
APPENDIX - VALIDATION REPORT

JOHN SINGHAMMER AND LARS BO ANDERSEN
JANUARY 2015

CONTENTS

APPENDIX 1: BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS OBTAINED IN 2011. INTRA-OBSERVER RELIABILITY.....	7
Figure 1. Height, all grades, 2011.....	7
Figure 2. Height, 0 th grade, 2011.....	8
Figure 3. Height, 1 st grade, 2011.....	9
Figure 4. Height, 2 nd grade, 2011.....	10
Figure 5. Height, 3 rd grade, 2011.....	11
Figure 6. Height, 4 th grade, 2011.....	12
Figure 7. Height, 5 th grade, 2011.....	13
Figure 8. Height, 6 th grade, 2011.....	14
Figure 9. Height, 7 th grade, 2011.....	15
Figure 10. Height, 8 th and 9 th grades combined, 2011.....	16
Figure 11. Weight, all grades, 2011.....	17
Figure 12. Weight, 1 st grade, 2011.....	18
Figure 13. Weight, 2 nd grade, 2011.....	19
Figure 14. Weight, 3 rd grade, 2011.....	20
Figure 15. Weight, 4 th grade, 2011.....	21
Figure 17. Weight 6 th grade 2011.....	22
Figure 18. Weight, 7 th grade, 2011.....	23
Figure 19. Weight, 8 th and 9 th grades combined, 2011.....	24
Figure 20. WC, all grades, 2011.....	25
Figure 21. WC, 0 th grade, 2011.....	26
Figure 22. WC, 1 st grade, 2011.....	27
Figure 23. WC, 2 nd grade, 2011.....	28
Figure 24. WC, 3 rd grade, 2011.....	29
Figure 25. WC, 4 th grade, 2011.....	30
Figure 26. WC, 5 th grade, 2011.....	31
Figure 27. WC, 6 th grade, 2011.....	32
Figure 28. WC, 7 th grade, 2011.....	33
Figure 29. WC, 8 th and 9 th grades combined, 2011.....	34
Figure 30. Vertical jump height, all grades, 2011.....	35

Figure 31. Vertical jump height, 0th grade, 2011	36
Figure 32. Vertical jump height, 1 st grade, 2011.....	37
Figure 33. Vertical jump height, 2 nd grade, 2011.....	38
Figure 34. Vertical jump height, 3 rd grade, 2011	39
Figure 35. Vertical jump height, 4 th grade, 2011	40
Figure 36. Vertical jump height, 5 th grade, 2011	41
Figure 37. Vertical jump height, 6 th grade, 2011	42
Figure 38. Vertical jump height, 7 th grade, 2011	43
Figure 39. Vertical jump height, 8 th and 9 th grades combined, 2011	44
Figure 40. The Andersen test, all grades, 2011.....	45
Figure 41. The Andersen test, 0 th grade, 2011.....	46
Figure 42. The Andersen test, 1 st grade, 2011.....	47
Figure 43. The Andersen test, 2 nd grade, 2011	48
Figure 44. The Andersen test, 3 rd grade, 2011.....	49
Figure 45. The Andersen test, 4 th grade, 2011.....	50
Figure 46. The Andersen test, 5 th grade, 2011.....	51
Figure 47. The Andersen test, 6 th grade, 2011.....	52

APPENDIX 2: MEAN DIFFERENCES (SD) AND INTRA-OBSERVER RELIABILITY (ρ_C) IN ANTHROPOMETRIC MEASUREMENTS AND PHYSICAL FITNESS TEST RESULTS OBTAINED IN 2012 TWO DAYS APART BY RESEARCHERS FROM THE UNIVERSITY OF SOUTHERN DENMARK (SDU).....	53
Table 1.....	53

APPENDIX 3: COMPARISON OF ANTHROPOMETRIC MEASUREMENTS AND PHYSICAL FITNESS TEST. BY GRADE.	54
Figure 1: Height.....	54
Figure 2: Weight.....	55
Figure 3: Waist circumference	56
Figure 4: Vertical jump.....	57
Figure 5: Andersen test.....	58

APPENDIX 4 – ATTRITION, HSN STUDY	59
Table 1. Number of observations, number of participants and percentage of attrition after data cleaning. Numbers cover the entire study period from 2009 to 2012.....	59

APPENDIX 5: ODDS RATIO (OR) AND 95% CONFIDENCE INTERVAL (CI) FOR MISSING VALUES OF MEASUREMENTS OF HEIGHT, WEIGHT, WC, VERTICAL JUMP HEIGHT AND THE ANDERSEN TEST 60

Table 1. Odds ratio (OR) and 95% confidence interval (CI) for missing values among girls, by grade. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year.....	60
Table 2. Odds ratio (OR) and 95% confidence interval (CI) for missing values among boys, by grade. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year.....	61
Table 3. Grade-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC, vertical jump height and the Andersen test among girls, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status, grade and school year.....	62
Table 4. Grade-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC, vertical jump height and the Andersen test among boys, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status, grade and school year.....	63
Table 5. Grade- and gender-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of anthropometric and fitness measurements carried out by schools, by children's immigrant status, parent's educational level and parents' employment status, 2009--2012 ^c , (n = 130.787)	64

APPENDIX 6. ATTRITION, ODENSE SUB-STUDY 65

Table 1. Mean results of anthropometry for children measured by both schools and school nurses (n = 4,027) and children measured by school nurses only (n =2,590)	65
Table 2. Odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC among girls, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year	66
Table 3. Odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC among boys, by children's BMI deciles. Adjusted for children's immigrant status, parent's educational level, parent's employment status and school year	67
Table 4. Odds ratio (OR) and 95% confidence interval (CI) for missing values of any anthropometric measurements carried out by schools, by child children's immigrant status, parents' educational level, parents' employment status and school year.....	68
Figure 48. The Andersen test, 7 th grade, 2011.....	69
Figure 49. The Andersen test, 8 th and 9 th grades combined, 2011.....	70

BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS MEASUREMENTS OBTAINED IN 2012. INTRA-OBSERVER RELIABILITY..... 71

Figure 50. Height, all grades, 2012	71
Figure 51. Height, 0 th grade, 2012	72
Figure 52. Height, 1 st grade, 2012	73
Figure 53. Height, 2 nd grade, 2012	74

Figure 54. Height, 3 rd grade, 2012	75
Figure 55. Height, 4 th grade, 2012	76
Figure 56. Height, 5 th grade, 2012	77
Figure 57. Height, 6 th grade, 2012	78
Figure 58. Height, 7 th grade, 2012	79
Figure 59. Height, 8 th grade, 2012	80
Figure 60. Height, 9 th grade, 2012	81
Figure 61. Weight, all grades, 2012	82
Figure 62. Weight, 0 th grade, 2012	83
Figure 63. Weight, 1 st grade, 2012	84
Figure 64. Weight, 2 nd grade, 2012	85
Figure 65. Weight, 3 rd grade, 2012	86
Figure 66. Weight, 4 th grade, 2012	87
Figure 67. Weight, 5 th grade, 2012	88
Figure 68. Weight, 6 th grade, 2012	89
Figure 69. Weight, 7 th grade, 2012	90
Figure 70. Weight, 8 th grade, 2012	91
Figure 71. Weight, 9 th grade, 2012	92
Figure 72. WC, all grades, 2012.....	93
Figure 73. WC, 0 th grade, 2012.....	94
Figure 74. WC, 1 st grade, 2012	95
Figure 75. WC, 2 nd grade, 2012	96
Figure 76. WC, 3 rd grade, 2012	97
Figure 77. WC, 4 th grade, 2012.....	98
Figure 78. WC, 5 th grade, 2012.....	99
Figure 79. WC, 6 th grade, 2012.....	100
Figure 80. WC, 7 th grade, 2012.....	101
Figure 81. WC, 8 th grade, 2012.....	102
Figure 82. WC, 9 th grade, 2012.....	103
Figure 83. The Andersen test, all grades, 2012.....	104
Figure 84. The Andersen test, 0 th grade, 2012.....	105
Figure 85. The Andersen test, 1 st grade, 2012	106
Figure 86. The Andersen test, 2 nd grade, 2012	107
Figure 87. The Andersen test, 3 rd grade, 2012.....	108
Figure 88. The Andersen test, 4 th grade, 2012.....	109
Figure 89. The Andersen test, 5 th grade, 2012.....	110
Figure 90. The Andersen test, 6 th grade, 2012.....	111

Figure 91. The Andersen test, 7 th grade, 2012.....	112
Figure 92. The Andersen test, 8 th grade, 2012.....	113
Figure 93. The Andersen test, 9 th grade, 2012.....	114

BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS OBTAINED BY HSN SCHOOLS IN 2011 AND BY SDU IN 2012. SCHOOL MEASUREMENTS ARE ADJUSTED FOR EXPECTED GROWTH BETWEEN MEASUREMENT POINTS. INTER-OBSERVER RELIABILITY..... 115

Figure 94. Height, all grades.....	115
Figure 95. Height, 0 th -3 rd grades	116
Figure 96. Height, 4 th -6 th grades	117
Figure 97. Height, 7 th -9 th grades	118
Figure 98. Weight, all grades	119
Figure 99. Weight, 0 th -3 rd grades	120
Figure 100. Weight, 4 th -6 th grades	121
Figure 101. Weight, 7 th -9 th grades	122
Figure 102. WC, all grades.....	123
Figure 103. WC, 0 th -3 rd grades	124
Figure 104. WC, 4 th -6 th grades	125
Figure 105. WC, 7 th -9 th grades	126
Figure 106. Vertical jump height, all grades	127
Figure 107. Vertical jump height, 0 th -3 rd grades	128
Figure 108. Vertical jump height, 4 th -6 th grades	129
Figure 109. Vertical jump height, 7 th -9 th grades	130
Figure 110. The Andersen test, all grades.....	131
Figure 111. The Andersen test, 0 th -3 rd grades	132
Figure 112. The Andersen test. 4 th -6 th grades	133
Figure 113. The Andersen test, 7 th -9 th grades	134

BLAND-ALTMAN PLOTS OF ANTHROPOMETRY CARRIED OUT BY SCHOOL NURSES (T1) IN ODENSE/DENMARK FOR CHILDREN IN GRADES 0, 1, 2 AND 5, AND BY HSN SCHOOLS IN 2009-2012 (T2). INTER-OBSERVER RELIABILITY 135

Figure 114. Height, all grades	135
Figure 115. Weight, all grades	136
Figure 116. WC, all grades.....	137

