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**STUDY**  
**ON RECOVERY DAYS**  
Amsterdam, 9 May **2012**

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**SUMMARY**

**author:**  
**Raymond Verheijen**

**WORLD FOOTBALL ACADEMY**

for coaches, staff members and practitioners



# Study on recovery days

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Period: From 2001/2002 till 2010/2011

Countries: England  
Holland  
Germany  
France  
Spain  
Portugal  
Italy

Competitions: League games  
Champions League  
Europa League

Total games: 27.002 games

Conclusion: Only 2 recovery days between games is insufficient: unfair play!

All teams win less games after only 2 recovery days: fatigue?

After only 2 recovery days: 70% less goals scored in 60-90min

After only 2 recovery days: 75% more goals against in 60-90min

## Introduction

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This summer Dutch football coach Raymond Verheijen will take part in his 7th consecutive major international tournament. The 40-year old Verheijen also worked as a consultant for Chelsea, Manchester City, Barcelona, Zenit St. Petersburg and Feyenoord. In 2011 Verheijen was assistant manager alongside Gary Speed to elevate Wales into FIFA ranking's top 50 nations. Recently, Verheijen's coaching career entered the next phase when he became assistant manager with Armenia.



During his work both at international and club level Verheijen, world football's foremost authority on player periodisation, has witnessed the effects of insufficient recovery, in terms of both performance and player injury rates. Now he presents a new study which underlines what he knew to be true, that full recovery is not possible with just two rest days between games.

Raymond Verheijen  
*founder World Football Academy*



# New Study Demonstrates Player Fatigue is Distorting European Football

- Clear performance deficit suffered by teams playing after only two days' recovery
- Domestic title and European qualification outcomes affected
- Study author, Raymond Verheijen, calls for mandatory three-day gap between matches

'If Atletico Madrid beat Athletic de Bilbao in the Europa League Final tonight, their success could end up costing them a place in next season's Champions League,' contends international football coach, Raymond Verheijen unveiling a new 27,000 match study he has undertaken into the effects of player fatigue.

'Equally, the fact that Spurs are still well placed to qualify for the Champions League is absolutely down to Harry Redknapp's refusal to play his first team in the Europa League last year,' he continues.

The new study, which incorporates top tier league, Champions League and Europa League matches across seven countries and ten seasons, offers emphatic proof that teams playing every three days are substantially disadvantaged by player fatigue, and for the first time quantifies this disadvantage across a season.

Verheijen contends that if Atletico Madrid had not played in the Europa League this season, they would have accumulated six more points and been placed fourth, rather than fifth, in La Liga with one more match to play. Spurs would probably have dropped points and now been out of the running for automatic qualification.

To restore fair play, its author, Raymond Verheijen, is calling upon national leagues, associations and international federations to make a three-day gap between matches mandatory in all fixture scheduling.

Across the study, teams playing after just two days' recovery against teams who had enjoyed at least a three-day gap were found to be 39% less likely to win at home and 42% less likely to win away.

Where both teams had just two days' rest, the away team suffered more, showing a 26% reduced likelihood of victory.

In terms of league points lost, teams playing on the Saturday following a Wednesday night Champions League fixture were found to reap 0.55 points less than average, and teams playing on Sunday following a Thursday night Europa League match were 0.41 points per game worse off.

This season, Celtic have fared 0.94 pts per game worse after Europa League fixtures than in other weeks. In the 2010/11 season, Stuttgart's form after their elimination from the Europa League improved by 1.08 pts per game, and they rose from bottom of the table to finish 12th.



## Press Release

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The study also focused upon 71,251 goals and when they were scored during games. In parallel with winning less and losing more after just two recovery days, teams scored 0.52 fewer goals per game, scored 0.3 goals less in the final third and conceded 0.45 more goals than average in the final half hour.

Verheijen, world football's foremost authority on player periodisation, has witnessed the effects of insufficient recovery throughout his career, in terms of both performance and player injury rates. The study now underlines what he knew to be true, that full recovery is not possible in just two days.

'The results are clear,' comments Verheijen, 'on the basis of this evidence, I don't see how the game's authorities can continue to ask teams to play twice in three days. It is simply not fair play.'

He contends, however, that this need not create issues for football's governing bodies. 'There is a lot of debate at the moment about player fatigue and injuries due to too many fixtures. The problem is not the number of fixtures, but the scheduling. The differences in performance between teams after a three and a six-day gap are almost imperceptible. In Portugal, for example, where the FA offers clubs involved in Europe the chance to play on Friday or Monday to allow full recovery, this effect does not exist.'

