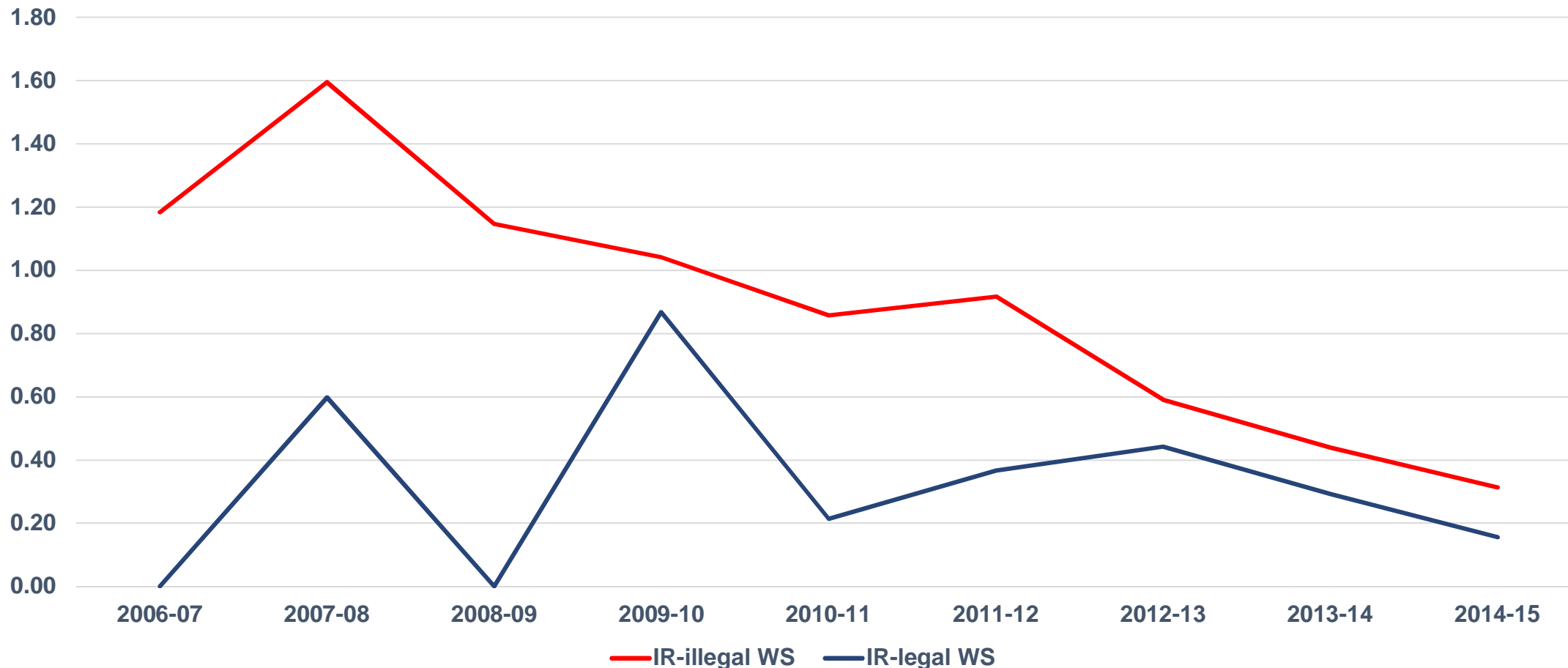
AIVOTÄRÄHDYSRISKI LAITAKONTAKTISSA



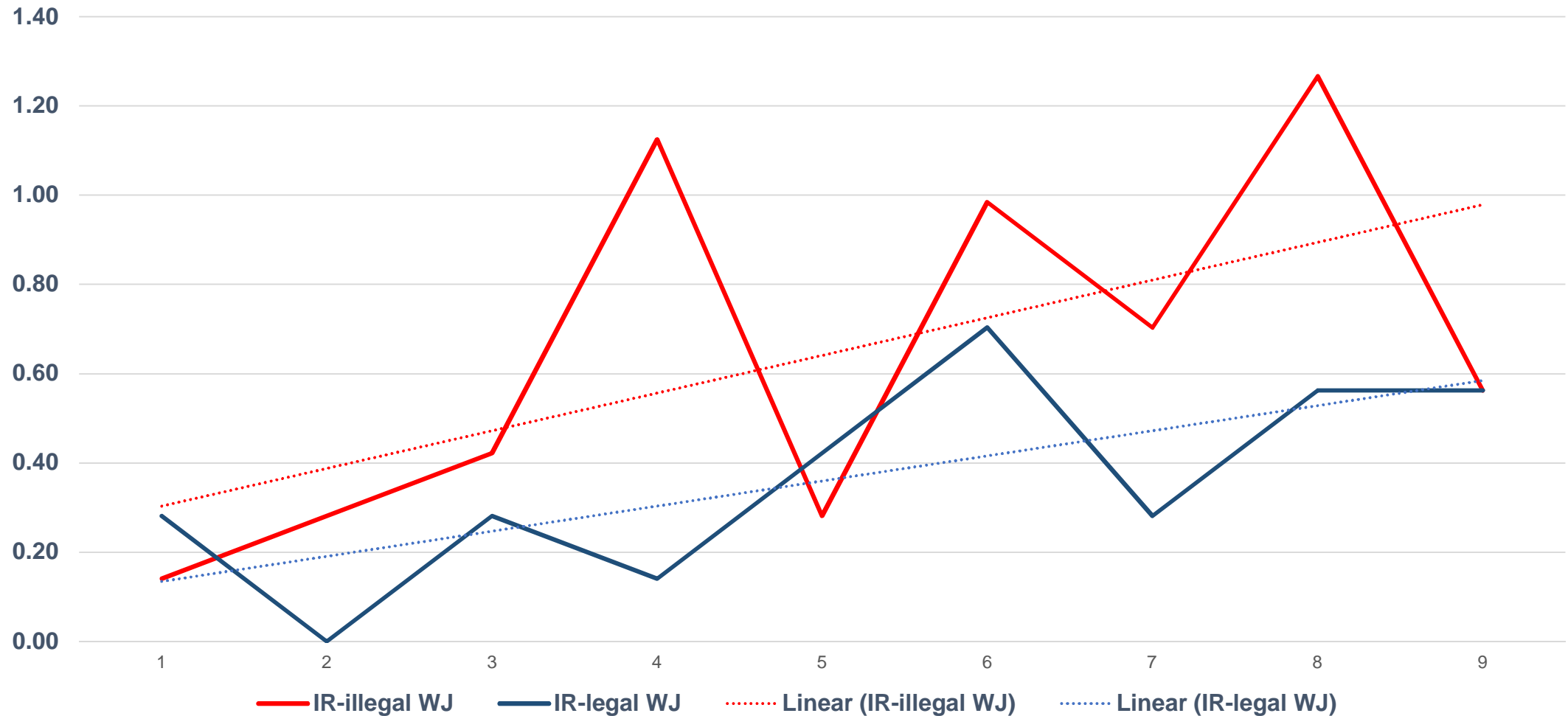
AIVOTÄRÄHDYSRISKI: sääntöjen mukaiset vs sääntöjen vastaiset syyt (all WC)