APPENDIX 1: BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS OBTAINED IN 2011. INTRA-OBSERVER RELIABILITY

Figure 1. Height, all grades, 2011

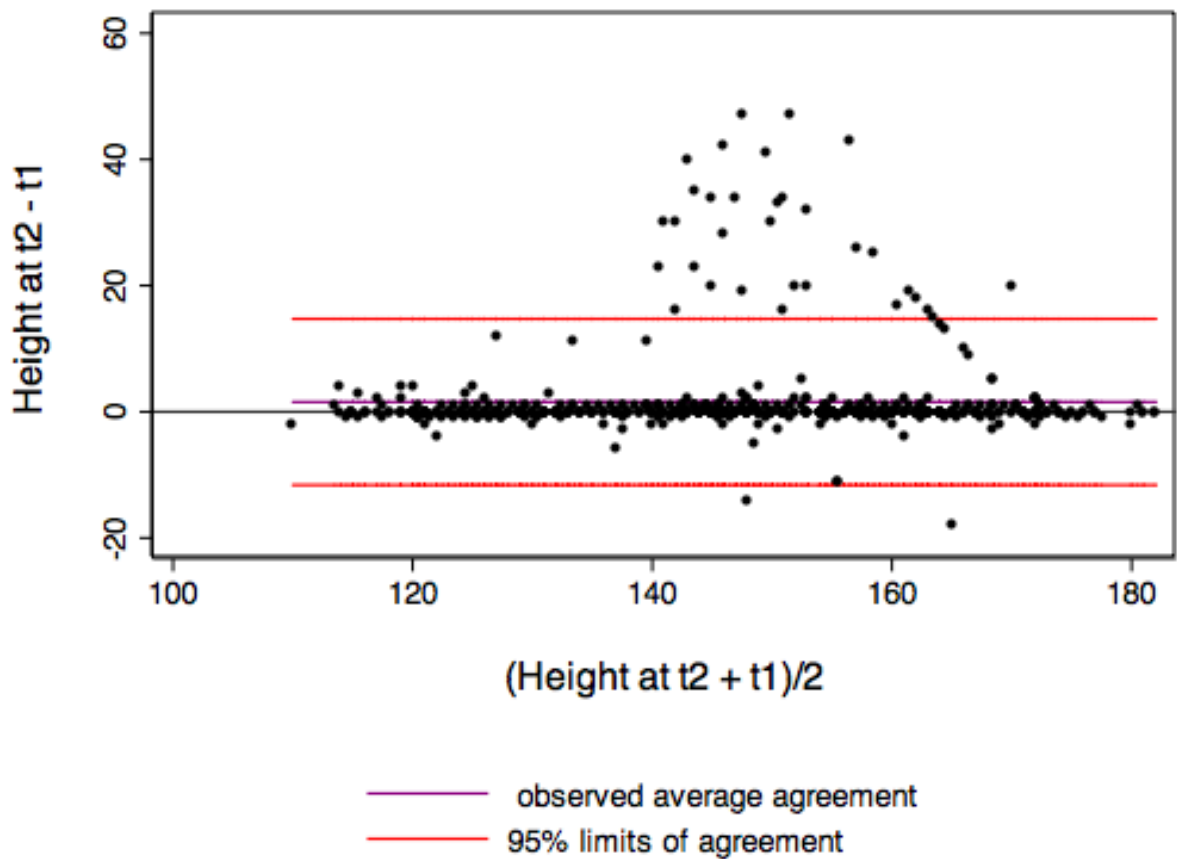


Figure 2. Height, 0th grade, 2011

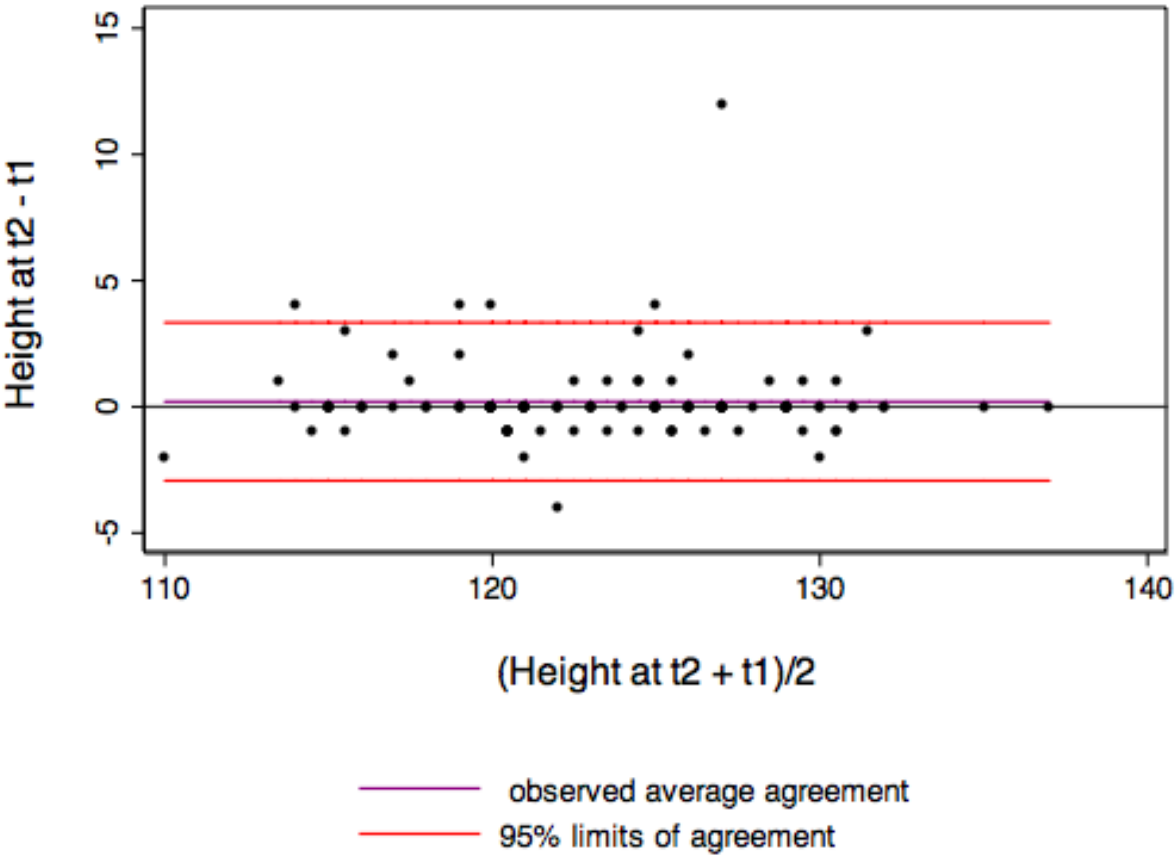


Figure 3. Height, 1st grade, 2011

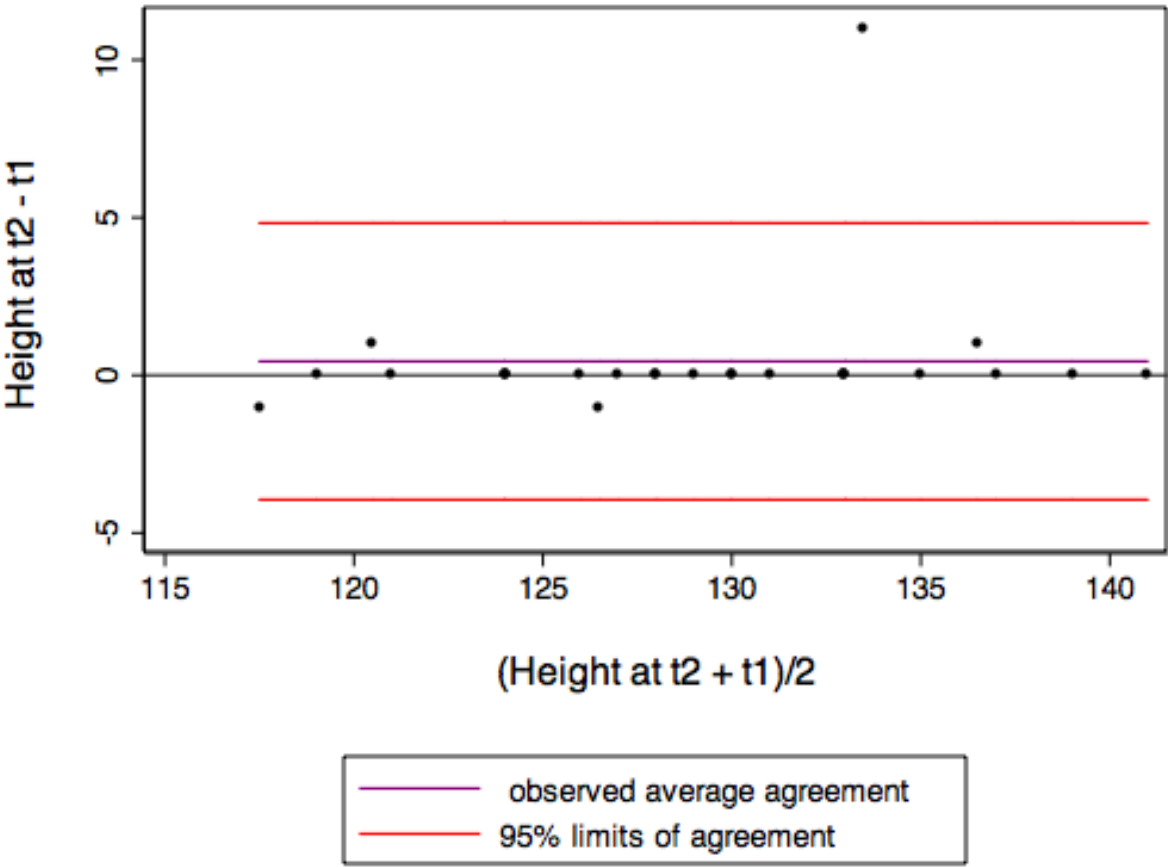


Figure 4. Height, 2nd grade, 2011

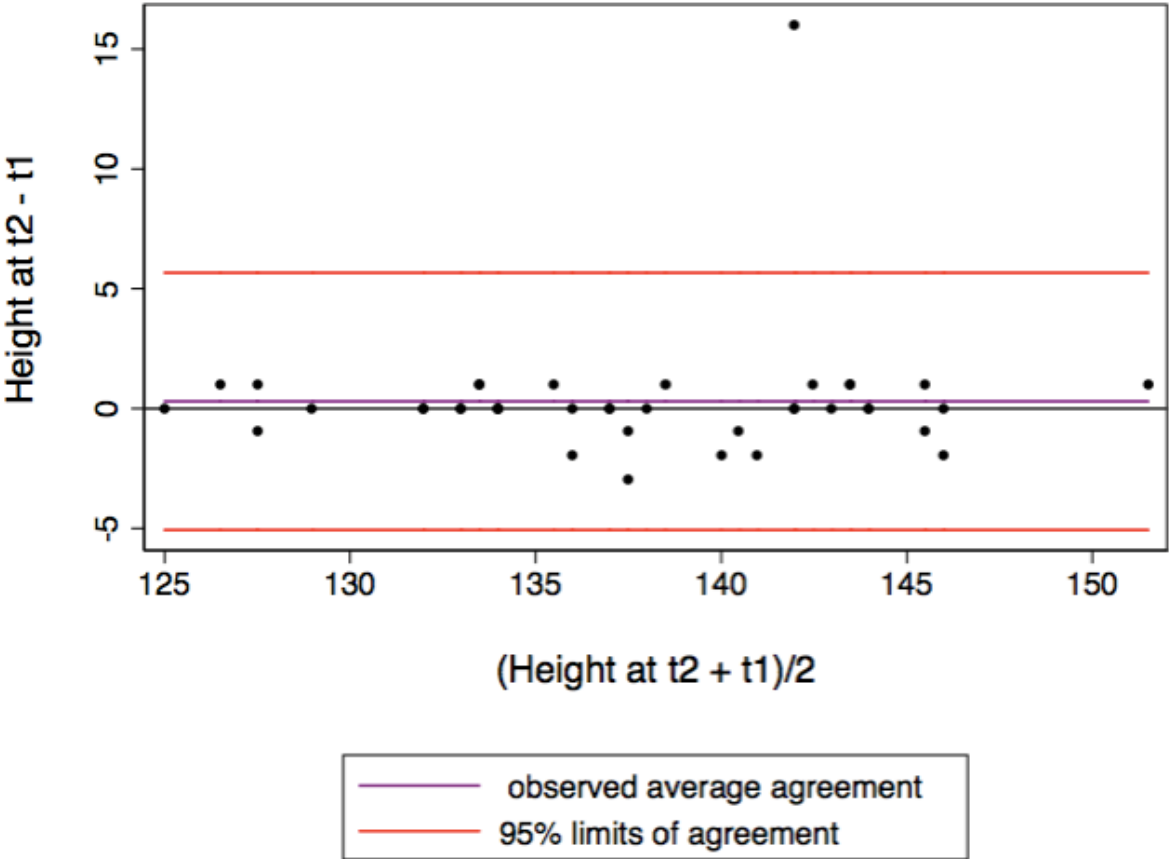


Figure 5. Height, 3rd grade, 2011

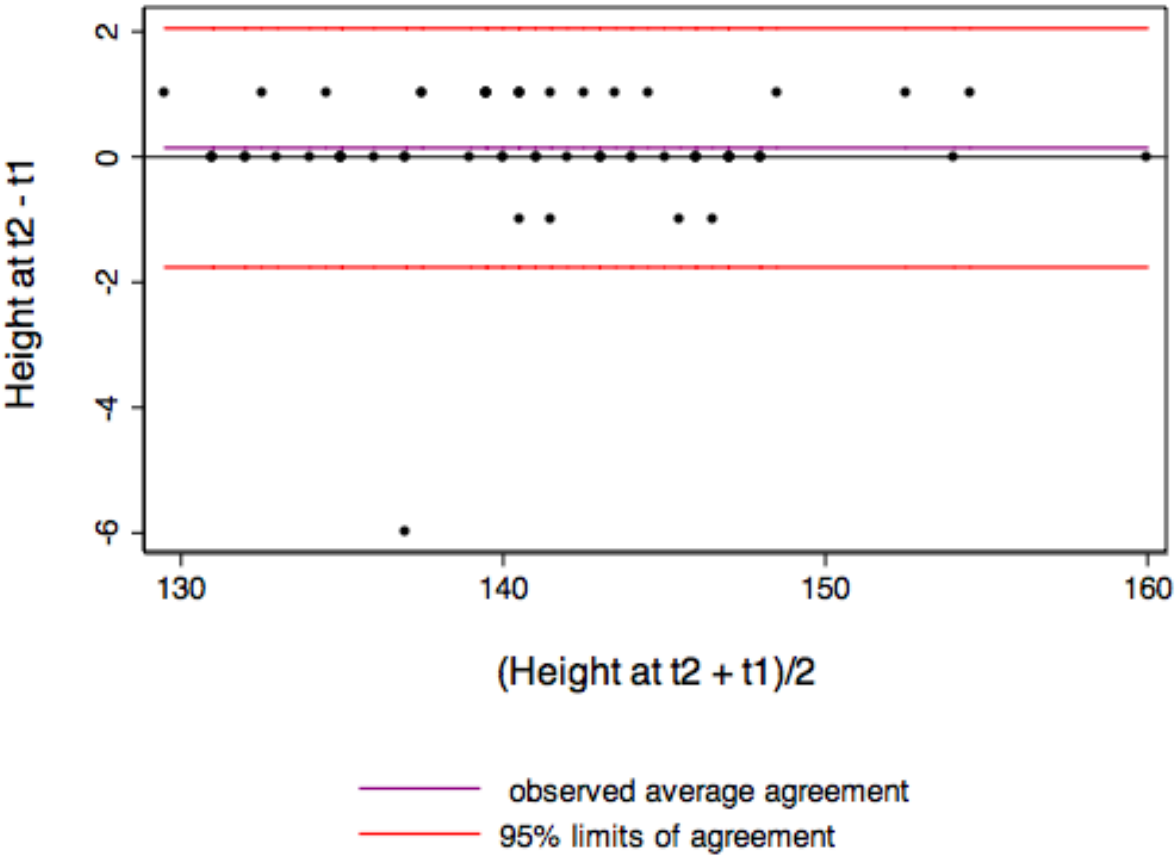


Figure 6. Height, 4th grade, 2011

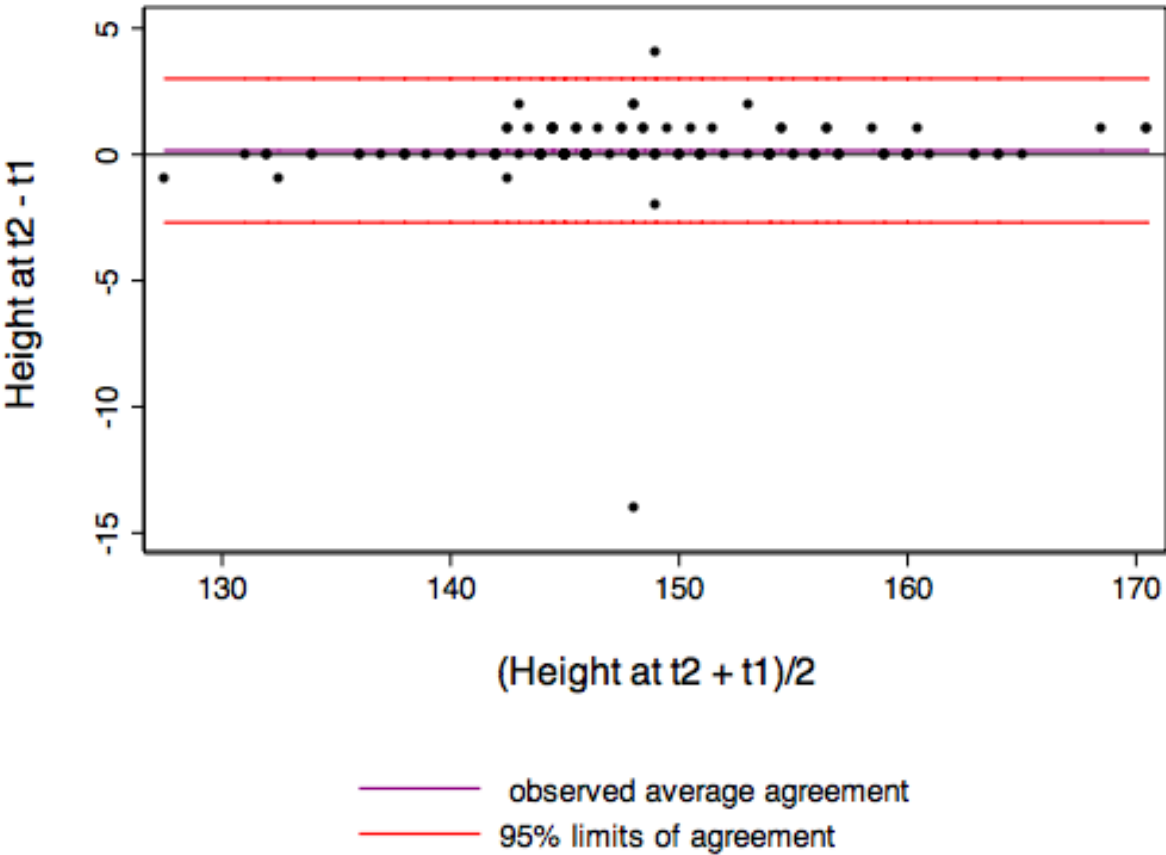


Figure 7. Height, 5th grade, 2011

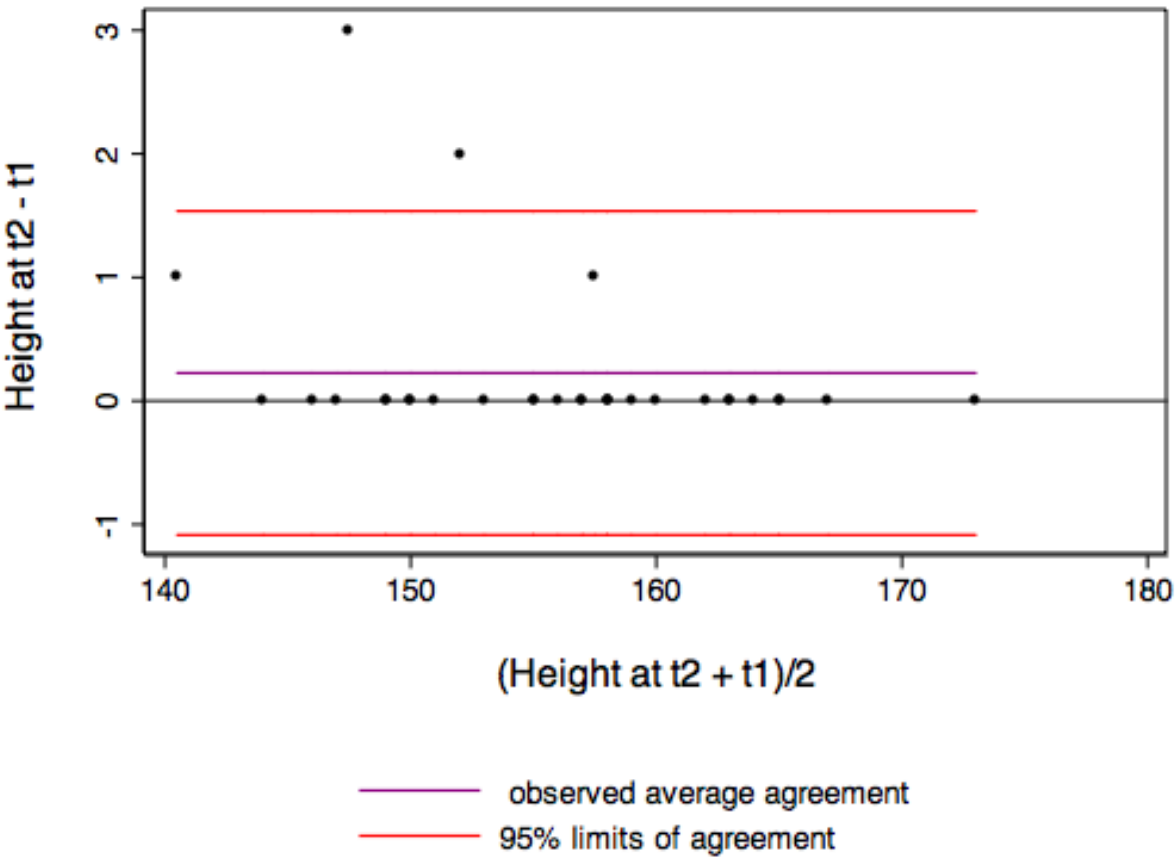


Figure 8. Height, 6th grade, 2011

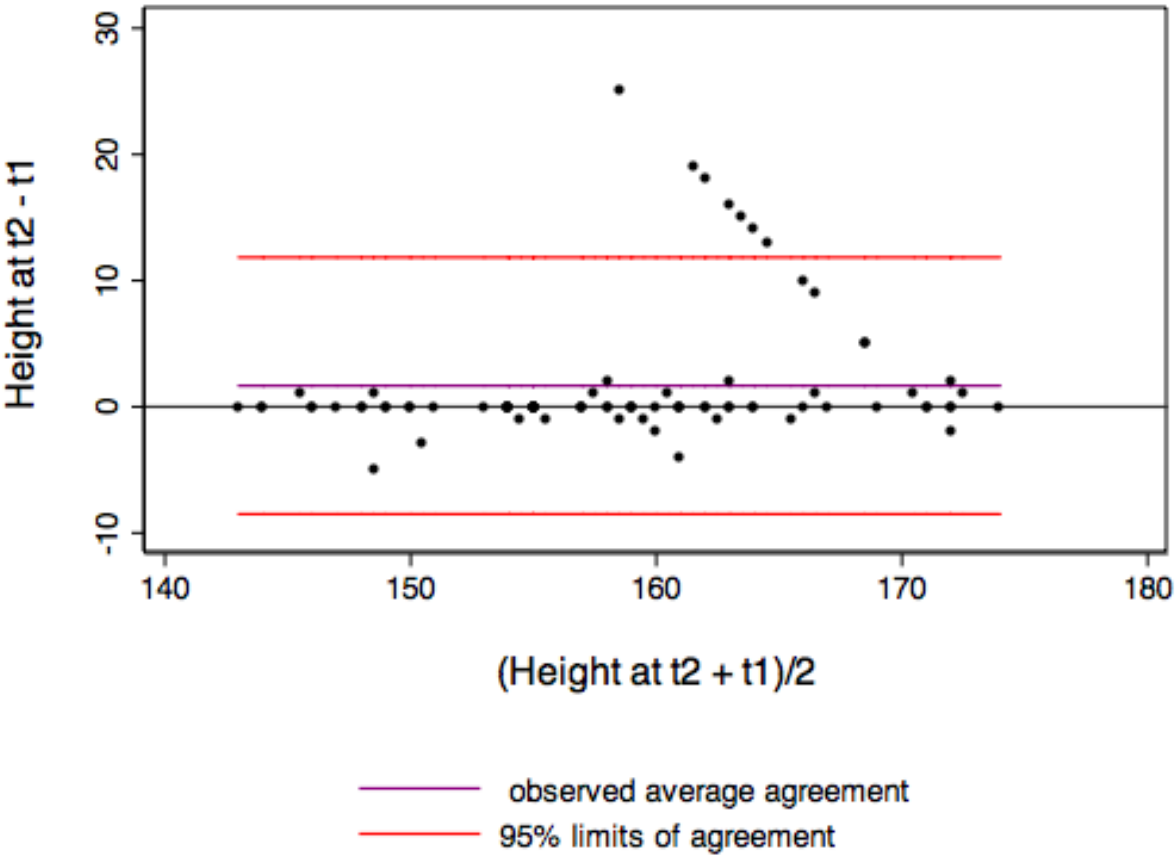


Figure 9. Height, 7th grade, 2011

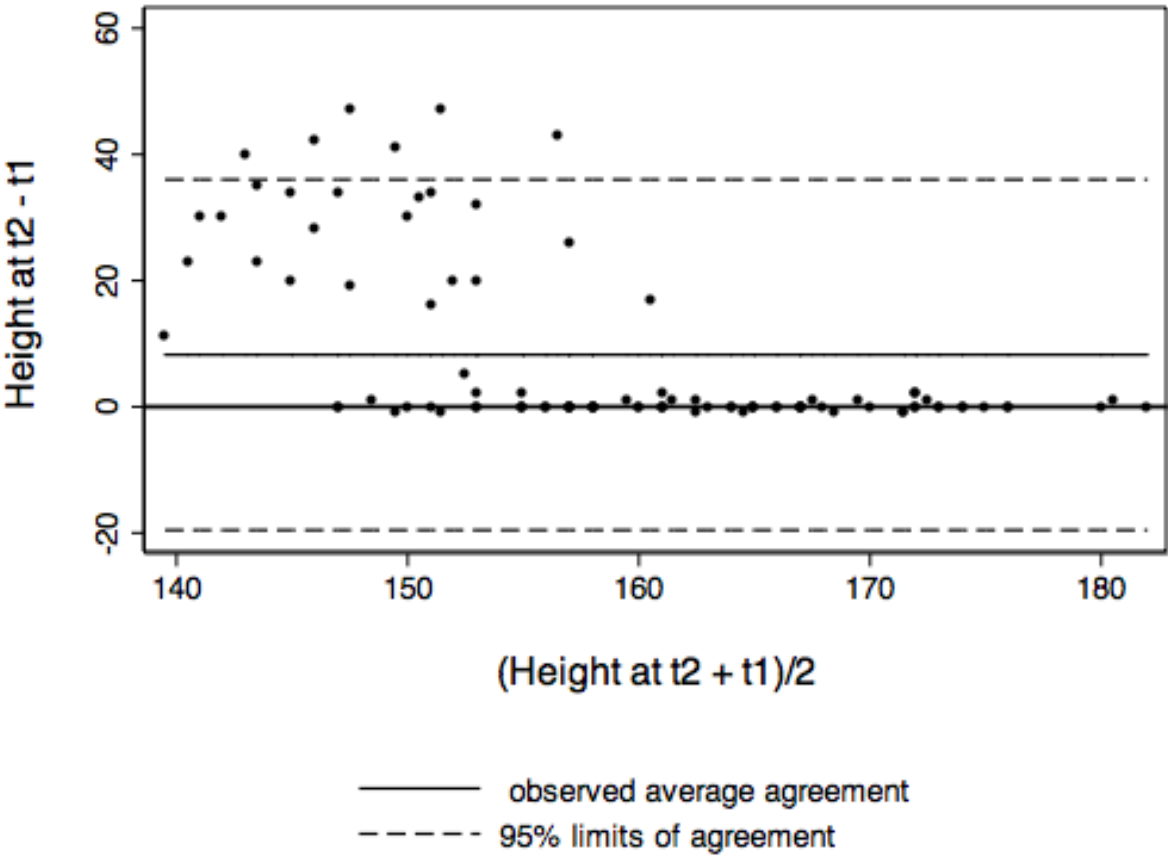


Figure 10. Height, 8th and 9th grades combined, 2011

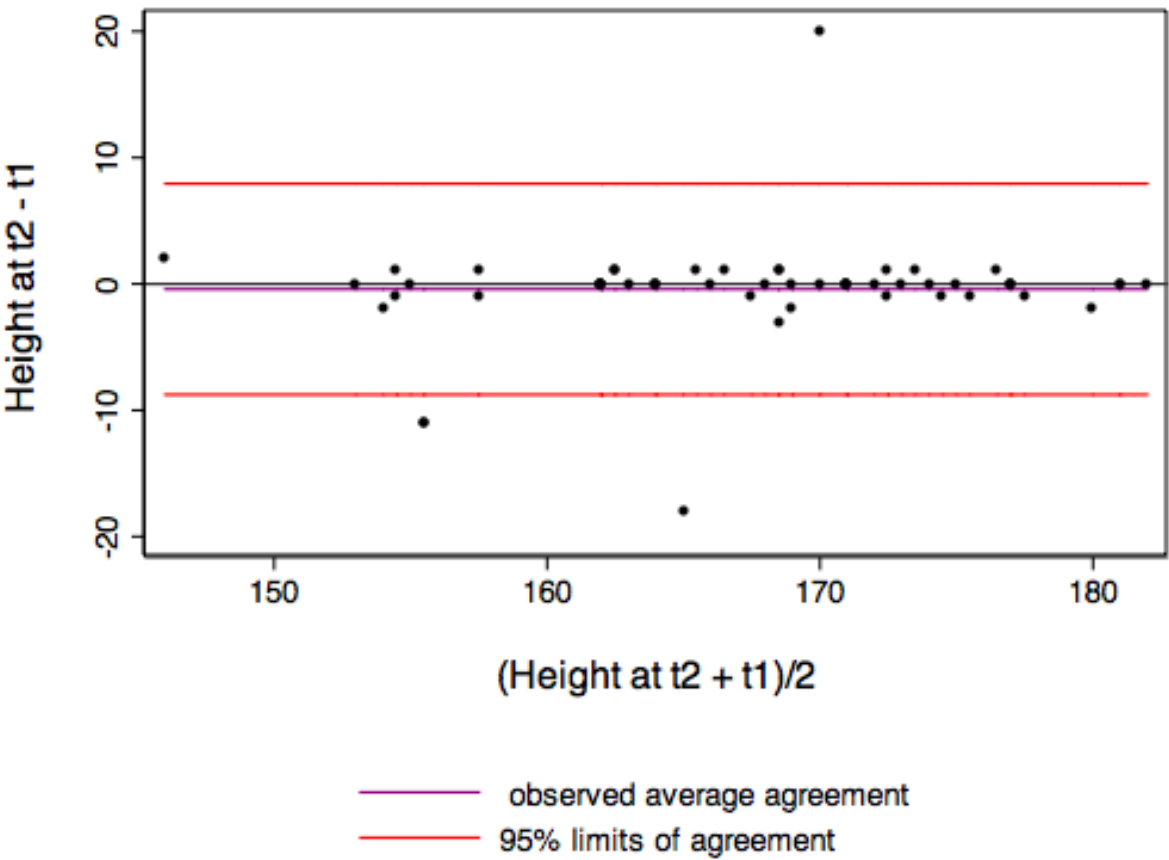


Figure 11. Weight, all grades, 2011

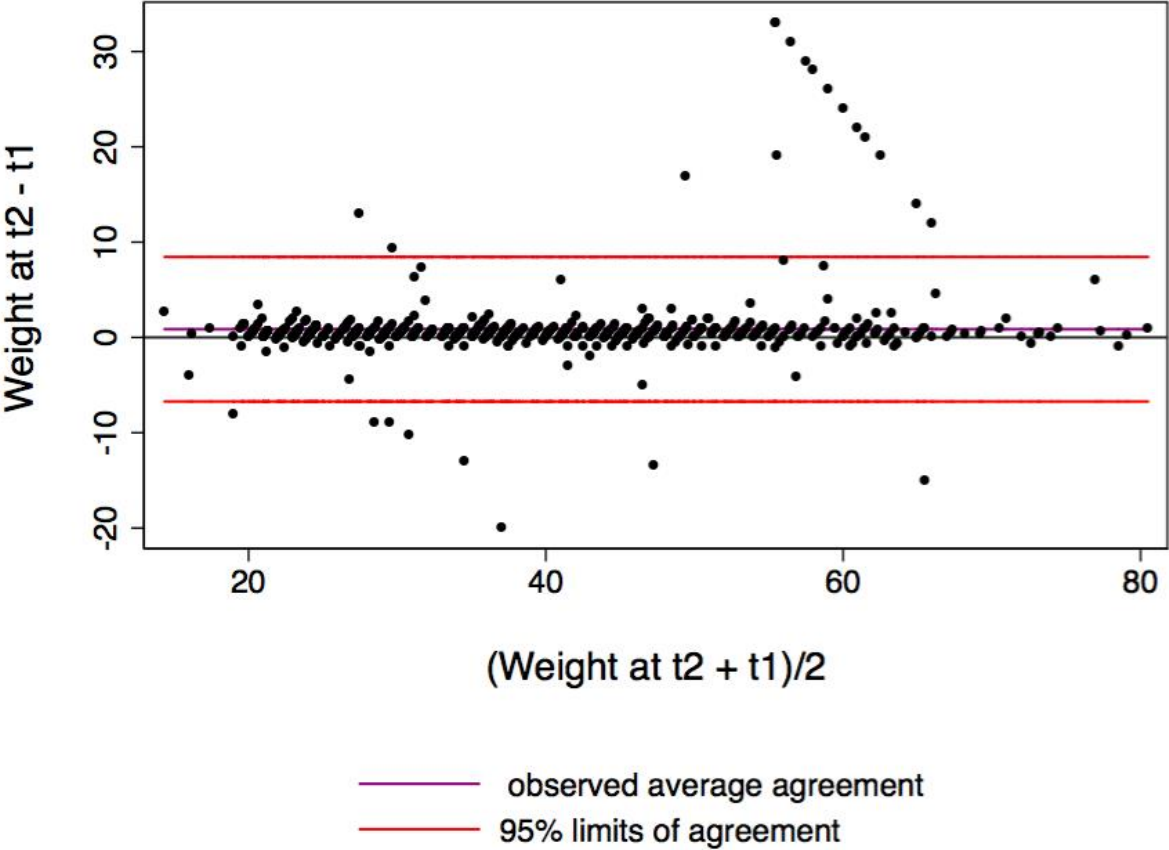


Figure 12. Weight, 1st grade, 2011

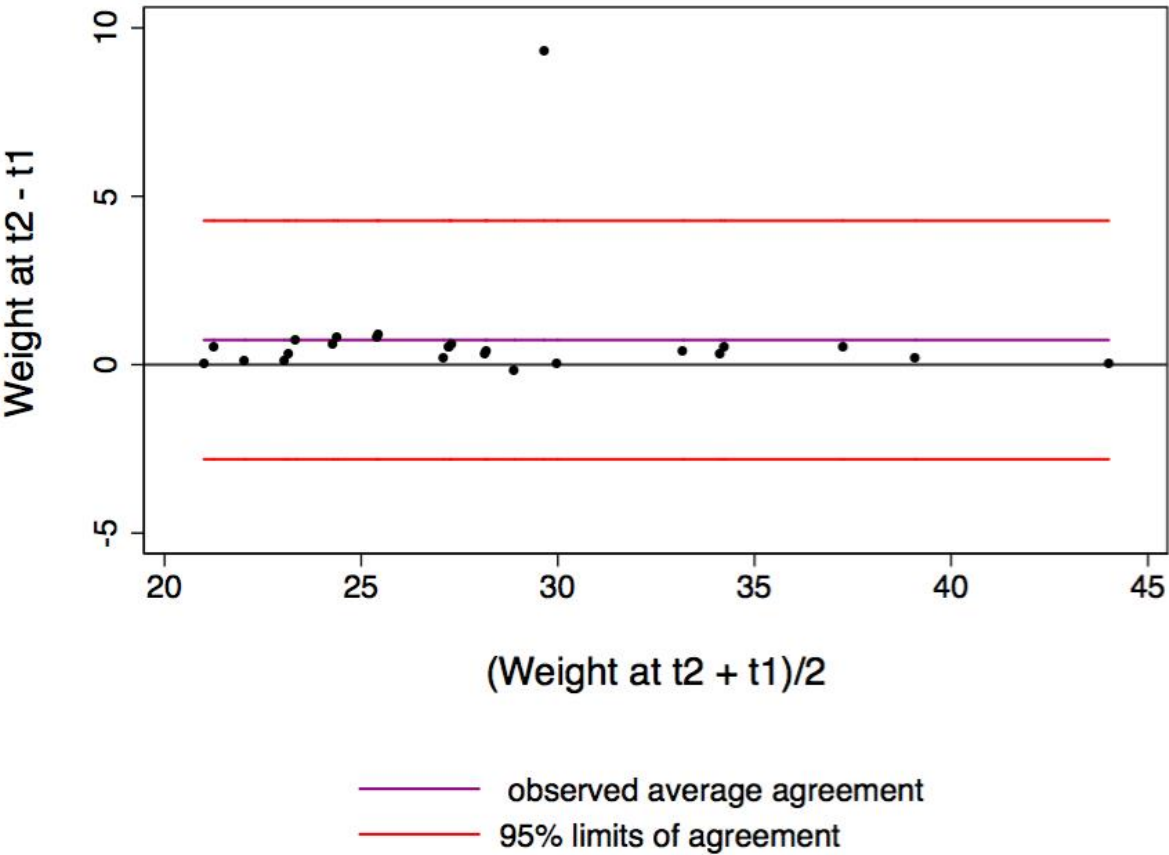


Figure 13. Weight, 2nd grade, 2011

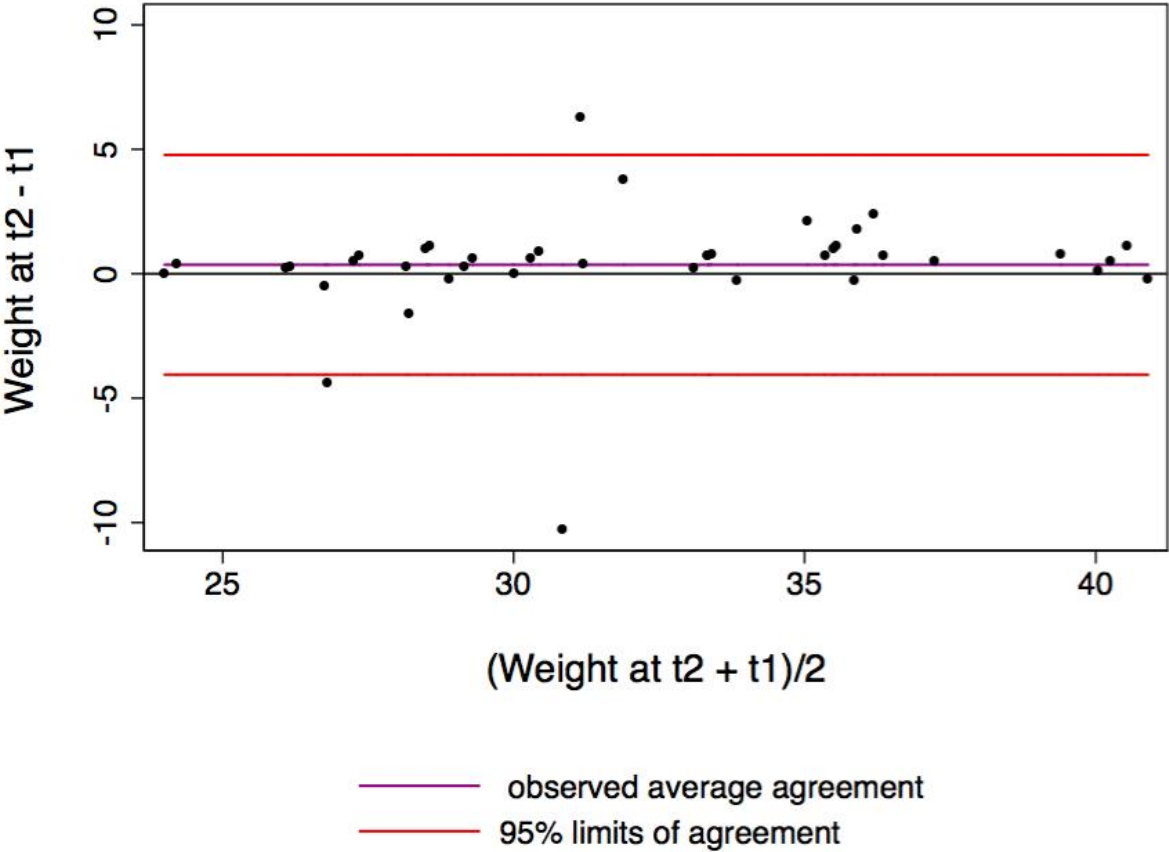


Figure 14. Weight, 3rd grade, 2011

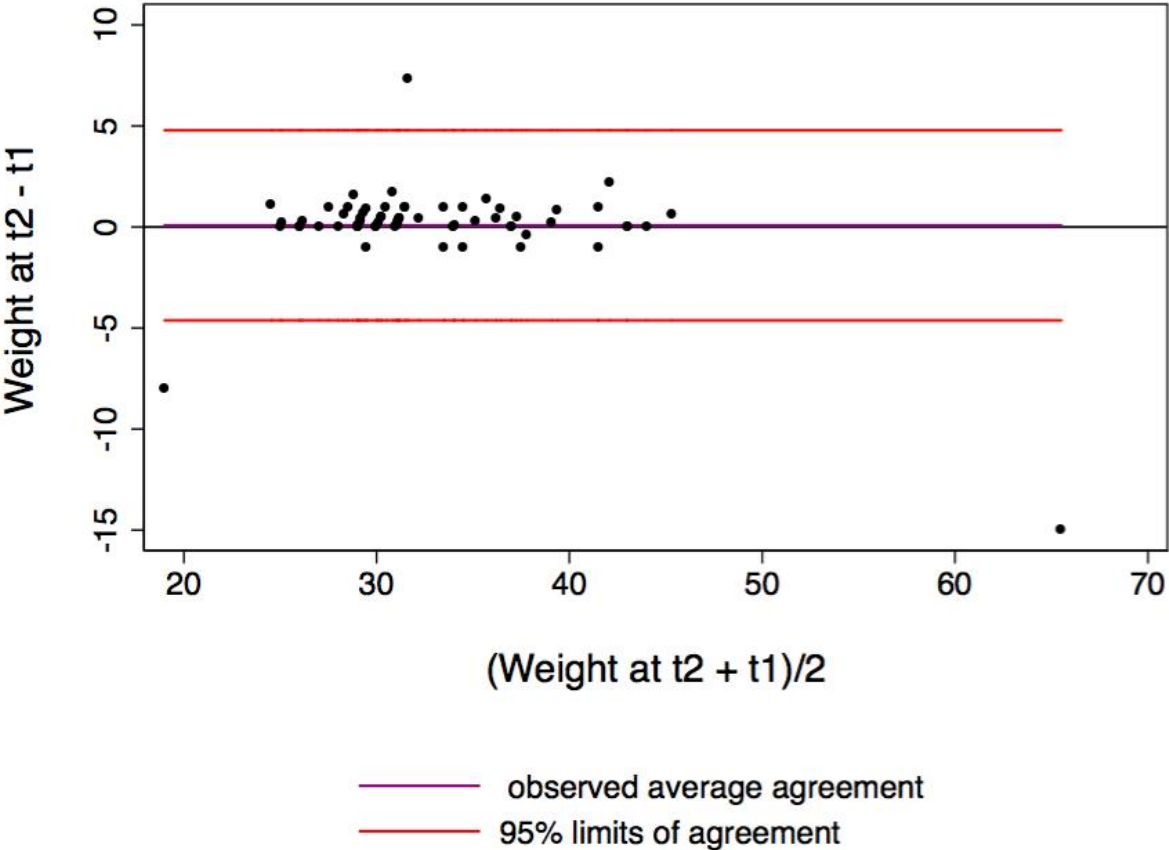


Figure 15. Weight, 4th grade, 2011

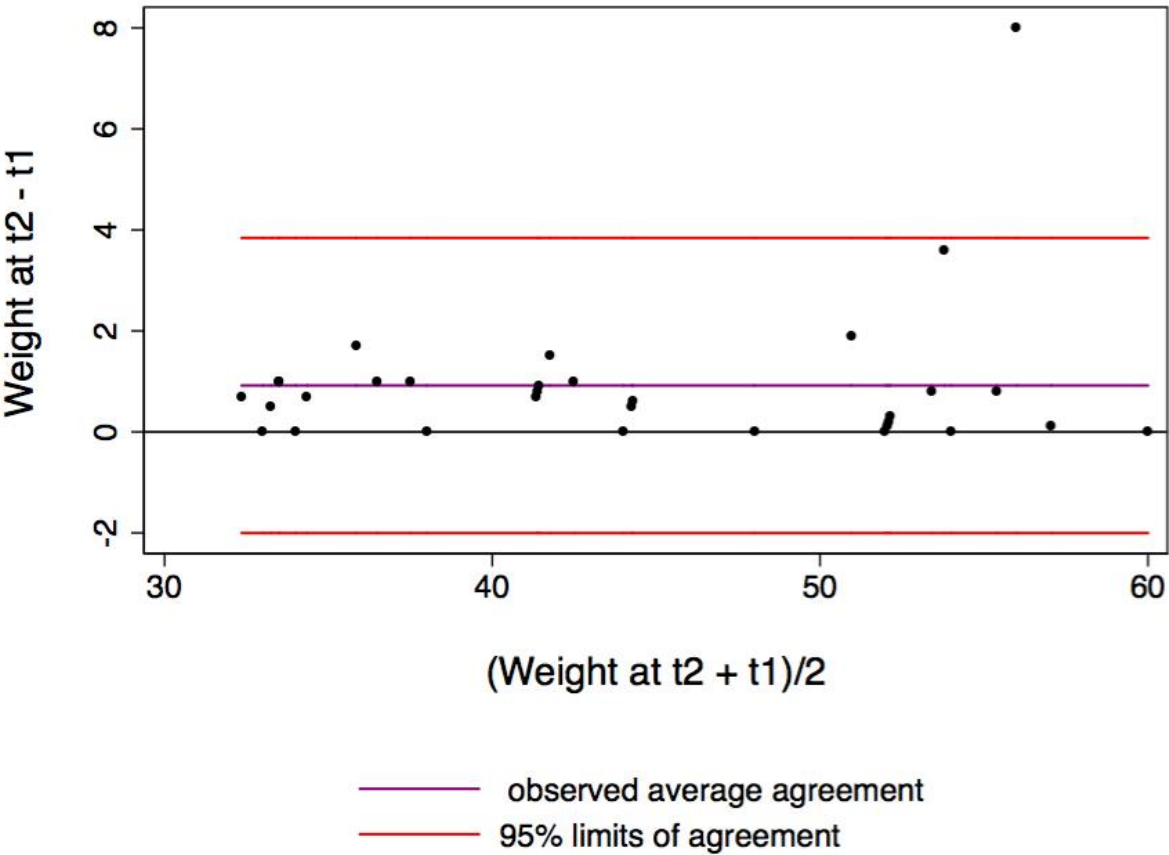


Figure 17. Weight 6th grade 2011

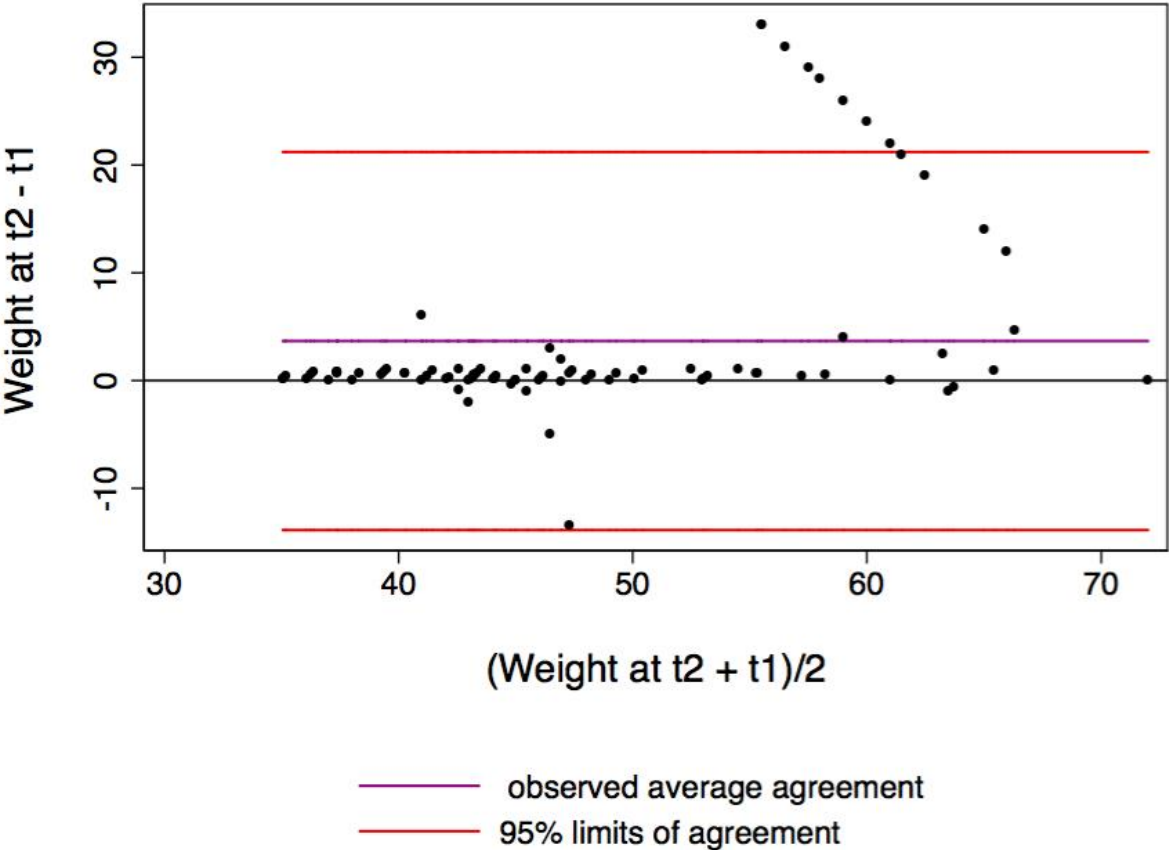


Figure 18. Weight, 7th grade, 2011

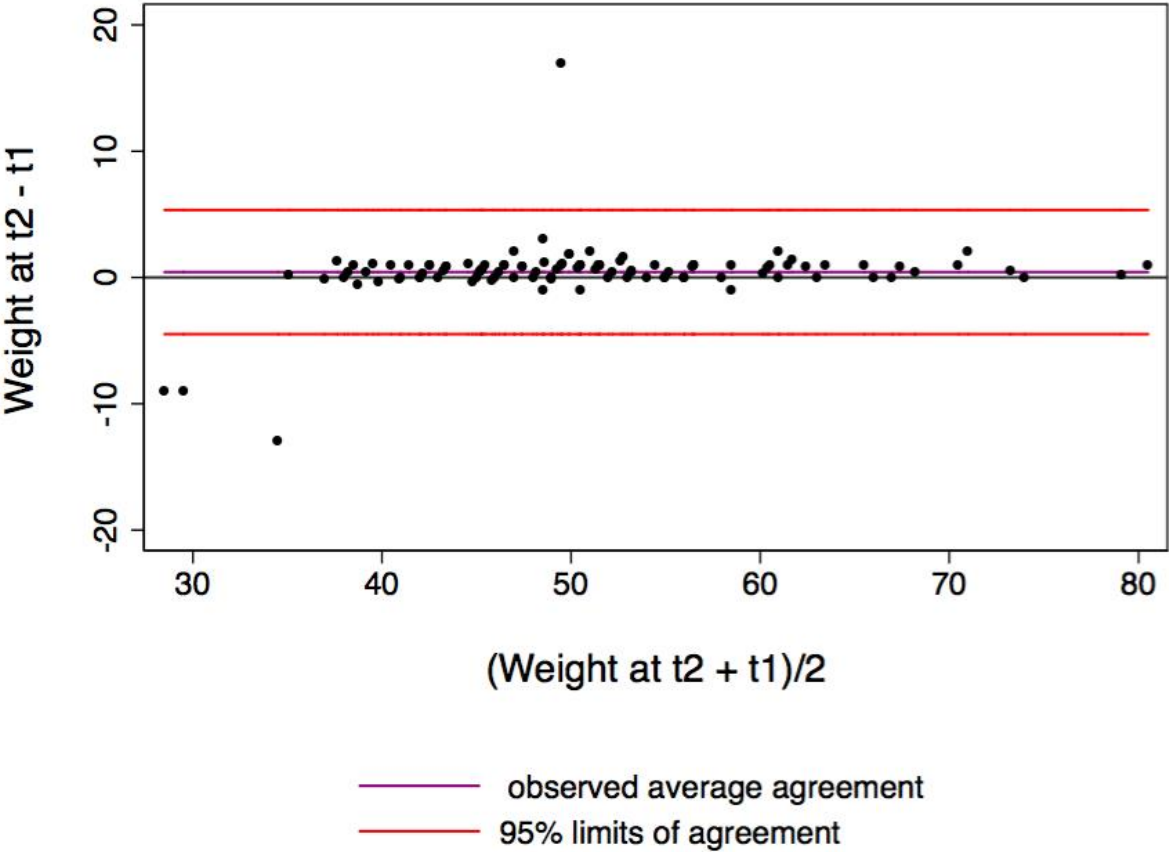


Figure 19. Weight, 8th and 9th grades combined, 2011

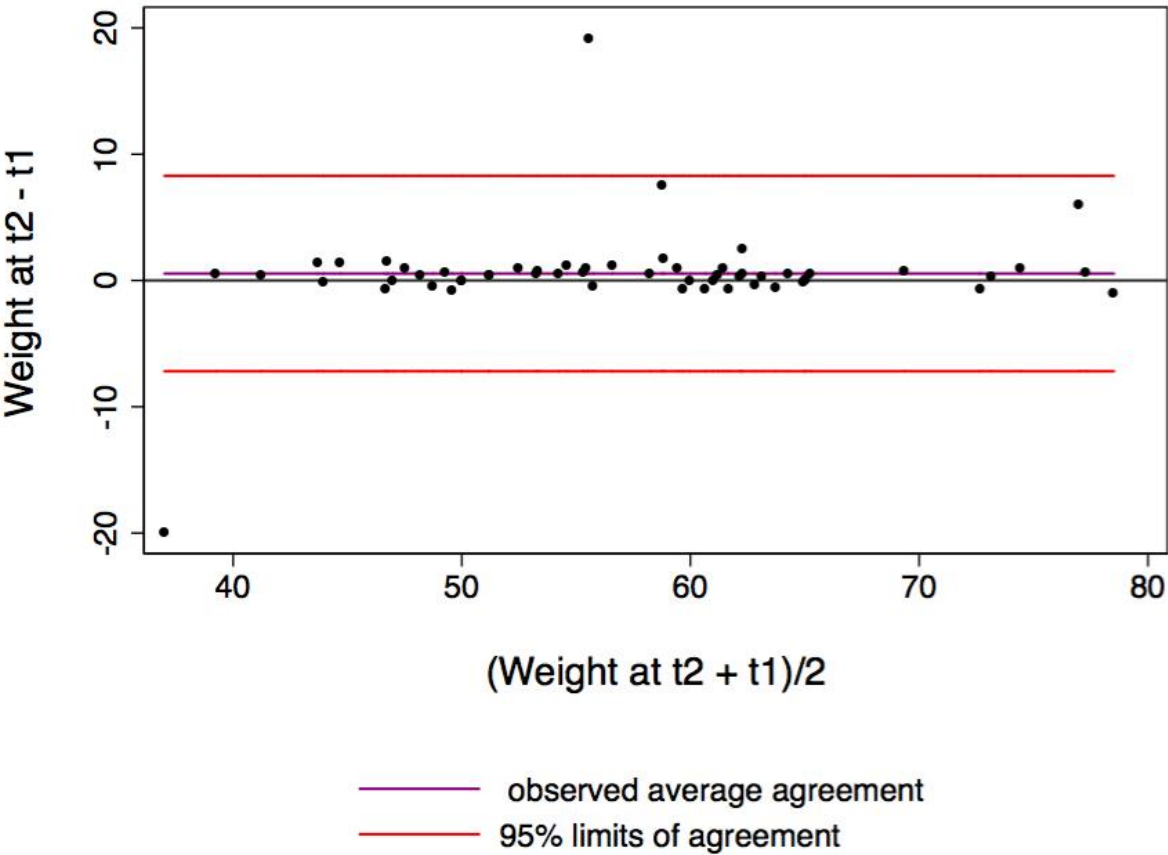


Figure 20. WC, all grades, 2011

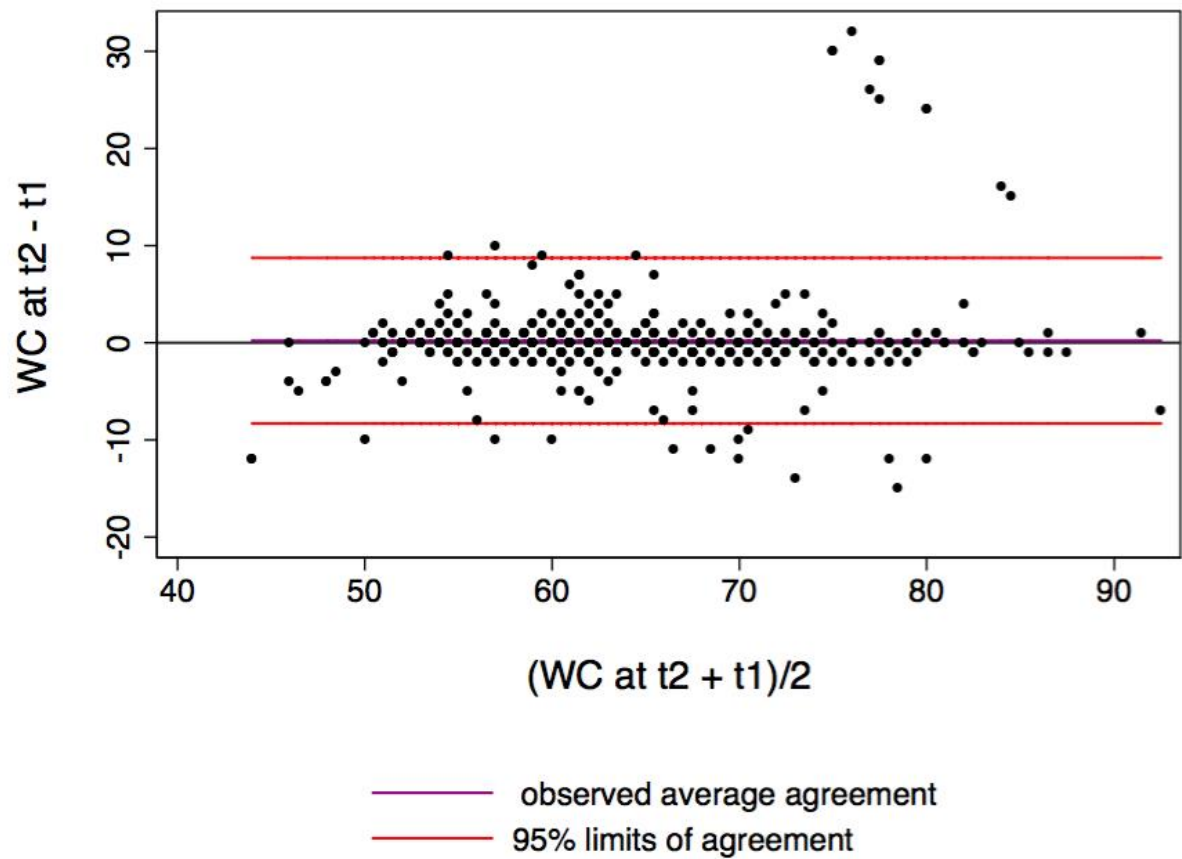


Figure 21. WC, 0th grade, 2011

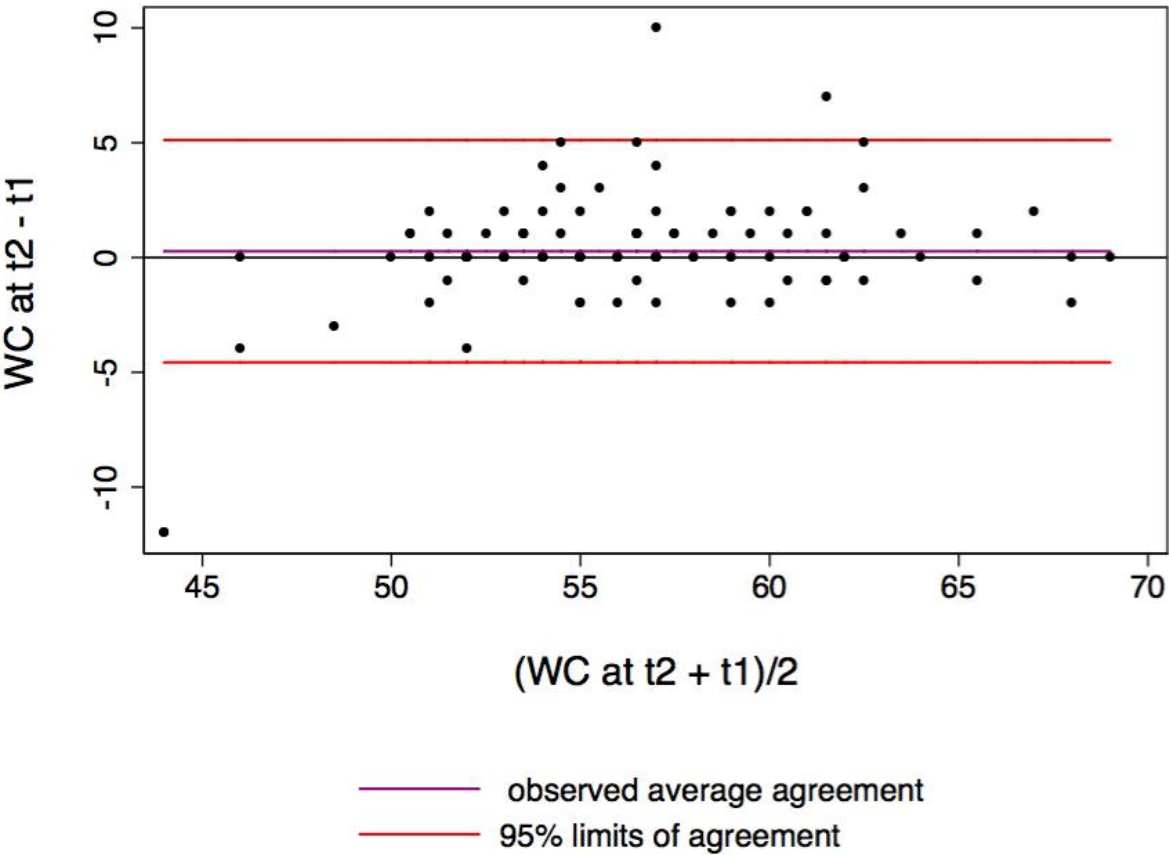


Figure 22. WC, 1st grade, 2011

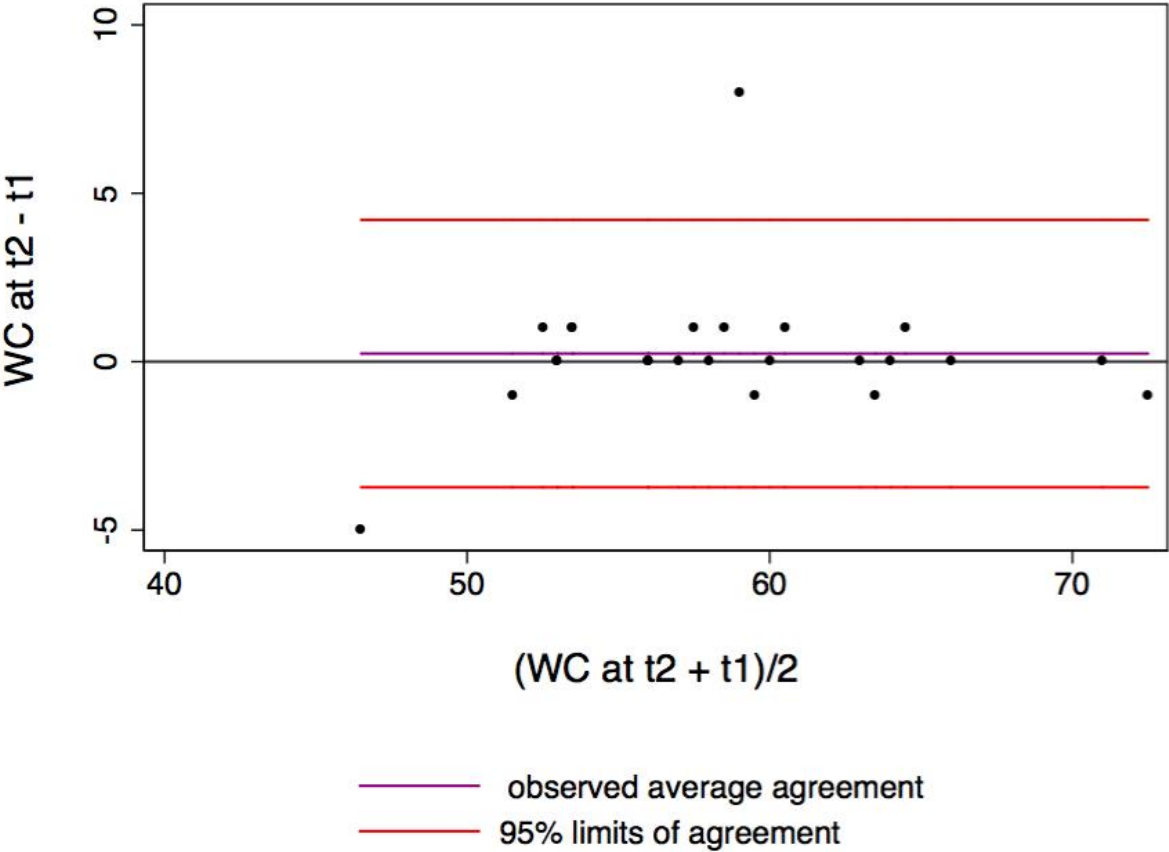


Figure 23. WC, 2nd grade, 2011

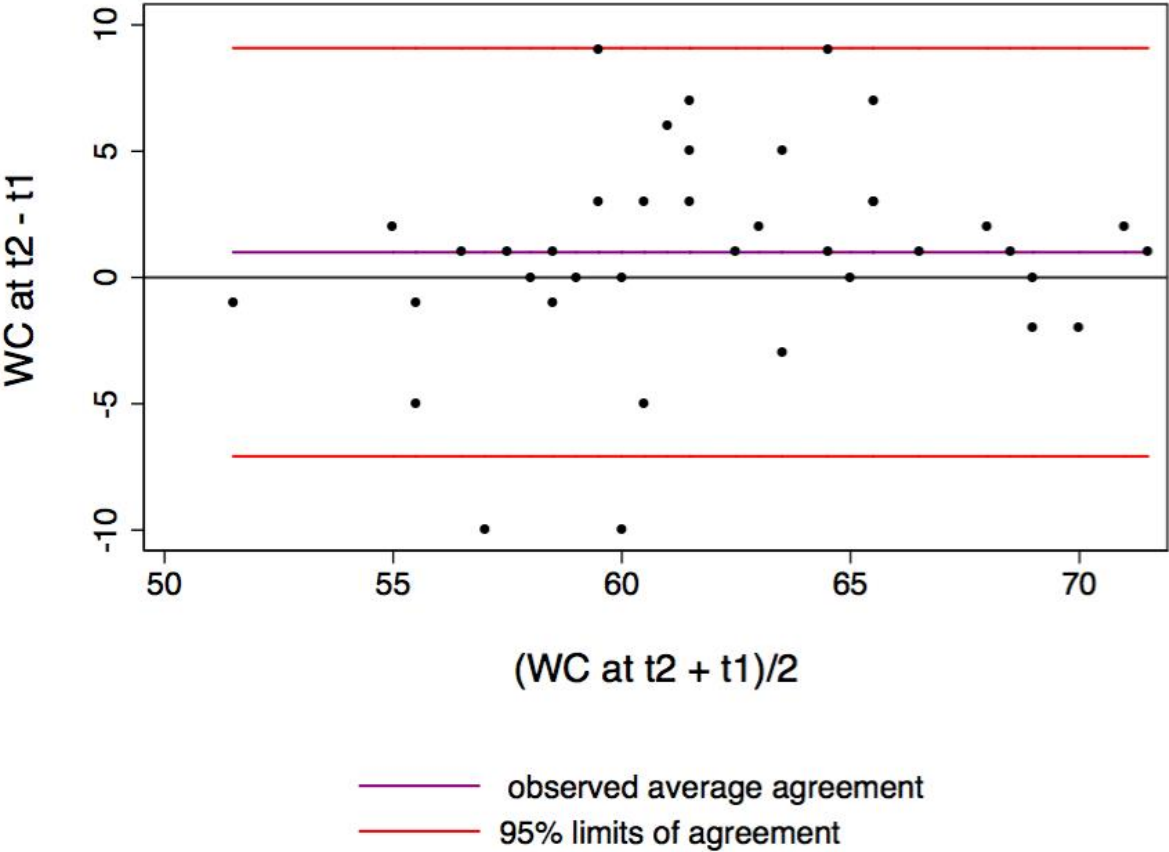


Figure 24. WC, 3rd grade, 2011

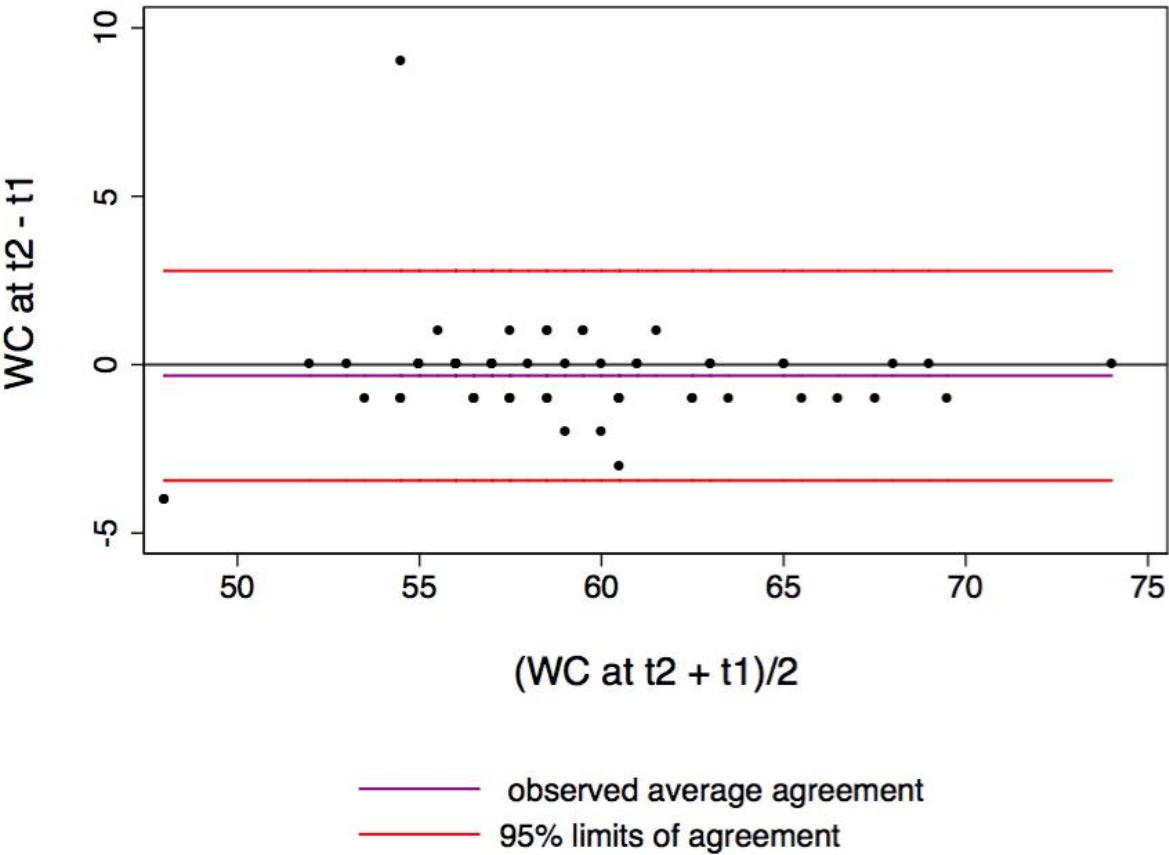


Figure 25. WC, 4th grade, 2011

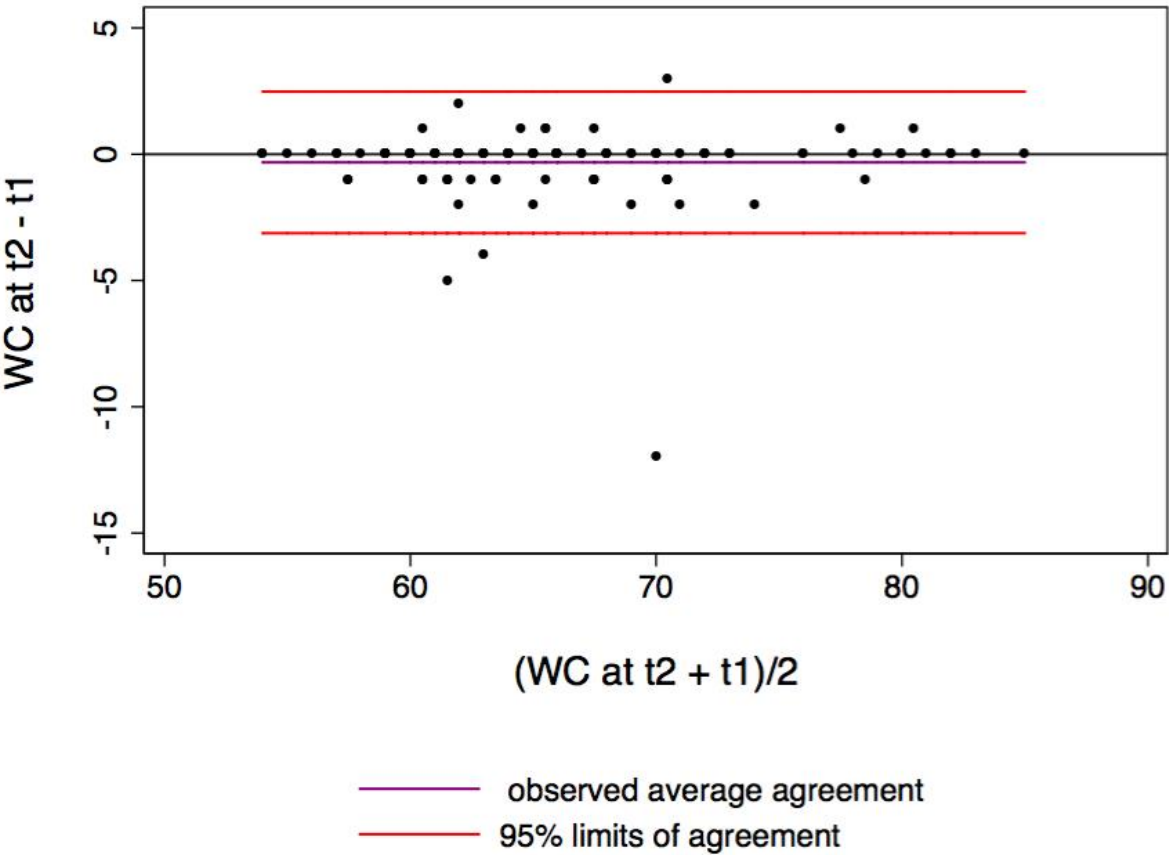


Figure 26. WC, 5th grade, 2011

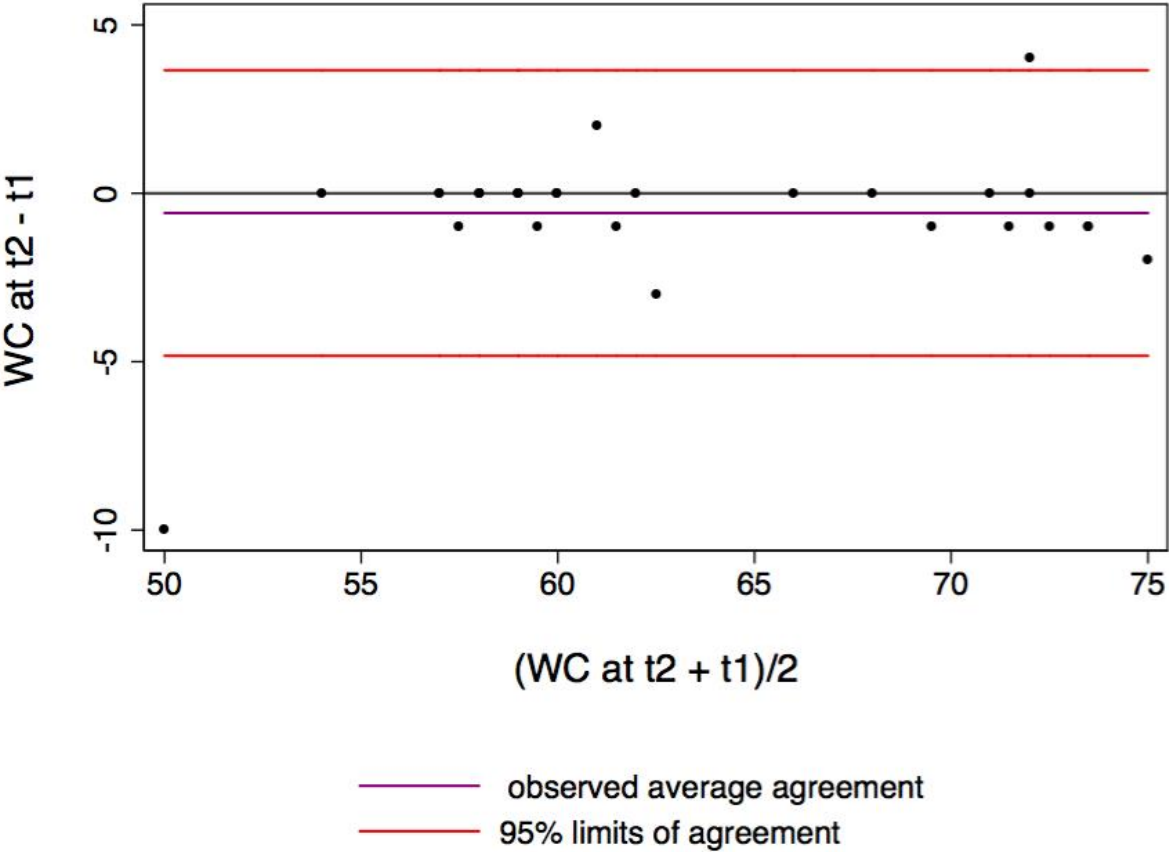


Figure 27. WC, 6th grade, 2011

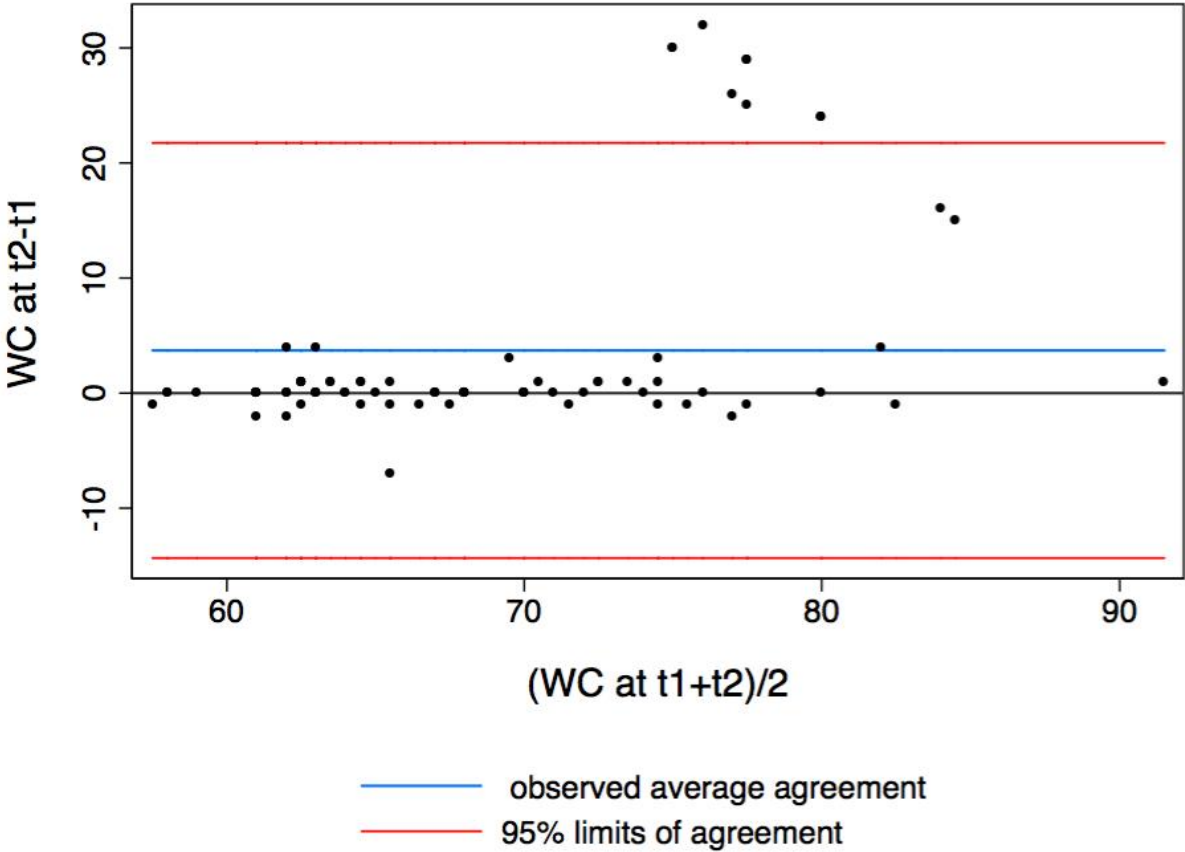


Figure 28. WC, 7th grade, 2011

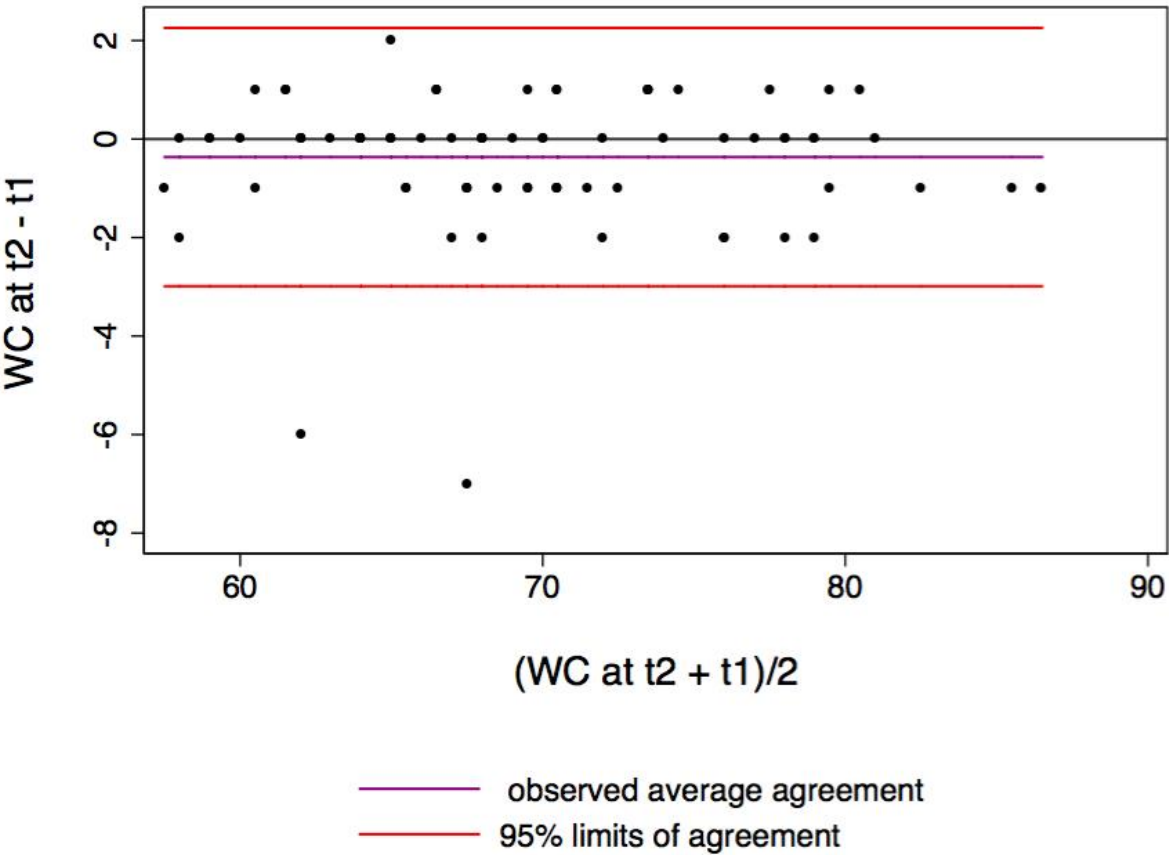


Figure 29. WC, 8th and 9th grades combined, 2011

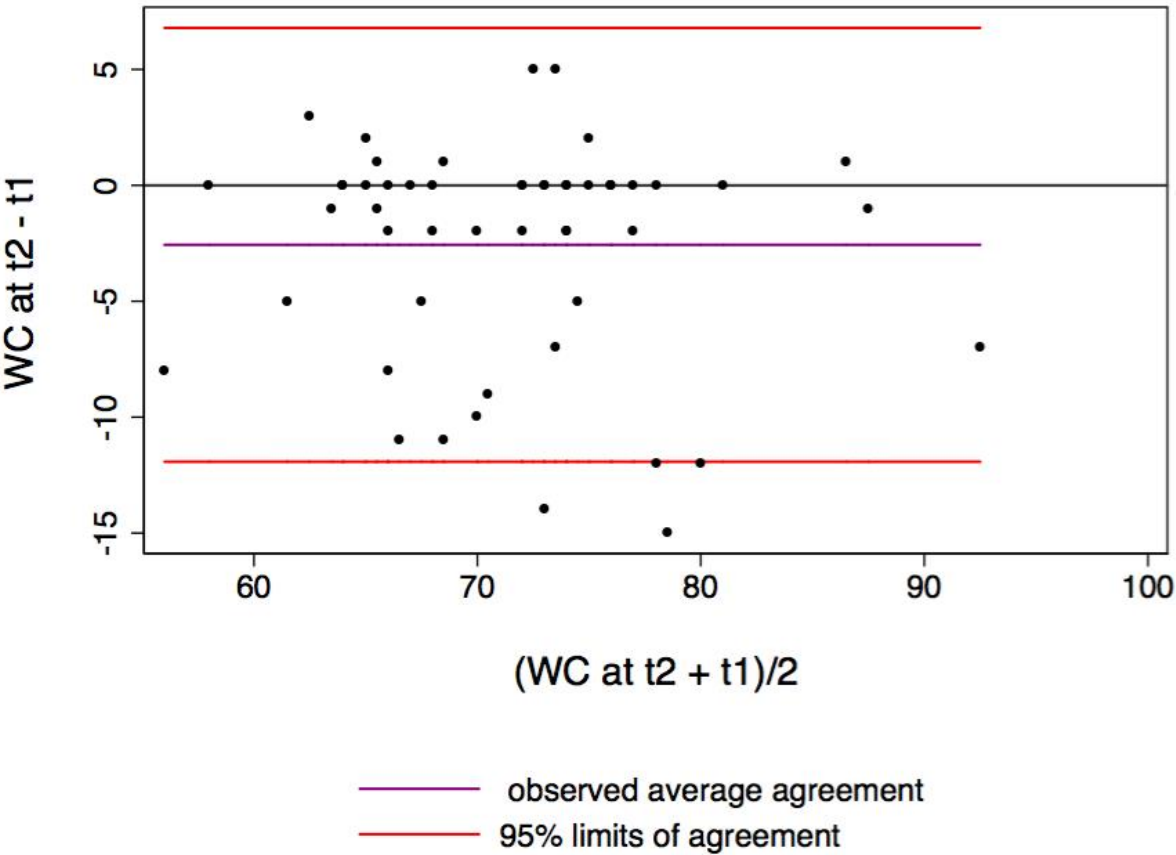


Figure 30. Vertical jump height, all grades, 2011

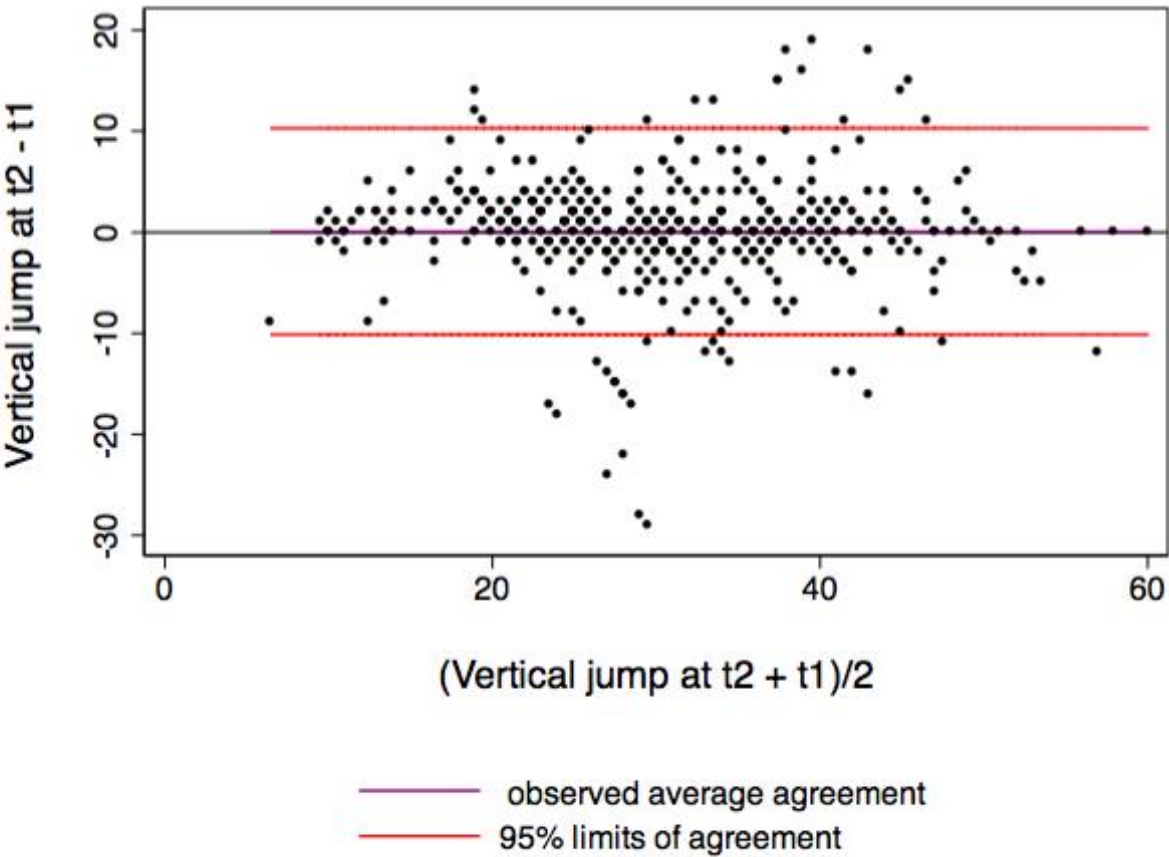


Figure 31. Vertical jump height, 0th grade, 2011

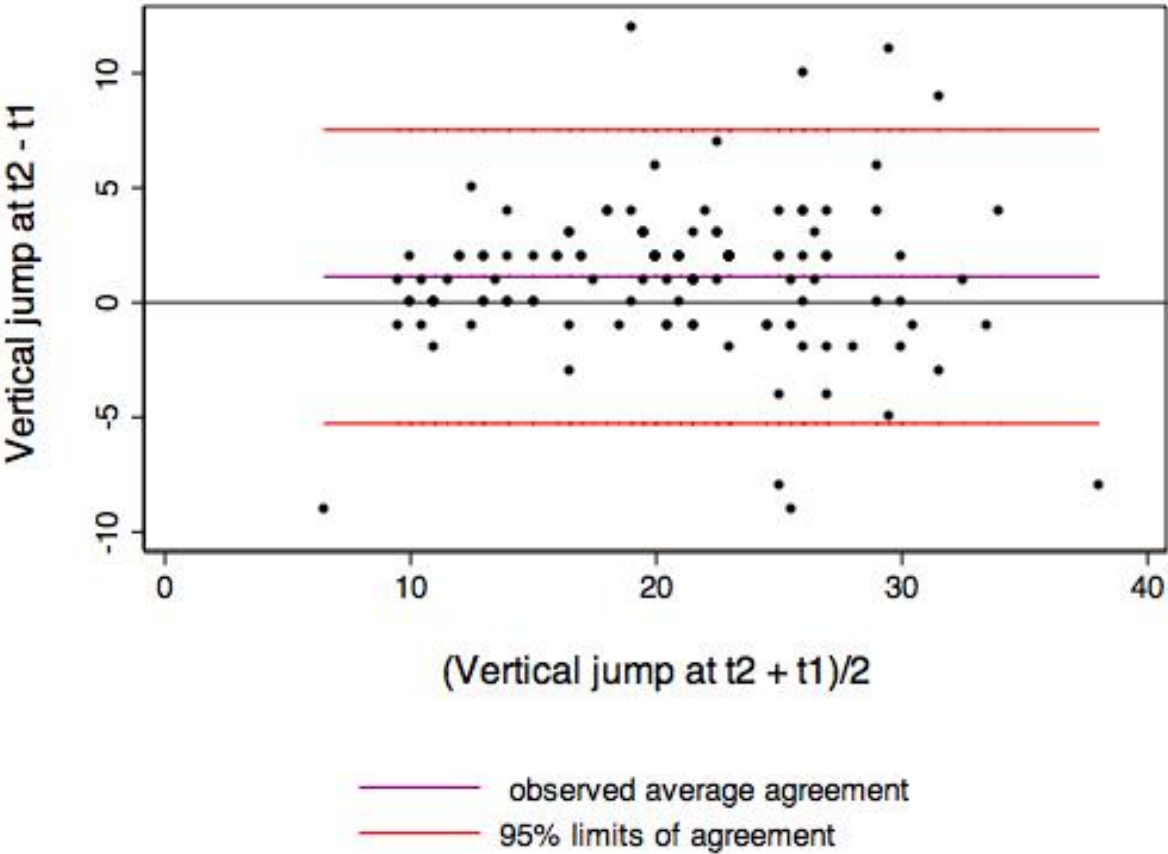


Figure 32. Vertical jump height, 1st grade, 2011

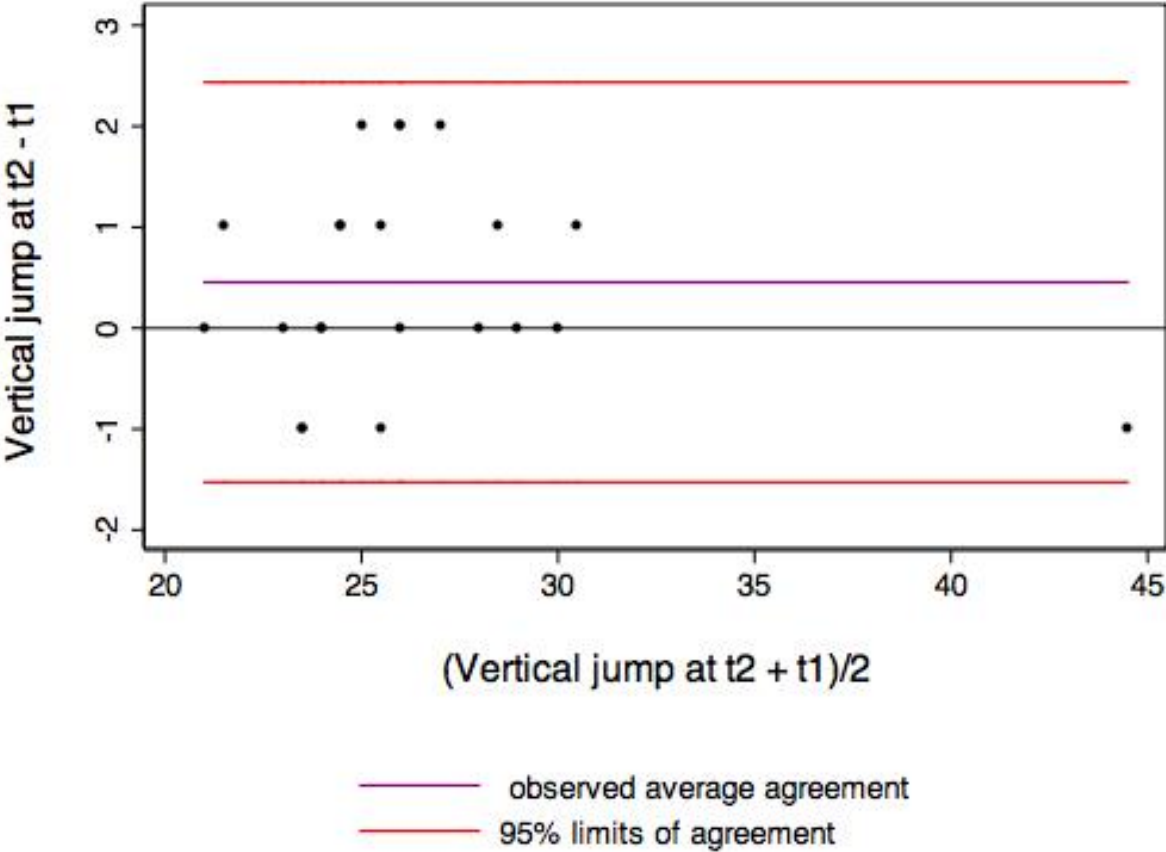


Figure 33. Vertical jump height, 2nd grade, 2011

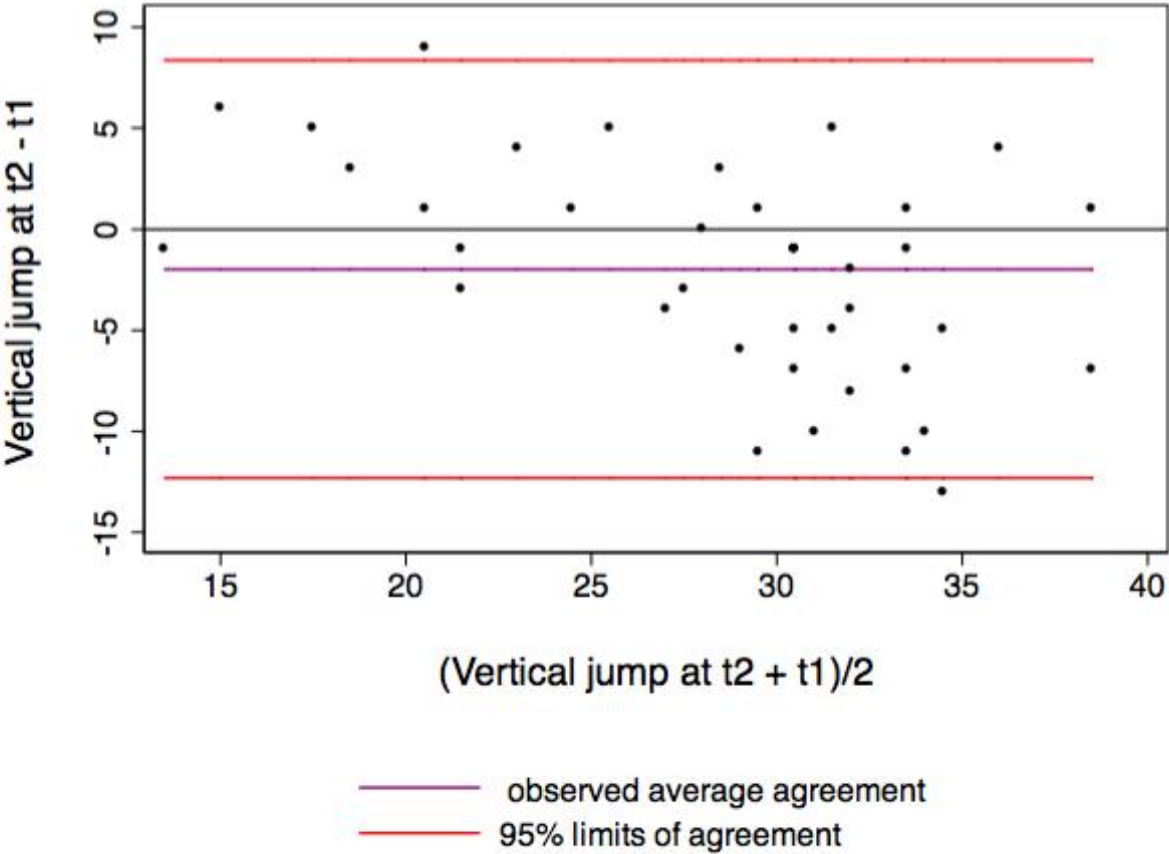


Figure 34. Vertical jump height, 3rd grade, 2011

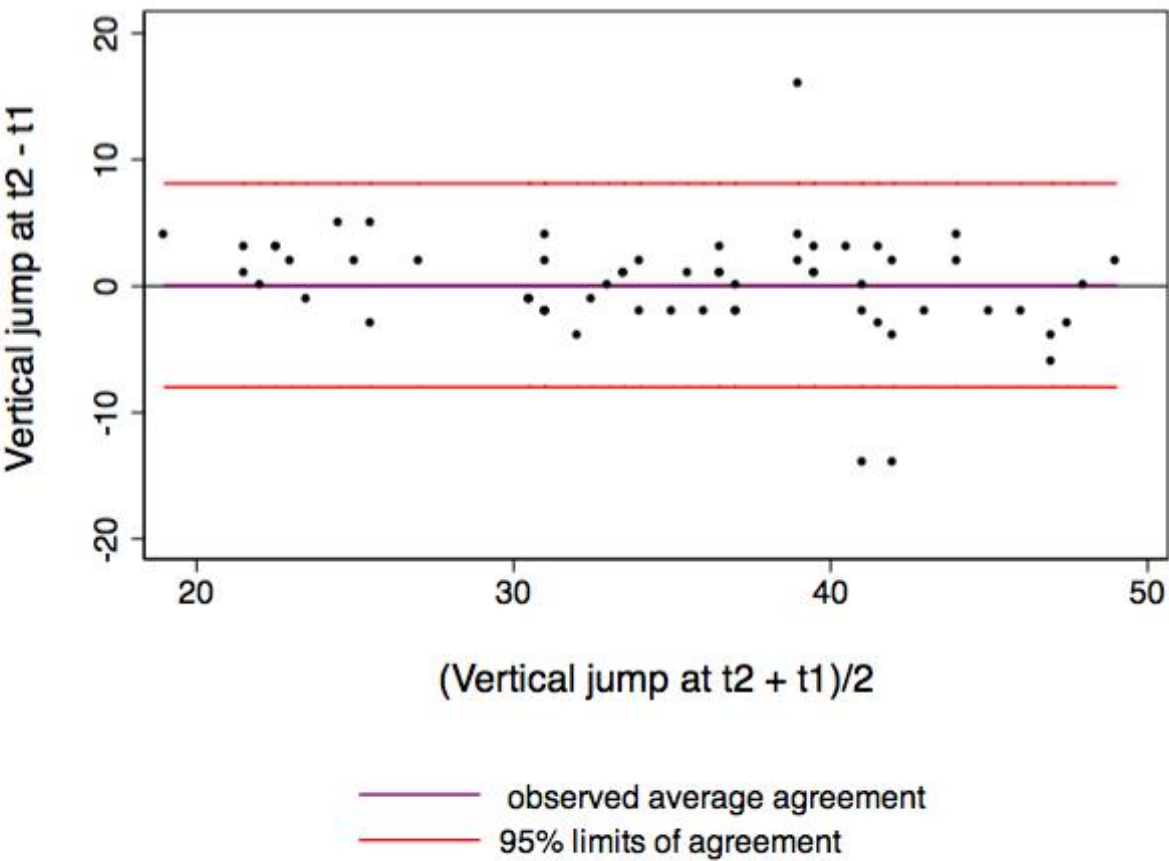


Figure 35. Vertical jump height, 4th grade, 2011

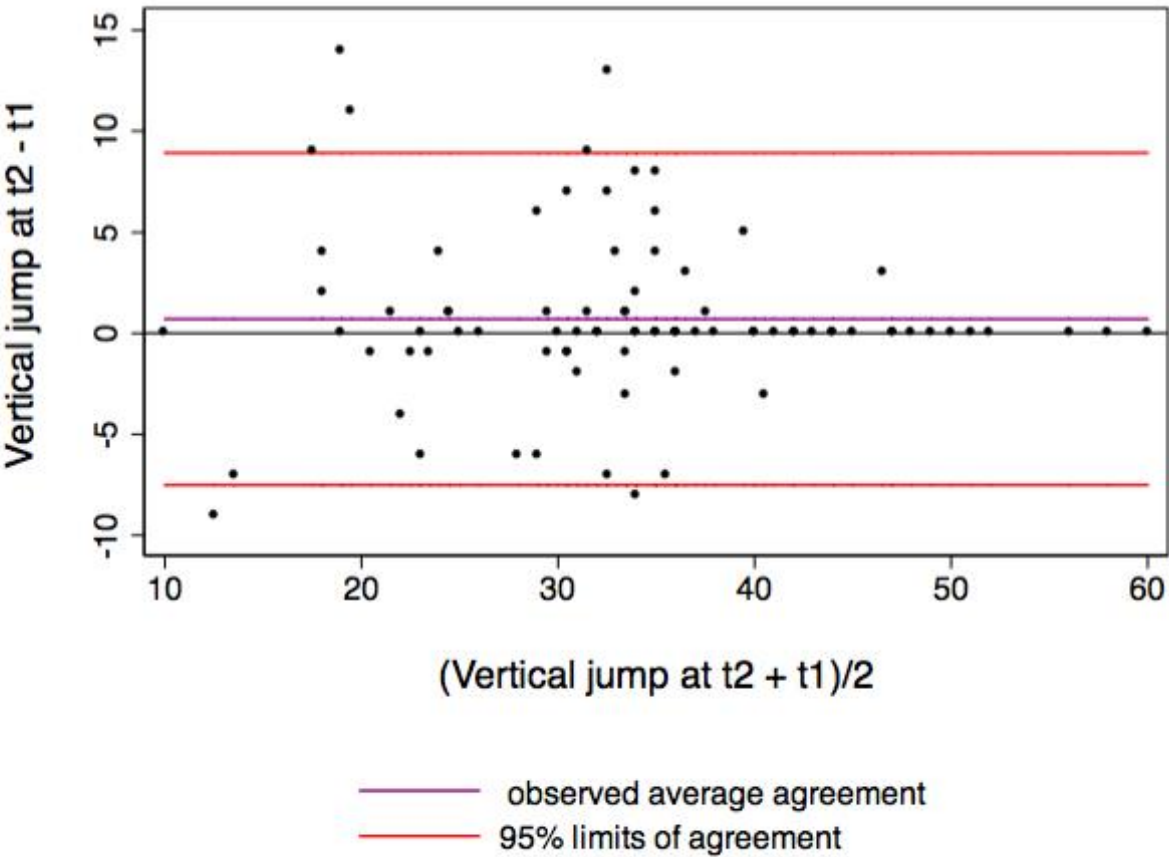


Figure 36. Vertical jump height, 5th grade, 2011

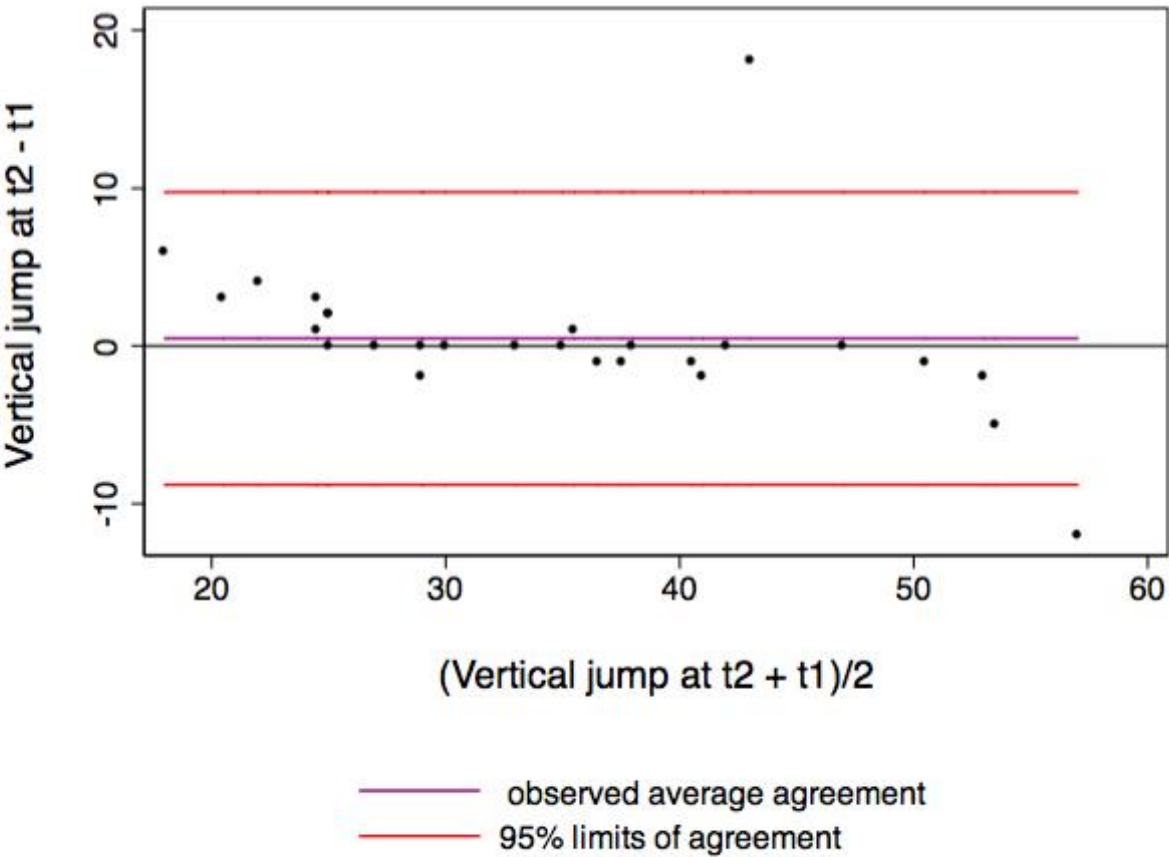


Figure 37. Vertical jump height, 6th grade, 2011

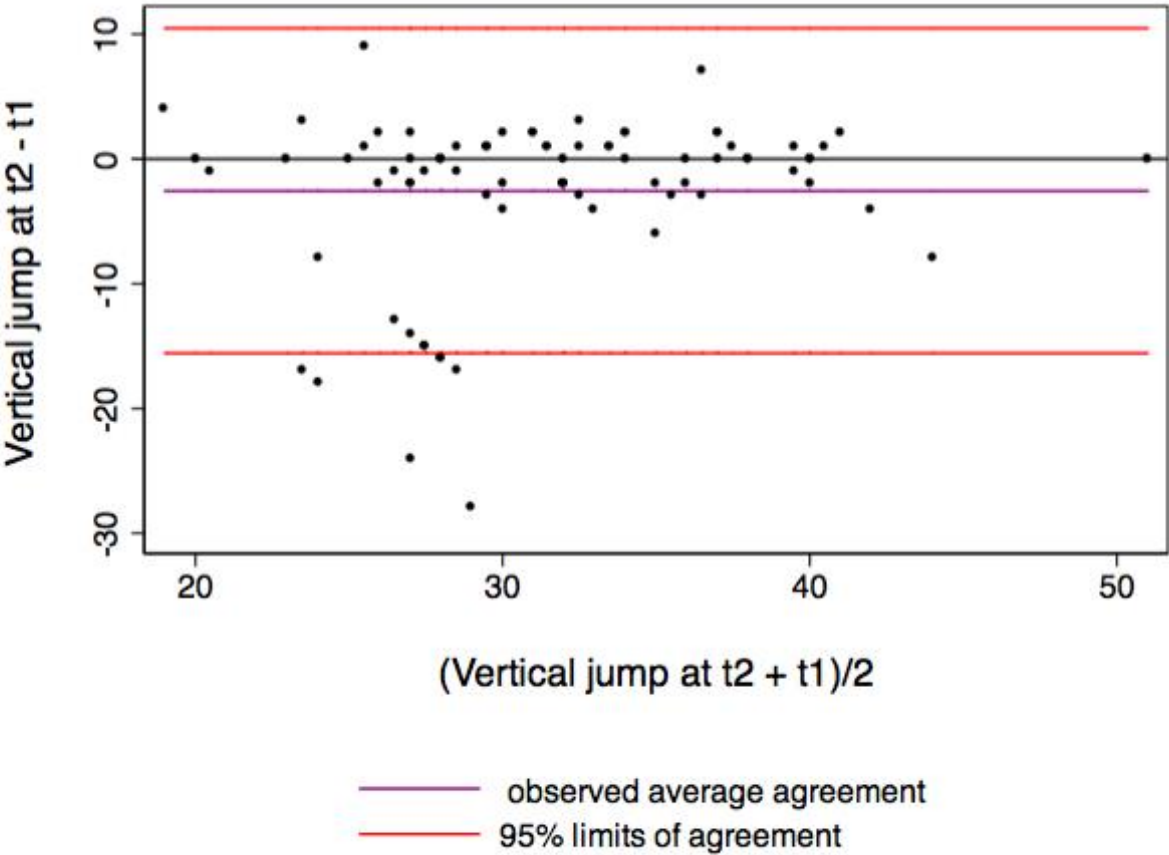


Figure 38. Vertical jump height, 7th grade, 2011

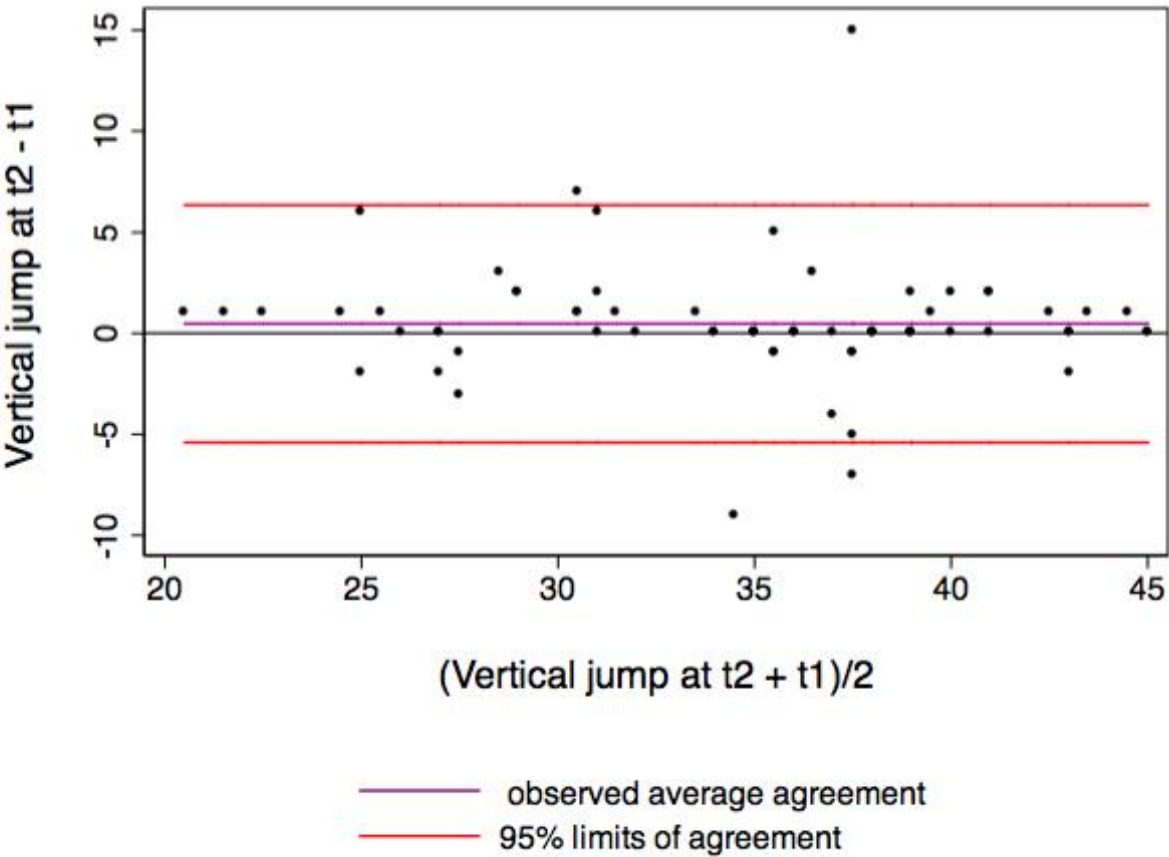


Figure 39. Vertical jump height, 8th and 9th grades combined, 2011

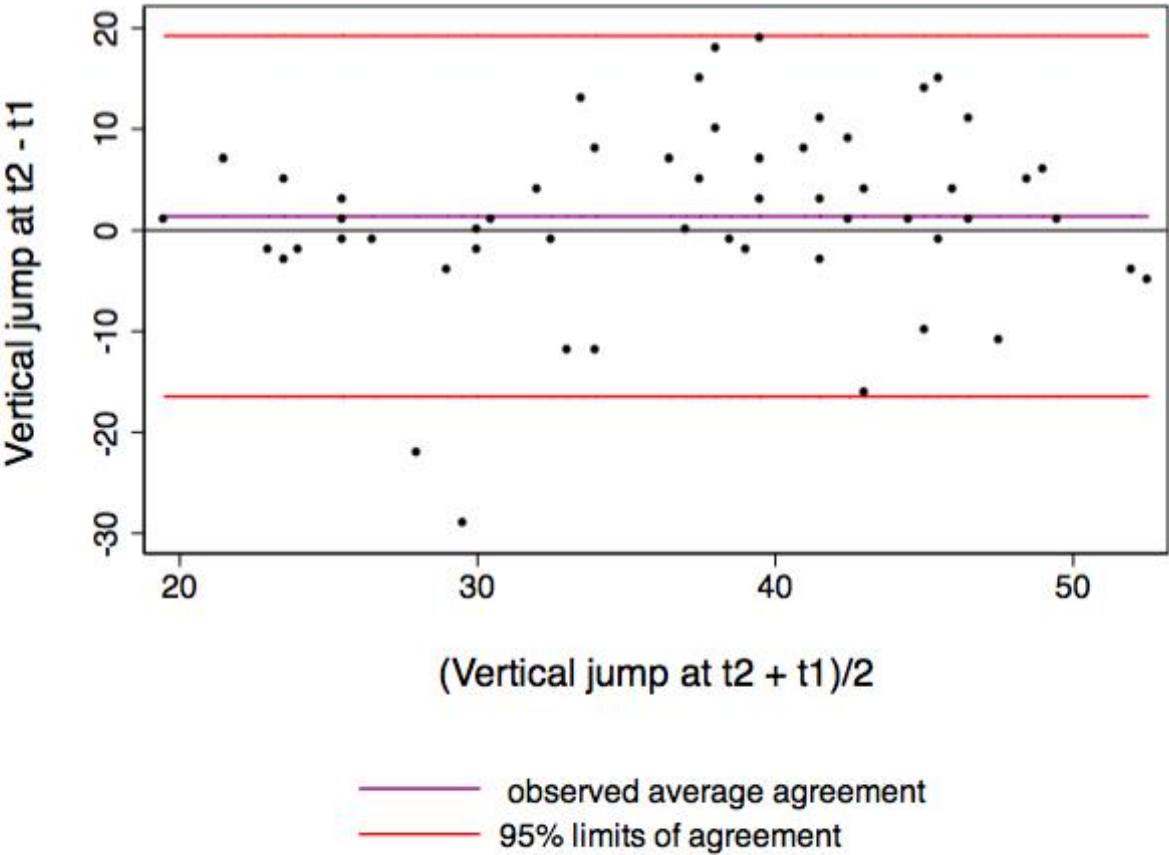


Figure 40. The Andersen test, all grades, 2011

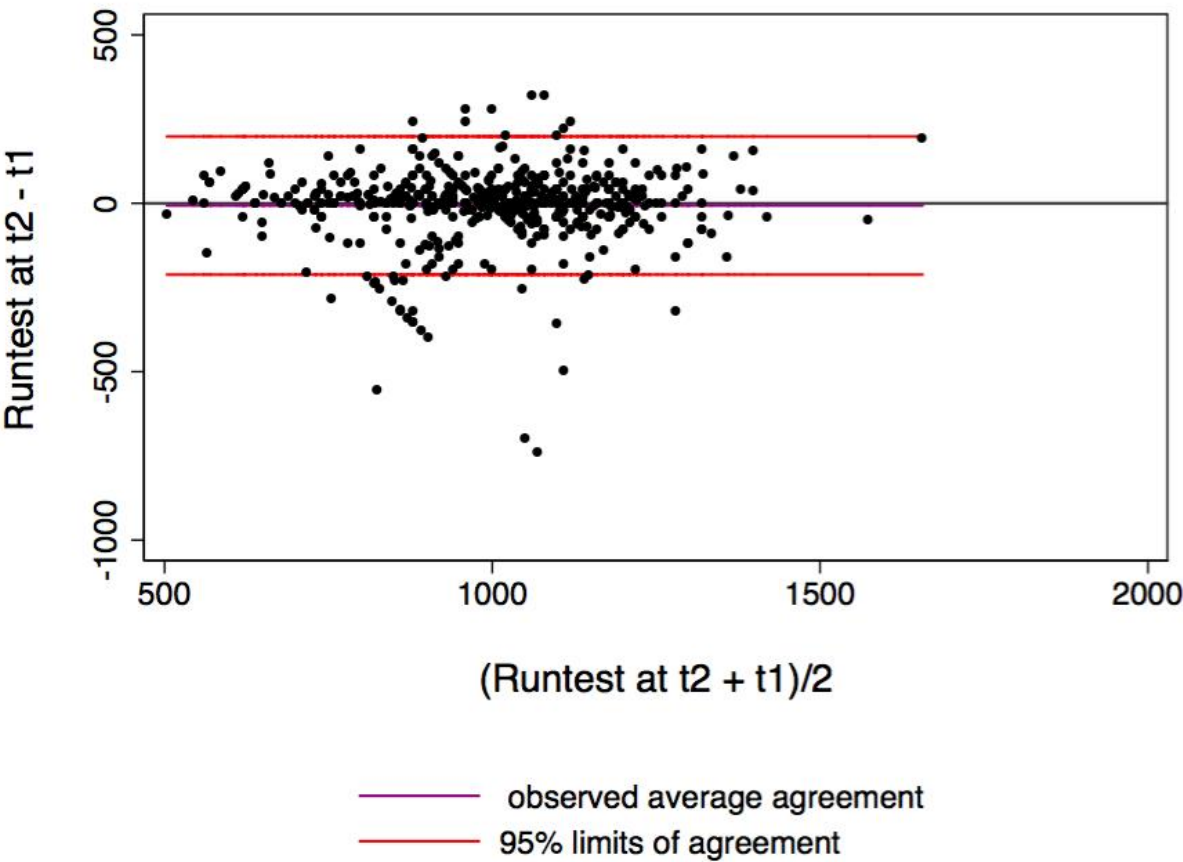


Figure 41. The Andersen test, 0th grade, 2011

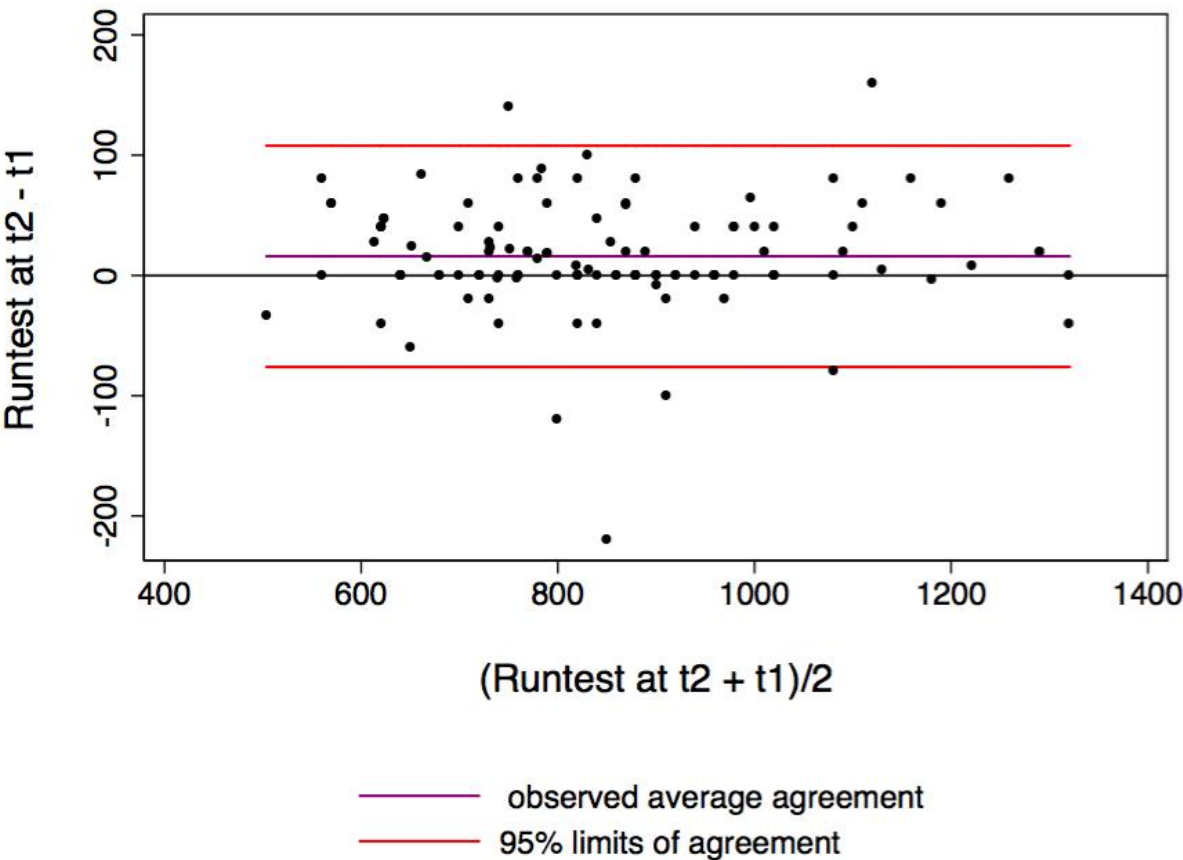


Figure 42. The Andersen test, 1st grade, 2011

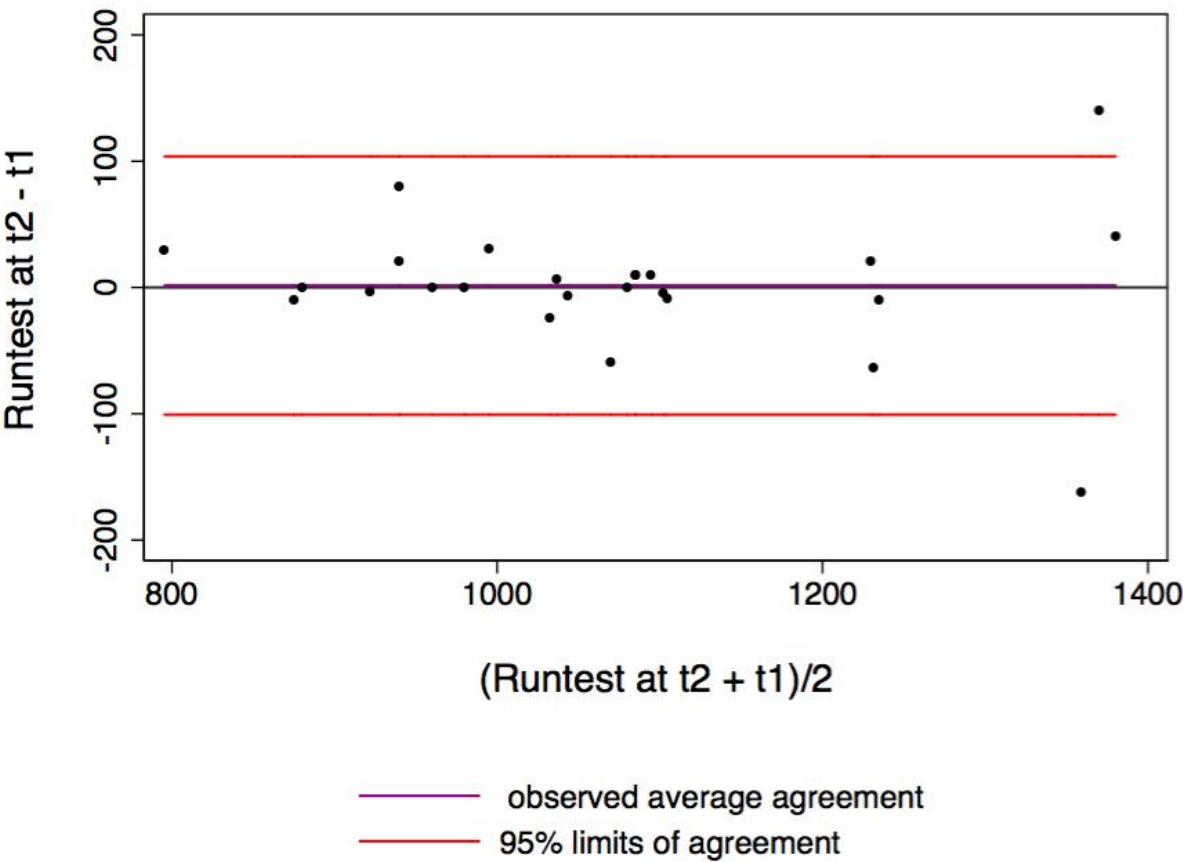


Figure 43. The Andersen test, 2nd grade, 2011

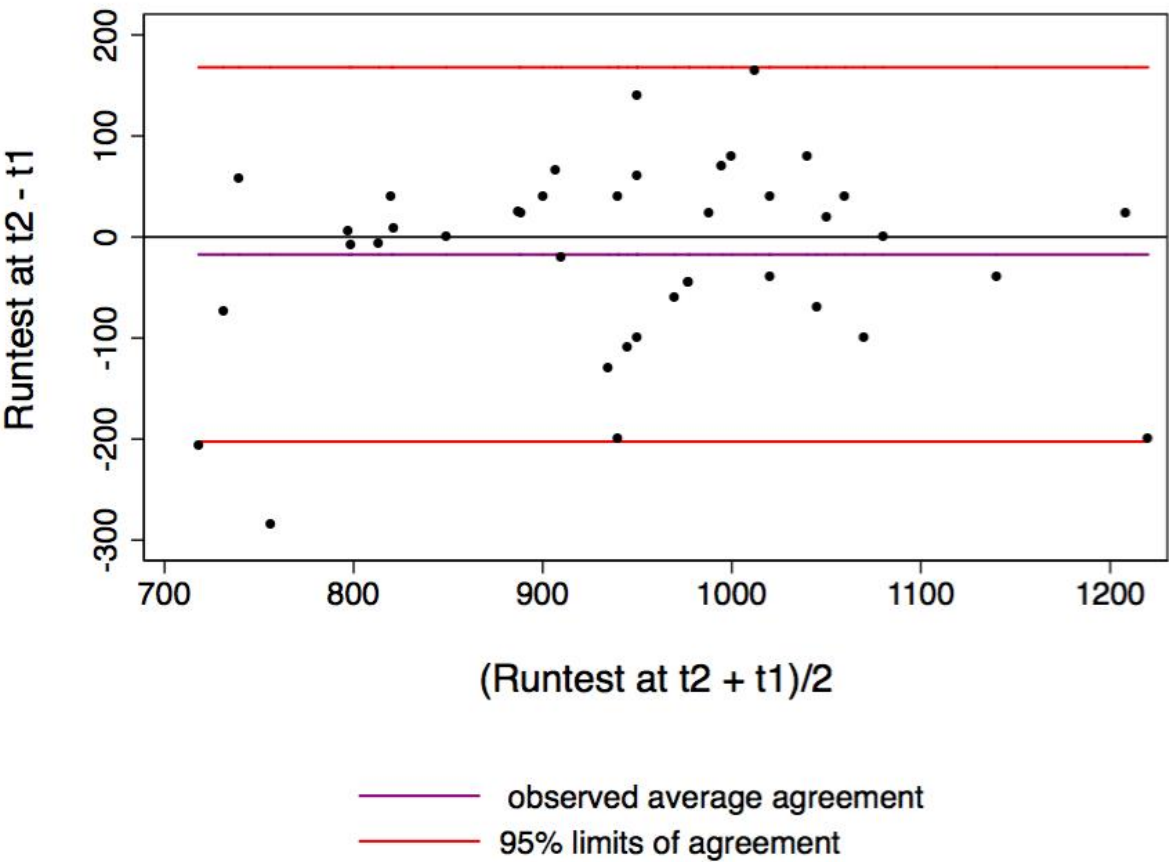


Figure 44. The Andersen test, 3rd grade, 2011

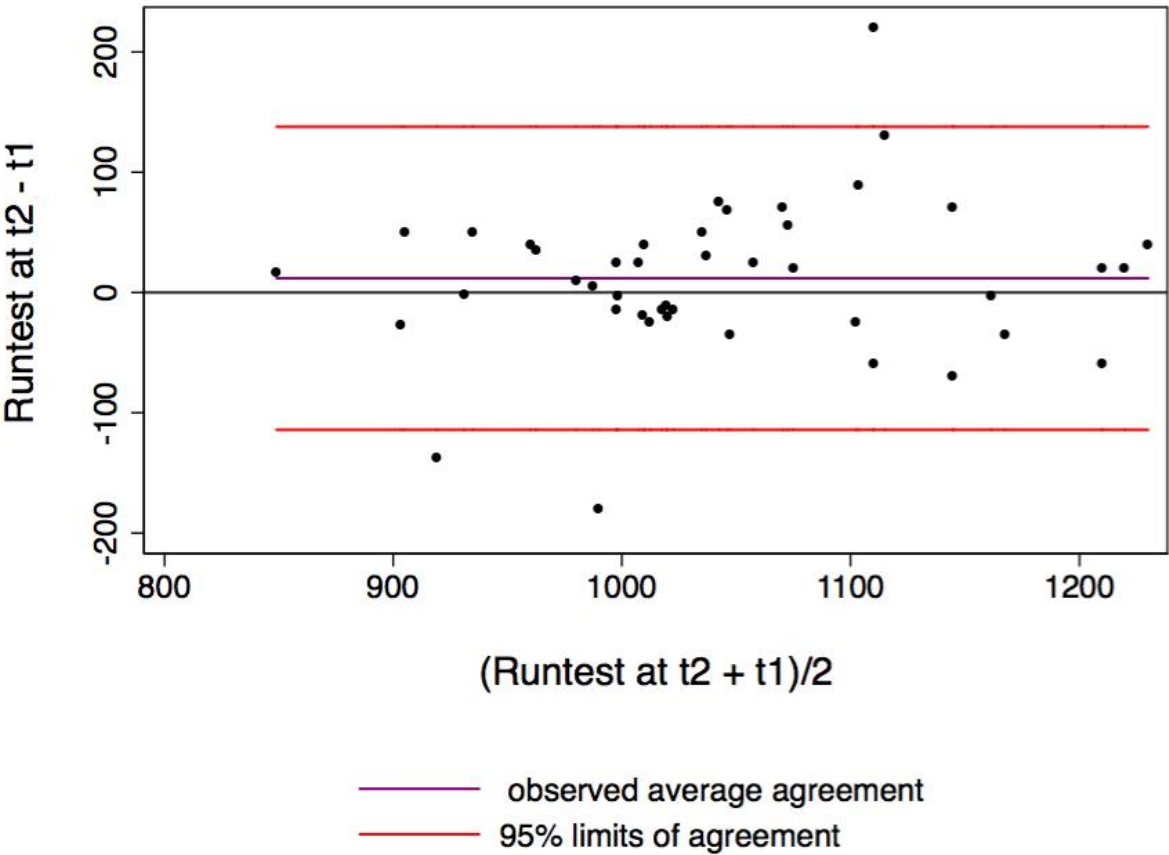


Figure 45. The Andersen test, 4th grade, 2011

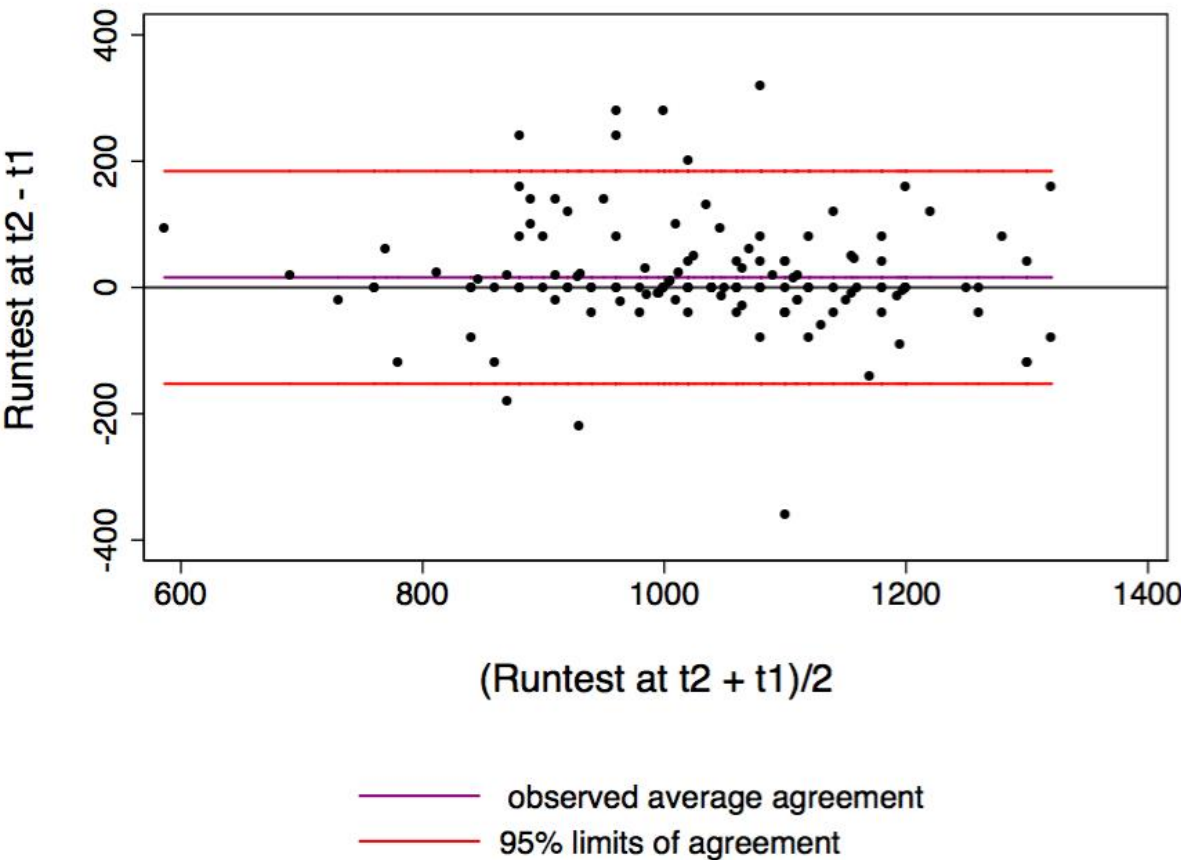


Figure 46. The Andersen test, 5th grade, 2011

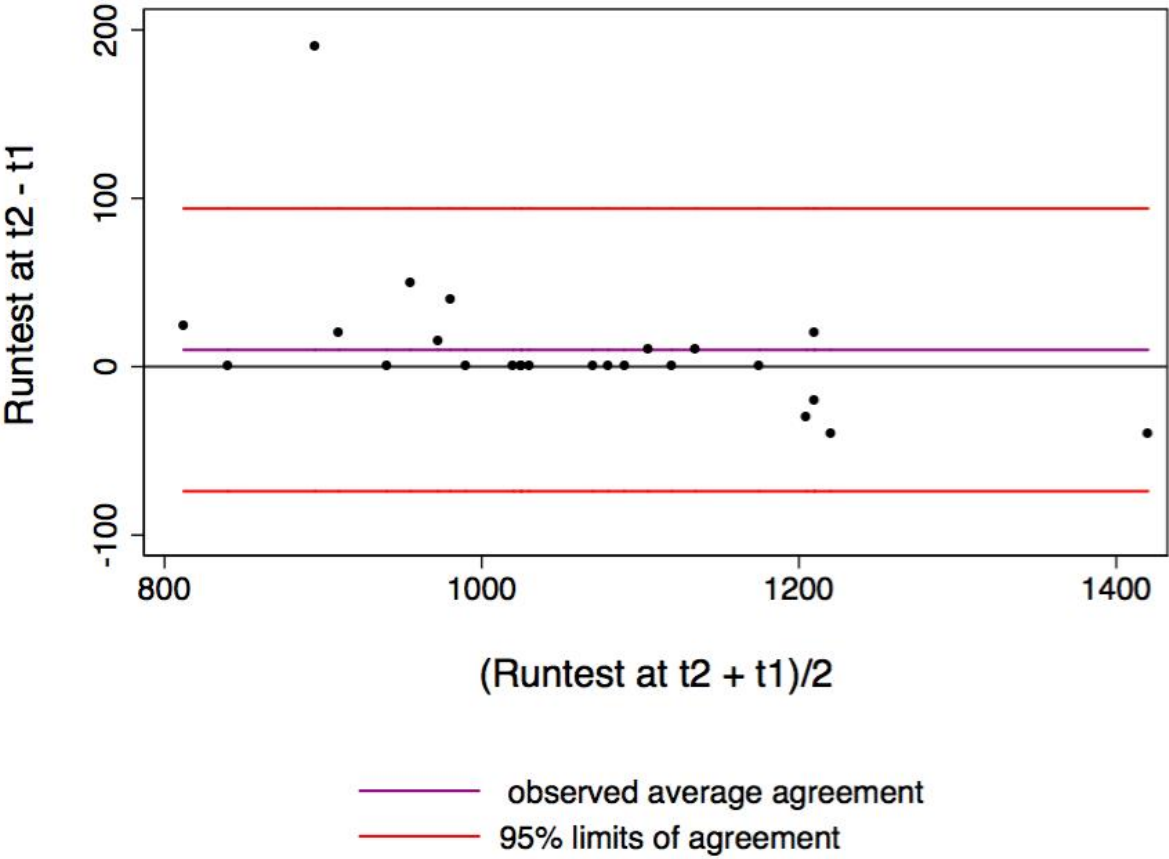
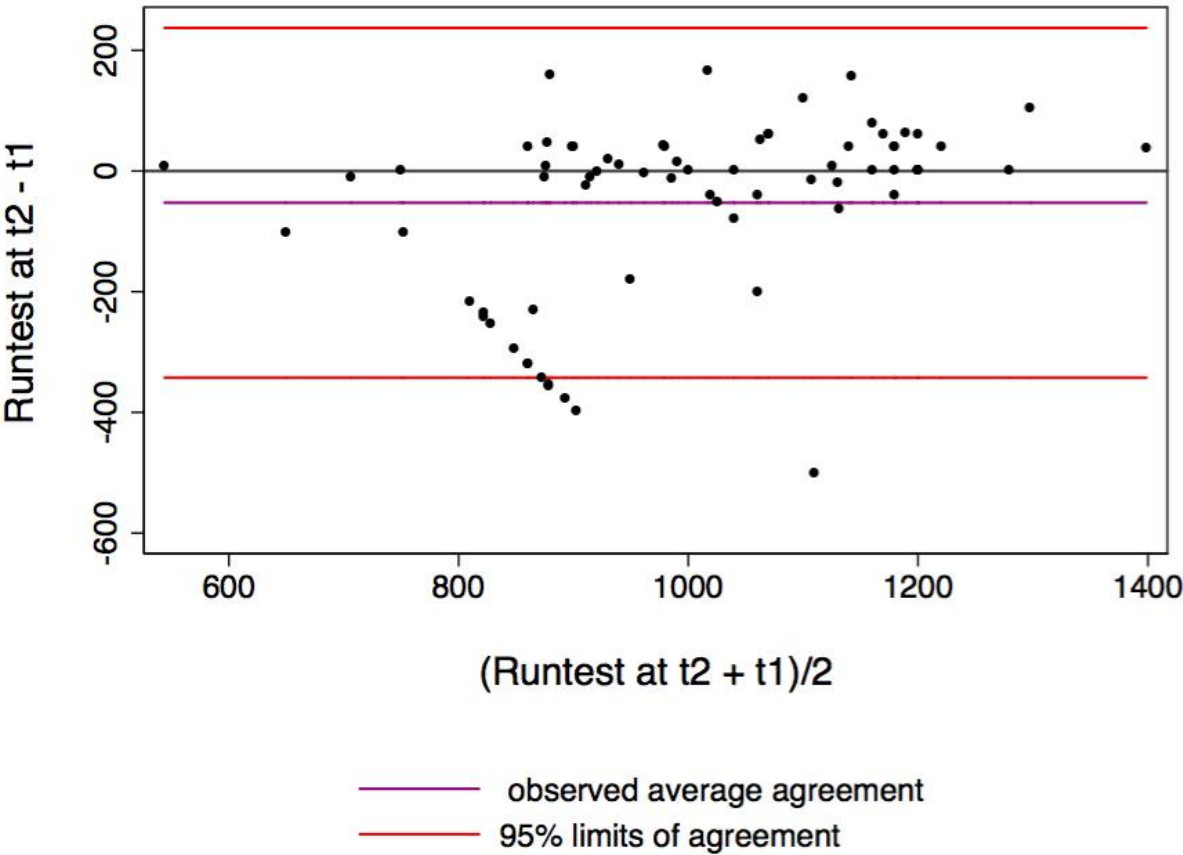


Figure 47. The Andersen test, 6th grade, 2011



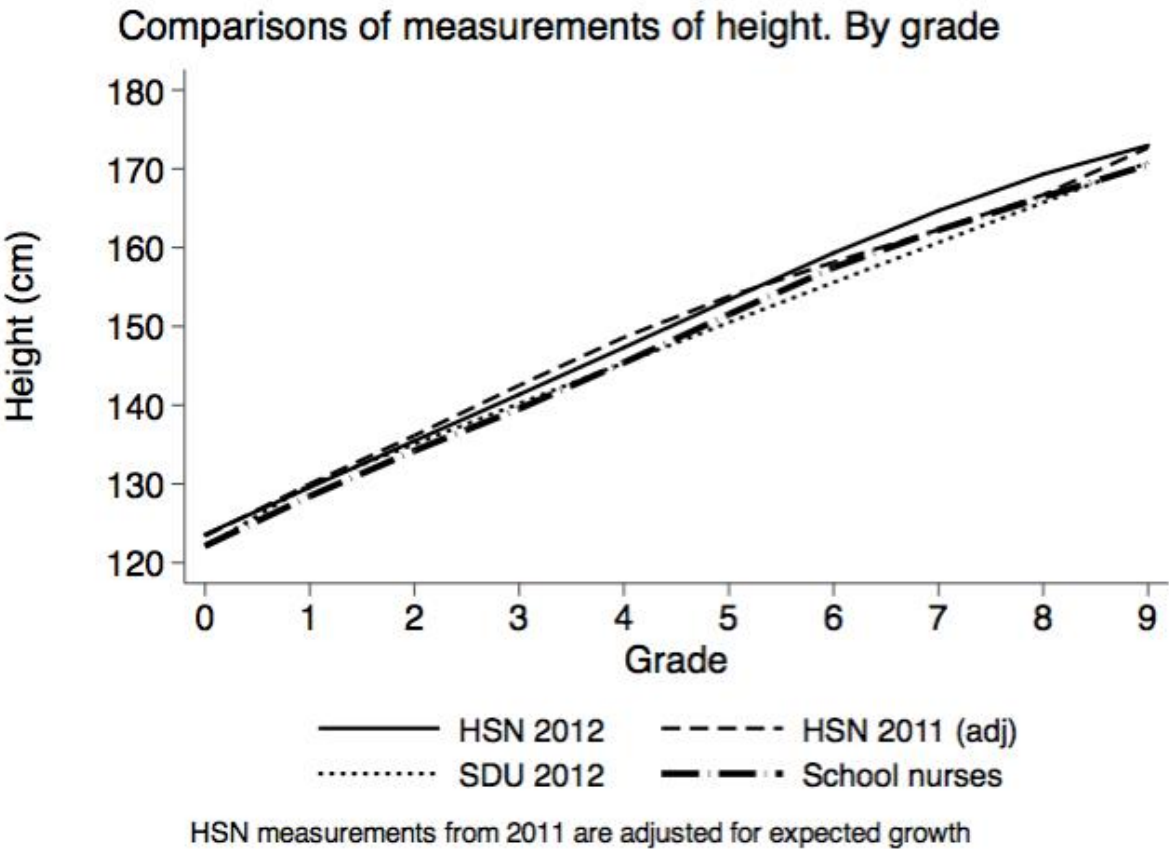
APPENDIX 2: MEAN DIFFERENCES (SD) AND INTRA-OBSERVER RELIABILITY (ρ_c) IN ANTHROPOMETRIC MEASUREMENTS AND PHYSICAL FITNESS TEST RESULTS OBTAINED IN 2012 TWO DAYS APART BY RESEARCHERS FROM THE UNIVERSITY OF SOUTHERN DENMARK (SDU)

Table 1.

	Grades							
	0 th – 3 rd		4 th – 6 th		7 th – 9 th		All	
	(n = 57)		(n = 57)		(n = 40)		(n = 154)	
	Mean (SD)	(ρ_c)	Mean (SD)	(ρ_c)	Mean (SD)	(ρ_c)	Mean (SD)	(ρ_c)
Height (cm)	0.06 (0.72)	0.99	0.25 (2.77)	0.99	0.02 (3.05)	0.99	0.12 (2.32)	0.99
Weight (kilograms)	-0.12 (0.63)	0.99	-0.01 (1.00)	0.99	-0.20 (1.06)	0.99	-0.1 (0.90)	0.99
Waist circumference (cm)	0.32 (3.48)	0.93	-0.61 (4.94)	0.88	-0.28 (3.53)	0.93	-0.18 (4.10)	0.92
Vertical jump height (cm)	-0.61 (3.40)	0.82	0.89 (4.84)	0.75	1.45 (8.07)	0.88	0.48 (5.48)	0.91
Andersen test (m)	-2.38 (107.6)	0.68	-0.8 (151.4)	0.54	-11.8 (173.3)	0.20	-4.0 (142.6)	0.53

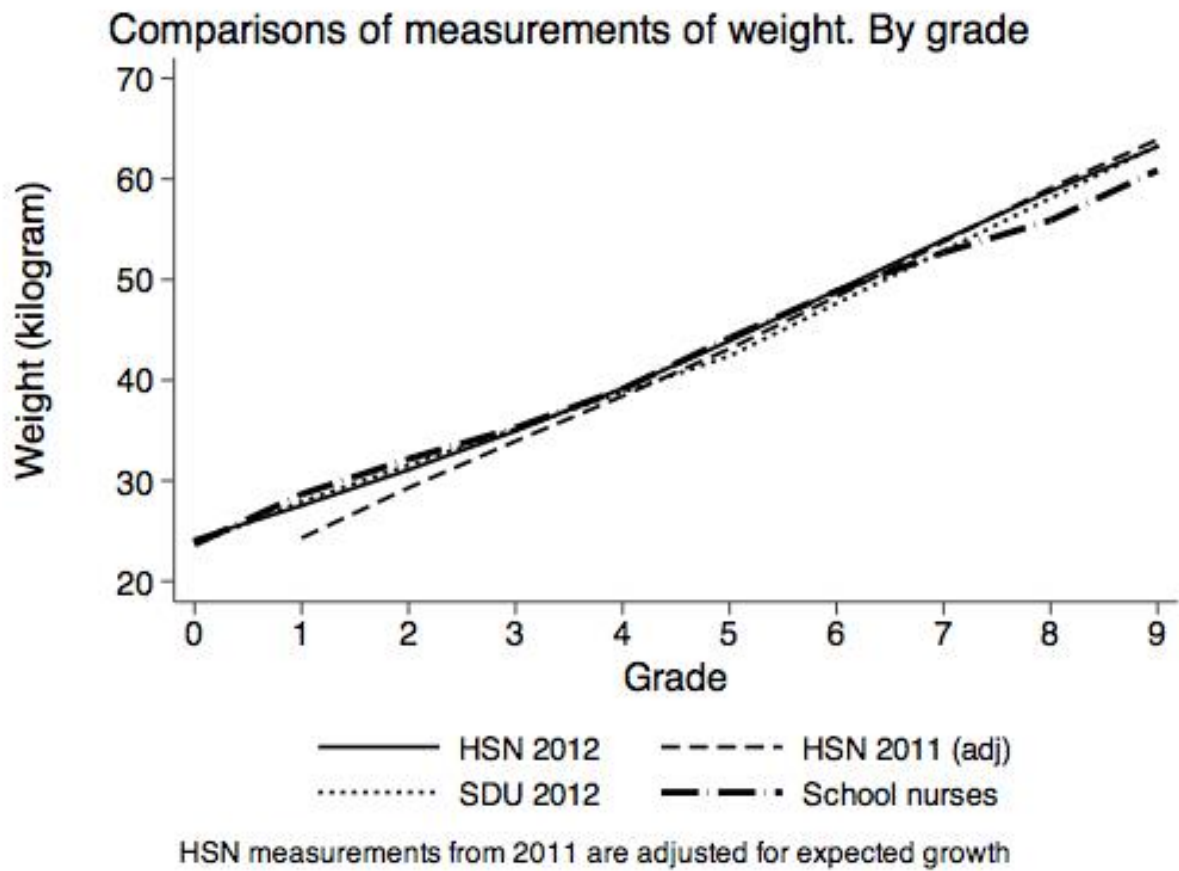
**APPENDIX 3: COMPARISON OF ANTHROPOMETRIC MEASUREMENTS
AND PHYSICAL FITNESS TEST. BY GRADE.**

Figure 1: Height



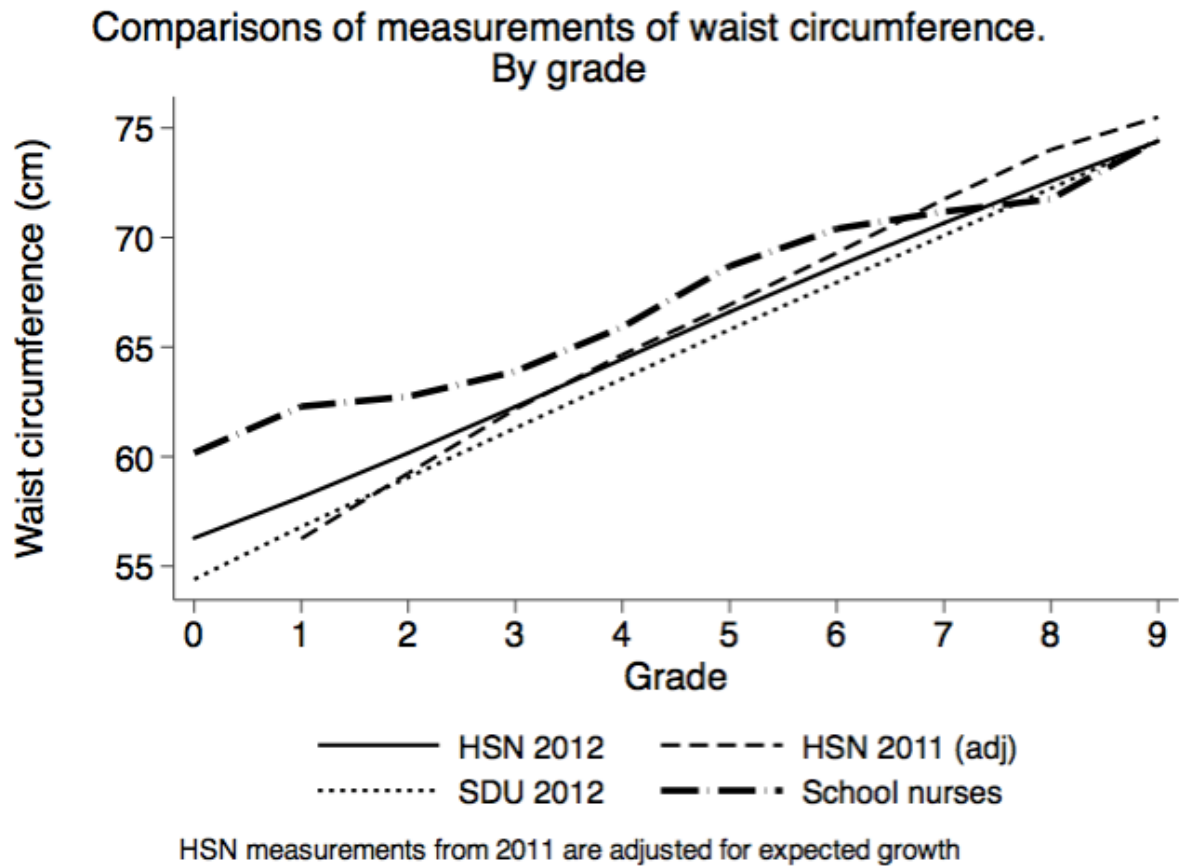
Note: School nurses carried out the measurements for children in grades 0, 1, 5 and 9. Data points are connected for clarity of presentation.