Verheijen continues, 'only two days recovery does not automatically mean a bad result, but most bad results can be explained by only two recovery days.'

'Look at the Premiership teams' attempts to qualify for the last 16 of the Champions League this season. The eight worst results all came after two-day gaps: Manchester City's away defeats to both Bayern Munich and Napoli, Manchester United's home draws against Basel and Benfica, Chelsea's away draw with Genk and defeat to Leverkusen and Arsenal's draws with Dortmund and Marseille.'

The outspoken Verheijen has worked alongside Guus Hiddink, Dick Advocaat and Frank Rijkaard at the last three World Cups and three European Championships, as a consultant for Chelsea, Manchester City, Barcelona, Zenit St. Petersburg and Feyenoord, and until recently worked alongside Gary Speed to elevate Wales into FIFA ranking's top 50 nations.

Last year, Verheijen joined forces with Guus Hiddink to launch the World Football Academy, an institute dedicated to bringing the world's best coaches and professionals to the doorstep of football people at all levels of the game.

For further information, visit: [www.worldfootballacademy.com](http://www.worldfootballacademy.com)

# All games

## Overall:

Home win:	47,0%	(12.692 games)
Draw:	26,2%	( 7.082 games)
Away win:	26,8%	( 7.228 games)
		(27.002 games)

## 2 recovery days vs 2 recovery days:

Home win:	52,7%	(1857 games)	+12,1%
Draw:	27,5%	( 972 games)	
Away win:	<b>19,8%</b>	( 699 games)	- 26,1%
		(3528 games)	

## 2 recovery days vs 3+ recovery days:

Home win:	<b>28,9%</b>	( 480 games)	- 38,5%
Draw:	31,7%	( 525 games)	
Away win:	39,4%	( 654 games)	+47,0%
		(1659 games)	

## 3+ recovery days vs 2 recovery days:

Home win:	61,4%	(1058 games)	+30,6%
Draw:	23,0%	( 396 games)	
Away win:	<b>15,6%</b>	( 270 games)	- 41,8%
		(1724 games)	

## 3 recovery days vs 4+ recovery days:

Home win:	44,4%	(1019 games)
Draw:	29,9%	( 687 games)
Away win:	25,7%	( 591 games)
		(2297 games)

## 4+ recovery days vs 3 recovery days:

Home win:	46,9%	( 977 games)
Draw:	25,1%	( 522 games)
Away win:	28,0%	( 584 games)
		(2083 games)

Other games: 15711 games



## Champions League game Wednesday > League game on Saturday

### Champions League teams in national league overall:

Win:	62,2%	(2369 games)	
Draw:	29,1%	(1108 games)	
Lose:	8,7%	( 331 games)	
		(3808 games)	2,16 points per game

### CL game on Wednesday > League game on Saturday:

Win:	43,8%	(256 games)	- 29,6%
Draw:	29,3%	(171 games)	
Lose:	26,9%	(157 games)	+209,2%
		(584 games)	1,61 points per game

FINDING: Playing six CL group games on Wednesday, followed by national league games on Saturday will on average cost a team 3,30pts (6 x 0,55)

## Europa League game Thursday > League game on Sunday

### Europa League teams in national league overall:

Win:	46,1%	(2633 games)	
Draw:	30,0%	(1714 games)	
Lose:	23,9%	(1365 games)	
		(5712 games)	1,68 points per game

### Europa League game on Thursday > League game on Sunday:

Win:	32,6%	( 546 games)	- 29,3%
Draw:	29,7%	( 497 games)	
Lose:	37,7%	( 632 games)	+57,7%
		(1675 games)	1,27 points per game

FINDING: Playing six EL group games on Thursday, followed by national league games on Sunday will on average cost a team 2,46pts (6 x 0,41)

## Goals per 30 minutes

All games:

Overall: 27.002 games / 71.251 goals

	Total	0-30min	30-60min	60-90min
Home goals:	1,53 (41.350)	0,38 (10.160)	0,48 (13.016)	0,67 (18.174)
Away goals:	1,11 (29.901)	0,28 ( 7.543)	0,36 ( 9.709)	0,47 (12.649)
Total:	2,64 (71.251)	0,66 (17.703)	0,84 (22.725)	1,14 (30.823)