AIVOTÄRÄHDYSRISKI: sääntöjen mukaiset vs sääntöjen vastaiset syyt (WS)

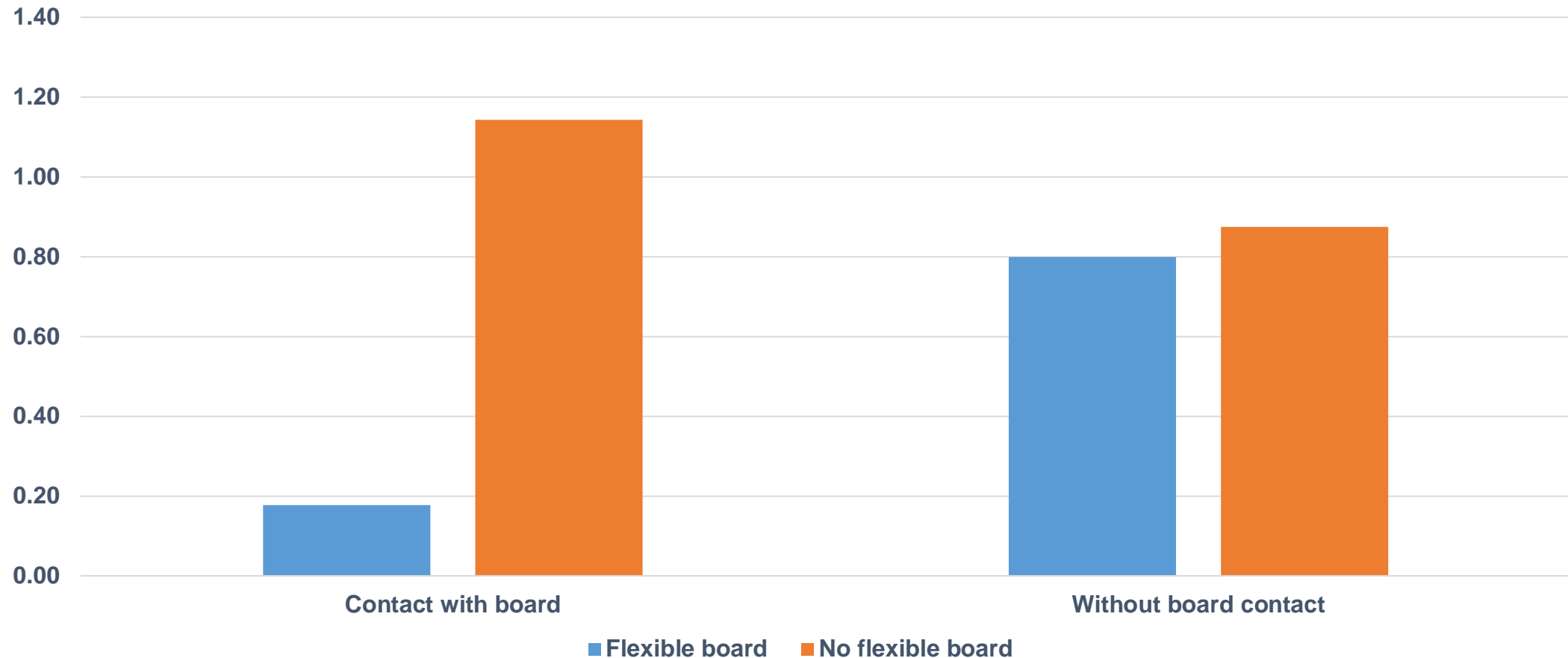


AIVOTÄRÄHDYSRISKI: sääntöjen mukaiset vs sääntöjen vastaiset syyt (WJ)





LAITAKONTAKTISSA SYNTYNEET AIVOTÄRÄHDYKSET- perinteinen vs. joustokaukalo



LAITAKONTAKTISSA SYNTYNEET AIVOTÄRÄHDYKSET- perinteinen kaukalo vs. joustokaukalo



THANK YOU !