Figure 2: Weight



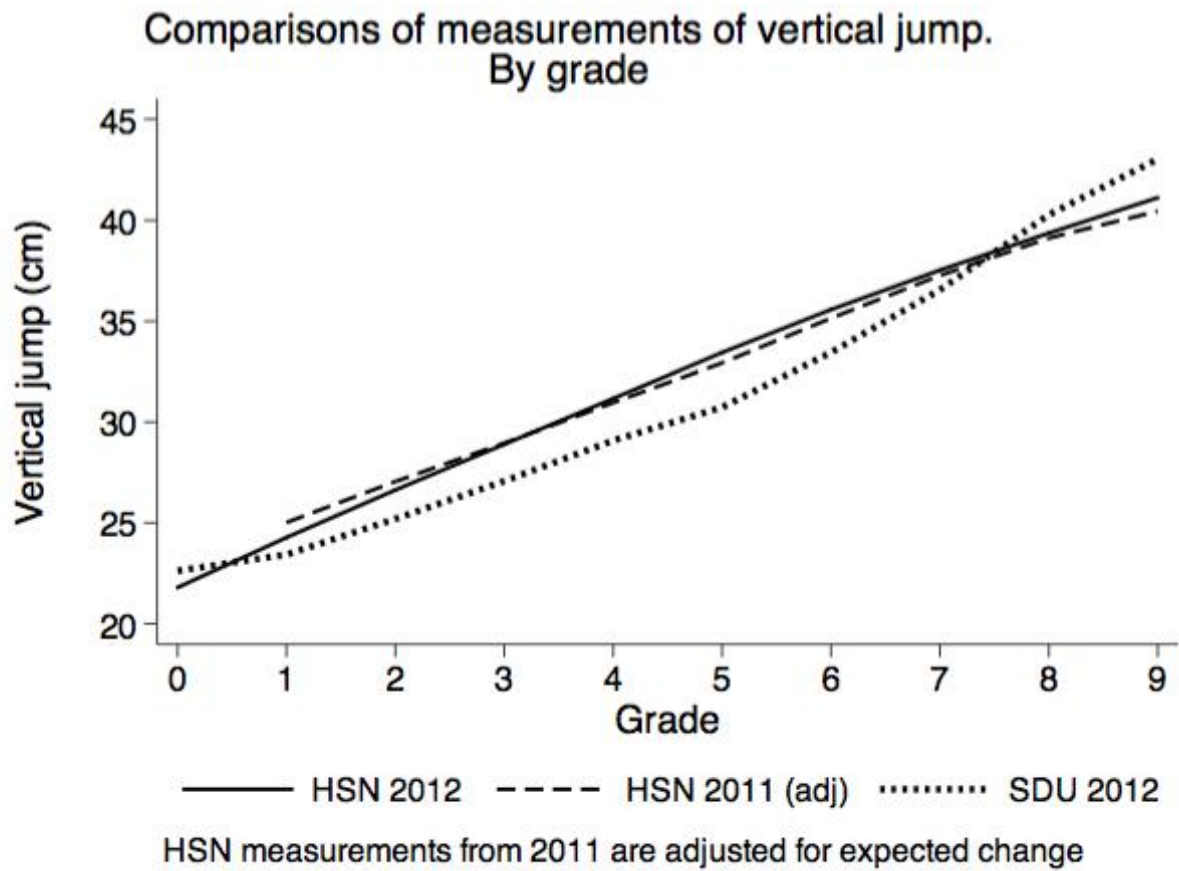
Note: School nurses carried out the measurements for children in grades 0, 1, 5 and 9. Data points are connected for clarity of presentation.

Figure 3: Waist circumference



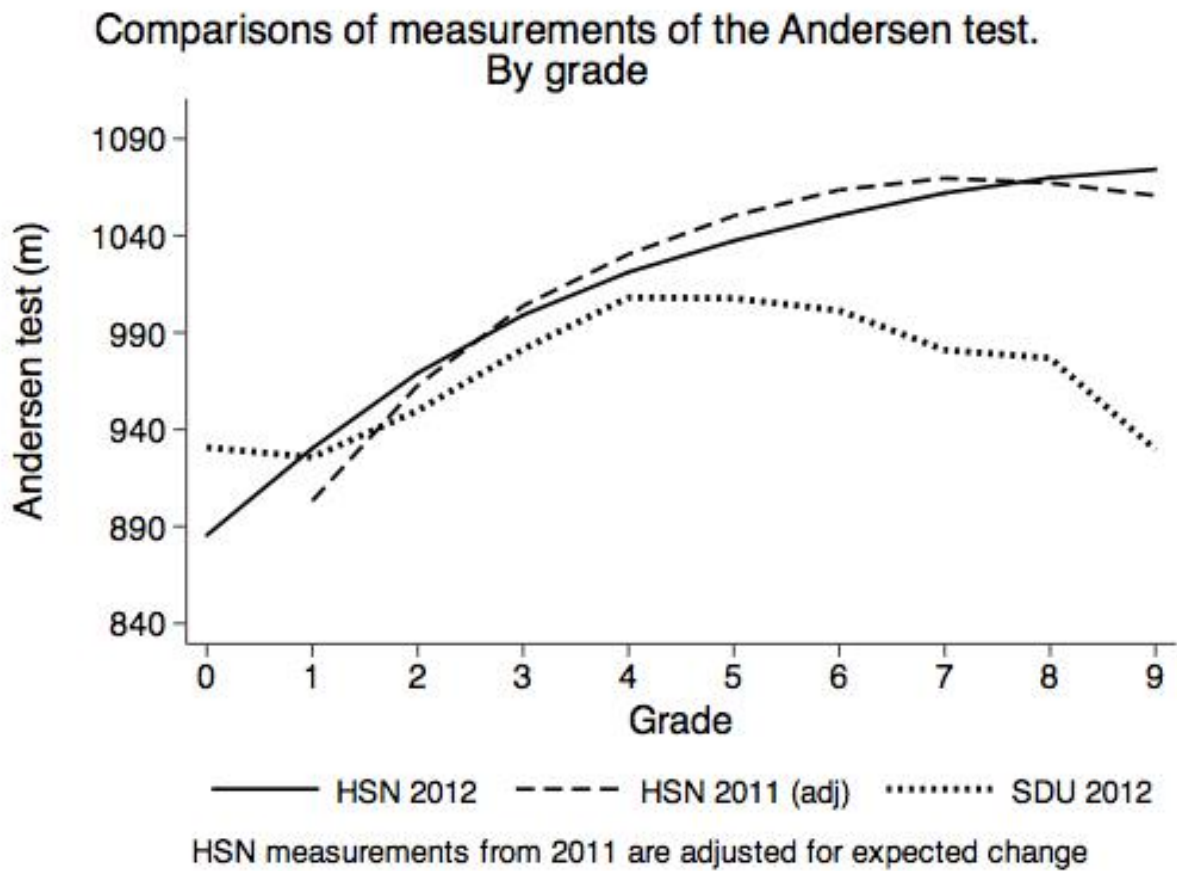
Note: School nurses carried out the measurements for children in grades 0, 1, 5 and 9. Data points are connected for clarity of presentation.

Figure 4: Vertical jump



Note: School nurses did not carry out the measurements of vertical jump height.

Figure 5: Andersen test



Note: School nurses did not carry out the measurements of the Andersen test.

APPENDIX 4 – ATTRITION, HSN STUDY

Table 1. Number of observations, number of participants and percentage of attrition after data cleaning. Numbers cover the entire study period from 2009 to 2012

	Height	Weight	WC	Vertical jump height	Andersen test
Initial database ^a					
Observations	127,486	126,969	125,009	121,206	116,658
Participants	68,551	68,469	67,803	67,162	64,808
Cleaned database ^b					
Observations	119,184	124,442	111,743	109,312	112,325
Participants	65,251	67,406	63,050	62,447	62,855
<i>Attrition</i>	<i>5.1%</i>	<i>1.5%</i>	<i>7.0%</i>	<i>7.0%</i>	<i>3.0%</i>

a) After exclusion of duplicate observations and observations without identification number or information about grade

b) After exclusion of observations with differences greater than ± 2.57 standard deviations, observations with errors in change between the two measurement points, and observations with missing date of measurement

APPENDIX 5: ODDS RATIO (OR) AND 95% CONFIDENCE INTERVAL (CI) FOR MISSING VALUES OF MEASUREMENTS OF HEIGHT, WEIGHT, WC, VERTICAL JUMP HEIGHT AND THE ANDERSEN TEST

Table 1. Odds ratio (OR) and 95% confidence interval (CI) for missing values among girls, by grade. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year

Variables	Height missing		Weight missing		WC missing		Vertical jump height missing		Andersen test missing	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
0 th	ref		Ref		ref		ref		ref	
1 st	1.3	1.0-1.6*	1.1	0.8-1.7	1.3	1.0-1.6*	1.2	1.0-1.5	0.8	0.7-1.0
2 nd	1.5	1.1-1.9*	1.4	0.9-2.2	1.4	1.1-1.8*	1.3	1.1-1.5*	0.6	0.5-0.8*
3 rd	1.3	1.0-1.7	1.1	0.8-1.6	1.2	0.9-1.6	1.2	0.9-1.6	0.8	0.6-1.1
4 th	1.7	1.3-2.3*	1.8	1.2-2.8*	1.6	1.3-2.1*	1.5	1.1-1.9*	0.6	0.5-0.8*
5 th	1.6	1.2-2.1*	1.4	0.8-2.1	1.7	1.3-2.2*	1.5	1.2-1.9*	0.7	0.5-0.9*
6 th	2.2	1.6-2.9*	1.6	1.0-2.4*	2.1	1.6-2.7*	1.8	1.4-3.0*	0.9	0.7-1.2
7 th	2.7	2.1-3.6*	1.6	1.1-2.4*	2.8	2.2-3.6*	2.4	1.8-3.0*	1.1	0.8-1.5
8 th	3.9	2.9-5.2*	2.3	1.6-3.5*	3.6	2.9-4.7*	3.0	2.2-4.0*	1.2	0.9-1.8
9 th	5.1	3.7-7.2*	2.3	1.4-3.8*	4.5	3.3-6.3*	3.6	2.6-5.0*	1.3	0.9-1.9
<i>n with missing</i>	6,113		3,158		9,742		10,842		9,283	

*) p < 0.05

Table 2. Odds ratio (OR) and 95% confidence interval (CI) for missing values among boys, by grade. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year

Variables	Height missing		Weight missing		WC missing		Vertical jump height missing		Andersen test missing	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
0 th	ref		Ref		ref		ref		ref	
1 st	1.3	1.0-1.7*	1.1	0.8-1.7	1.3	1.0-1.7*	1.3	1.0-1.6*	0.7	0.6-0.9*
2 nd	1.7	1.3-2.2*	1.4	1.0-2.1	1.6	1.3-2.1*	1.4	1.1-1.8*	0.6	0.4-0.7*
3 rd	1.5	1.1-2.0*	1.0	0.7-1.5	1.4	1.1-1.9*	1.3	1.0-1.7*	0.8	0.6-1.1
4 th	2.0	1.5-2.8*	1.9	1.2-2.9*	2.0	1.6-2.5*	1.6	1.2-2.1*	0.6	0.4-0.8*
5 th	1.6	1.2-2.2*	1.4	0.9-2.1	1.8	1.4-2.3*	1.5	1.2-1.9*	0.7	0.5-0.9
6 th	1.7	1.3-2.2*	1.5	1.0-2.3	2.0	1.5-2.6*	1.6	1.3-2.0*	0.9	0.6-1.2
7 th	2.0	1.5-2.6*	1.8	1.2-2.6*	2.7	2.0-3.5*	2.0	1.5-2.6*	0.9	0.7-1.3
8 th	2.6	1.9-3.5*	2.0	1.4-2.9*	3.2	2.5-4.1*	2.3	1.7-3.2*	1.0	0.7-1.4
9 th	3.0	2.2-4.3*	2.8	1.2-2.9*	3.3	2.3-4.7*	2.6	1.8-3.8*	1.2	0.7-1.9
<i>n with missing</i>	5,487		3,187		9,302		10,633		9,179	

*) $p < 0.05$

Table 3. Grade-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC, vertical jump height and the Andersen test among girls, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status, grade and school year

Deciles	WC missing		Vertical jump height missing		Andersen test missing	
	OR	95% CI	OR	95% CI	OR	95% CI
1 st		ref		ref		ref
2 nd	0.7	0.6-0.9*	1.0	0.9-1.2	0.8	0.7-0.9*
3 rd	0.8	0.7-1.0	1.1	0.9-1.3	0.9	0.8-1.0*
4 th	0.7	0.6-0.9*	0.9	0.8-1.1	0.9	0.8-1.0*
5 th	1.0	0.8-1.2	0.9	0.8-1.0	0.8	0.7-0.9*
6 th	0.9	0.7-1.1	1.1	0.9-1.2	0.9	0.8-1.0*
7 th	1.3	1.0-1.5*	1.1	0.9-1.3	0.9	0.8-1.0
8 th	1.4	1.1-1.7*	1.1	0.9-1.3	0.9	0.8-1.1
9 th	1.5	1.2-1.8*	1.2	1.0-1.4*	1.0	0.9-1.1
10 th	2.9	2.4-3.5*	1.3	1.1-1.5*	1.2	1.1-1.3*
<i>n with missing</i>		2,637		4,088		8,298

*) p < 0.05

Table 4. Grade-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC, vertical jump height and the Andersen test among boys, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status, grade and school year

Deciles	WC missing		Vertical jump height missing		Andersen test missing	
	OR	95% CI	OR	95% CI	OR	95% CI
1 st	ref		ref		ref	
2 nd	0.7	0.5-0.8*	0.9	0.8-1.0	0.9	0.8-1.0
3 rd	0.8	0.7-1.0	1.1	0.9-1.2	0.9	0.9-1.0
4 th	0.8	0.7-1.0	1.0	0.8-1.1	0.9	0.8-1.0
5 th	0.9	0.7-1.1	0.9	0.8-1.0	0.9	0.8-1.0*
6 th	1.0	0.8-1.3	1.0	0.8-1.1	1.0	0.9-1.1