2 recovery days vs 2 recovery days: 3.528 games / 8.800 goals

	Total	0-30min	30-60min	60-90min
Home goals:	1,67 (5.900)	0,36 (1.261)	0,55 (1.925)	0,76 (2.714)
Away goals:	0,82 (2.900)	0,26 ( 927)	0,32 (1.125)	<b>0,24 ( 848)</b> - 48,9%
Total:	2,49 (8.800)	0,62 (2.188)	0,87 (3.050)	1,00 (3.562)

2 recovery days vs 3+ recovery days: 1659 games / 4495 goals

	Total	0-30min	30-60min	60-90min
Home goals:	1,06 (1.767)	0,27 (457)	0,41 ( 685)	<b>0,38 ( 625)</b> - 43,3%
Away goals:	1,65 (2.728)	0,31 (513)	0,48 ( 789)	<b>0,86 (1.426)</b> +83,0%
Total:	2,71 (4.495)	0,58 (970)	0,89 (1.474)	1,24 (2.051)

3+ recovery days vs 2 recovery days: 1724 games / 4764 goals

	Total	0-30min	30-60min	60-90min
Home goals:	2,23 (3.845)	0,46 ( 790)	0,60 (1038)	<b>1,17 (2.017)</b> +74,6%
Away goals:	0,53 ( 919)	0,16 ( 282)	0,22 ( 378)	<b>0,15 ( 259)</b> - 68,1%
Total:	2,76 (4764)	0,62 (1.072)	0,82 (1.416)	1,32 (2.276)

3 recovery days vs 4+ recovery days: 2297 games / 6331 goals

	Total	0-30min	30-60min	60-90min
Home goals:	1,57 (3.610)	0,41 ( 944)	0,54 (1.237)	0,62 (1.429)
Away goals:	1,18 (2.721)	0,28 ( 643)	0,41 ( 946)	0,49 (1.132)
Total:	2,75 (6.331)	0,69 (1.587)	0,95 (2.183)	1,11 (2.561)

4+ recovery days vs 3 recovery days: 2083 games / 5580 goals

	Total	0-30min	30-60min	60-90min
Home goals:	1,61 (3.357)	0,47 ( 975)	0,43 ( 895)	0,71 (1.487)
Away goals:	1,07 (2.223)	0,35 ( 723)	0,39 ( 820)	0,33 ( 680)
Total:	2,68 (5.580)	0,82 (1.698)	0,82 (1.715)	1,04 (2.167)

Other games: 15.711 games / 41.281 goals



## ALL GAMES

	Total	0-30min	30-60min	60-90min
Home goals:	1,46 (22.872)	0,37 ( 5.733)	0,46 ( 7.236)	0,63 ( 9.902)
Away goals:	1,17 (18.409)	0,28 ( 4.455)	0,36 ( 5.651)	0,53 ( 8.303)
Total:	2,63 (41.281)	0,65 (10.188)	0,82 (12.887)	1,16 (18.205)

Teams with only two days rest win significantly less games against teams with three or more days rest. Analysis of the goals scored has shown that this unfair play takes place in the last 30 minutes of the game.

**FINDING:** Teams with only two days rest score significantly less goals and concede significantly more goals in the last part of the game. This is clear proof that the unfair play is a result of player fatigue in last 30 minutes of the game after only two days rest.

# Premier League clubs in Champions League 2011/2012:

\* All bad results of PL teams in Champions League after only 2 recovery days:

## Manchester City:

24/9 Man City – Everton 2-0	<u>27/9 Bayern Munchen – Man City 2-0</u>
19/11 Man City – Newcastle 3-1	<u>22/11 Napoli – Man City 2-1</u>

## Chelsea:

29/10 Chelsea – Arsenal 3-5	<u>1/10 Genk – Chelsea 1-1</u>
20/11 Chelsea – Liverpool 1-2	<u>23/11 Leverkusen – Chelsea 2-1</u>
18/2 Chelsea – Birmingham 1-2	<u>21/2 Napoli – Chelsea 3-1</u>

## Manchester United:

24/9 Stoke City – Man United 1-1	<u>27/9 Man United – Basel 3-3</u>
19/11 Swansea – Man United 1-0	<u>22/11 Man United – Benfica 2-2</u>

## Arsenal:

10/9 Arsenal – Swansea 1-0	<u>13/9 Dortmund – Arsenal 1-1</u>
29/10 Chelsea – Arsenal 3-5	<u>1/11 Arsenal – Marseille 0-0</u>
3/12 Wigan – Arsenal 0-4	<u>6/12 Olympiakos – Arsenal 3-1</u>

Only 2 days recovery does not automatically mean a bad result, but most bad results can be explained by only 2 recovery days.