7 th	1.2	1.0-1.4*	1.0	0.8-1.1	0.9	0.9-1.0
8 th	1.2	1.0-1.5*	1.0	0.8-1.1	1.0	0.9-1.1
9 th	1.8	1.5-2.1*	1.1	0.9-1.2	1.1	1.0-1.3*
10 th	2.9	2.4-3.4*	1.1	1.0-1.4*	1.2	1.1-1.4*
<i>n with missing</i>	2,930		4,613		8,456	

*) p < 0.05

Table 5. Grade- and gender-adjusted odds ratio (OR) and 95% confidence interval (CI) for missing values of anthropometric and fitness measurements carried out by schools, by children's immigrant status, parent's educational level and parents' employment status, 2009--2012^c, (n = 130.787)

Variables	Height missing		Weight missing		WC missing		Vertical jump height missing		Andersen test missing	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Western immigrants	1.2	1.0-1.5*	1.3	1.0-1.6*	1.2	1.0-1.4*	1.1	1.0-1.3	1.0	0.9– 1.1
Non-western immigrants	1.2	1.2-1.4*	0.9	0.8-1.2	1.2	1.0-1.3*	1.1	0.9-1.2	1.1	0.9-1.3
Father unemployed ^b	1.1	1.0-1.2	1.2	1.0-1.3*	1.1	1.0-1.2*	1.1	1.0-1.4	1.2	1.0-1.3*
Mother unemployed ^b	1.1	1.0-1.2	1.1	1.1-1.2*	1.1	1.0-1.2*	1.1	1.0-1.1*	1.1	1.0-1.2*
Father's education ^a	1.0	0.9-1.1	1.0	0.9-1.1	1.0	0.9-1.0	1.0	1.0-1.1	1.0	0.9-1.1
Mother's education ^a	1.0	0.9-1.0	1.0	0.9-1.0	0.9	0.9-1.0*	1.0	0.9-1.0	1.0	0.9-1.1
Female	1.2	1.1-1.2*	1.0	1.0-1.1	1.1	1.0-1.1*	1.1	1.0-1.1*	1.0	1.0-1.1*
<i>n with missing</i>	<i>11,600</i>		<i>6,345</i>		<i>19,044</i>		<i>21,475</i>		<i>18,462</i>	

a) More than nine years of schooling

b) Temporarily or permanently out of work, with or without disability pension

c) Models are adjusted for school year

*) p < 0.05

APPENDIX 6. ATTRITION, ODENSE SUB-STUDY

Table 1. Mean results of anthropometry for children measured by both schools and school nurses (n = 4,027) and children measured by school nurses only (n = 2,590)

Grade	Height			Weight			WC			BMI		
	Both	Nurses only	Δ	Both	Nurses only	Δ	Both	Nurses only	Δ	Both	Nurses only	Δ
0 th	122.5	122.1	-0.4	24.0	23.7	-0.3	55.2	54.3	-0.9	15.9	15.8	-0.1
1 st	130.3	129.9	0.1	28.1	27.8	-0.3	57.8	57.4	-0.5	16.5	16.4	-0.1
5 th	150.4	150.7	0.8	41.7	43.6	2.1*	65.4	67.6	2.2*	18.3	19.9	0.6*
9 th	171.1	170.7	0.3	63.8	62.9	-0.9	76.0	73.3	-2.7	21.9	21.5	-0.4

Note: A negative difference indicates that results are higher among children measured by both schools and school nurses compared to results carried out by school nurses only.

* p < 0.05

Table 2. Odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC among girls, by children's BMI deciles. Adjusted for children's immigrant status, parents' educational level, parents' employment status and school year

Variables	Grade							
	0 th		1 st		5 th		9 th	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
1 st	ref		ref		ref		ref	
2 nd	1.3	0.8-2.1	0.8	0.4-1.6	0.3	0.1-0.9*	-	-
3 rd	1.1	0.7-1.8	0.8	0.6-1.2	0.5	0.2-1.2	6.4	0.3-118.0
4 th	1.4	0.9-2.1	0.7	0.4-1.2	0.2	0.1-0.4*	2.4	0.2-27.4
5 th	1.6	0.9-2.9	0.5	0.2-1.3	0.3	0.2-0.6*	6.6	0.4-103.2
6 th	1.4	0.6-3.3	0.8	0.4-1.7	0.4	0.2-0.7*	4.5	0.5-41.5
7 th	1.2	0.5-2.9	1.5	0.8-2.9	0.5	0.3-1.1	5.2	0.7-40.7
8 th	0.7	0.3-1.6	0.9	0.3-2.4	0.4	0.2-0.9*	5.0	0.6-42.5
9 th	0.6	0.1-3.4	0.6	0.3-1.5	0.5	0.2-0.9*	3.1	0.4-27.8
10 th	2.0	0.5-7.9	0.9	0.3-2.9	0.8	0.4-1.7	2.8	0.4-19.4
<i>n</i>	883		788		891		645	

*) p < 0.05

Table 3. Odds ratio (OR) and 95% confidence interval (CI) for missing values of measurements of WC among boys, by children's BMI deciles. Adjusted for children's immigrant status, parent's educational level, parent's employment status and school year

Variables	Grade							
	0 th		1 st		5 th		9 th	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
1 st	ref		ref		ref		ref	
2 nd	1.0	0.6-1.5	1.5	0.7-3.1	1.8	0.6-6.0	-	-
3 rd	0.7	0.5-1.2	0.9	0.4-2.1	1.4	0.3-6.3	-	-
4 th	0.7	0.4-1.2	1.2	0.6-2.2	2.0	0.5-7.3	3.6	0.5-25.0
5 th	0.6	0.3-1.1	1.2	0.5-2.8	1.5	0.4-5.2	1.5	0.3-7.6
6 th	1.0	0.6-1.6	0.8	0.5-1.4	2.5	0.6-10.0	2.0	0.7-6.0
7 th	0.7	0.3-1.8	0.7	0.3-1.6	2.1	0.5-6.6	2.1	1.3-3.4*
8 th	0.7	0.2-2.8	1.2	0.4-3.2	3.3	1.0-10.4*	0.7	0.5-1.0
9 th	1.3	0.6-3.2	0.8	0.3-2.3	3.3	1.0-11.6	1.6	1.0-2.5
10 th	0.2	0.0-2.4	3.6	1.4-9.5*	4.4	1.3-14.6*	-	-
<i>n</i>	931		840		935		700	

*) p < 0.05

Table 4. Odds ratio (OR) and 95% confidence interval (CI) for missing values of any anthropometric measurements carried out by schools, by child children's immigrant status, parents' educational level, parents' employment status and school year

Variables	Grade							
	0 th		1 st		5 th		9 th	
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Western immigrants	1.1	0.6-1.9	1.6	1.0-2.7	1.2	0.7-2.1	1.1	0.5-2.4
Non-Western immigrants	1.6	1.0-2.5*	2.1	1.2-2.9*	0.8	0.6-1.1	1.0	0.5-2.0
Female	1.1	0.9-1.3	0.8	0.6-1.0	1.0	0.8-1.2	1.0	0.7-1.3
Father unemployed ^b	1.3	1.1-1.5*	1.0	0.7-1.4	1.3	0.9-1.9	0.8	0.6-1.2
Mother unemployed ^b	1.1	0.7-1.6	1.3	0.9-2.0	1.5	1.2-2.0*	0.9	0.6-1.2
Father's education ^a	0.9	0.7-1.1	1.2	0.9-1.5	0.9	0.7-1.1	1.4	1.0-1.8*
Mother's education ^a	1.3	1.0-1.8	0.8	0.6-1.1	1.1	0.9-1.4	1.1	0.7-1.6
<i>n</i>	1,814		1,628		1,826		1,349	

a) More than nine years of schooling

b) Temporarily or permanently out of work, with or without disability pension

*) $p < 0.05$

Figure 48. The Andersen test, 7th grade, 2011

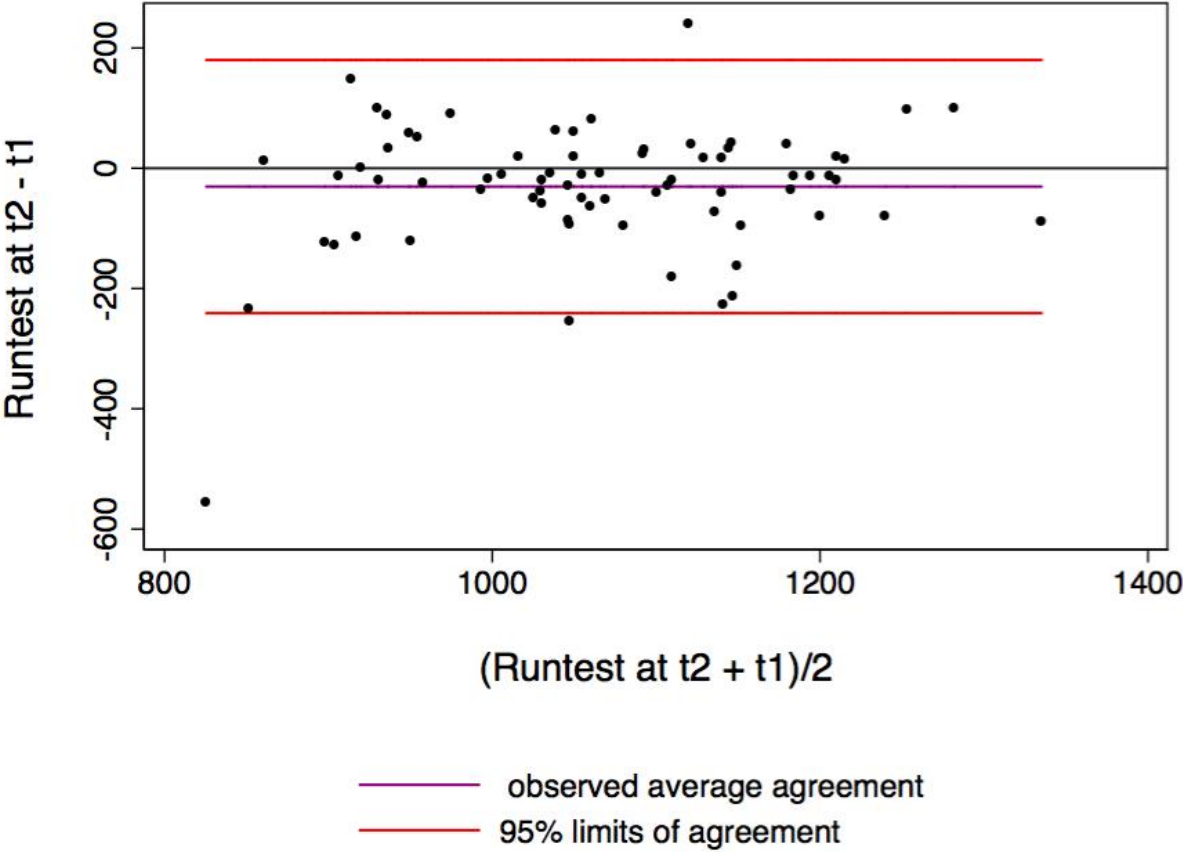
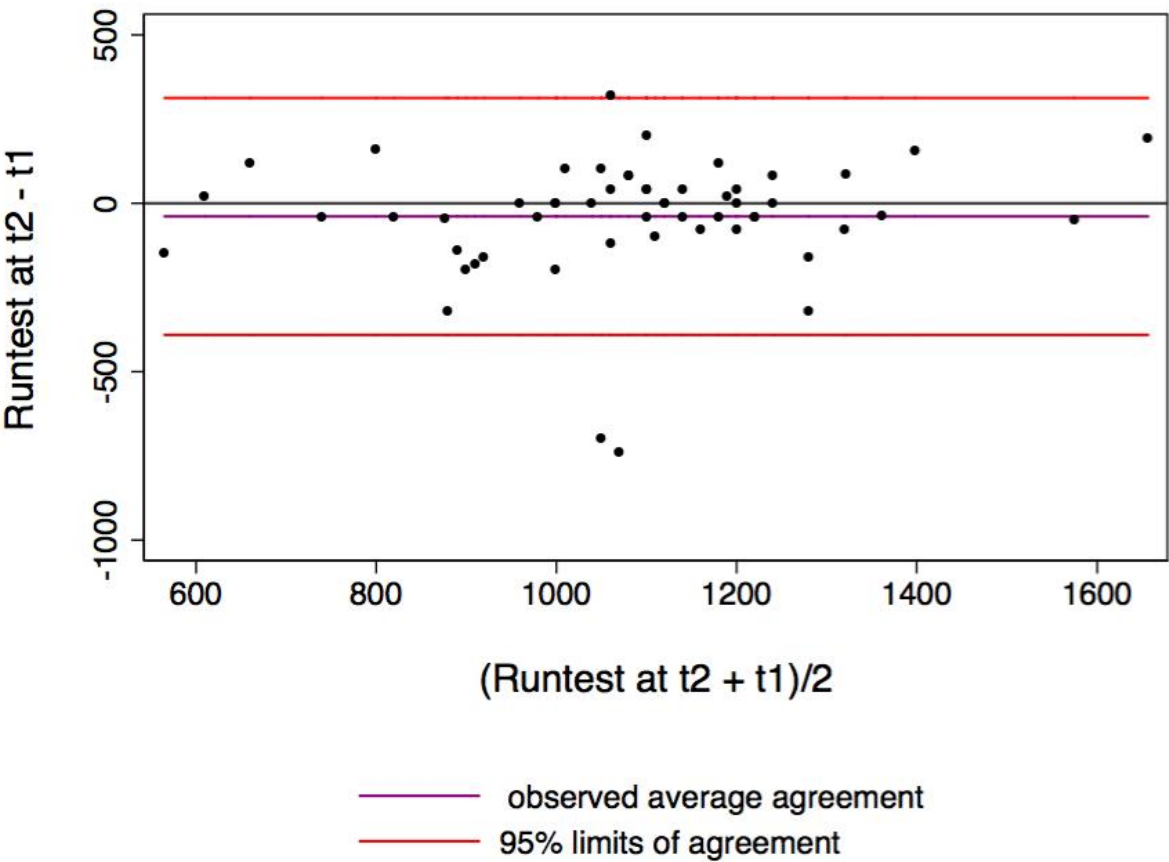


Figure 49. The Andersen test, 8th and 9th grades combined, 2011



BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS MEASUREMENTS OBTAINED IN 2012. INTRA-OBSERVER RELIABILITY

Figure 50. Height, all grades, 2012

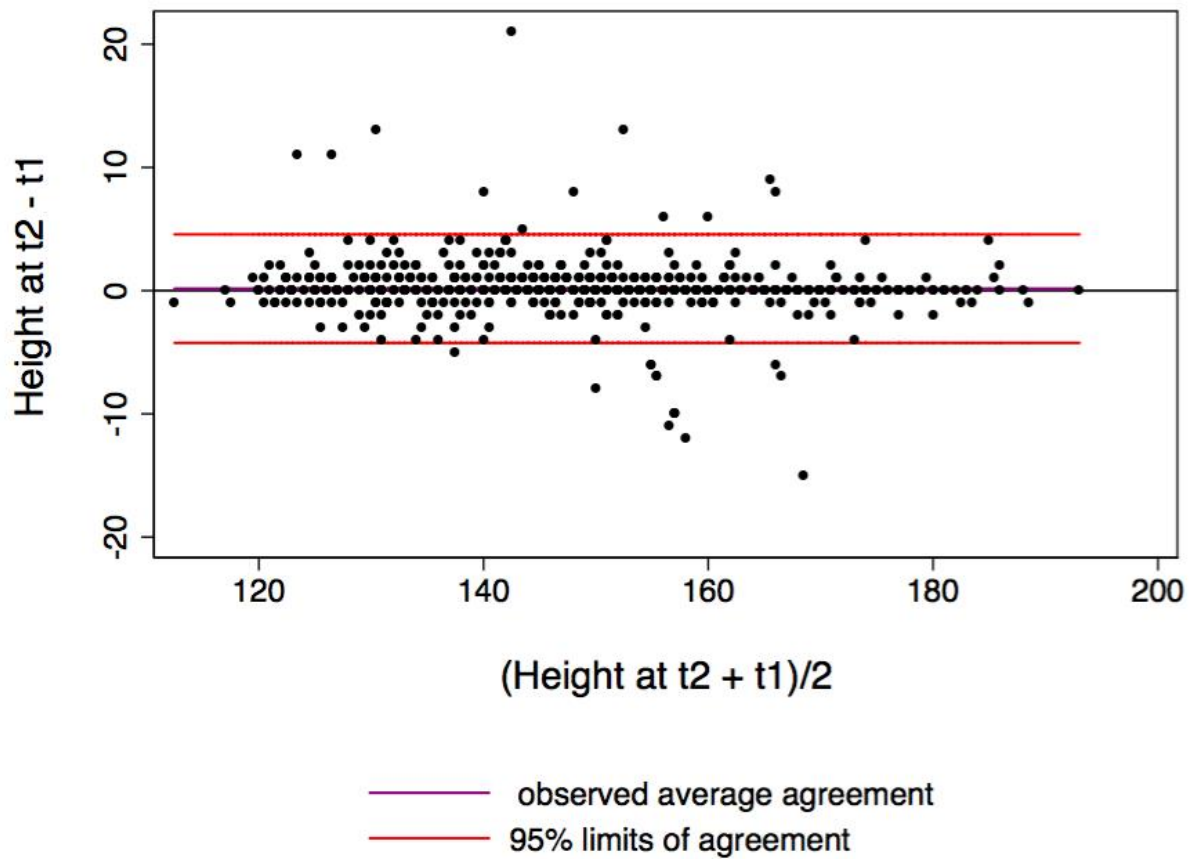


Figure 51. Height, 0th grade, 2012

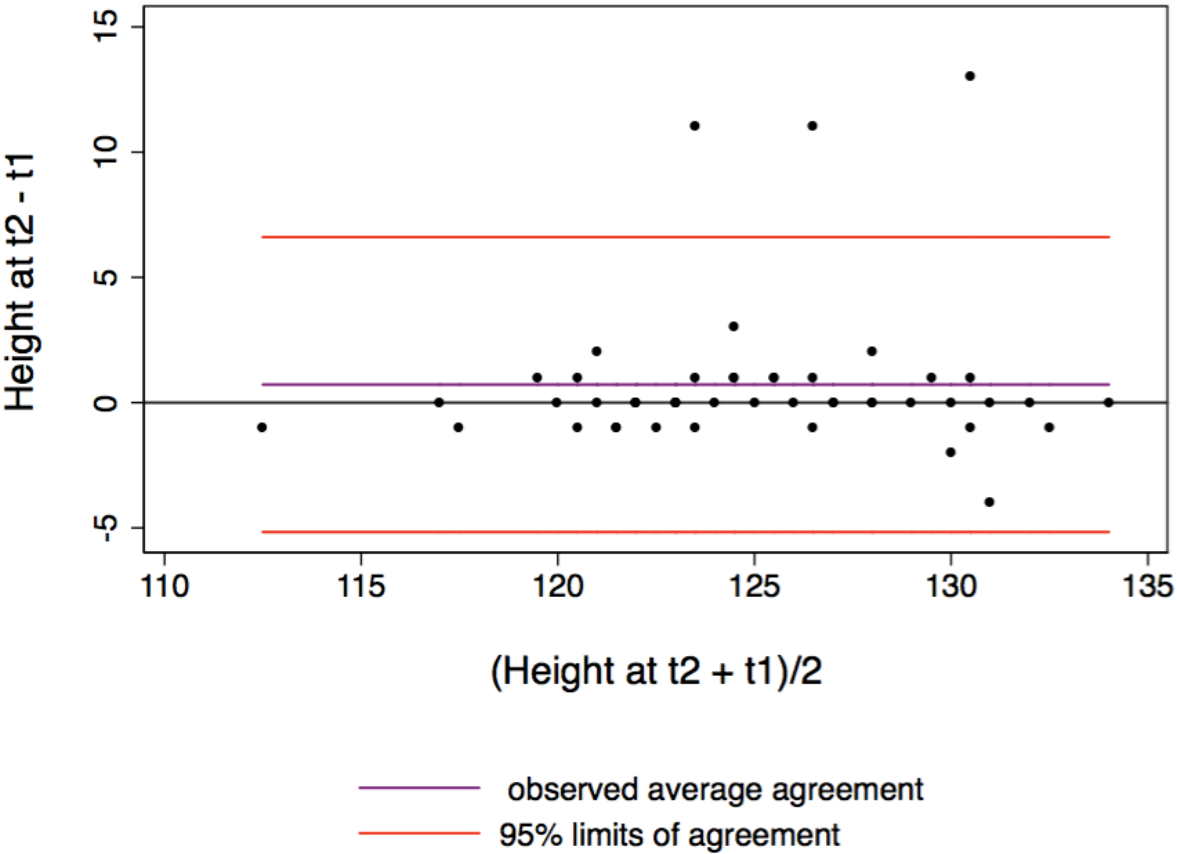


Figure 52. Height, 1st grade, 2012

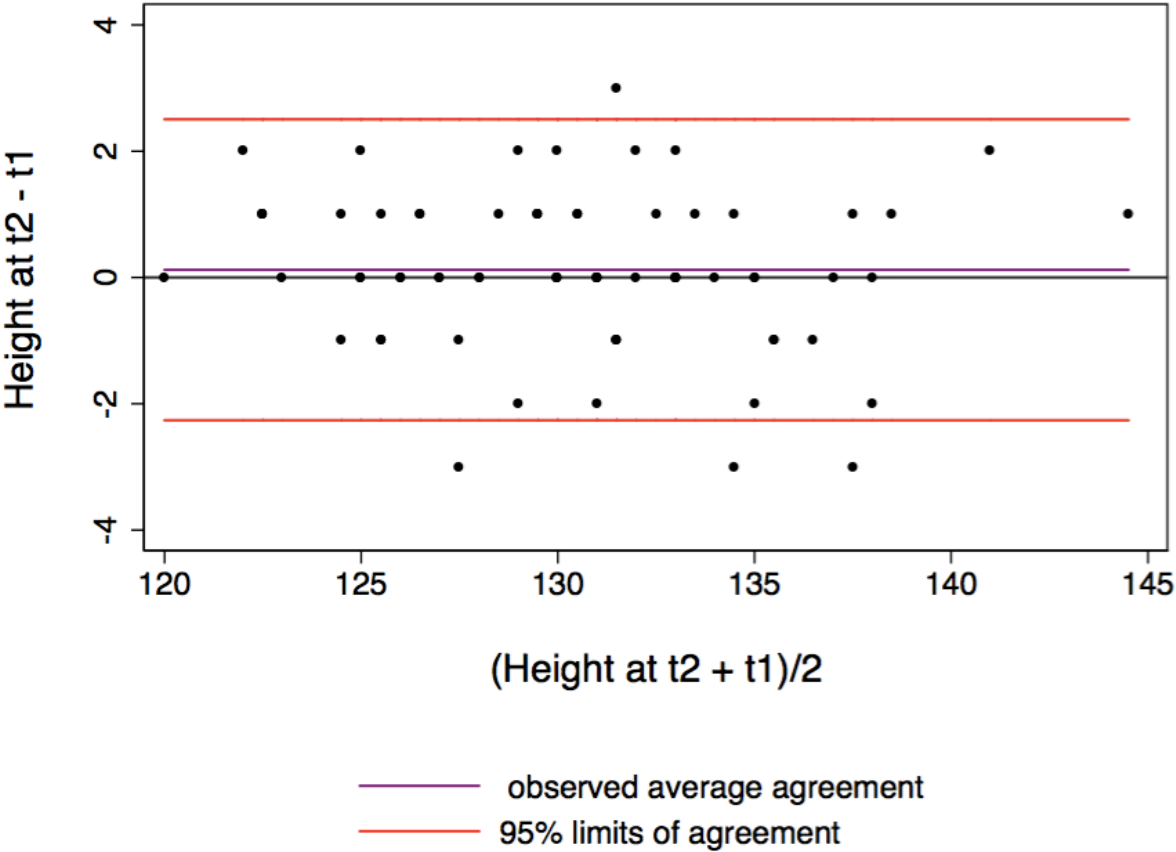


Figure 53. Height, 2nd grade, 2012

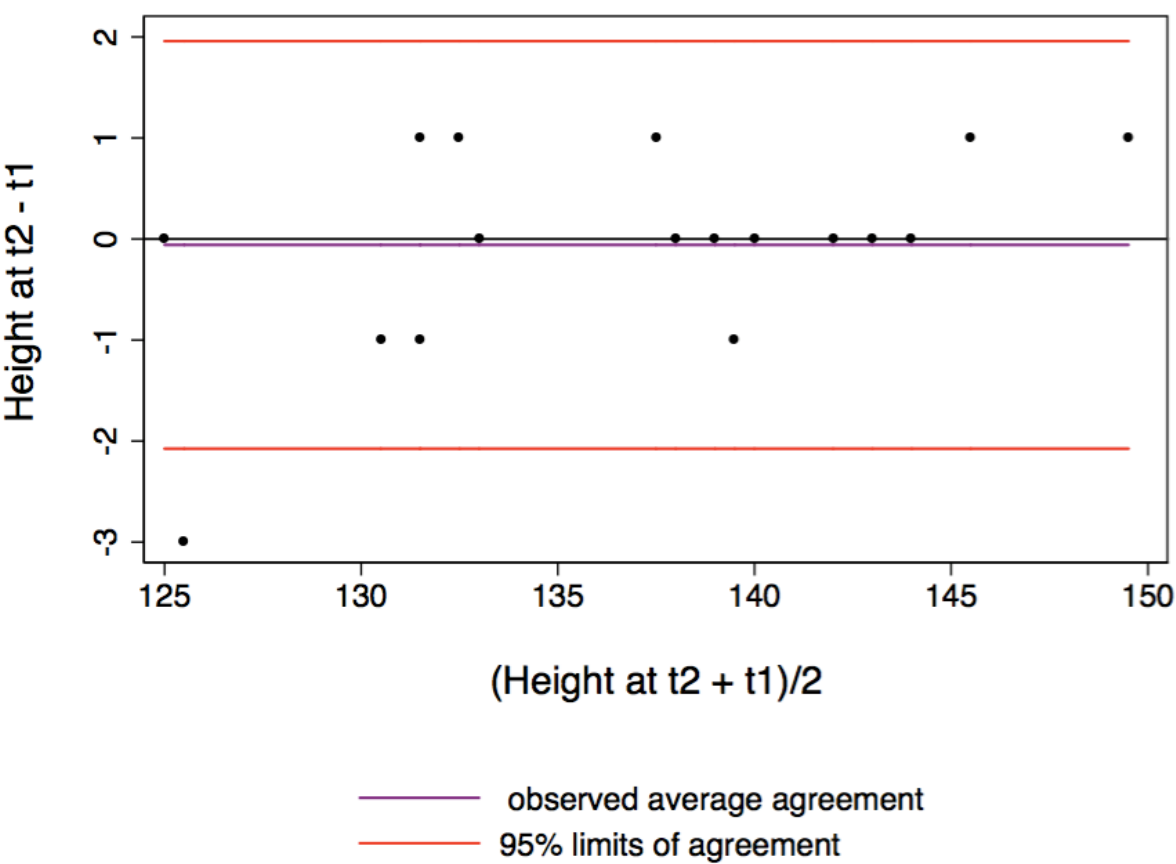


Figure 54. Height, 3rd grade, 2012

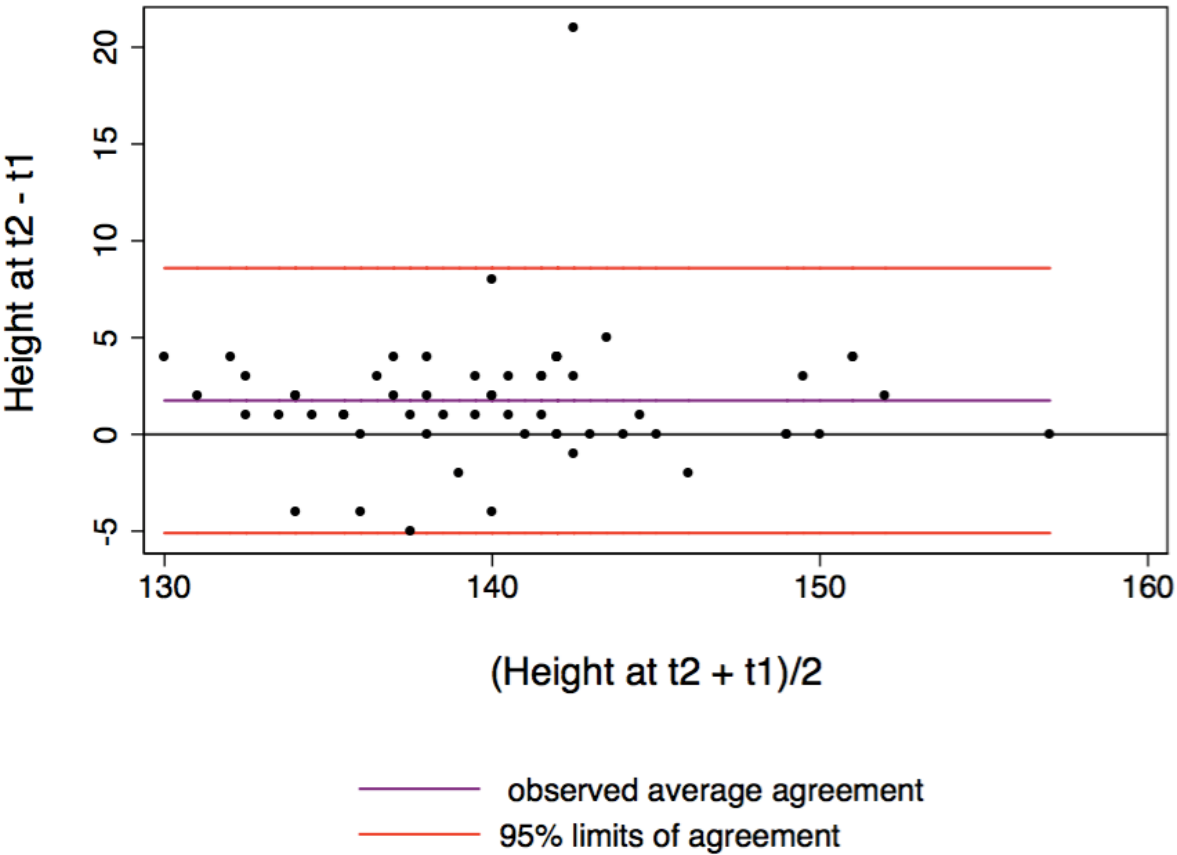


Figure 55. Height, 4th grade, 2012

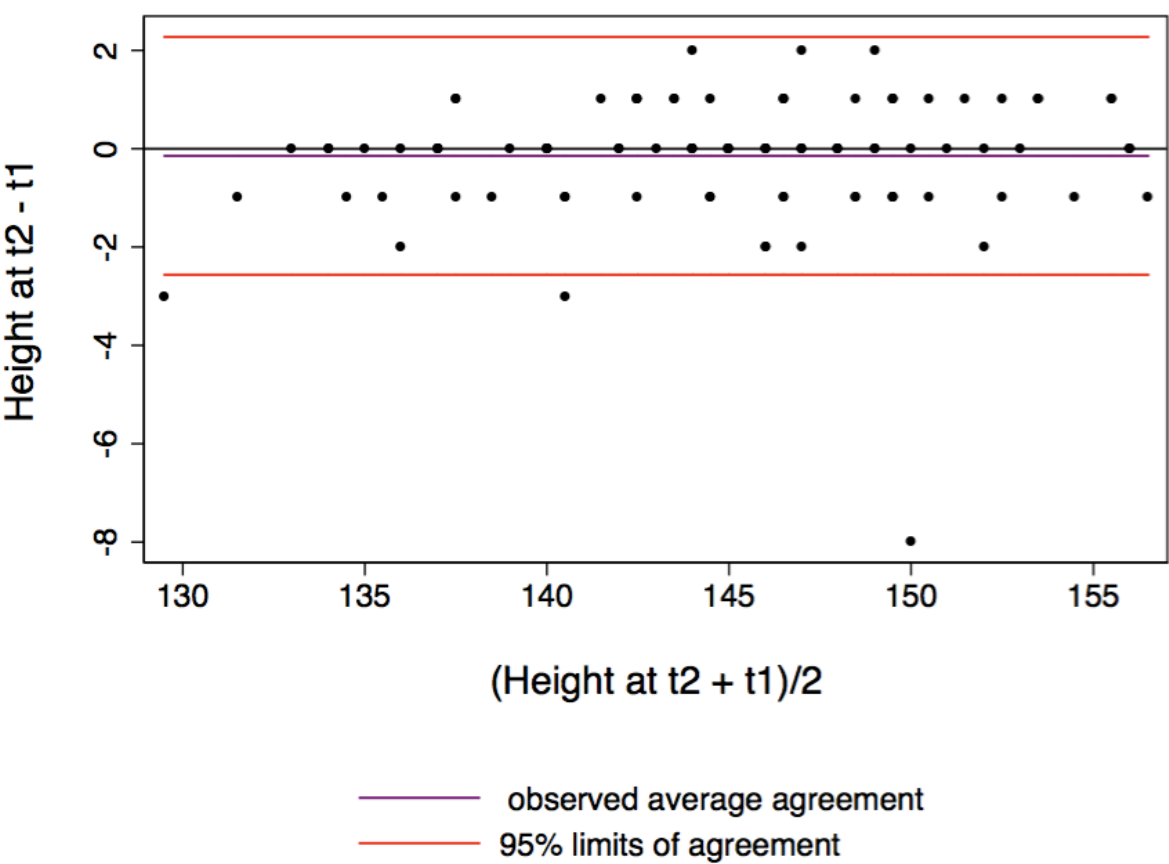


Figure 56. Height, 5th grade, 2012

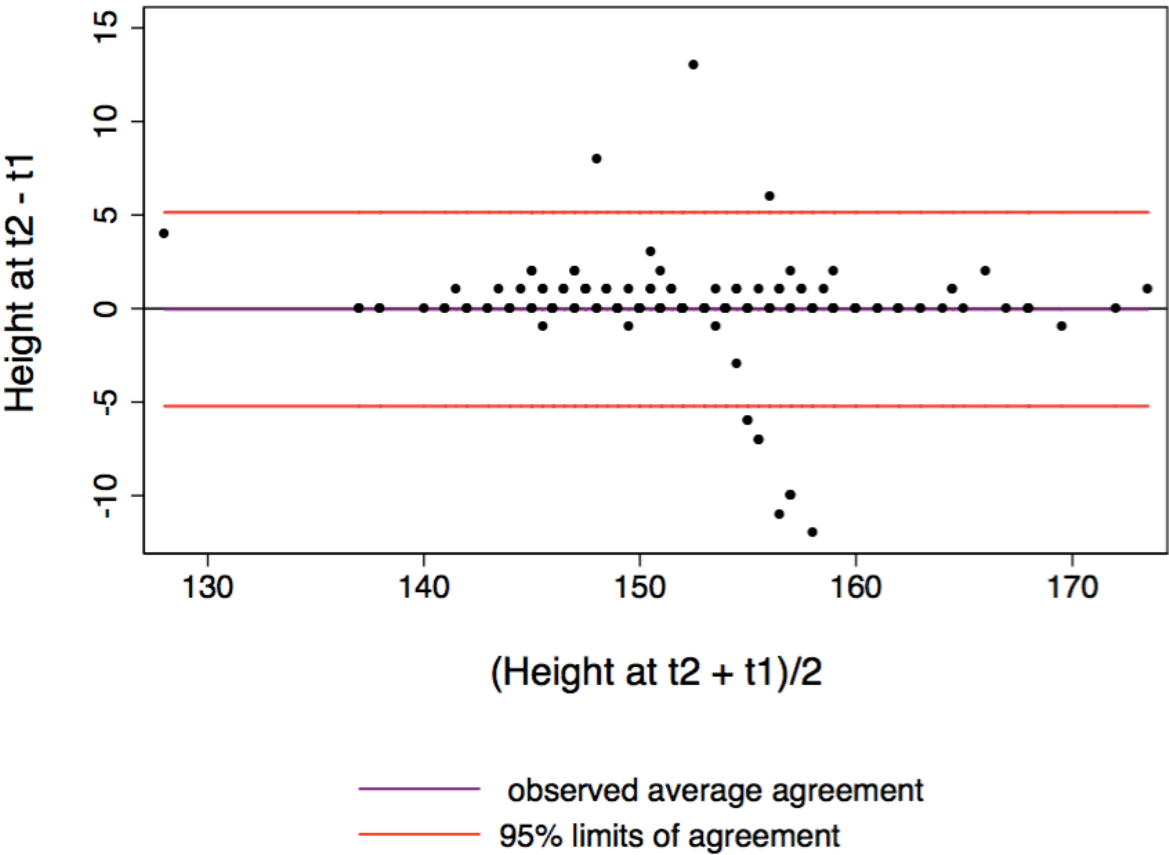


Figure 57. Height, 6th grade, 2012

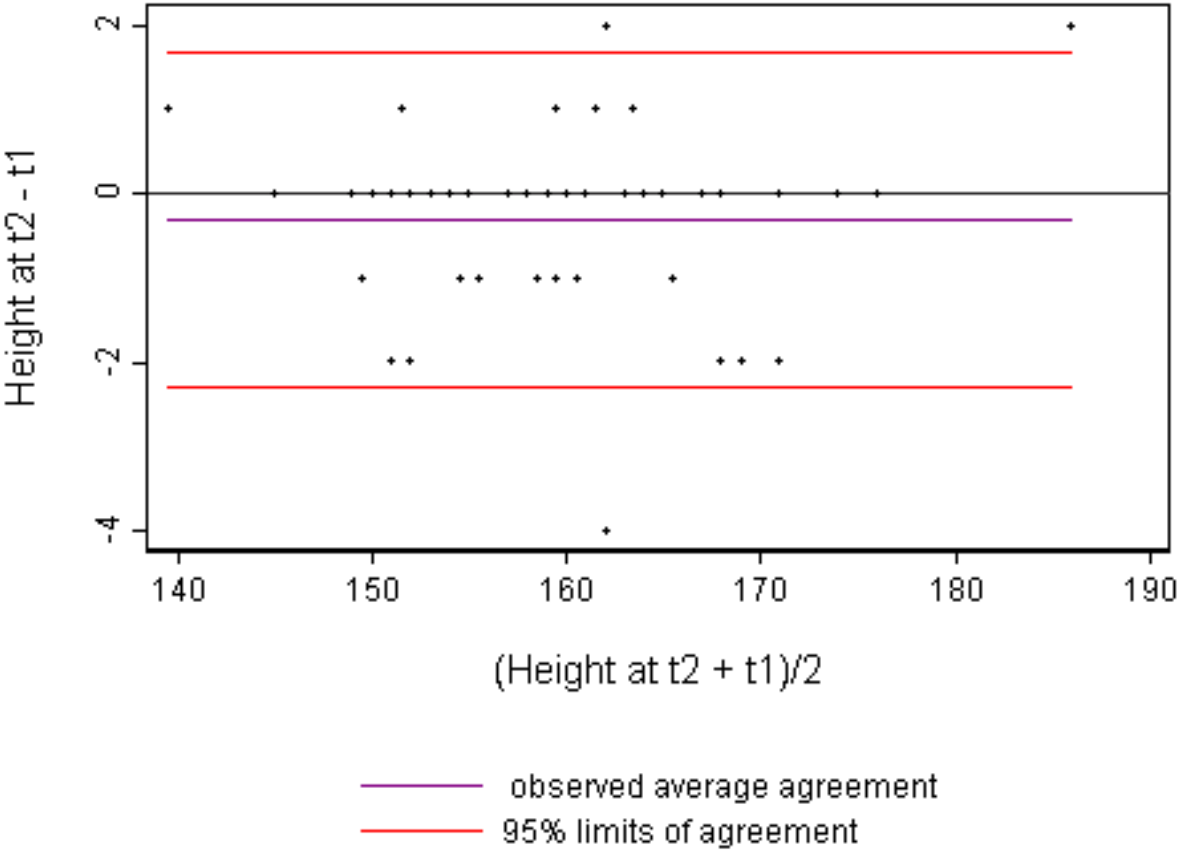


Figure 58. Height, 7th grade, 2012

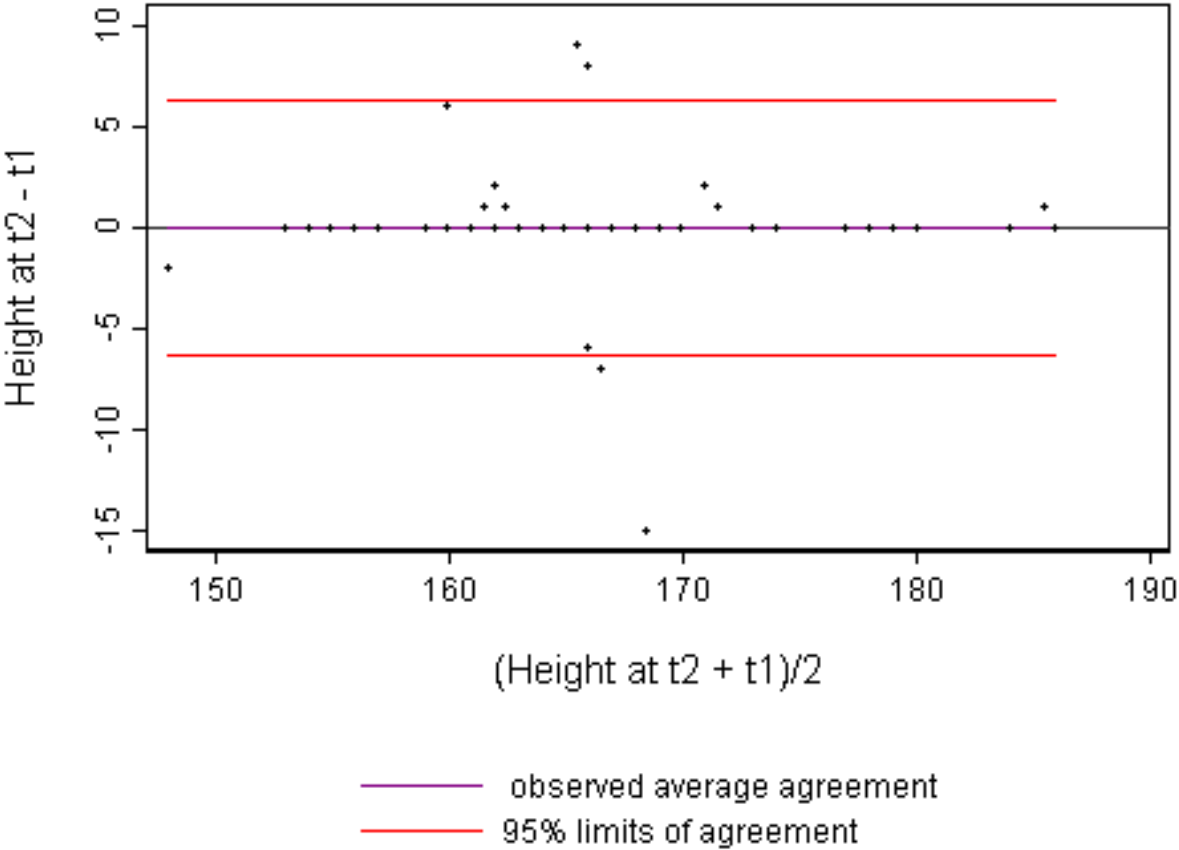


Figure 59. Height, 8th grade, 2012

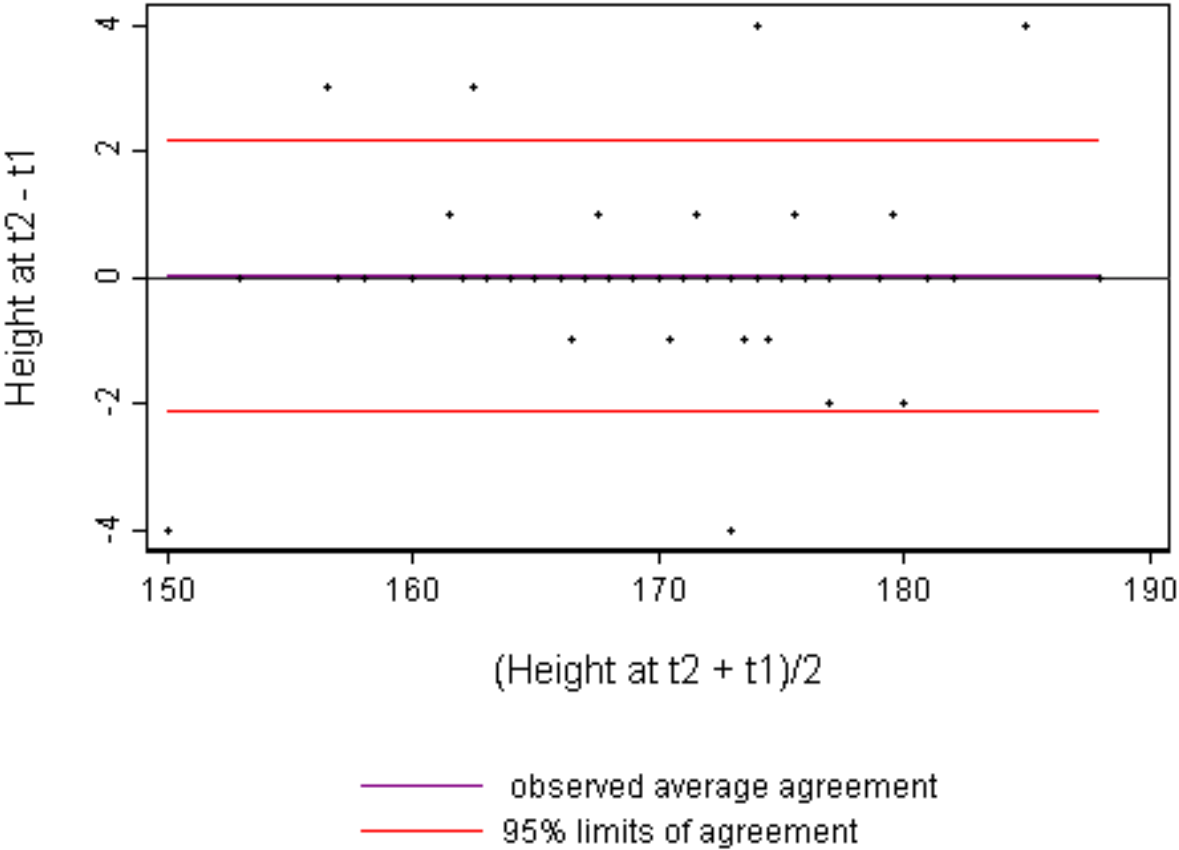


Figure 60. Height, 9th grade, 2012

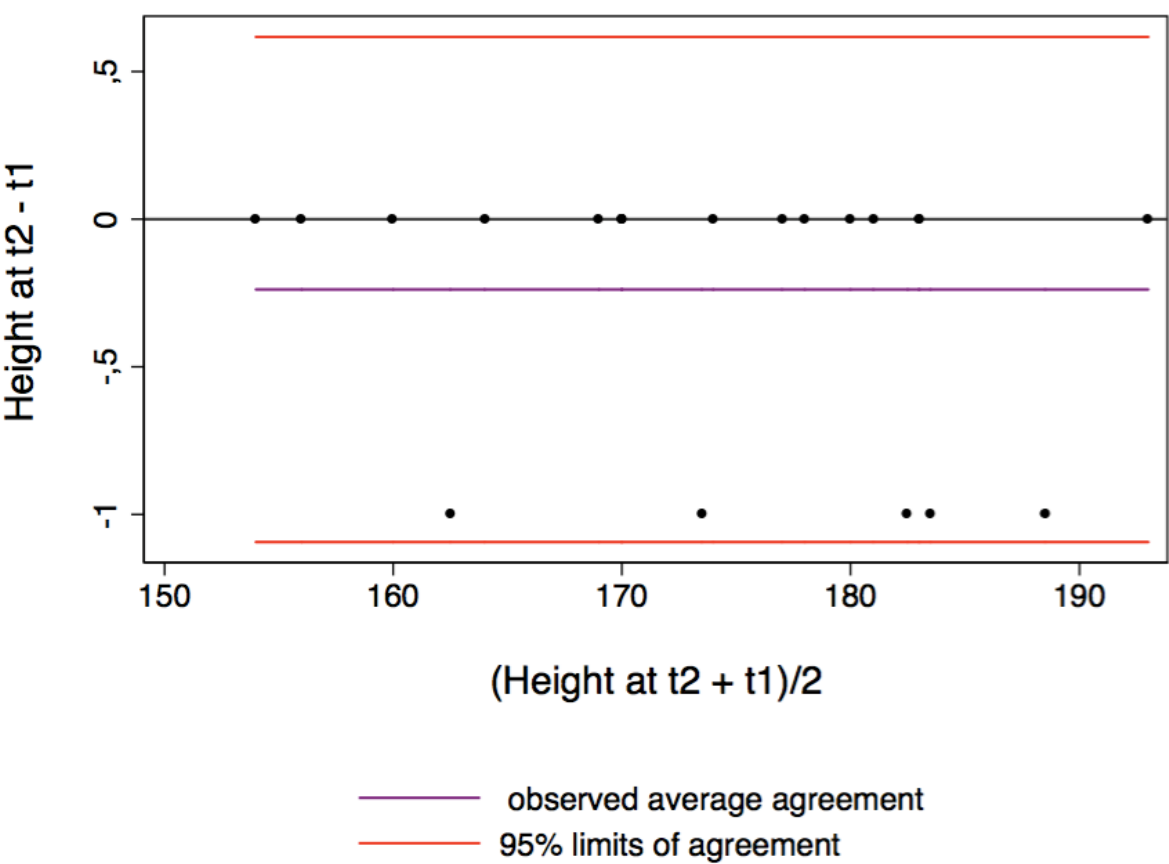


Figure 61. Weight, all grades, 2012

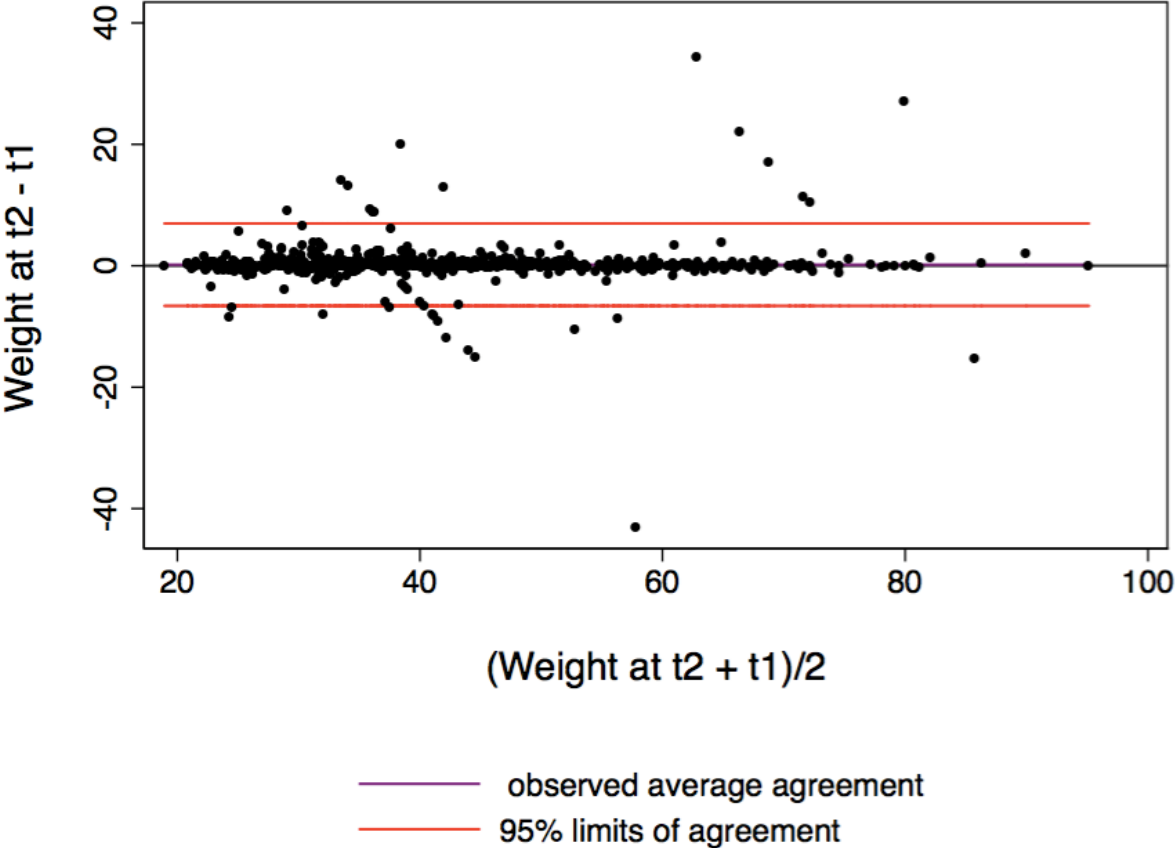


Figure 62. Weight, 0th grade, 2012

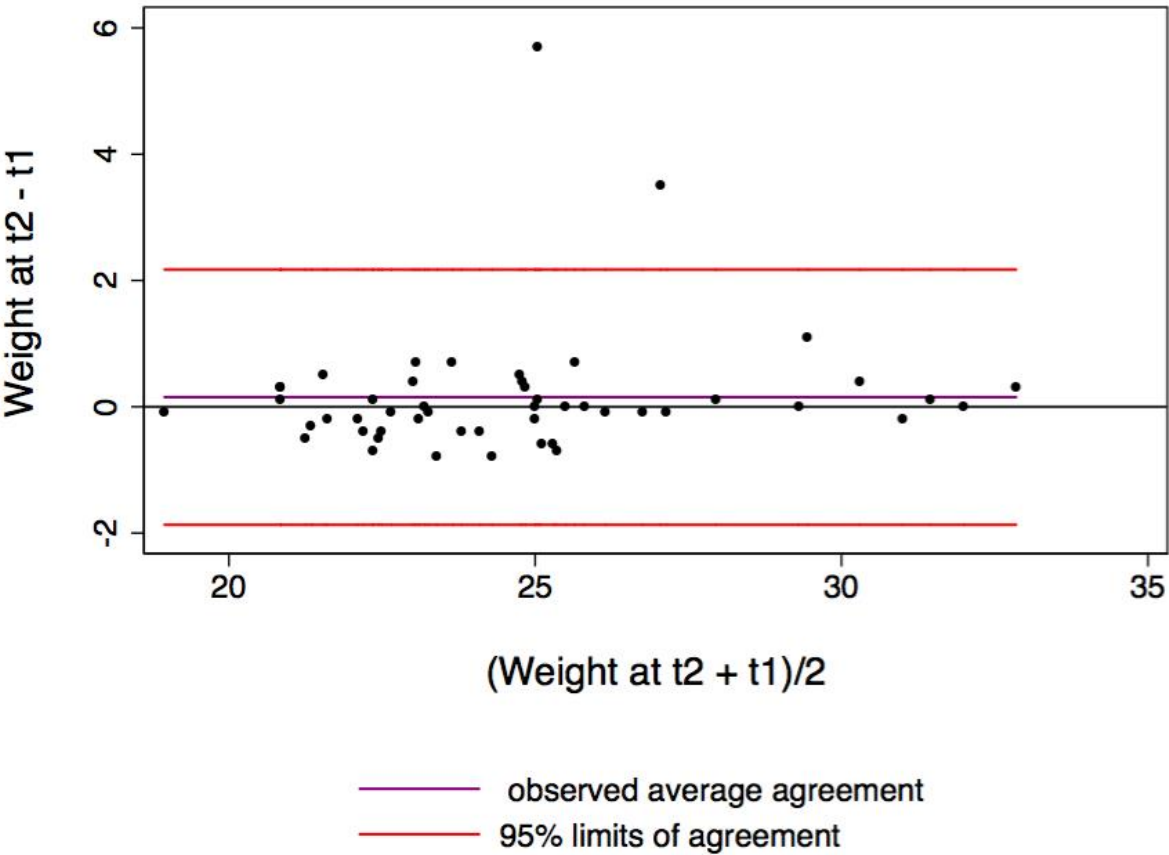


Figure 63. Weight, 1st grade, 2012

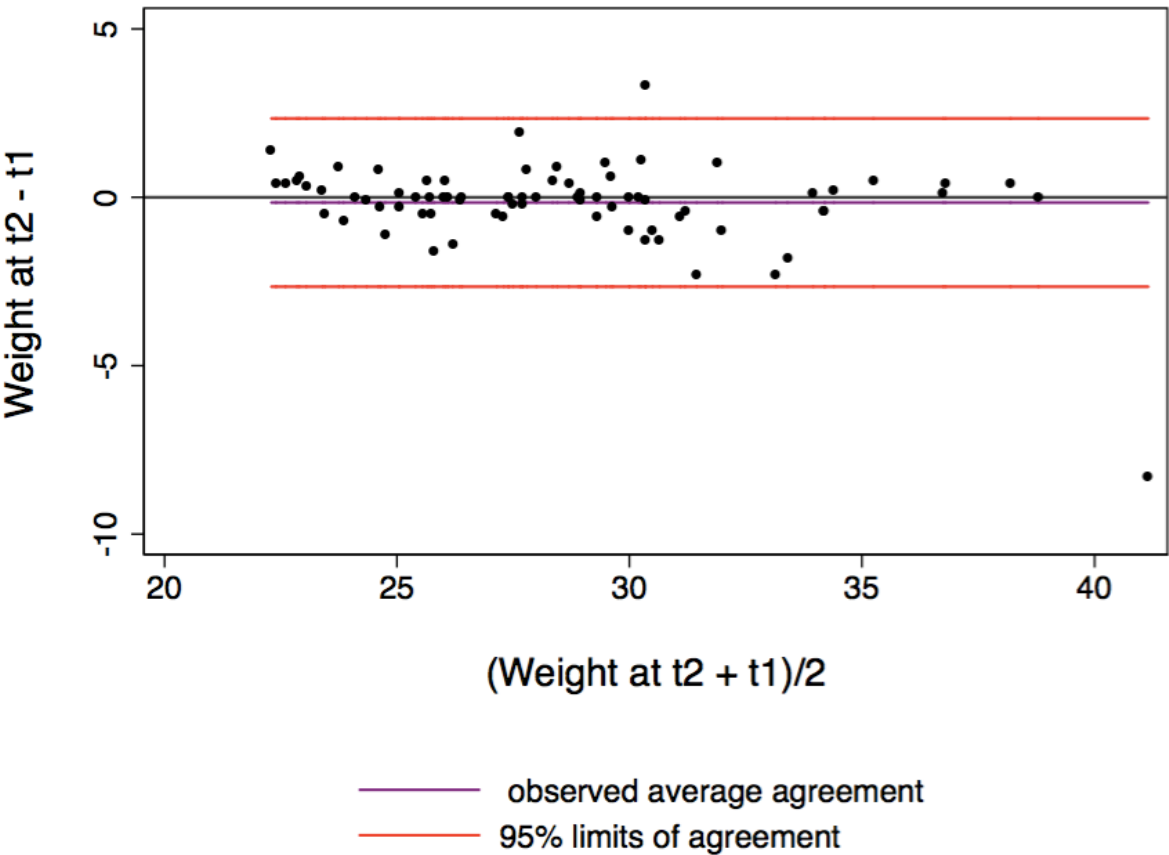


Figure 64. Weight, 2nd grade, 2012