# Premier League clubs in Europa League 2011/2012 (Nov 2012):

## Tottenham Hotspurs:

18/8	TH – Hearts	<b><u>21/8 TH – Man United 0-3</u></b>
25/8	TH – Hearts	<b><u>28/8 TH – Man City 1-5</u></b>
15/9	TH – PAOK	18/9 TH – Liverpool 4-0
29/9	TH – Shamrock	2/10 TH – Arsenal 2-0
20/10	TH – Rubin	23/10 TH – Blackburn 2-1
3/11	TH – Rubin	6/11 TH – Fulham 3-1

League without EL:	4–10	(2.50 points per game)
League after EL:	6-12	(2.00 points per game)

## Fulham:

18/8	Fulham - Dnjepr	<b><u>21/8 Fulham – Aston Villa 0-2</u></b>
25/8	Fulham - Dnjepr	<b><u>28/8 Fulham – Newcastle 1-2</u></b>
15/9	Fulham – Twente	18/9 Fulham – Man City 2-2
29/9	Fulham – Odense	2/10 Fulham – QPR 6-0
20/10	Fulham – Wislaw	<b><u>23/10 Fulham – Everton 1-3</u></b>
3/11	Fulham – Wislaw	<b><u>6/11 Fulham – Spurs 1-3</u></b>

League without EL:	5-6	(1,20 points per game)
League after EL:	6-4	(0,67 points per game)

## Stoke City:

18/8	Stoke – Thun	21/8 Stoke – Norwich 1-1
25/8	Stoke – Thun	28/8 Stoke – WBA 1-0
15/9	Stoke – Dynamo Kiev	<b><u>18/9 Stoke – Sunderland 0-4</u></b>
29/9	Stoke – Besiktas	<b><u>2/10 Stoke – Swansea 0-2</u></b>
20/10	Stoke – Macabi	<b><u>23/10 Stoke – Arsenal 1-3</u></b>
3/11	Stoke – Macabi	<b><u>6/11 Stoke – Bolton 0-5</u></b>

League without EL:	5-8	(1,60 points per game)
League after EL:	6-4	(0,67 points per game)

## Birmingham City:

18/8	BC – Nacional	<b><u>21/8 BC – Middlesborough 1-3</u></b>
25/8	BC – Nacional	28/8 BC – Watford 2-2
15/9	BC – Braga	<b><u>18/9 BC – Southampton 1-4</u></b>
29/9	BC – Maribor	2/10 BC – Nottingham F 3-1
20/10	BC – Club Brugge	23/10 BC – Bristol 2-0
3/11	BC – Club Brugge	<b><u>6/11 BC – Reading 0-1</u></b>

League without EL:	7-14	(2,00 points per game)
League after EL:	6-7	(1,17 points per game)

Celtic:

18/8	Celtic – Sion	<b><u>21/8 Celtic – St. Johnston 0-1</u></b>
25/8	Celtic – Sion	28/8 Celtic – St. Mirren 2-0
15/9	Celtic – A. Madrid	<b><u>18/9 Celtic – Glasgow Rangers 2-4</u></b>
29/9	Celtic – Udinese	<b><u>2/10 Celtic – Hearts 0-2</u></b>
20/10	Celtic – Rennes	23/10 Celtic – Aberdeen 2-1
3/11	Celtic – Rennes	6/11 Celtic – Motherwell 2-1

League without EL:	7-17	(2.43 points per game)
League after EL:	6-9	(1,50 points per game)

All British teams dropped a significant number of points in the Premier League on Sunday after an Europa League game on Thursday.

Except for Tottenham, who did not drop points because of two rest days, as they played the Europa League games with their second team.