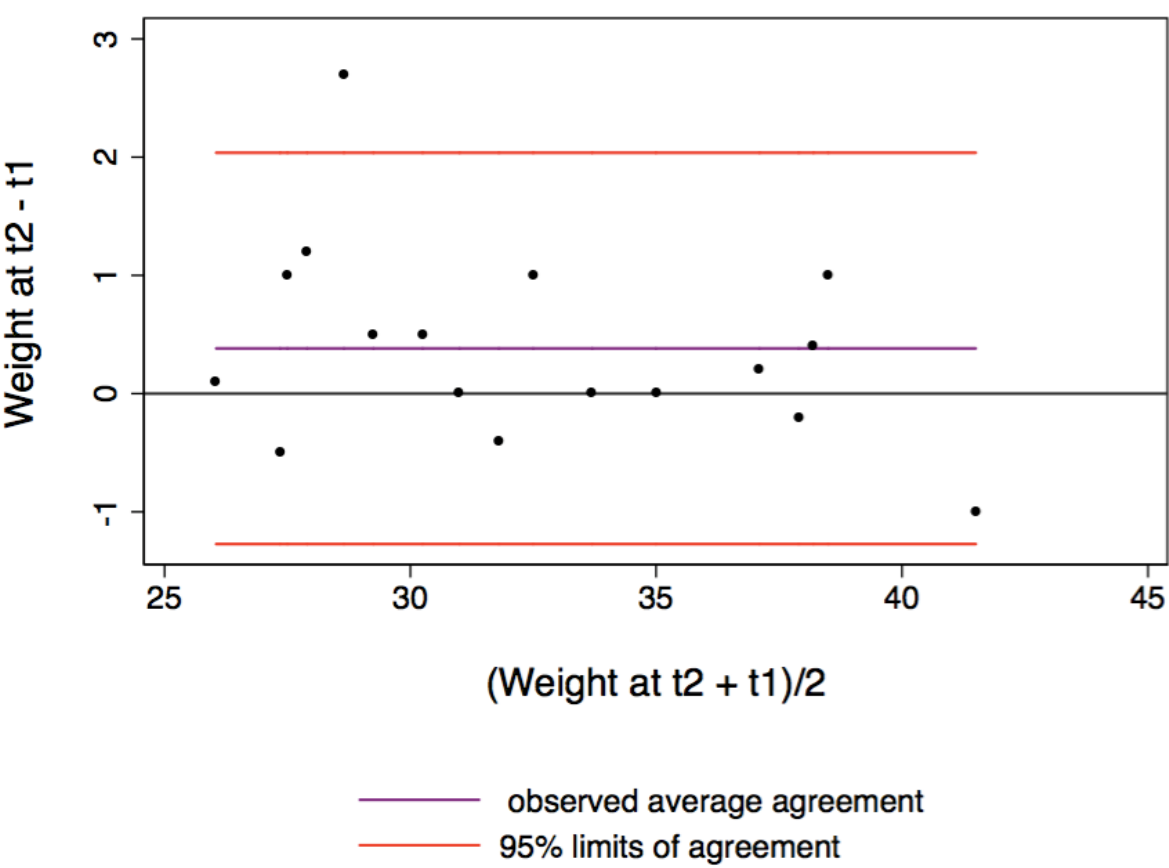


Figure 65. Weight, 3rd grade, 2012

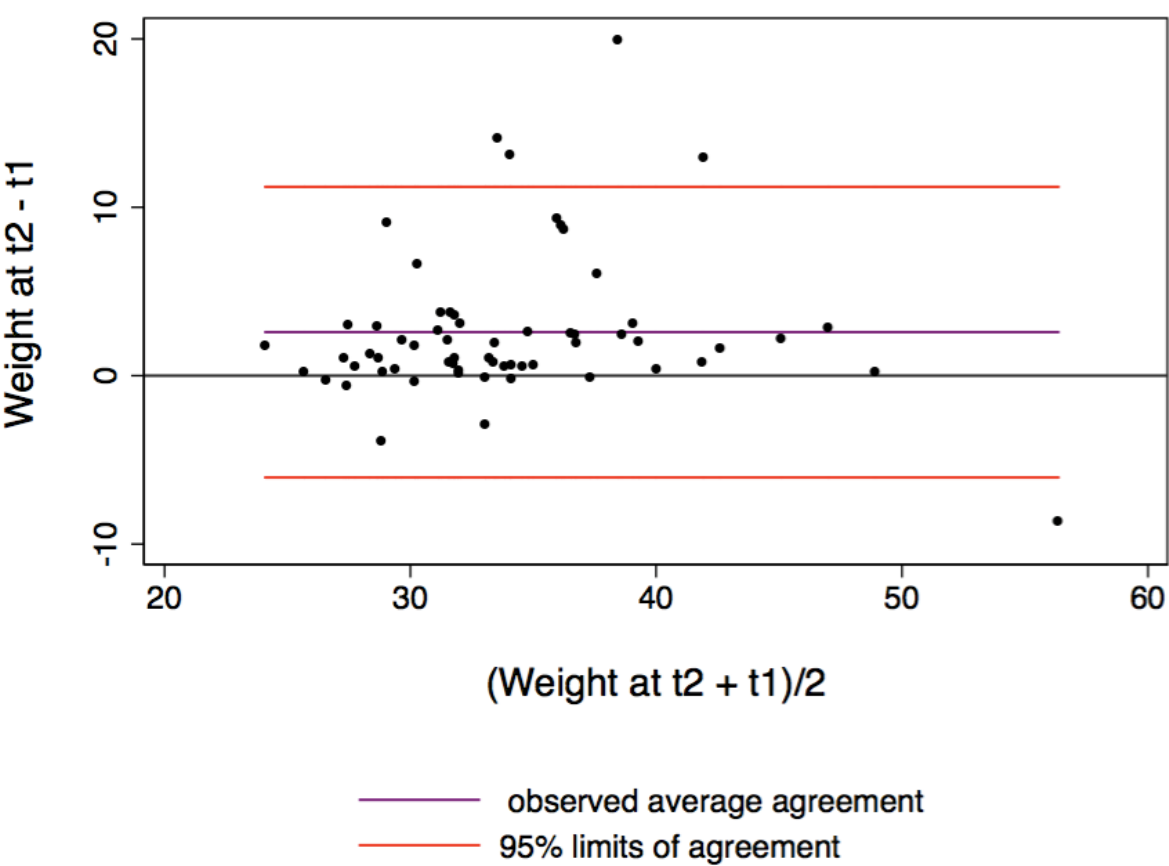


Figure 66. Weight, 4th grade, 2012

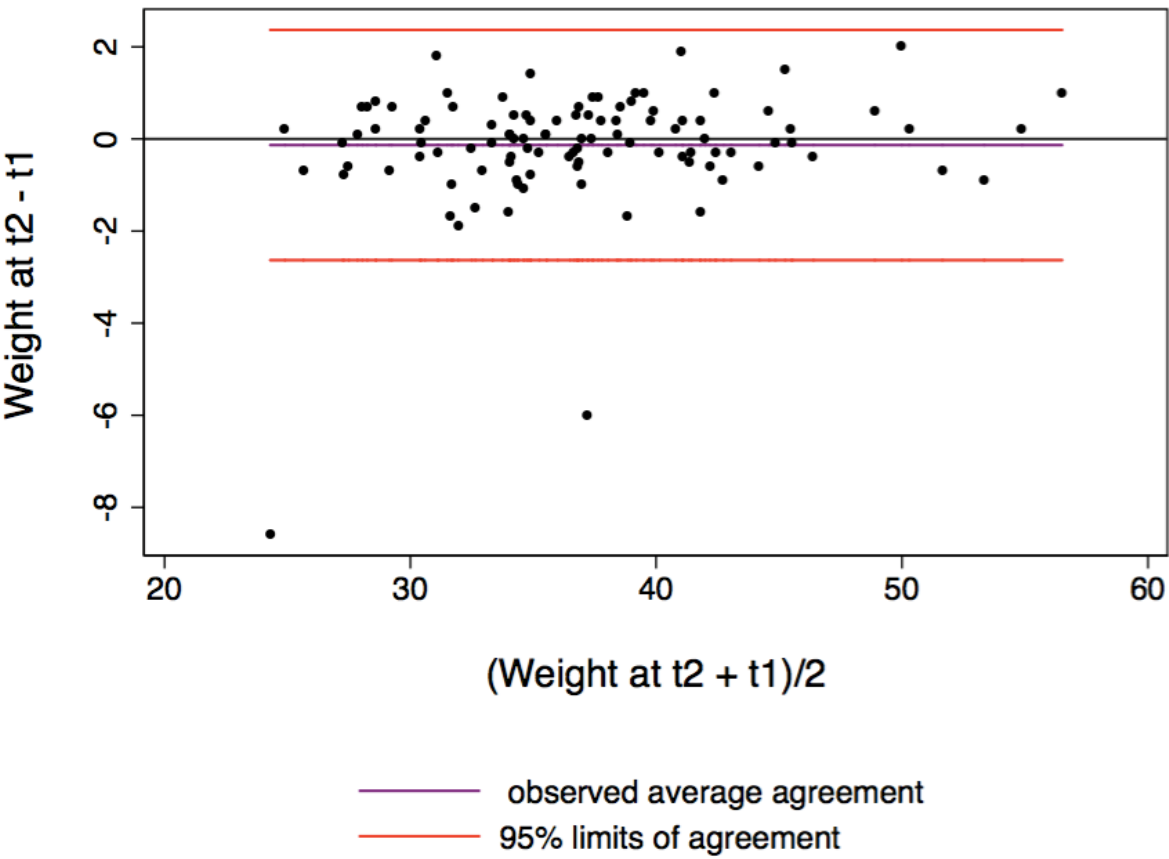


Figure 67. Weight, 5th grade, 2012

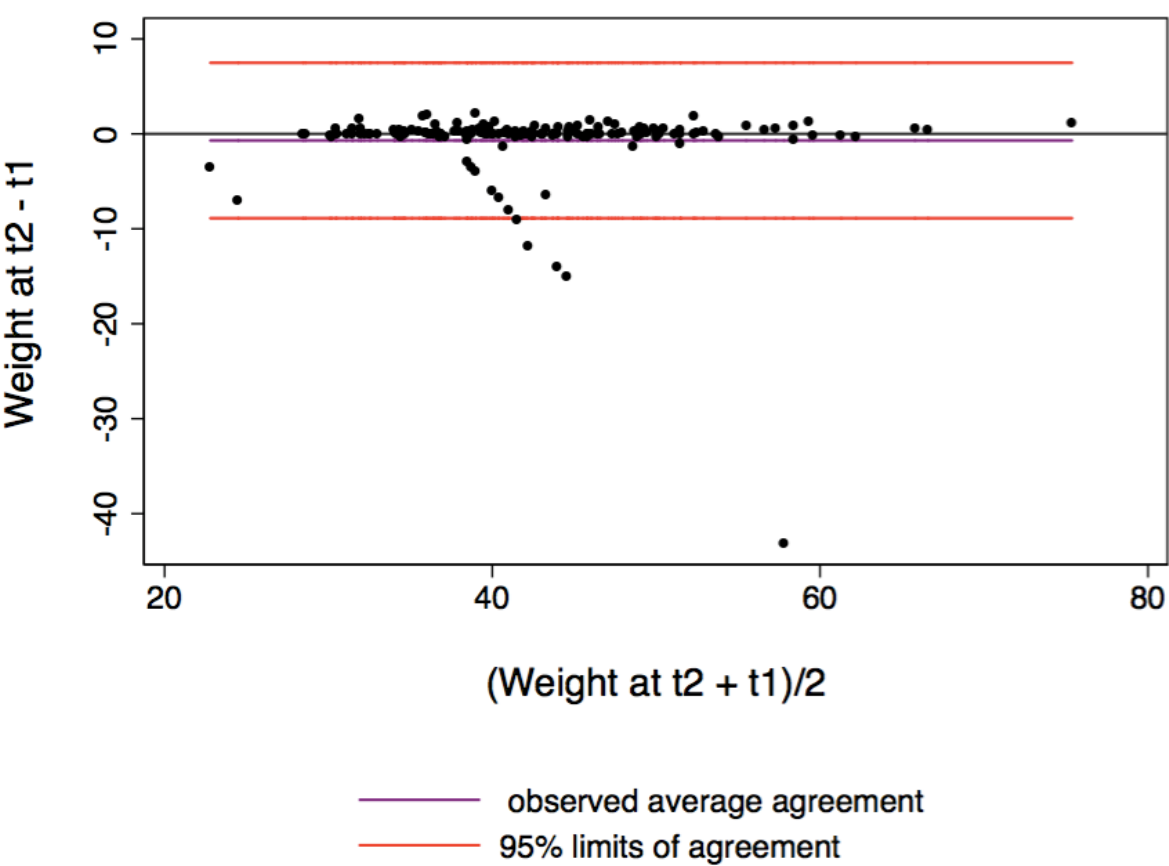


Figure 68. Weight, 6th grade, 2012

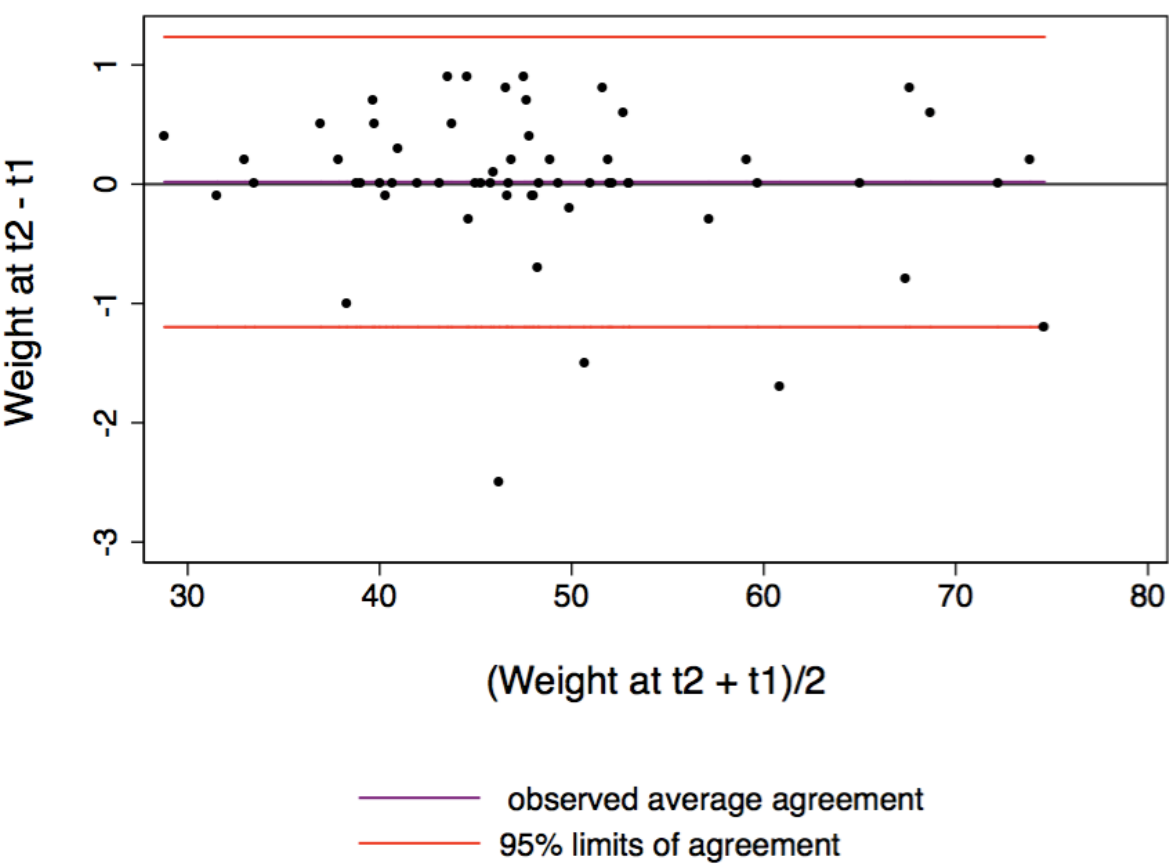


Figure 69. Weight, 7th grade, 2012

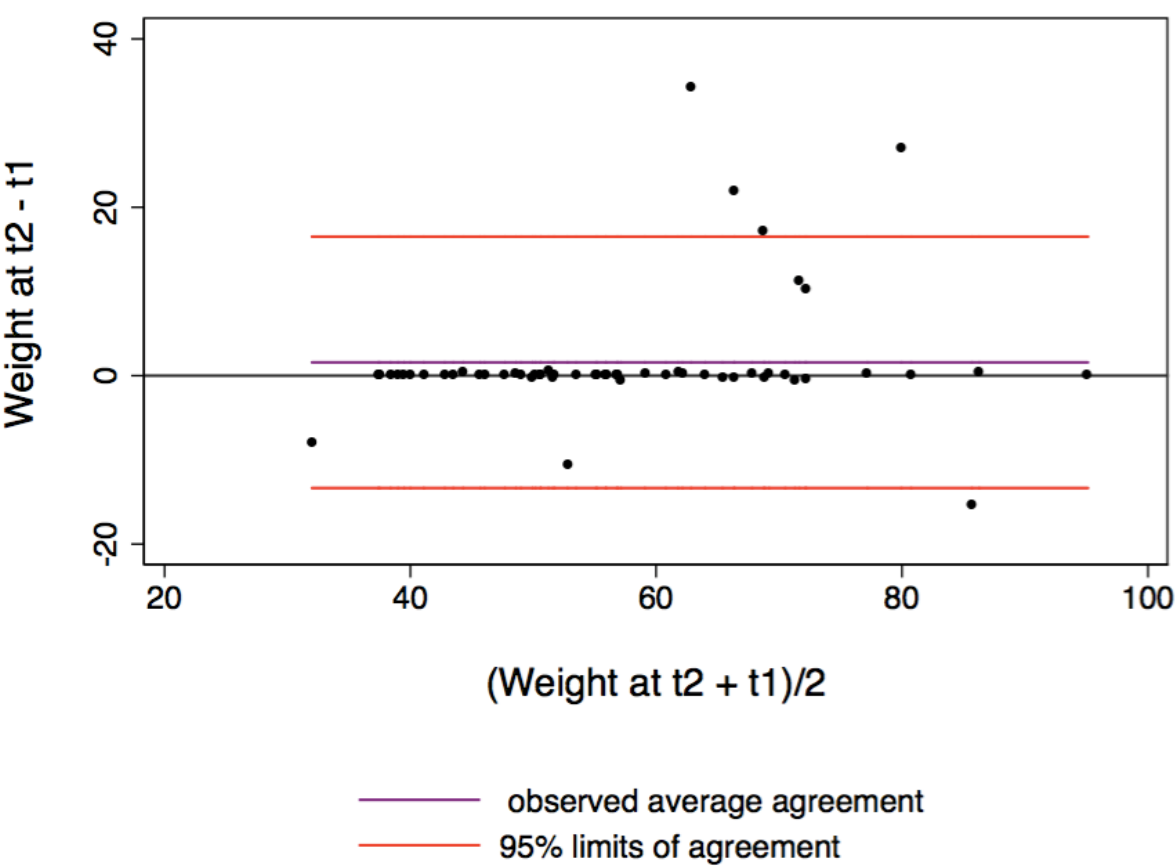


Figure 70. Weight, 8th grade, 2012

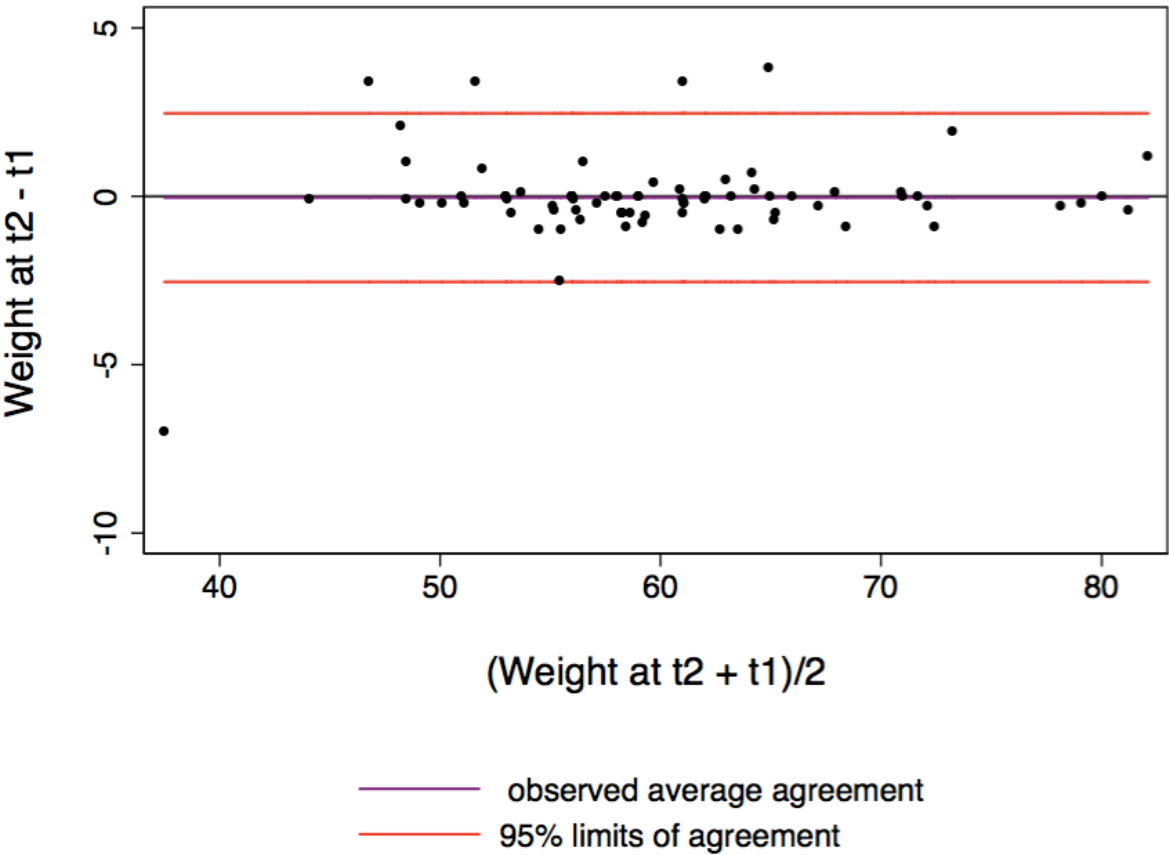


Figure 71. Weight, 9th grade, 2012

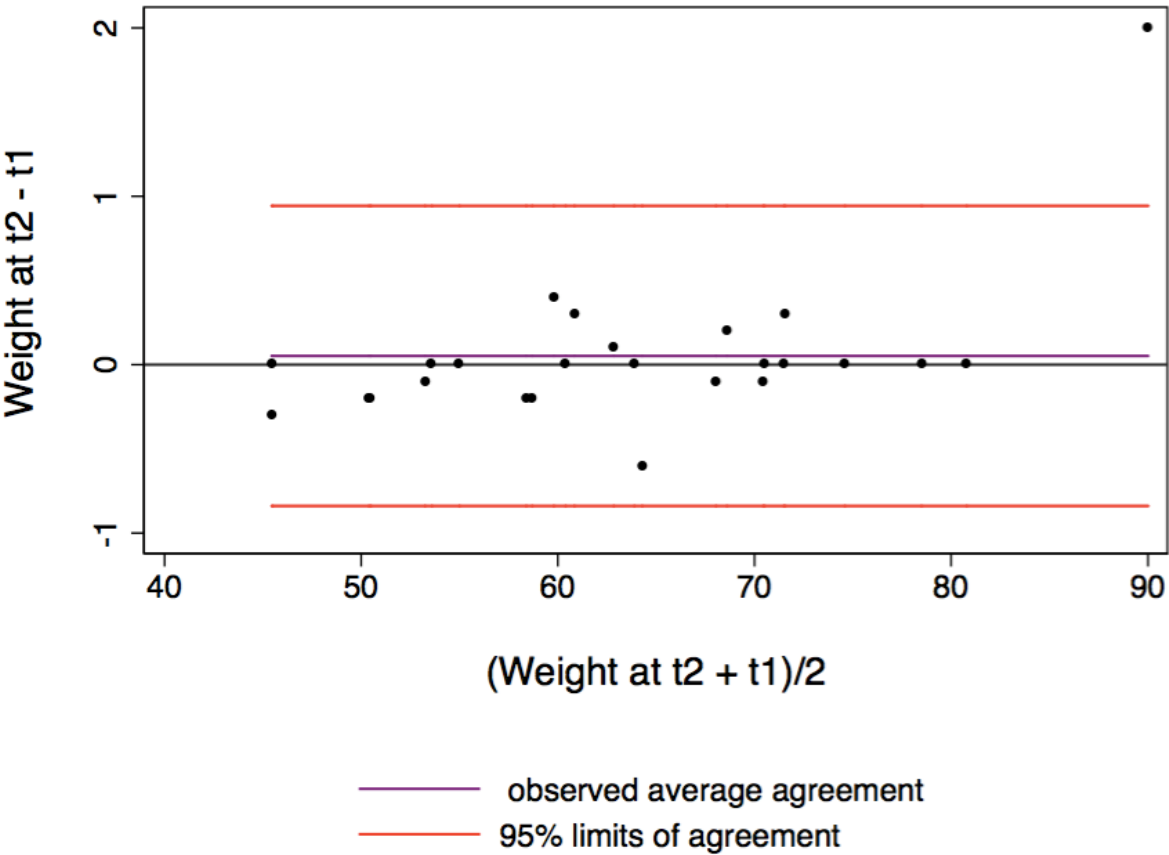


Figure 72. WC, all grades, 2012

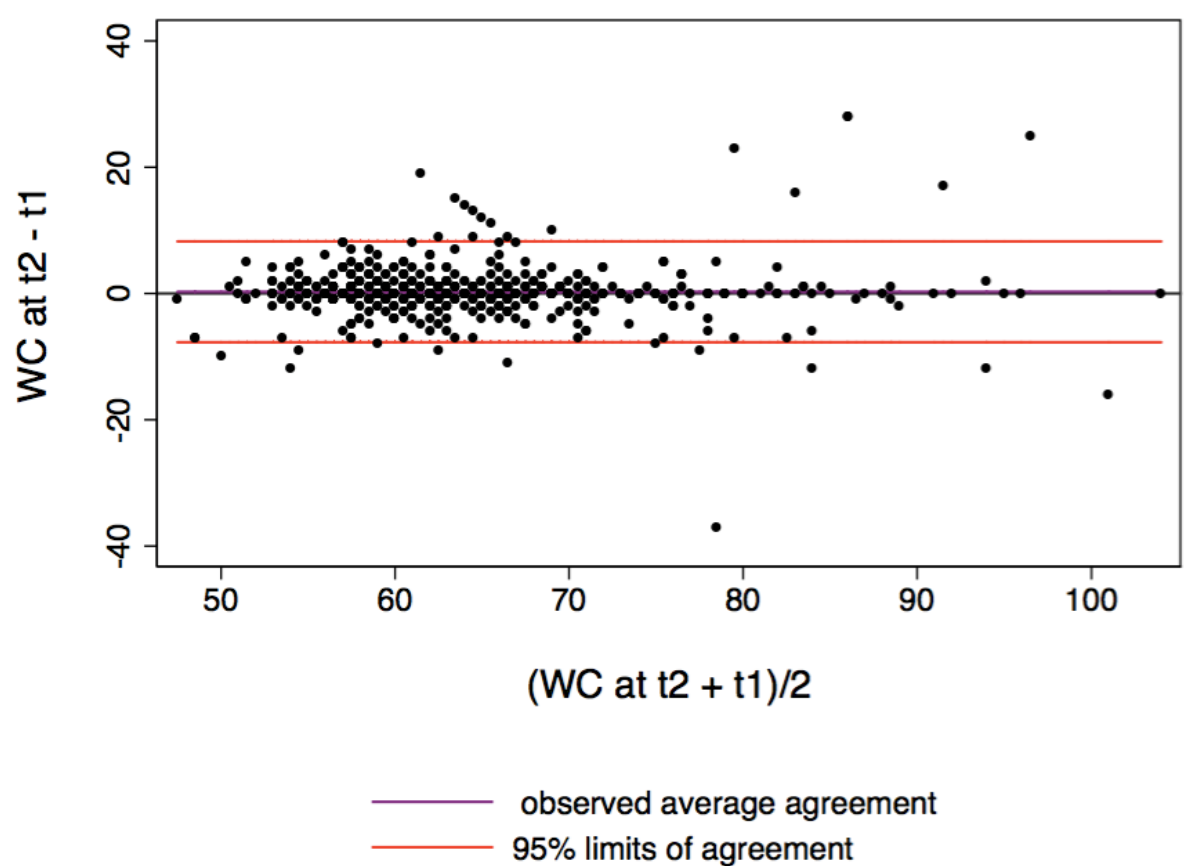


Figure 73. WC, 0th grade, 2012

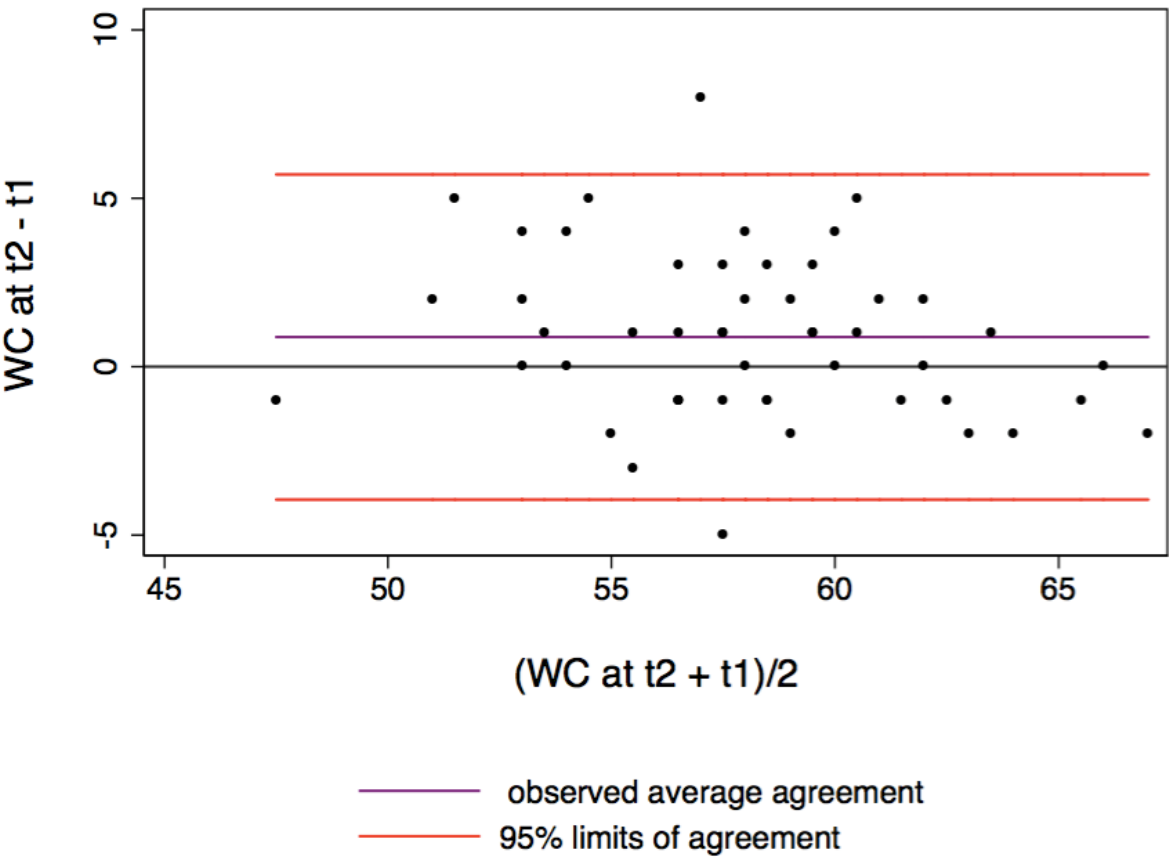


Figure 74. WC, 1st grade, 2012

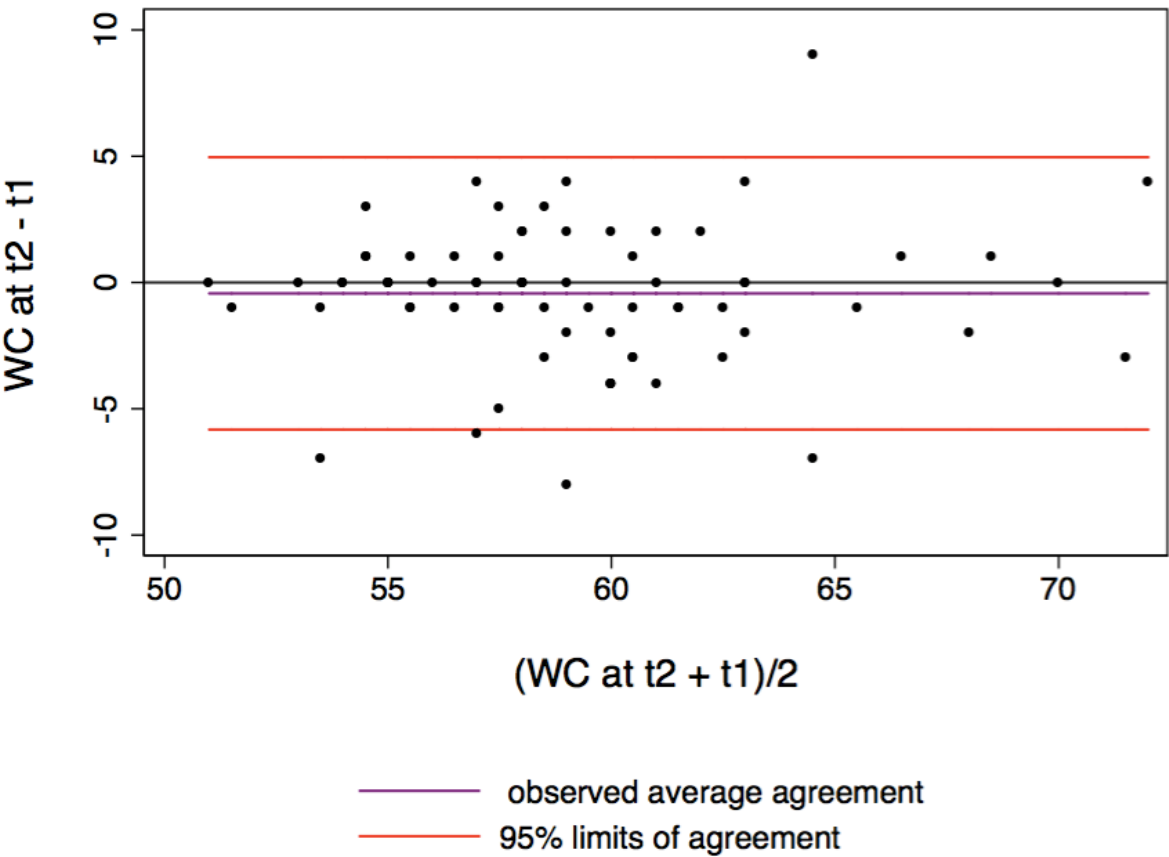


Figure 75. WC, 2nd grade, 2012

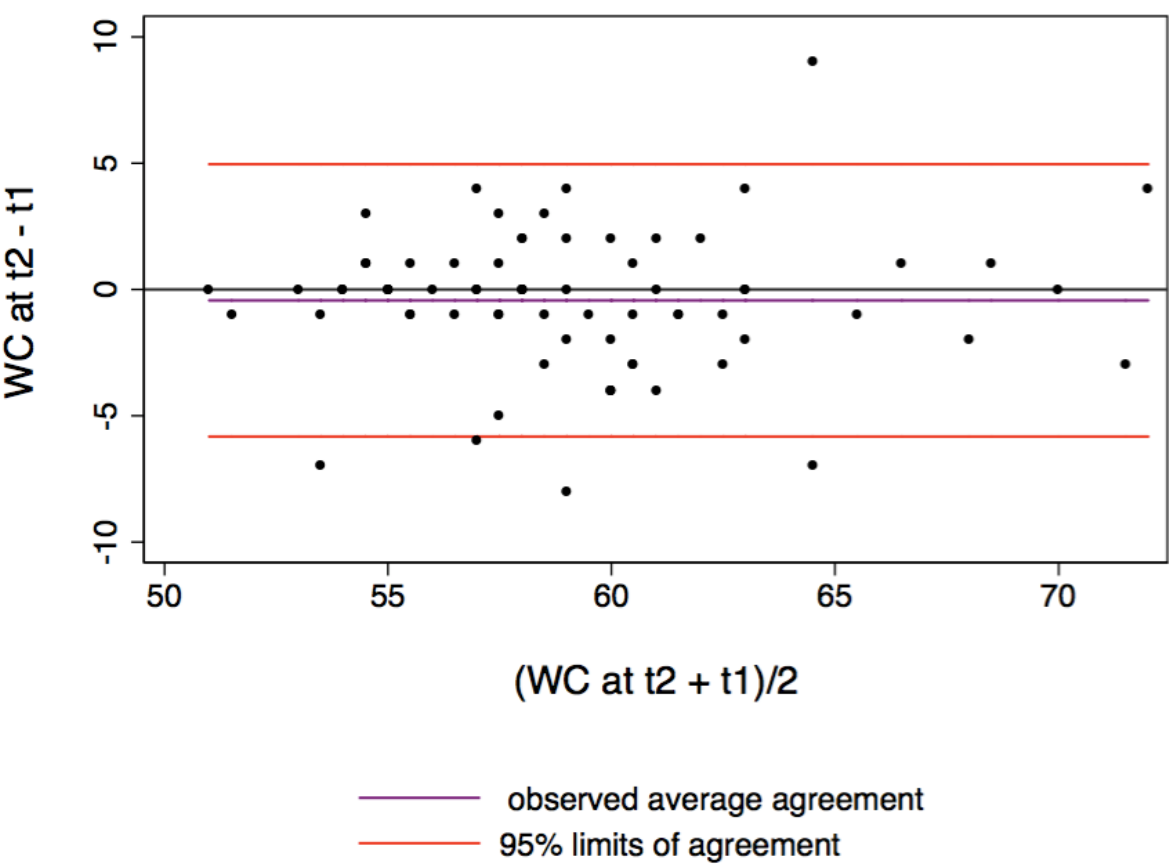


Figure 76. WC, 3rd grade, 2012

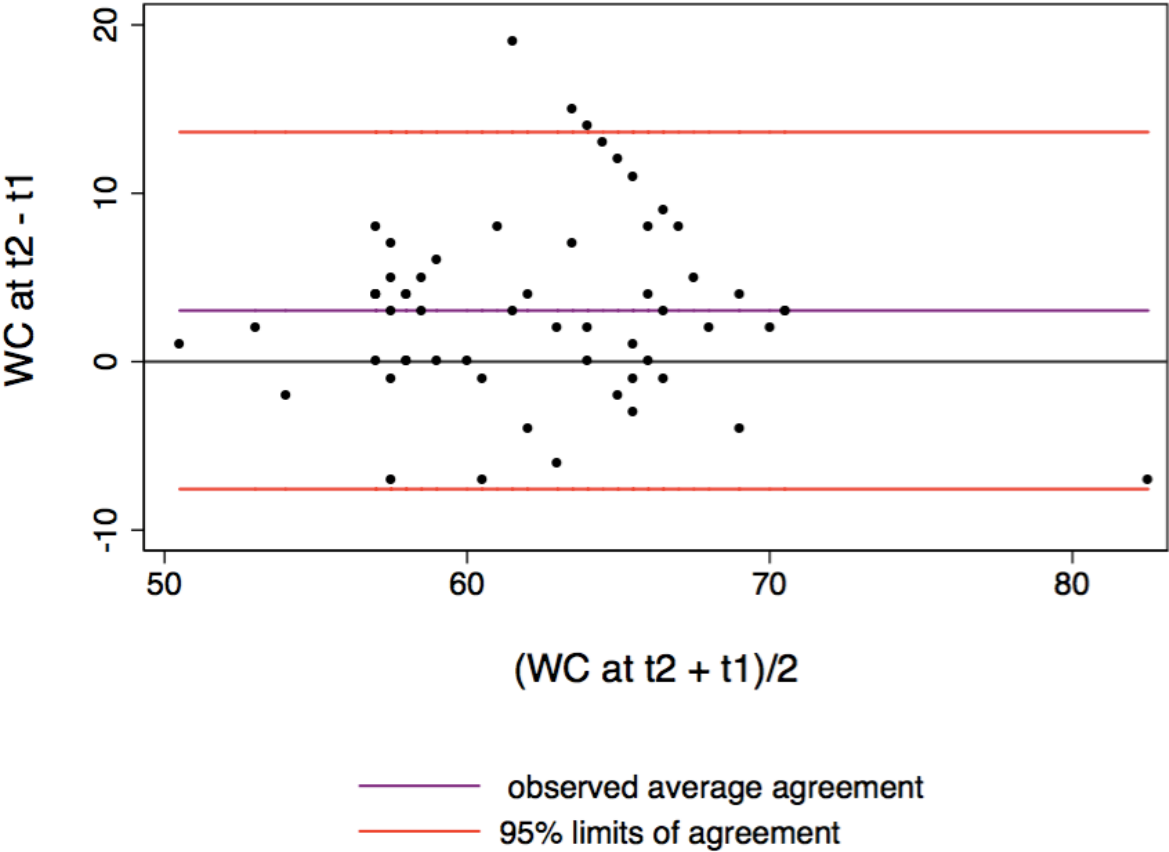


Figure 77. WC, 4th grade, 2012

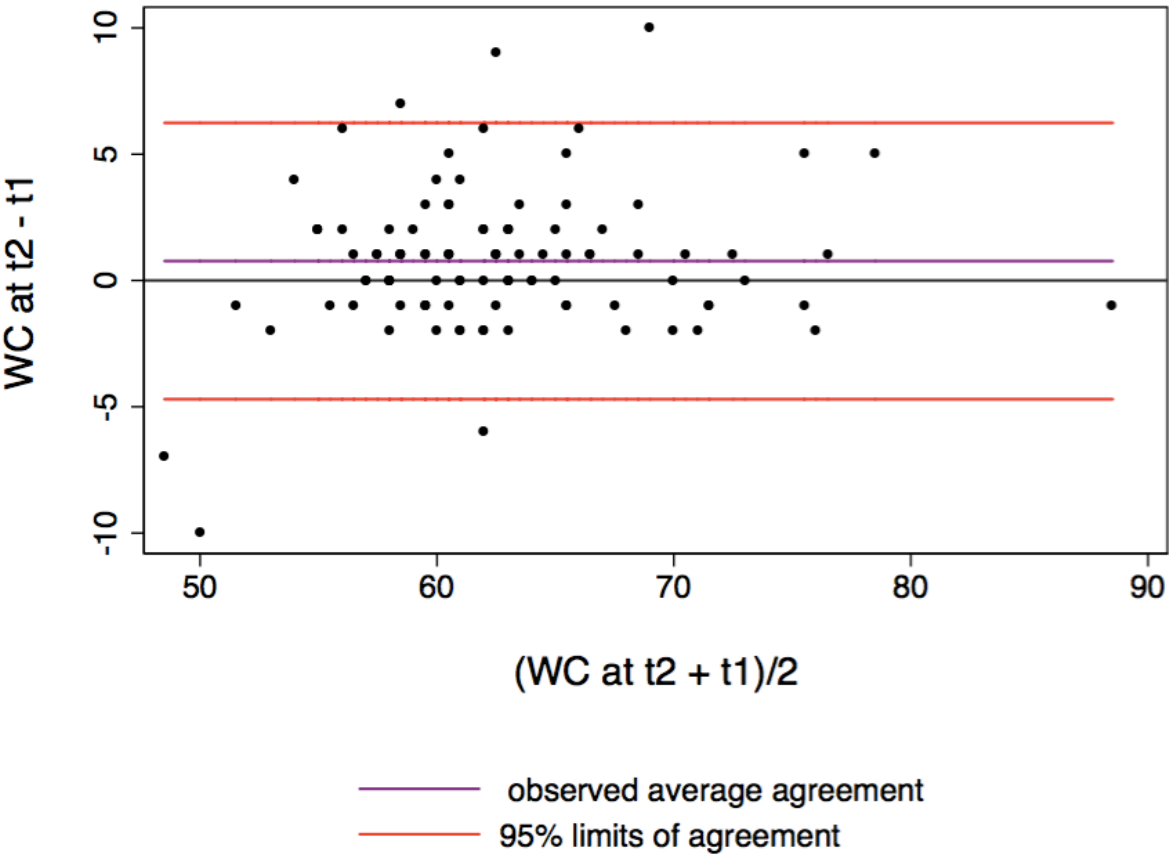


Figure 78. WC, 5th grade, 2012

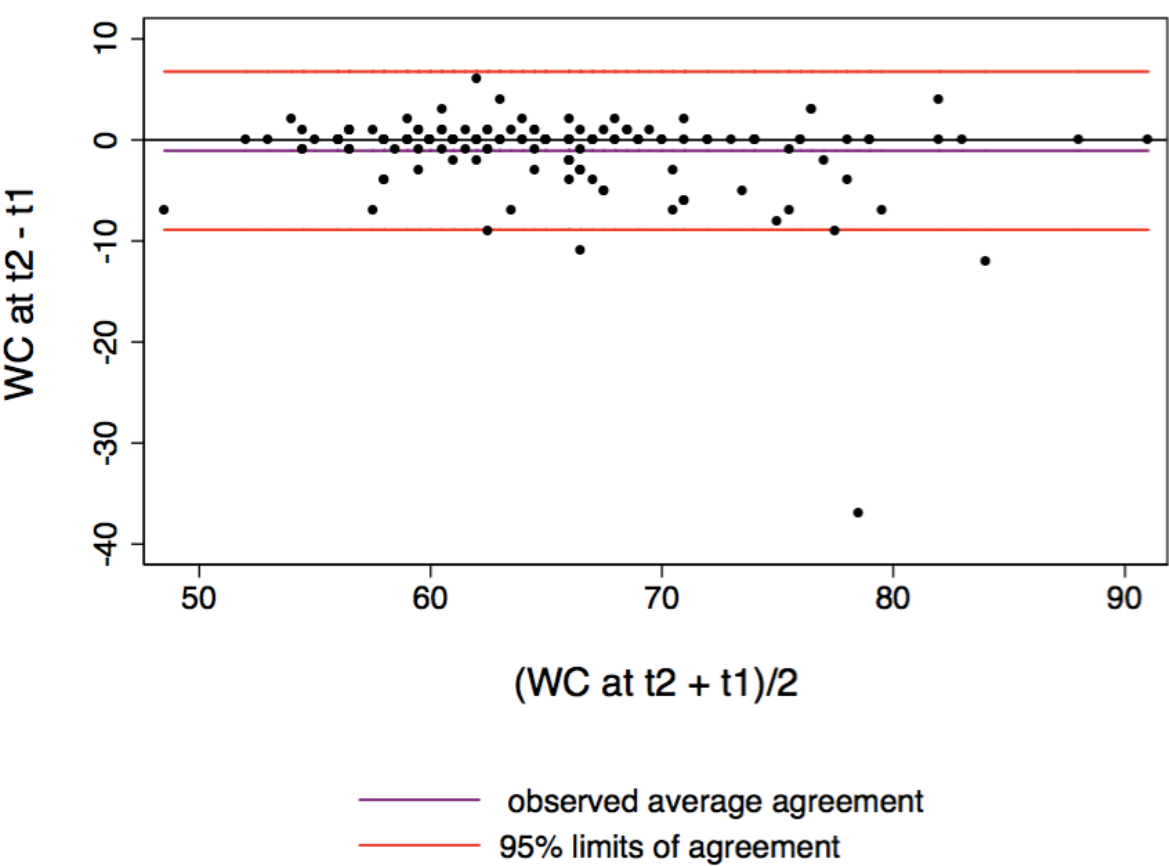


Figure 79. WC, 6th grade, 2012

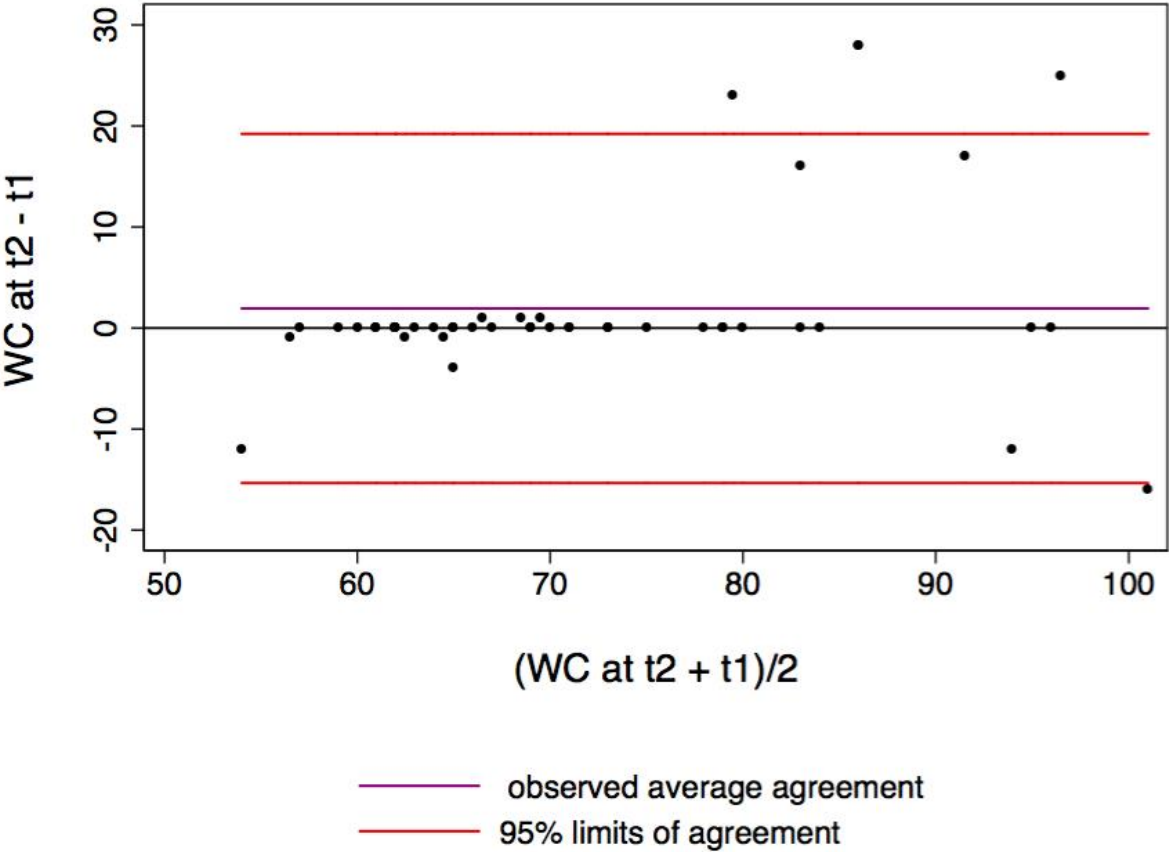


Figure 80. WC, 7th grade, 2012

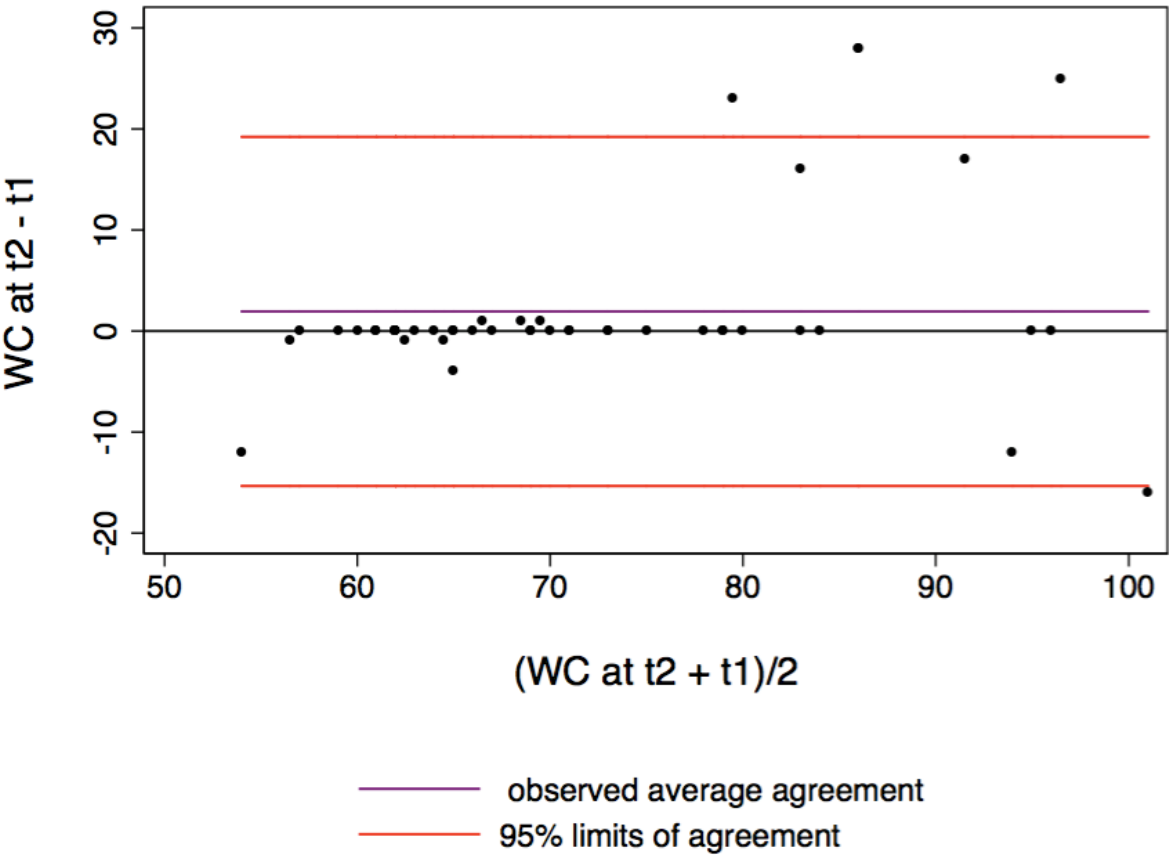


Figure 81. WC, 8th grade, 2012

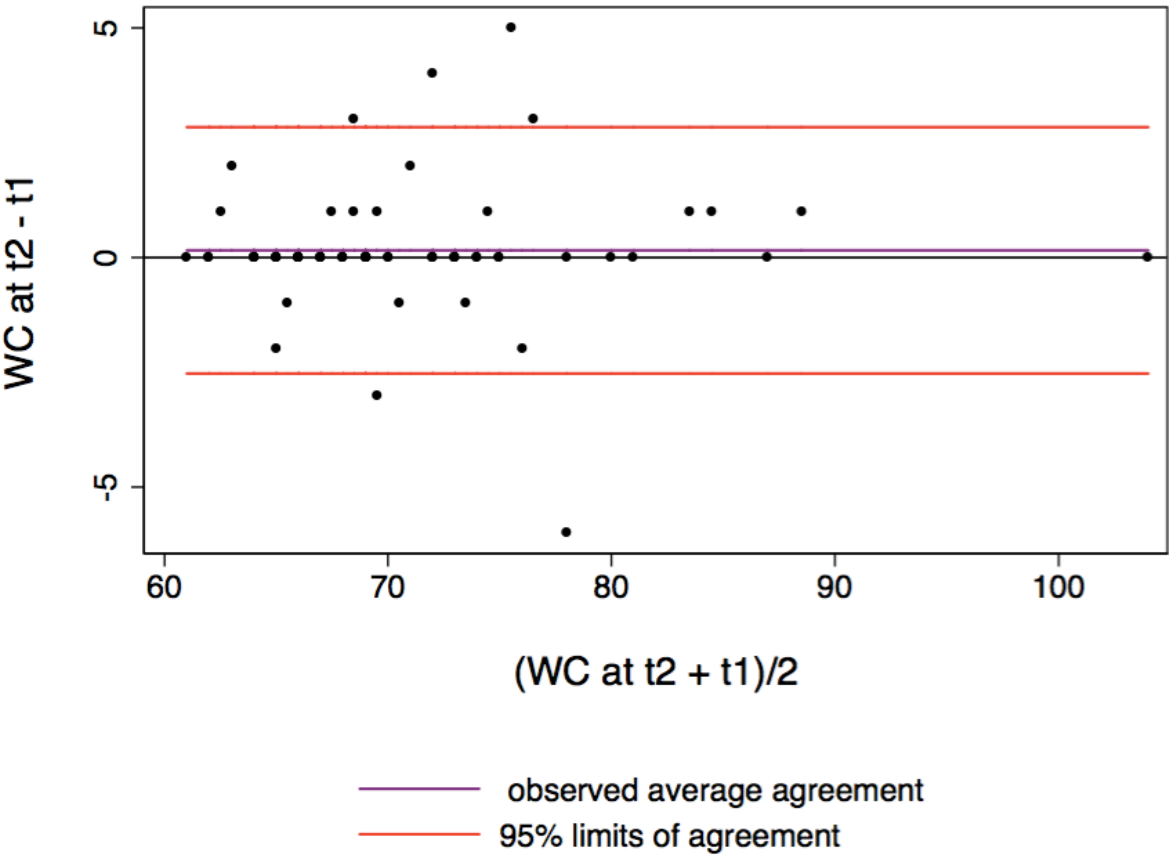


Figure 82. WC, 9th grade, 2012

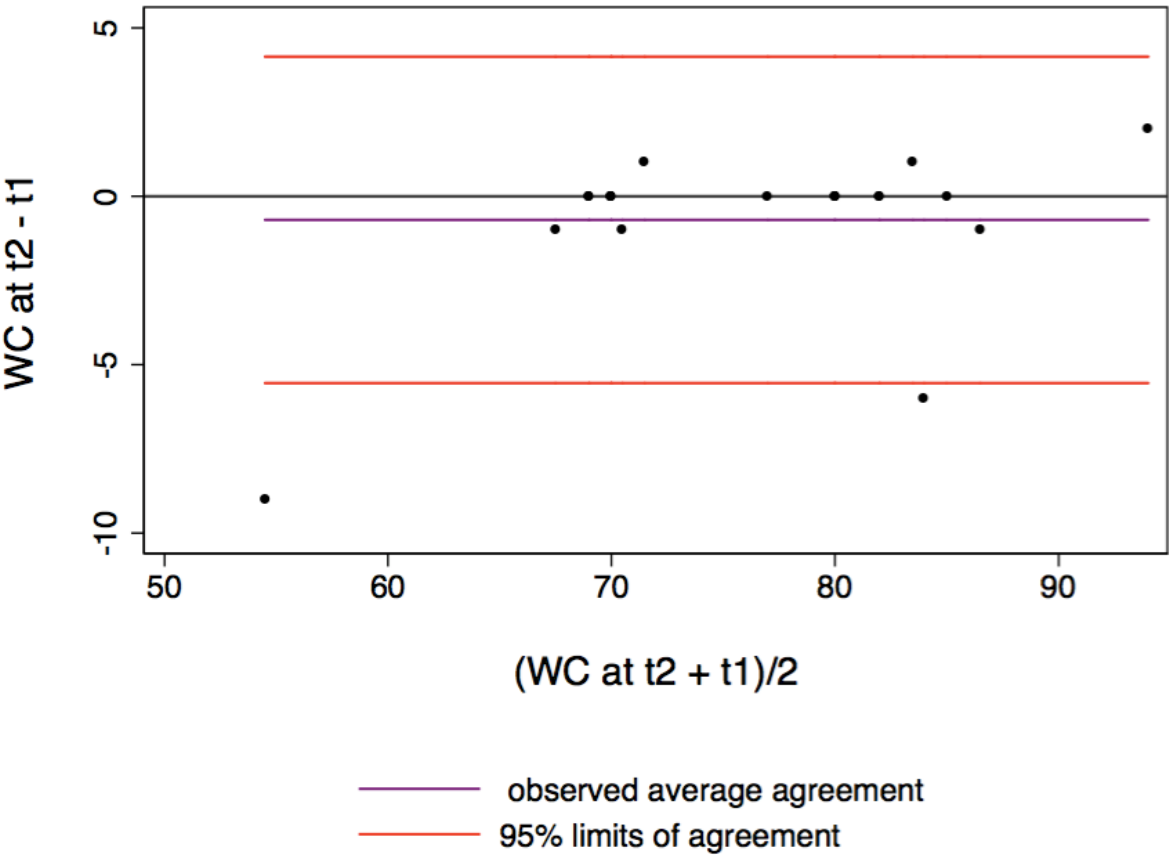


Figure 83. The Andersen test, all grades, 2012

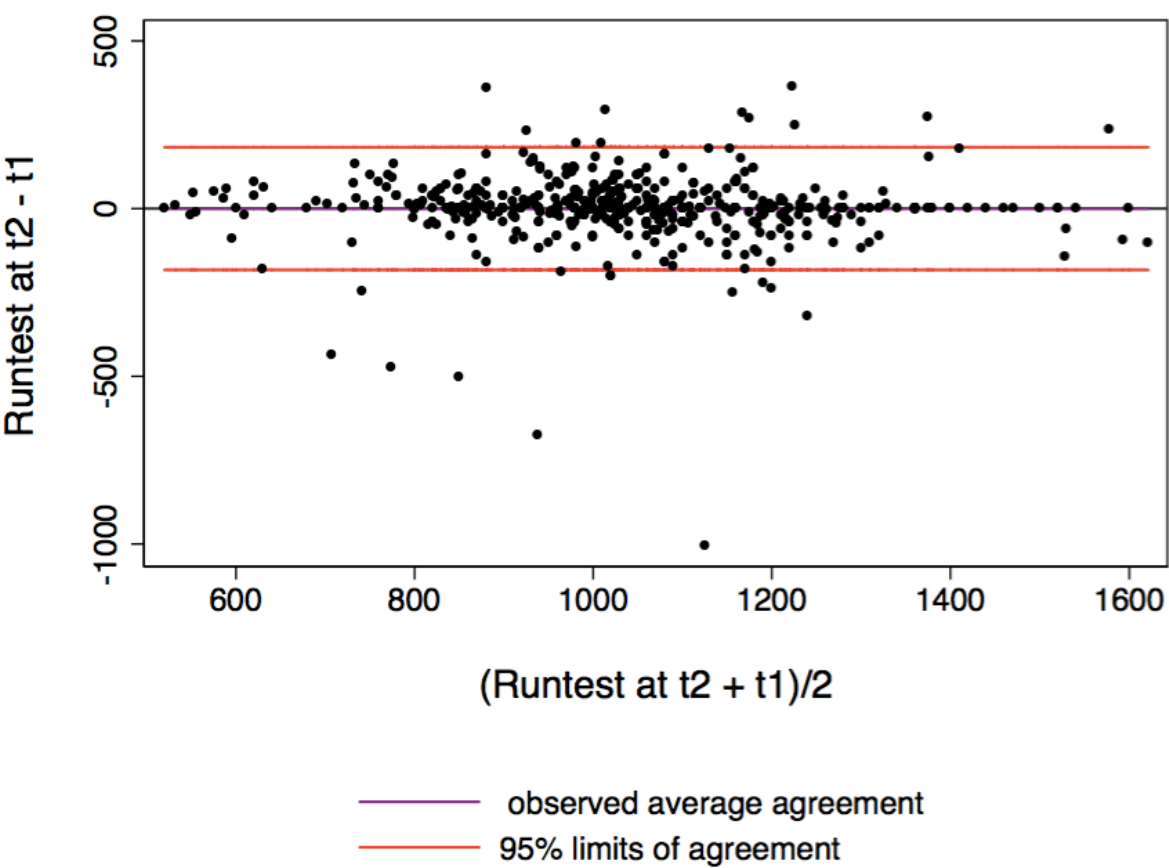


Figure 84. The Andersen test, 0th grade, 2012

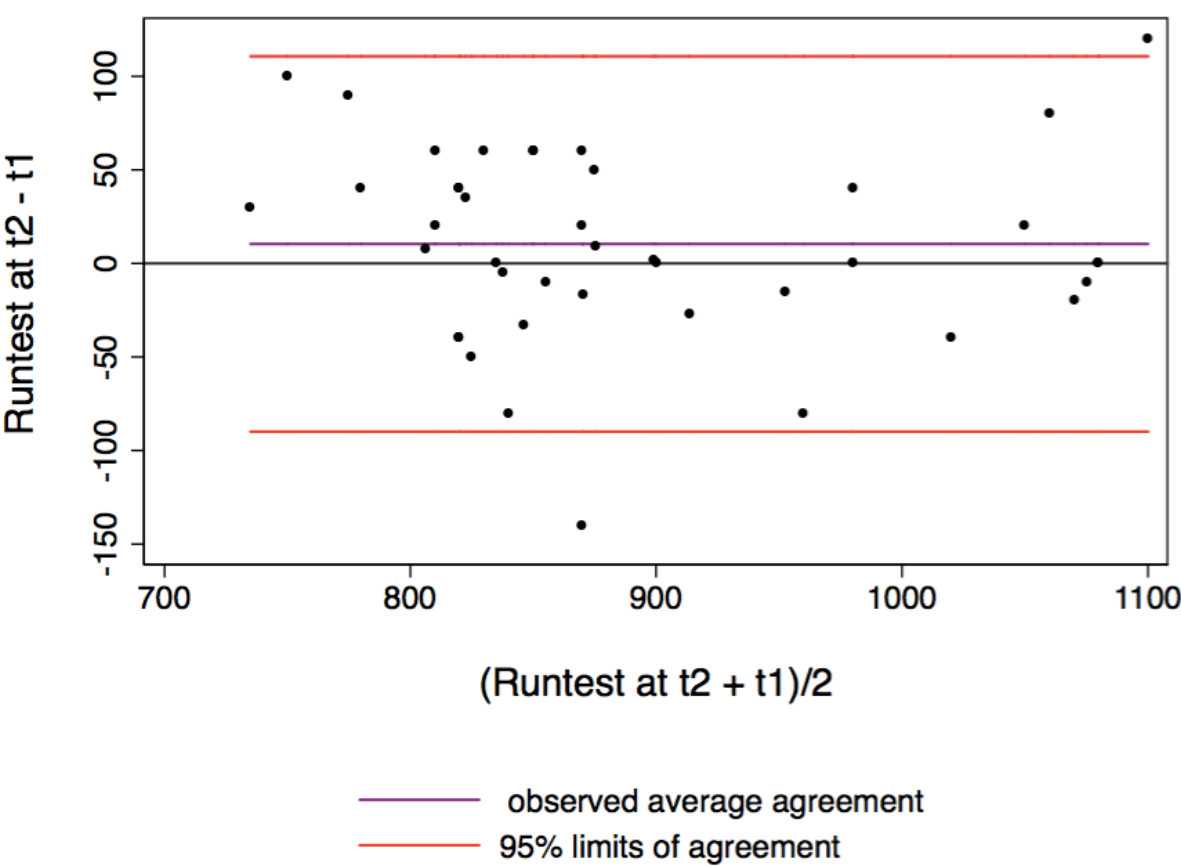


Figure 85. The Andersen test, 1st grade, 2012

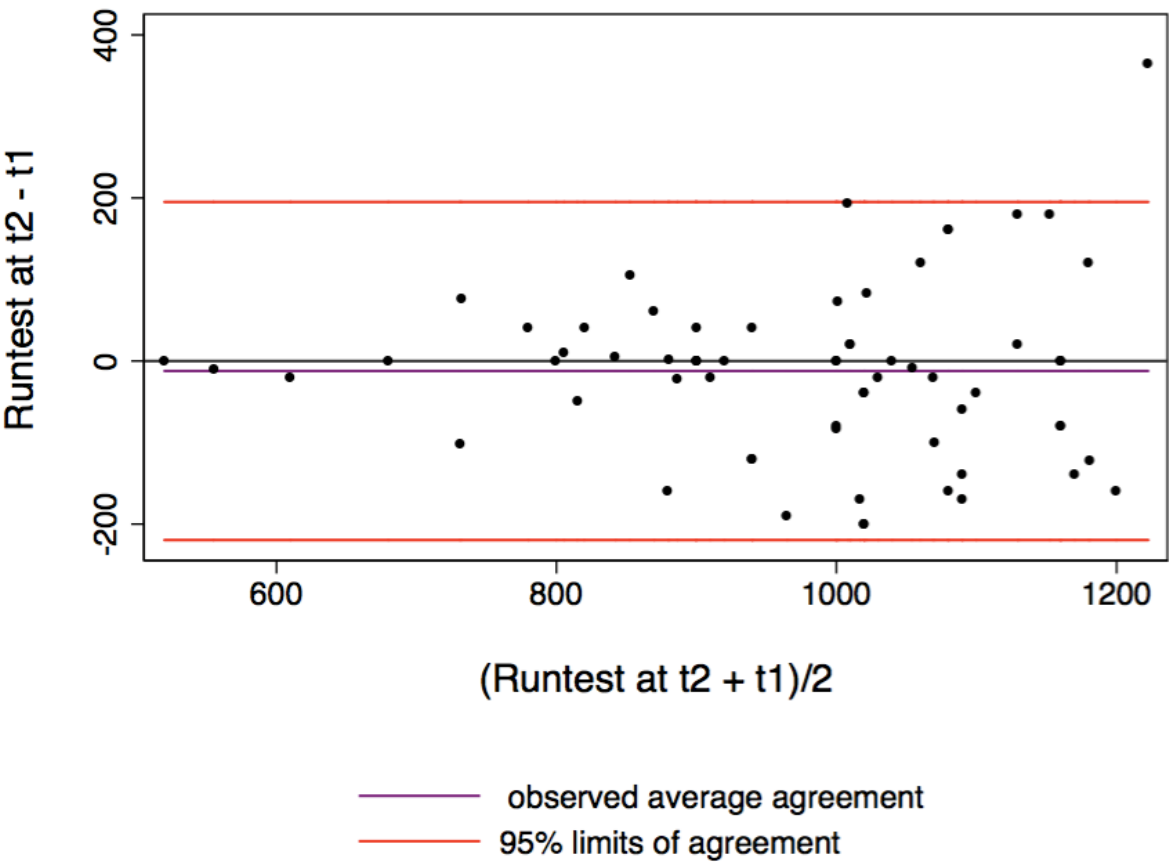


Figure 86. The Andersen test, 2nd grade, 2012

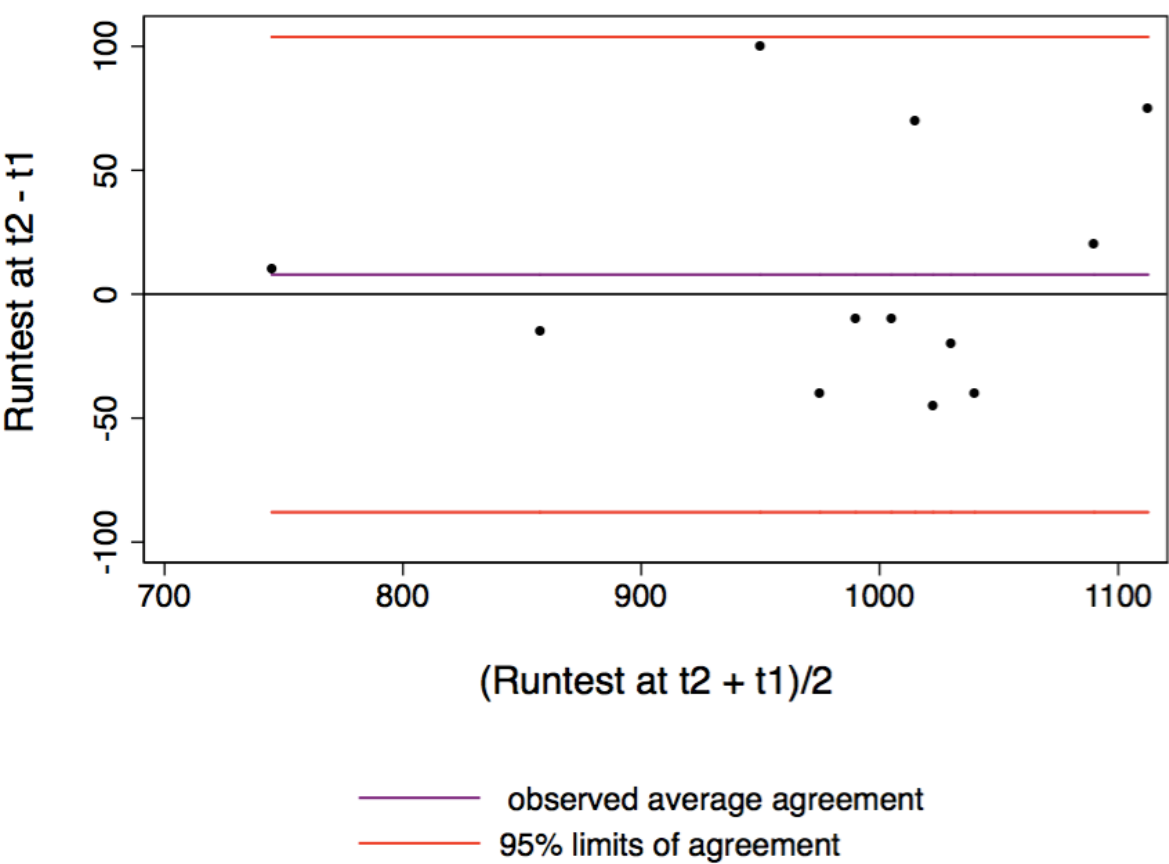


Figure 87. The Andersen test, 3rd grade, 2012

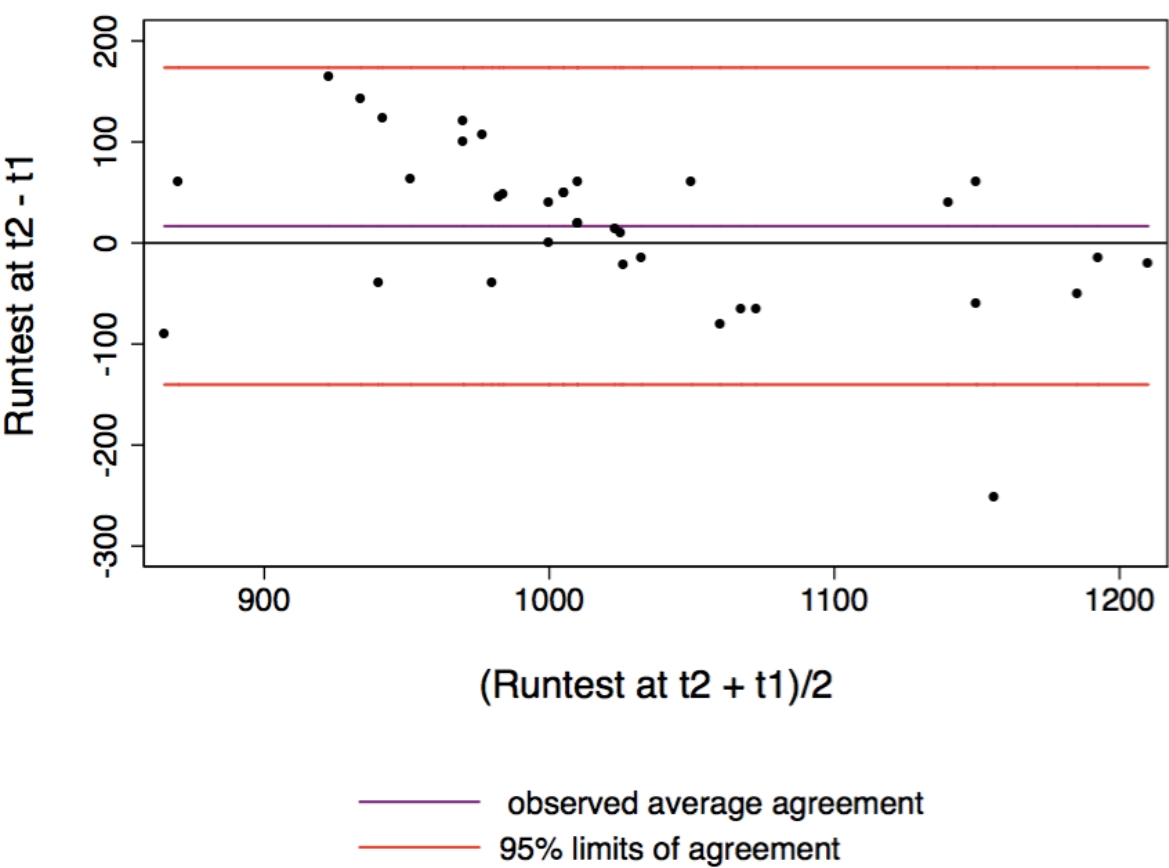


Figure 88. The Andersen test, 4th grade, 2012

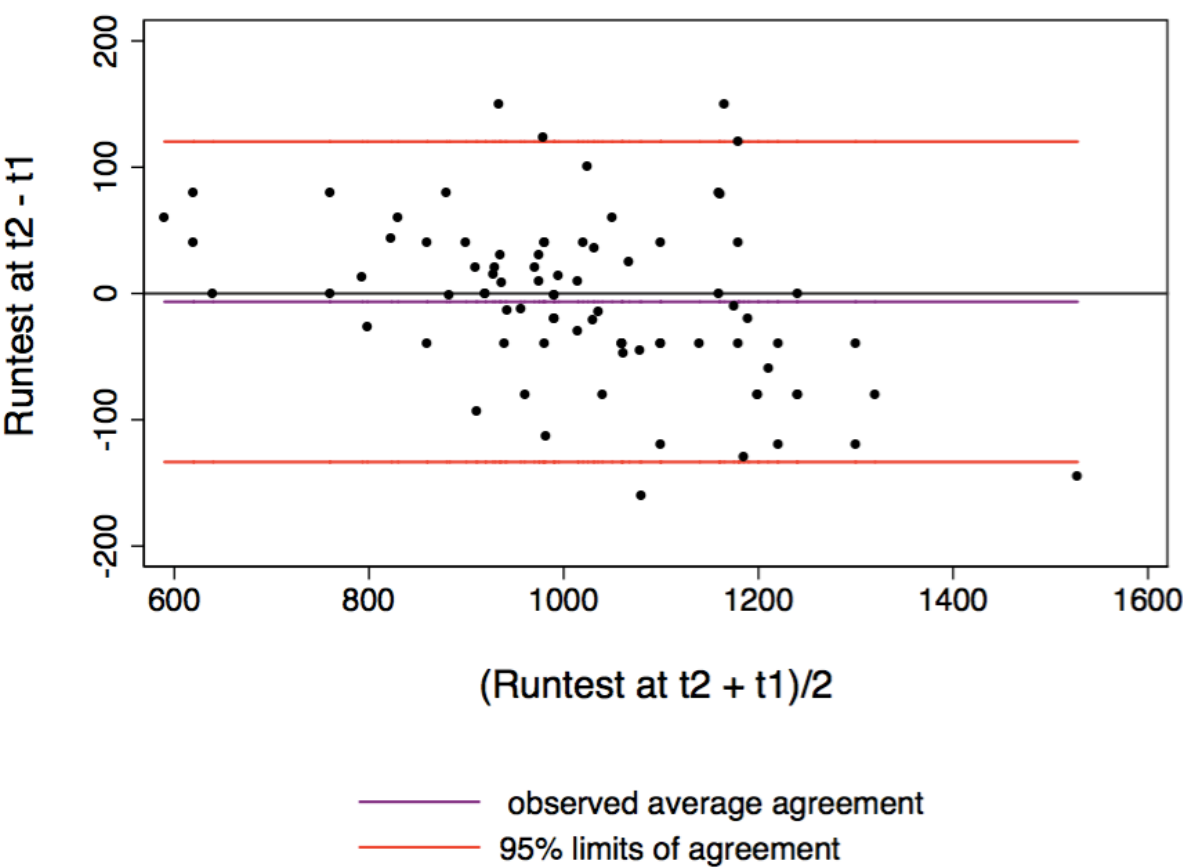


Figure 89. The Andersen test, 5th grade, 2012

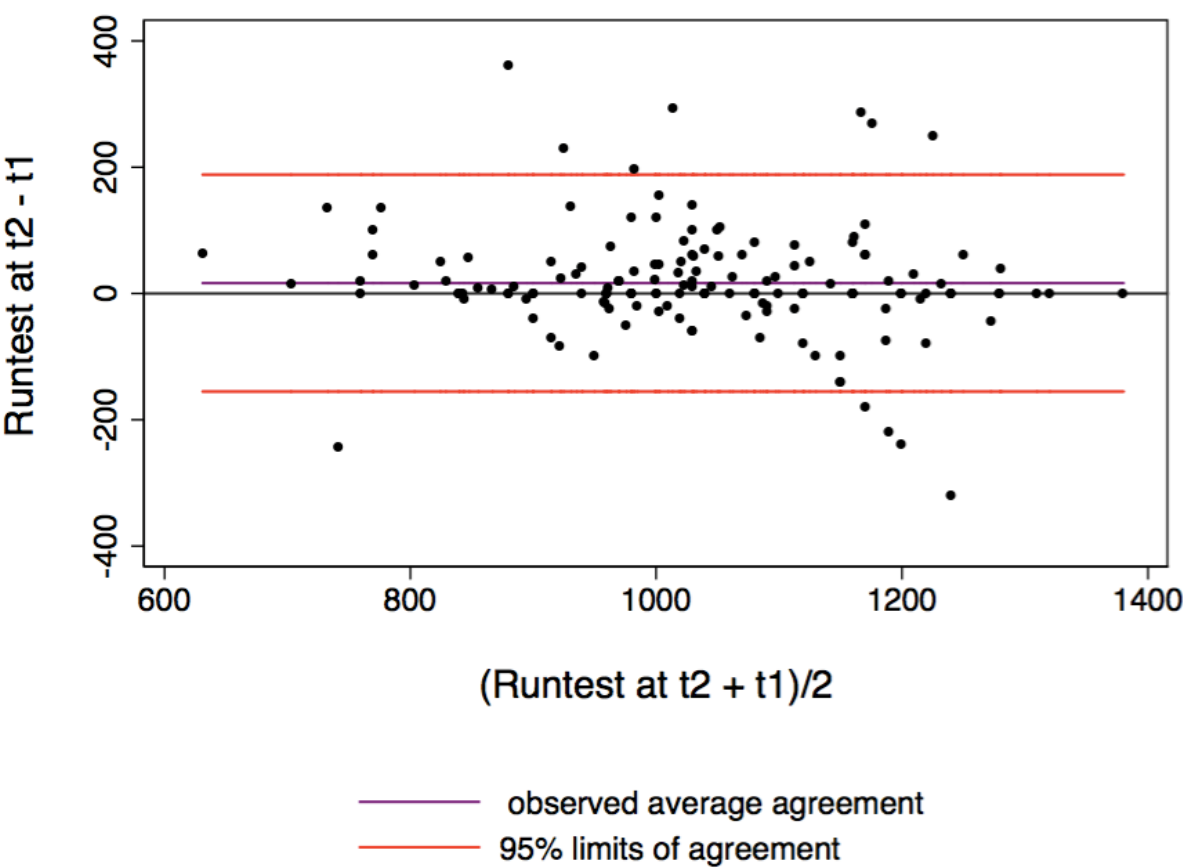


Figure 90. The Andersen test, 6th grade, 2012

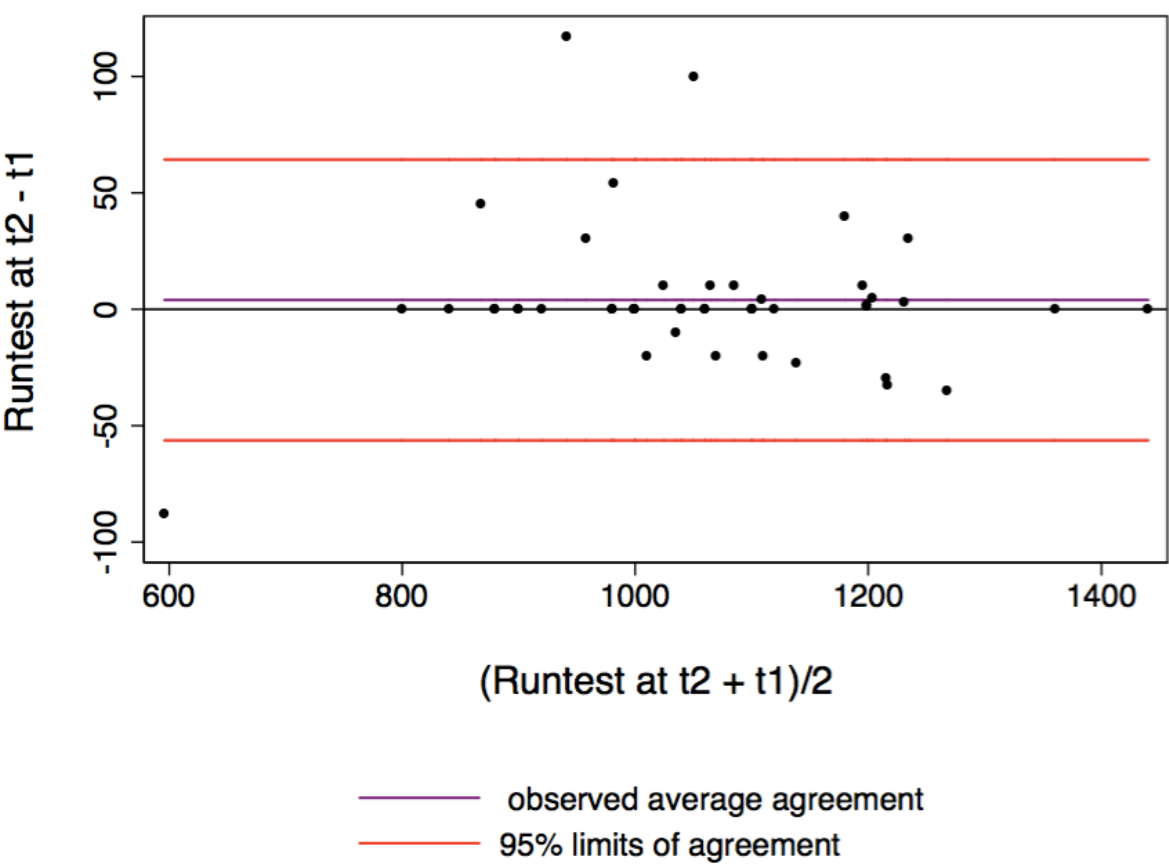


Figure 91. The Andersen test, 7th grade, 2012

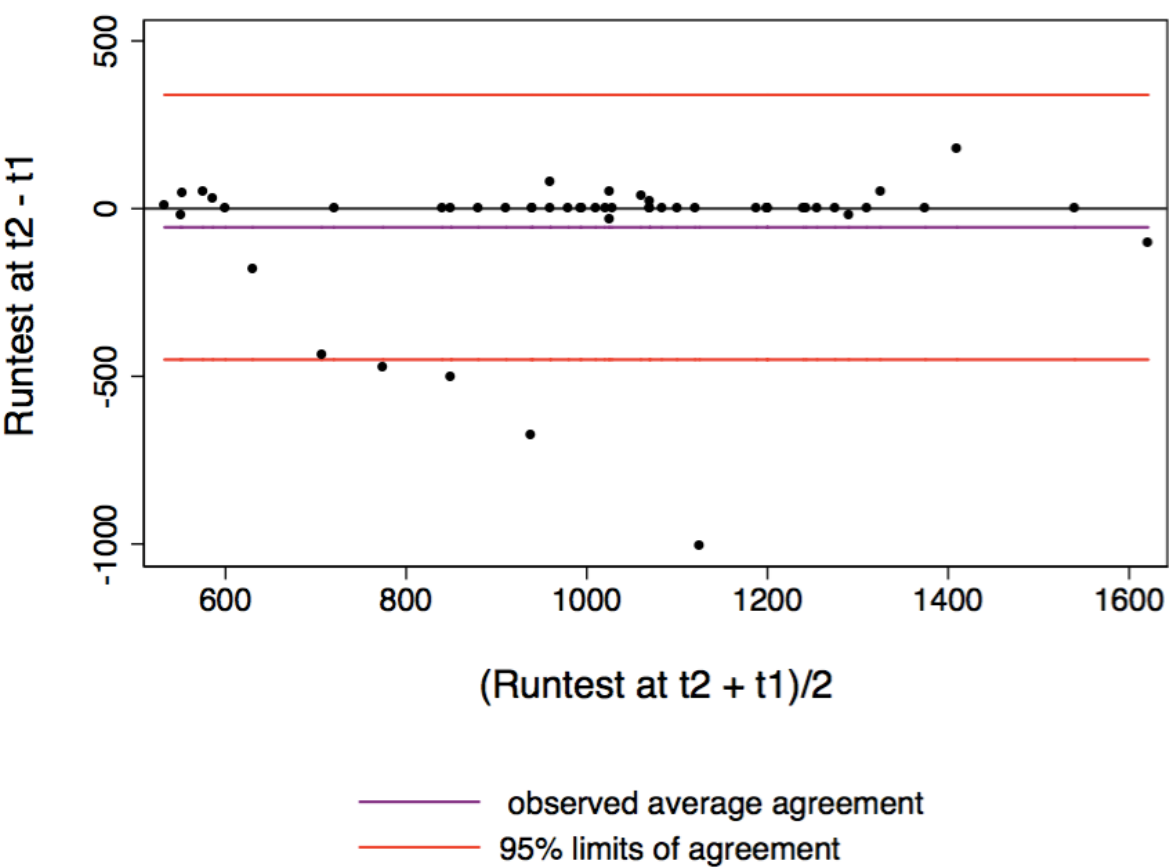


Figure 92. The Andersen test, 8th grade, 2012

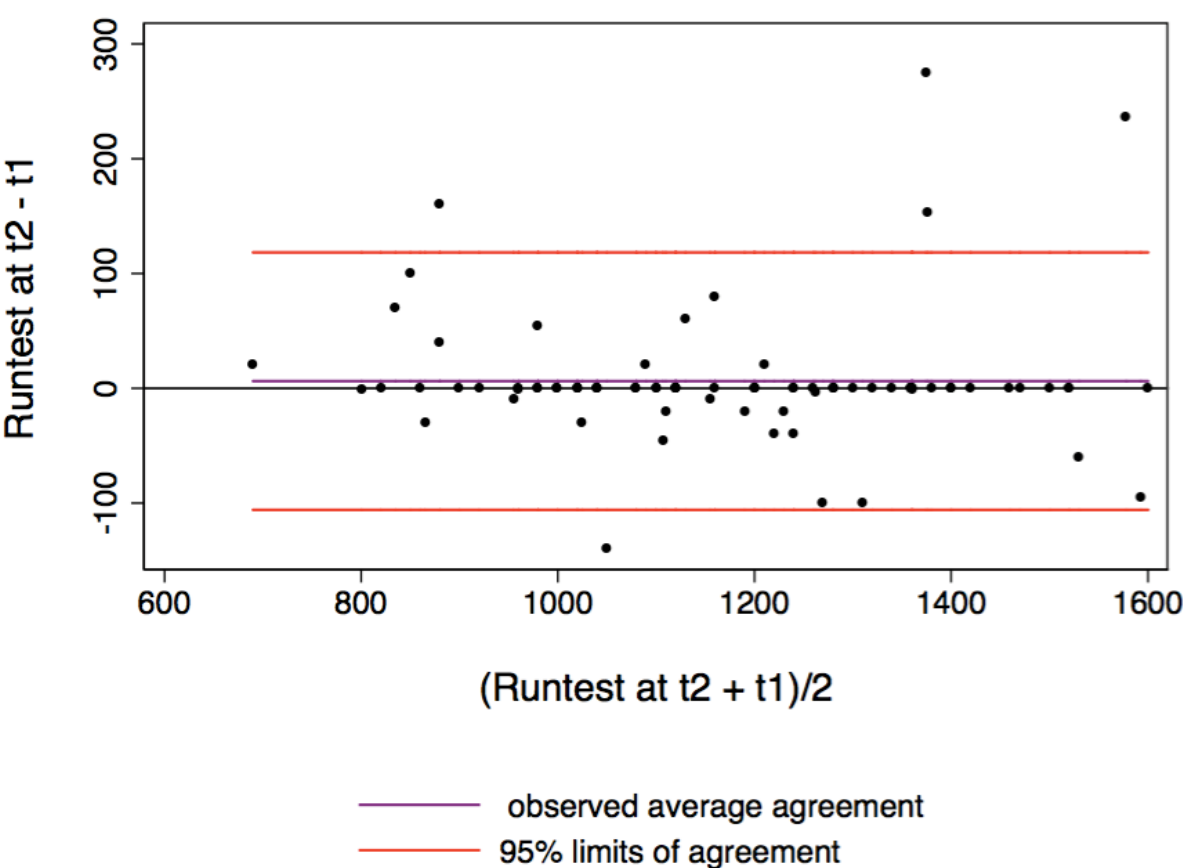
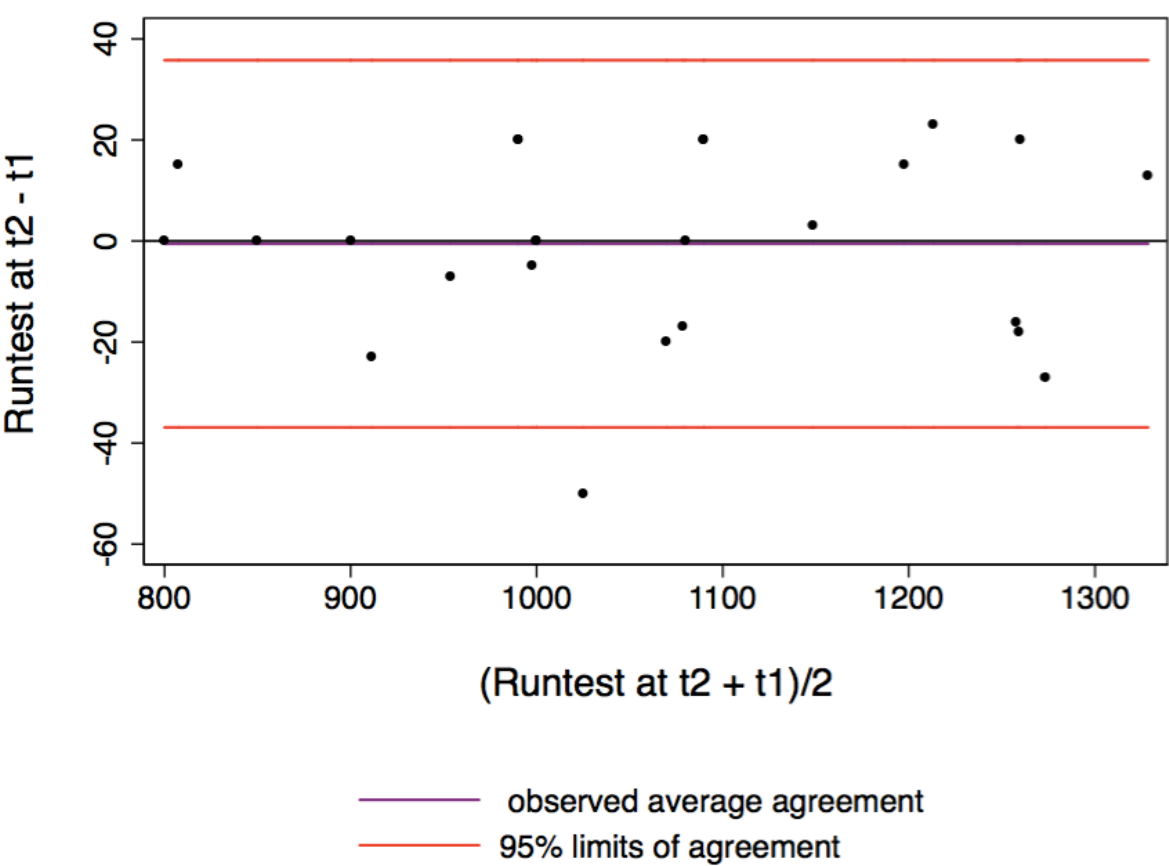


Figure 93. The Andersen test, 9th grade, 2012



**BLAND-ALTMAN PLOTS OF ANTHROPOMETRY AND PHYSICAL FITNESS
OBTAINED BY HSN SCHOOLS IN 2011 AND BY SDU IN 2012. SCHOOL
MEASUREMENTS ARE ADJUSTED FOR EXPECTED GROWTH BETWEEN
MEASUREMENT POINTS. INTER-OBSERVER RELIABILITY**