# Dutch clubs in Europa League 2011/2012

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## FC Twente:

29/9	FCT – Wislaw 4-1	2/10	FCT – Excelsior 2-2
20/10	Odense – FCT 1-4	23/10	FC Groningen – FCT 1-1
8/3	FCT – Schalke 1-0	11/3	NEC – FCT 3-1
15/3	Schalke – FCT 4-1	18/3	FCT – Feyenoord 0-2

## PSV:

15/9	PSV – Legia 1-0	18/9	PSV – Ajax 2-2
20/10	Hapoel – PSV 0-1	23/10	Vitesse – PSV 1-1
16/2	Trabzon – PSV 1-2	19/2	FCGro – PSV 3-0
8/3	Valencia – PSV 4-2	11/3	NAC – PSV 3-1

## AZ:

15/12	AZ – Metallist 1-1	18/12	NAC – AZ 2-1
16/2	AZ – Anderlecht 1-0	19/2	FCUtrecht – AZ 3-0
23/2	Anderlecht – AZ 0-1	26/2	AZ – Heerenveen 3-3
15/3	Udinese – AZ 2-1	18/3	AZ – NAC 0-0
29/3	AZ – Valencia 2-1	1/4	Vitesse – AZ 2-2

## Germany: 2010/2011

\* Stuttgart escaped relegation after being knock-out of Europa League

- During Europa League: 24 league games – 22 points (0,92 p/game, 17th/18th position)
- After Europa League: 10 league games – 20 points (2,00 p/game, 12th position)

## France: 2010/2011

\* Paris St. Germain missed out on Champions League qualification

- After 12 Europa League games: 12 league games – 16 points (1,33 points/game)
- No Europa League games: 26 league games – 48 points (1,85 points/game)

\* Lille win title despite negative effect EL on league games:

- After 8 Europa League games: 8 league games – 12 points (1,50 points/game)
- No Europa League games: 30 league games – 64 points (2,13 points/game)

## Portugal: 2010/2011

\* Champions Porto only drew 3 games in total. Two draws after Europa League game.

## Italy: 2009/2010

\* AS Roma should have won the title instead of Inter Milan

- Inter Milan 38 league games – 82 points
- AS Roma 38 league games – 80 points
- After 9 Europa League games: 9 league games – 14 points (1,56 points/game)
- No Europa League games: 29 league games – 66 points (2,28 points/game)

## Holland: 2010/2011

\* FC Twente should have won the title instead of Ajax

- Ajax 34 league games – 73 points
- FC Twente 34 league games – 71 points
- After 6 Europa League games: 6 league games – 9 points (1,50 points/game)
- No Europa League games: 28 league games – 62 points (2,14 points/game)



# CORRECTED LEAGUE TABLES

(8 May 2012)

## England:

Current table:		Real table:	
Man City	37-86	Man City	37-88
Man United	37-86	Man United	37-86
Arsenal	37-67	Arsenal	37-67
Spurs	37-66	Spurs	37-66
Newcastle	37-65	Newcastle	37-65
Chelsea	36-61	Chelsea	36-61

## Spain:

Current table:		Real table:	
Real Madrid	37-97	Real Madrid	37-95
Barcelona	37-90	Barcelona	37-93
Valencia	37-61	Valencia	37-68
Malaga	37-55	Athletico Madrid	37-59
Athletico Madrid	37-53	Athletic de Bilbao	37-56
Levante	37-52	Malaga	37-55
Athletic de Bilbao	37-49	Levante	37-52

## Italy:

Current table:		Real table:	
Juventus	37-81	Juventus	37-81
AC Milan	37-77	AC Milan	37-77
Udinese	37-61	Udinese	37-65
Lazio Roma	37-59	Lazio Roma	37-59
Inter Milan	37-58	Inter Milan	37-58
Napoli	37-58	Napoli	37-58

## Portugal:

Current table:		Real table:	
Porto	29-72	Porto	29-72
Benfica	29-66	Benfica	29-66
Sporting Braga	29-62	Sporting Braga	29-62
Sporting Portugal	29-56	Sporting Portugal	29-56

In Portugal no negative effects as:

- CL team is allowed to play league game on Friday night before CL game on Tuesday
- EL team is allowed to play league game on Monday night after EL game on Thursday

This proves the effect, and therefore the importance, of a '3 day recovery' rule.





**World Football Academy**  
Burg. Stramanweg 102T  
1101 AA Amsterdam  
The Netherlands

E: [info@worldfootballacademy.com](mailto:info@worldfootballacademy.com)  
T: +31 (0)20 472 1992

**[WWW.WORLDFOOTBALLACADEMY.COM](http://WWW.WORLDFOOTBALLACADEMY.COM)**