Figure 94. Height, all grades

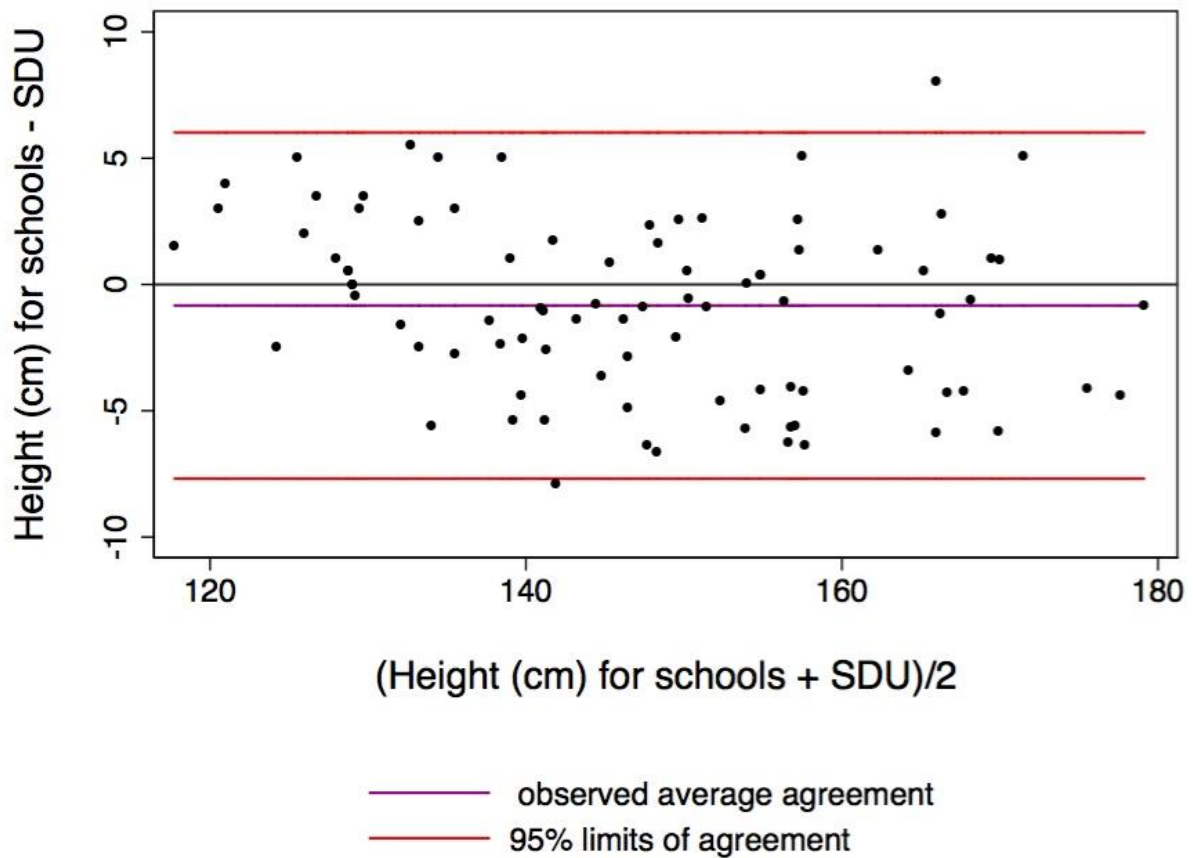


Figure 95. Height, 0th-3rd grades

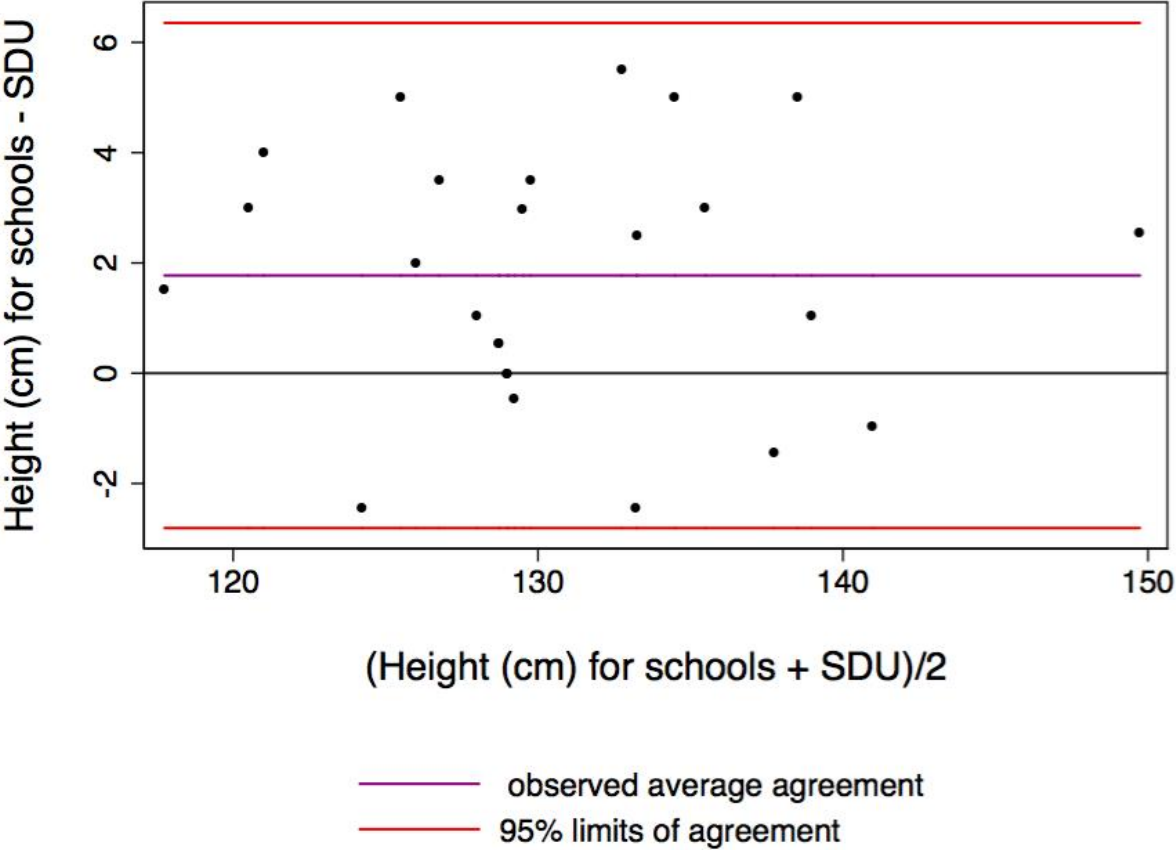


Figure 96. Height, 4th-6th grades

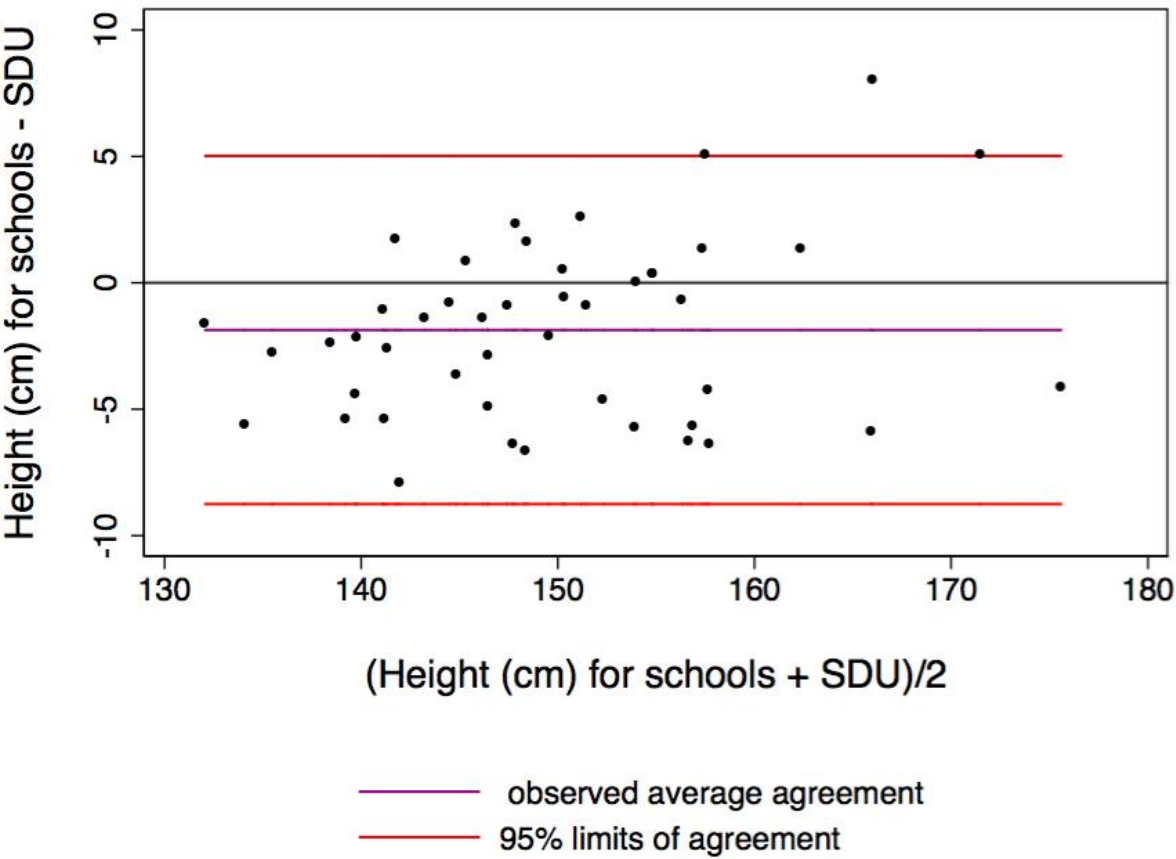


Figure 97. Height, 7th-9th grades

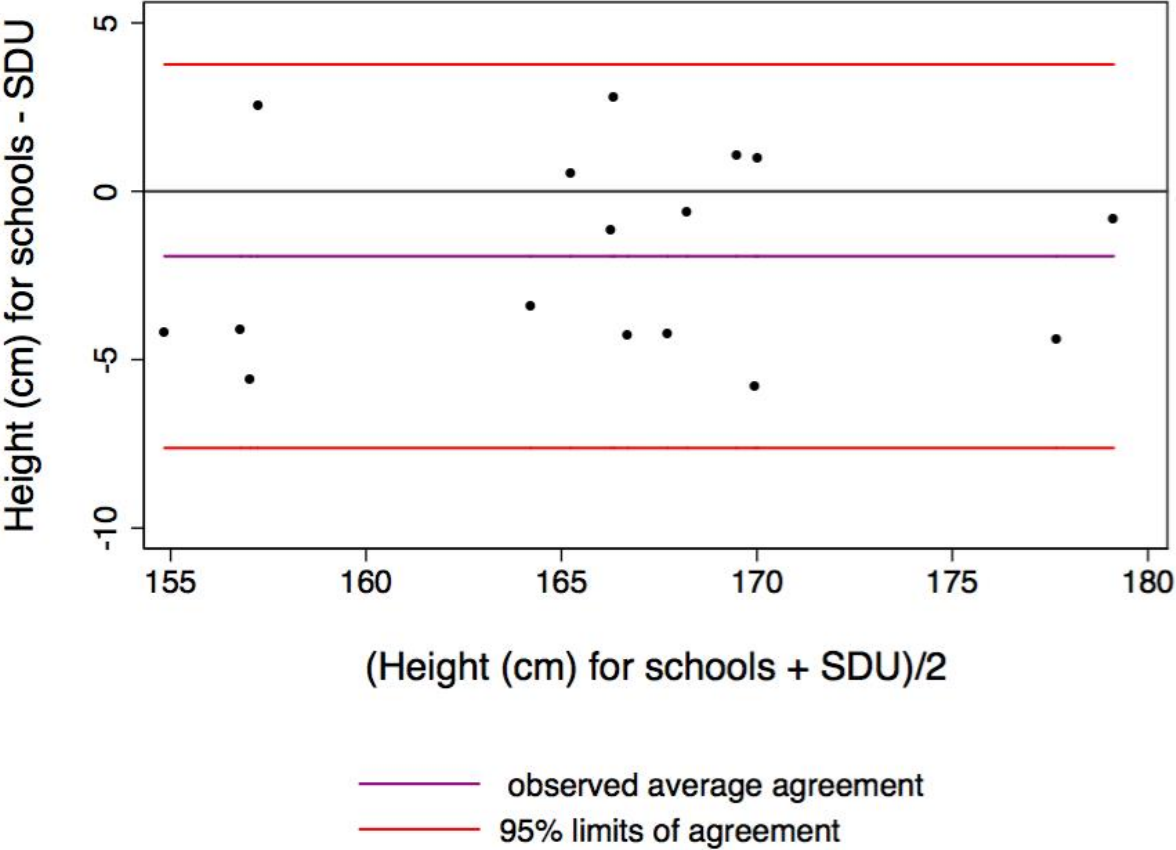


Figure 98. Weight, all grades

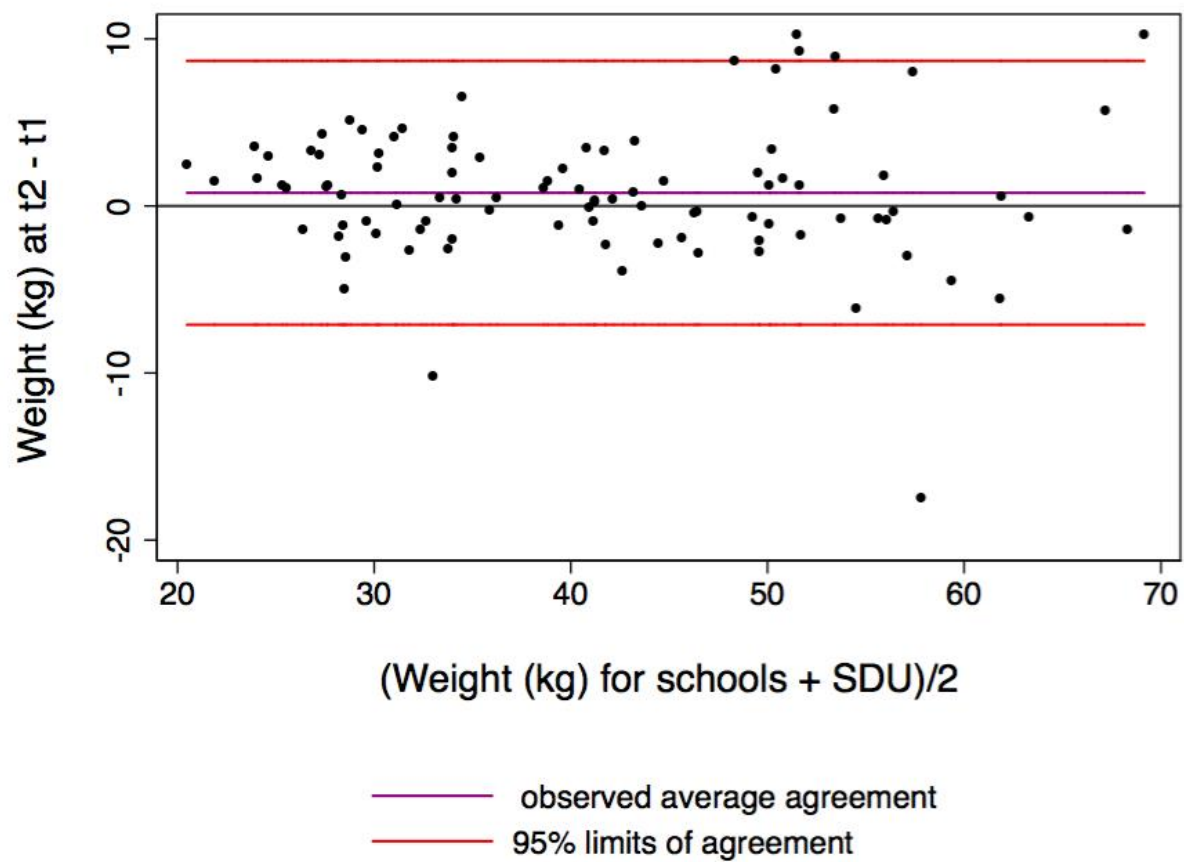


Figure 99. Weight, 0th-3rd grades

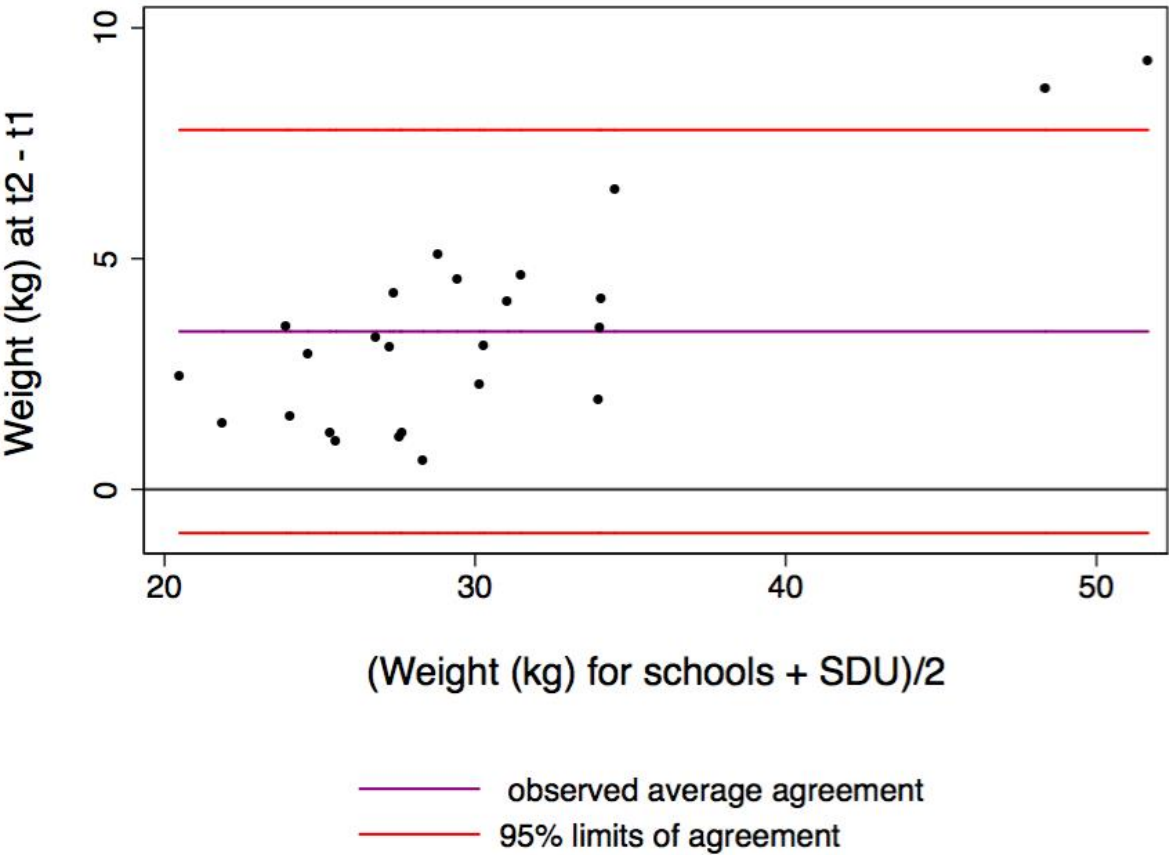


Figure 100. Weight, 4th-6th grades

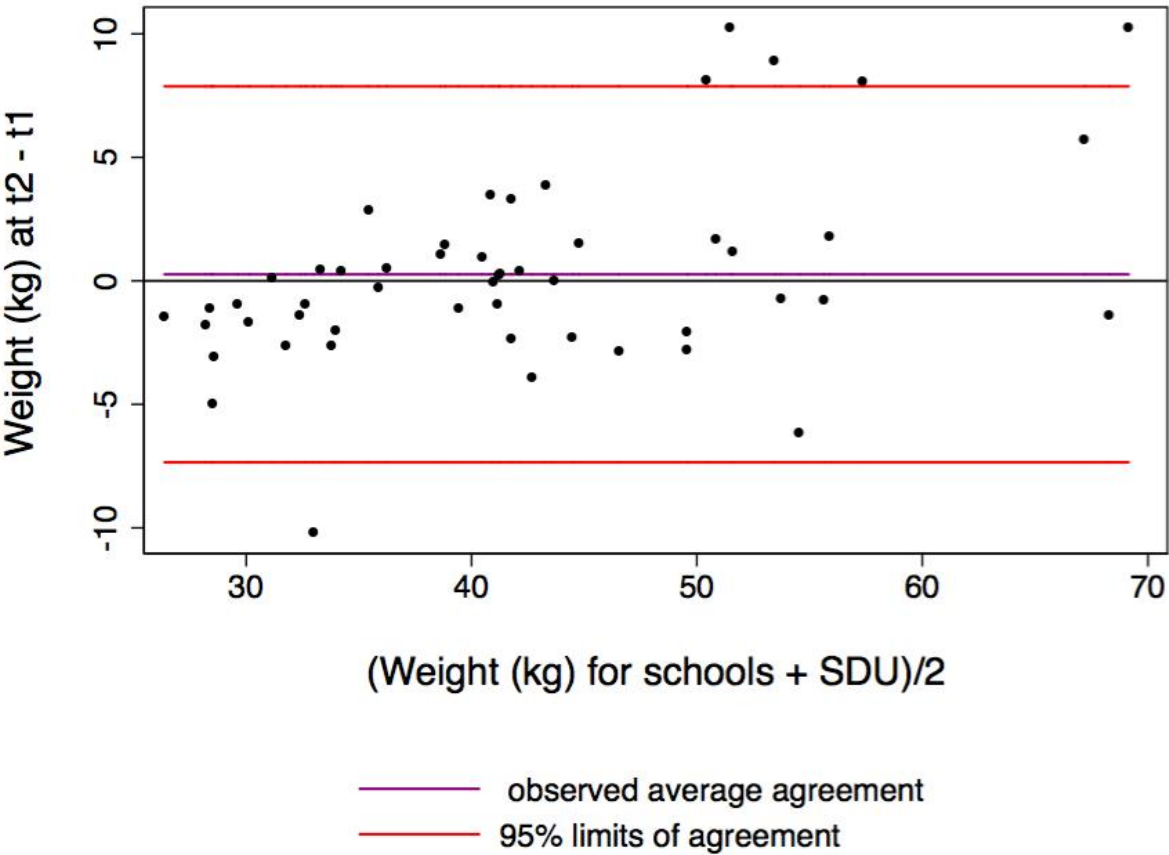


Figure 101. Weight, 7th-9th grades

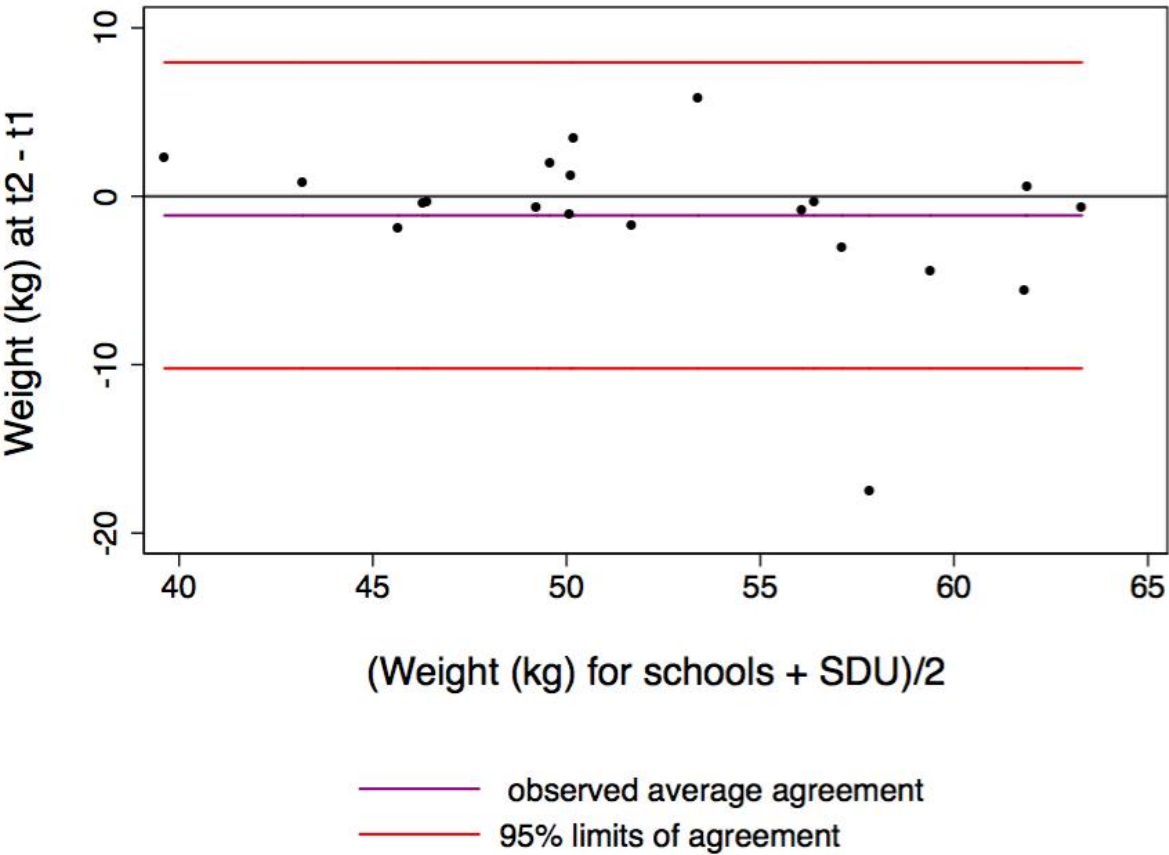


Figure 102. WC, all grades

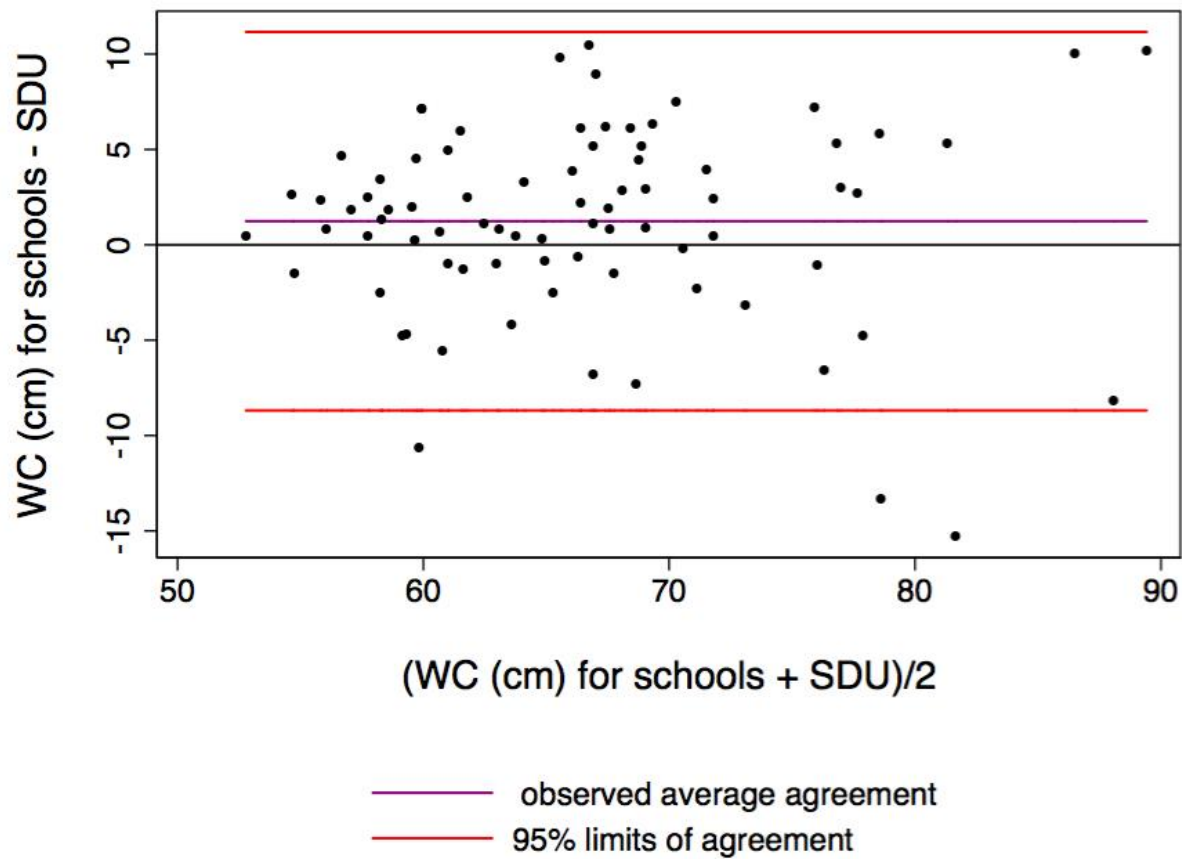


Figure 103. WC, 0th-3rd grades

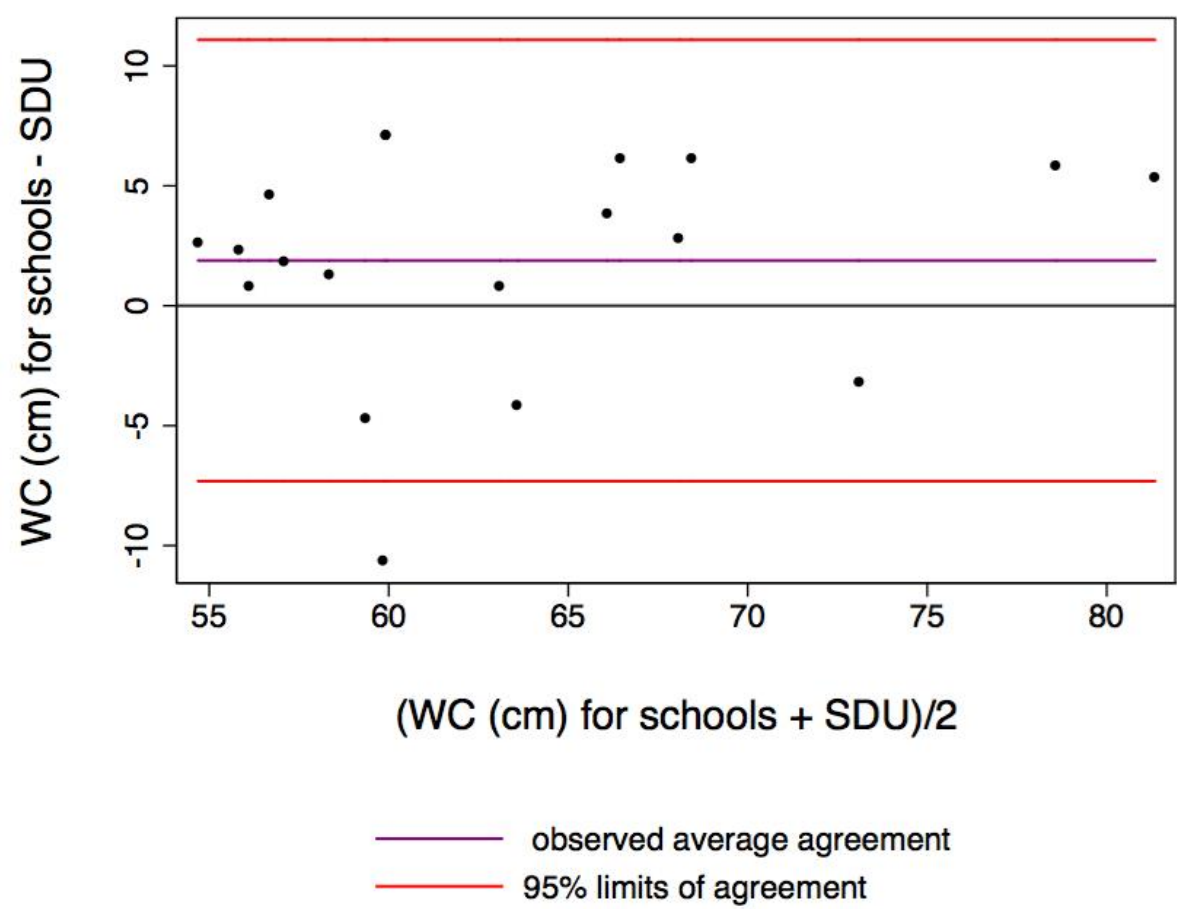


Figure 104. WC, 4th-6th grades

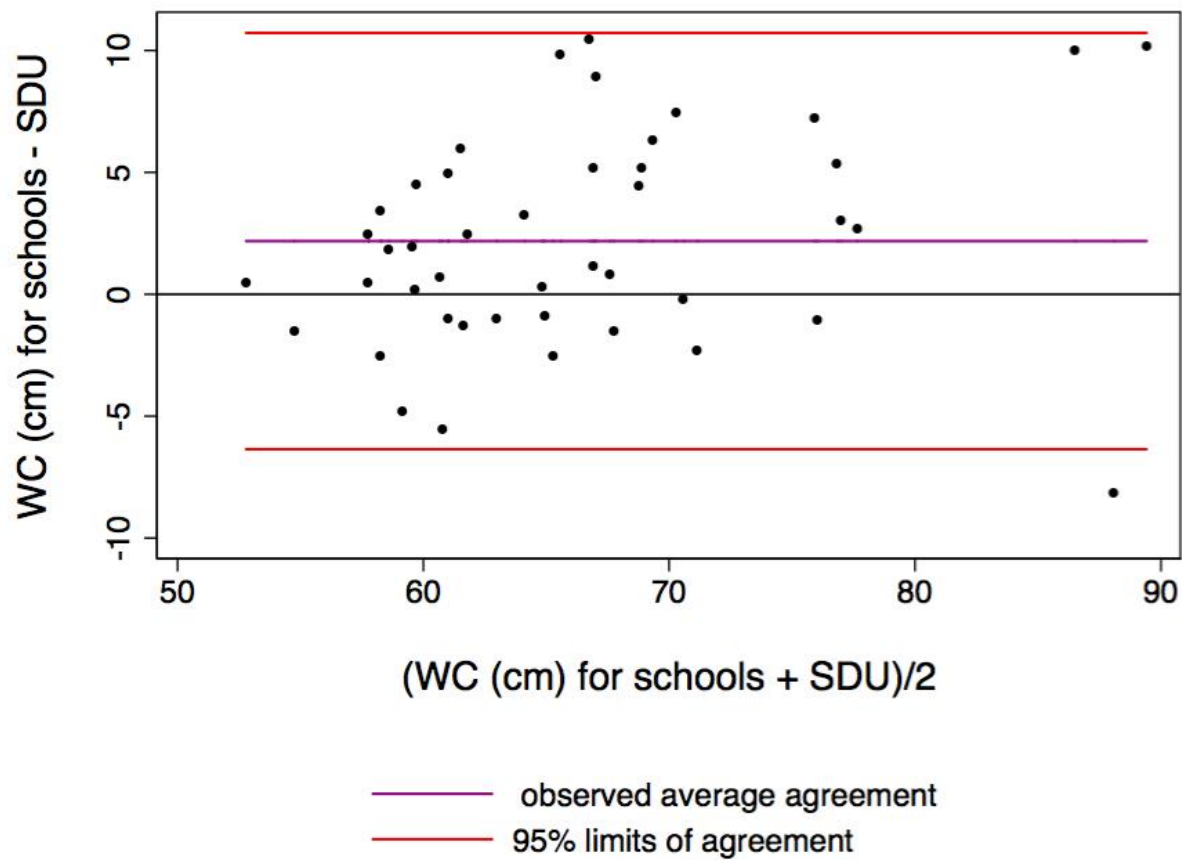


Figure 105. WC, 7th-9th grades

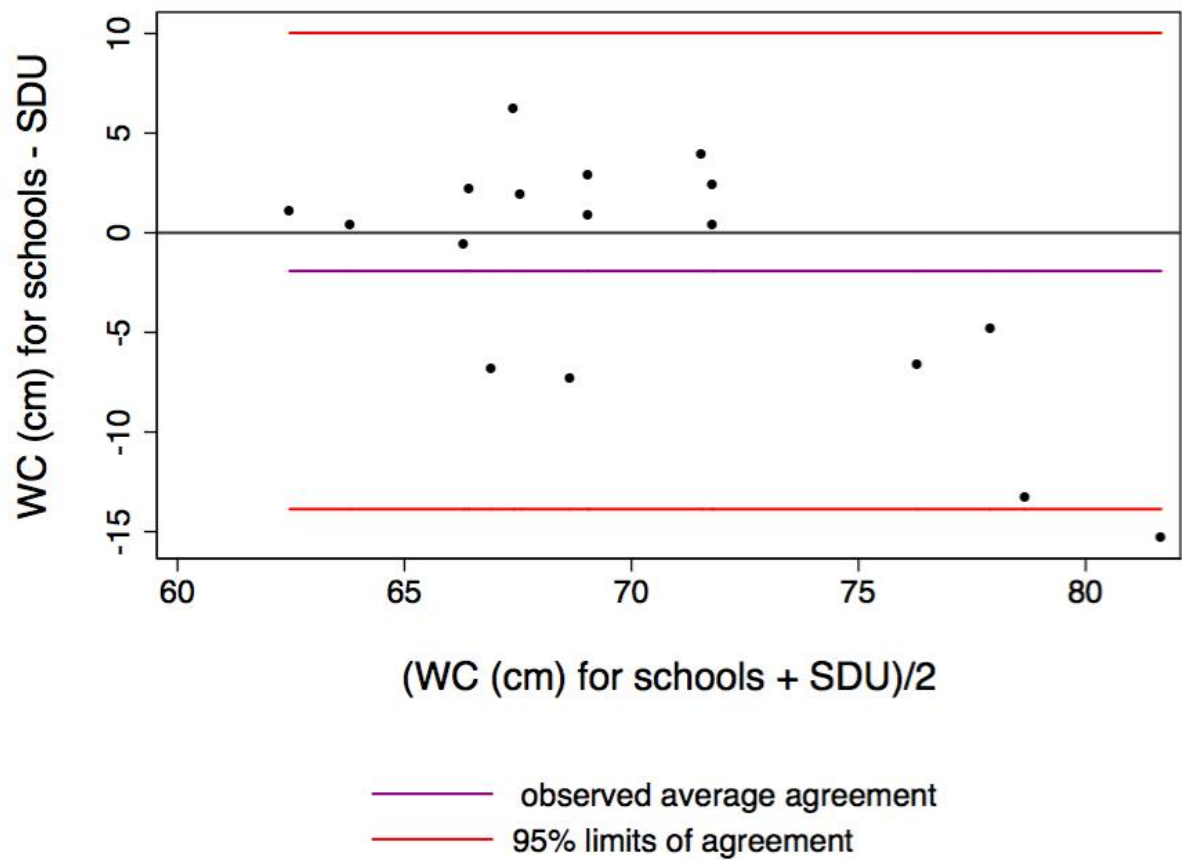


Figure 106. Vertical jump height, all grades

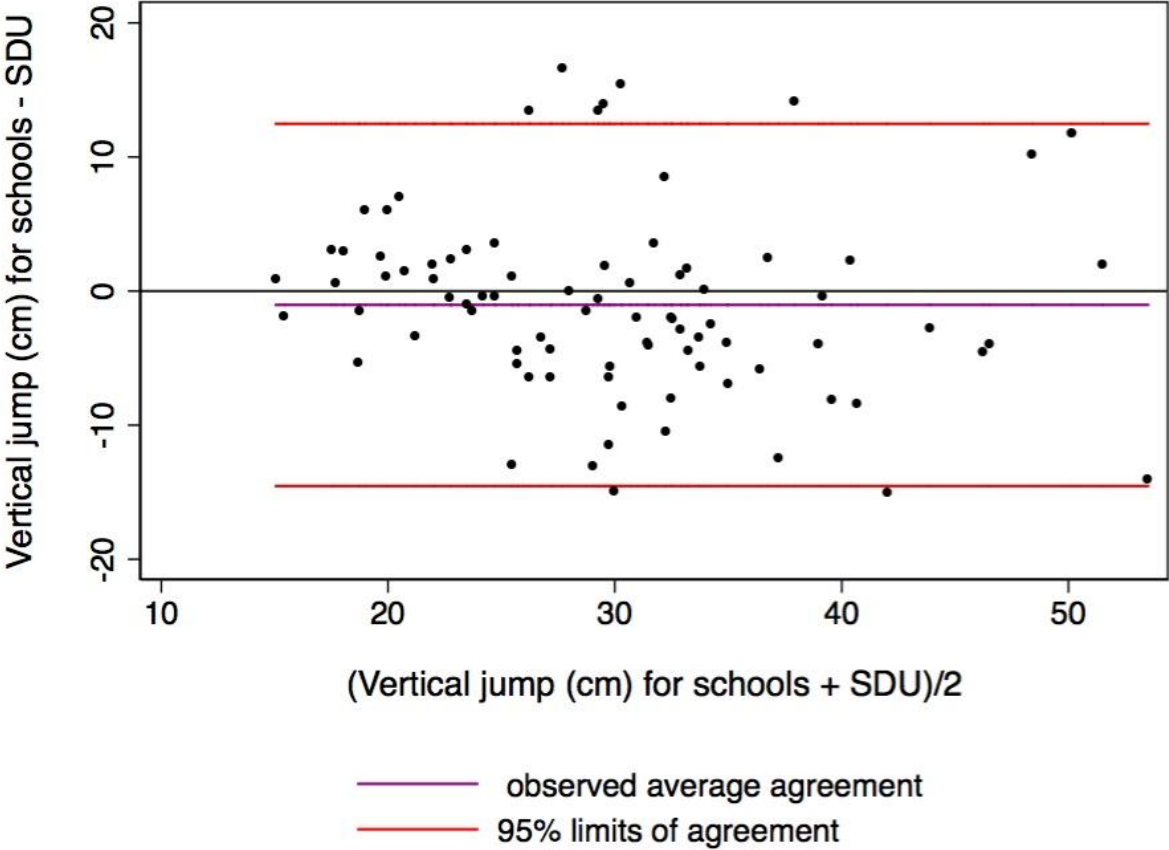


Figure 107. Vertical jump height, 0th-3rd grades

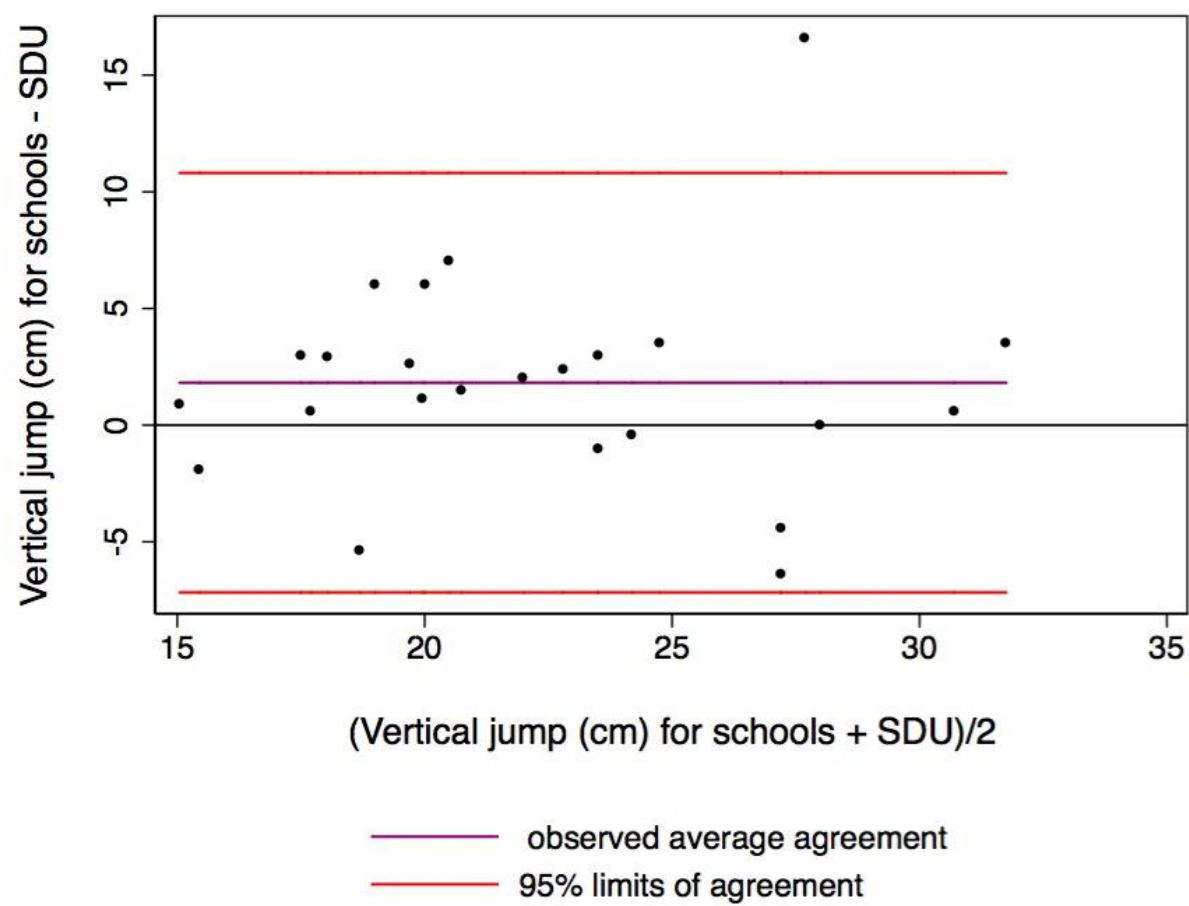


Figure 108. Vertical jump height, 4th-6th grades

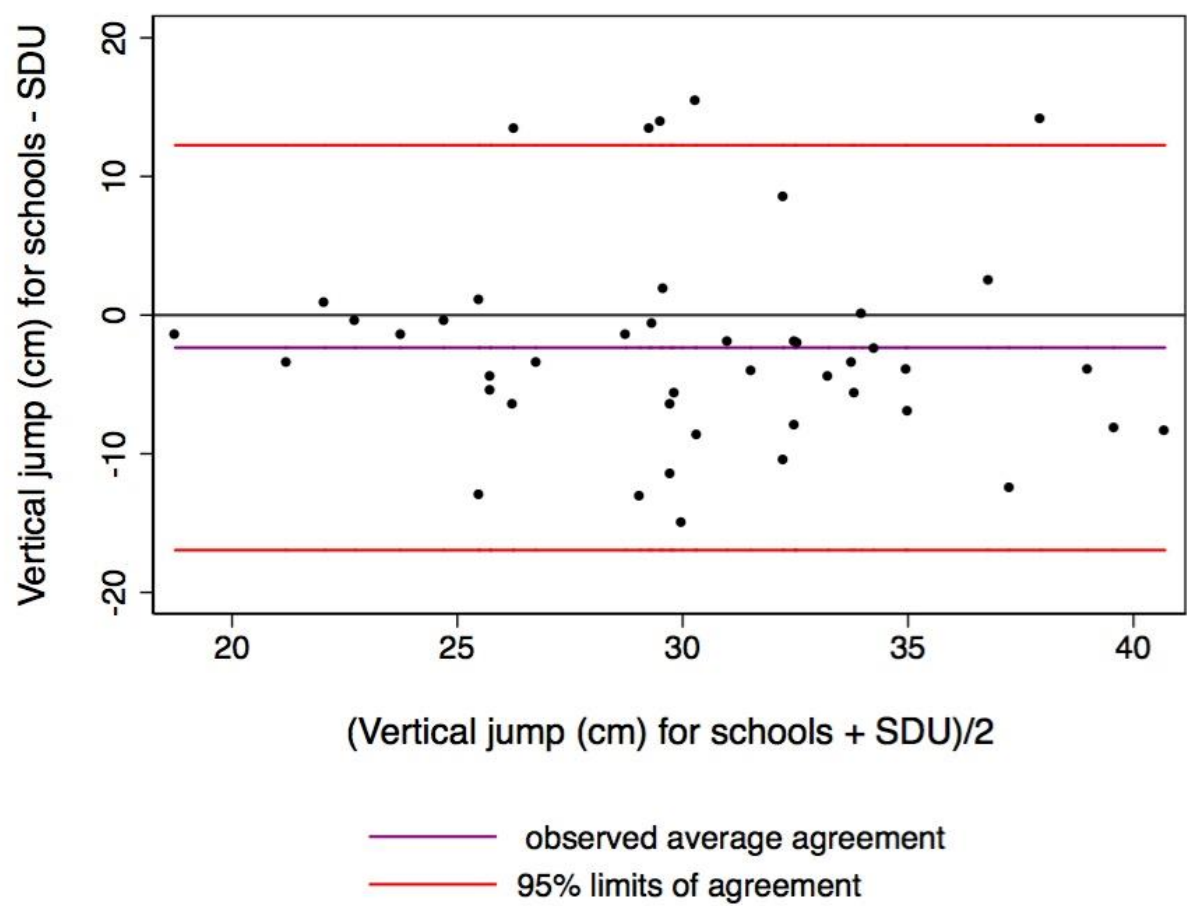


Figure 109. Vertical jump height, 7th-9th grades

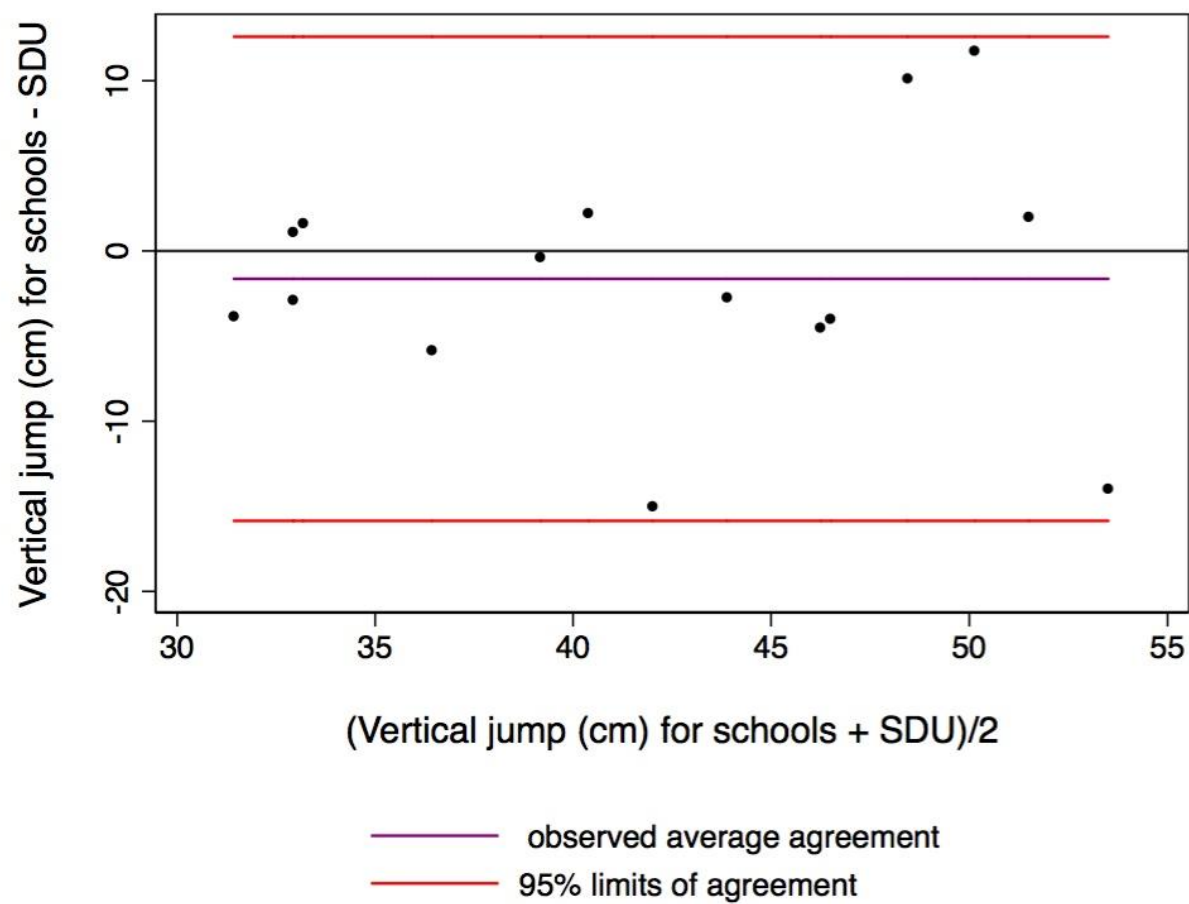


Figure 110. The Andersen test, all grades

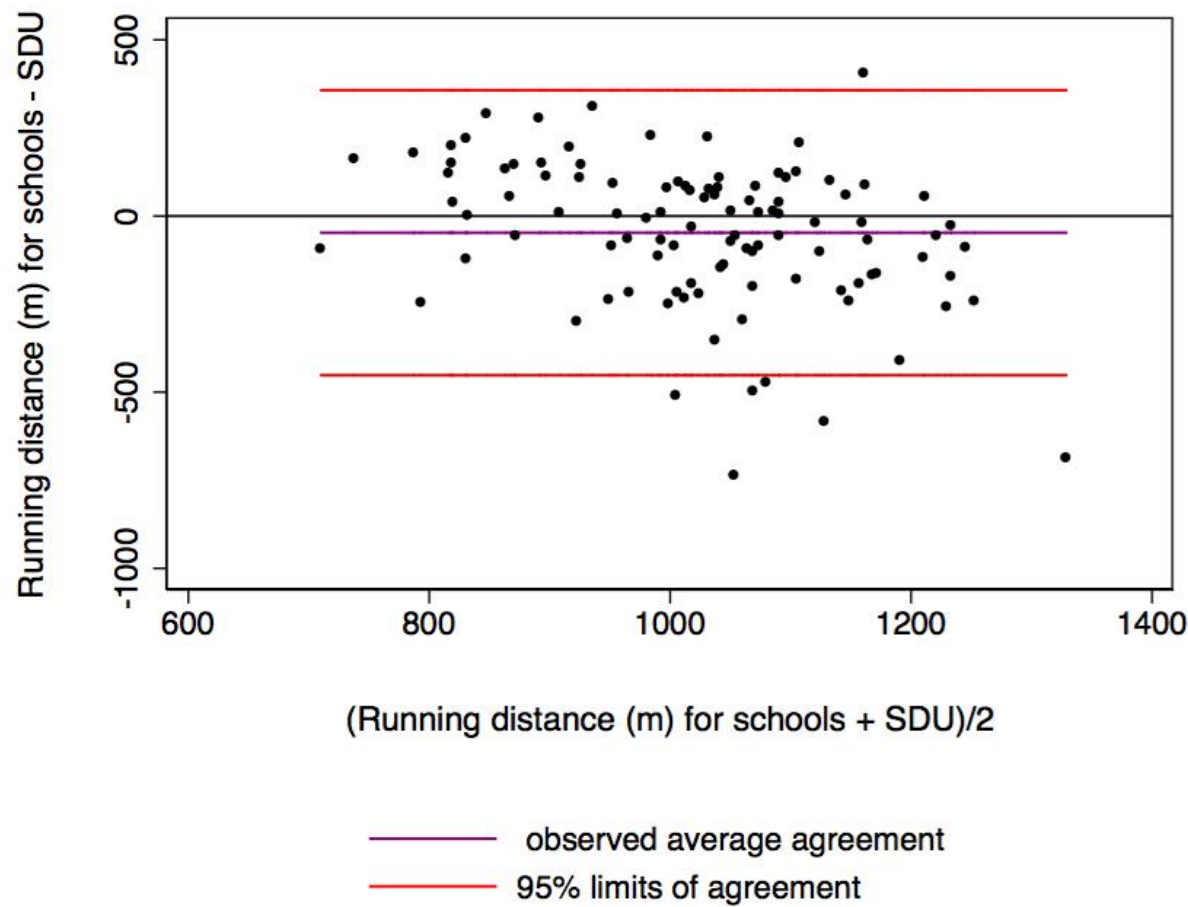


Figure 111. The Andersen test, 0th-3rd grades

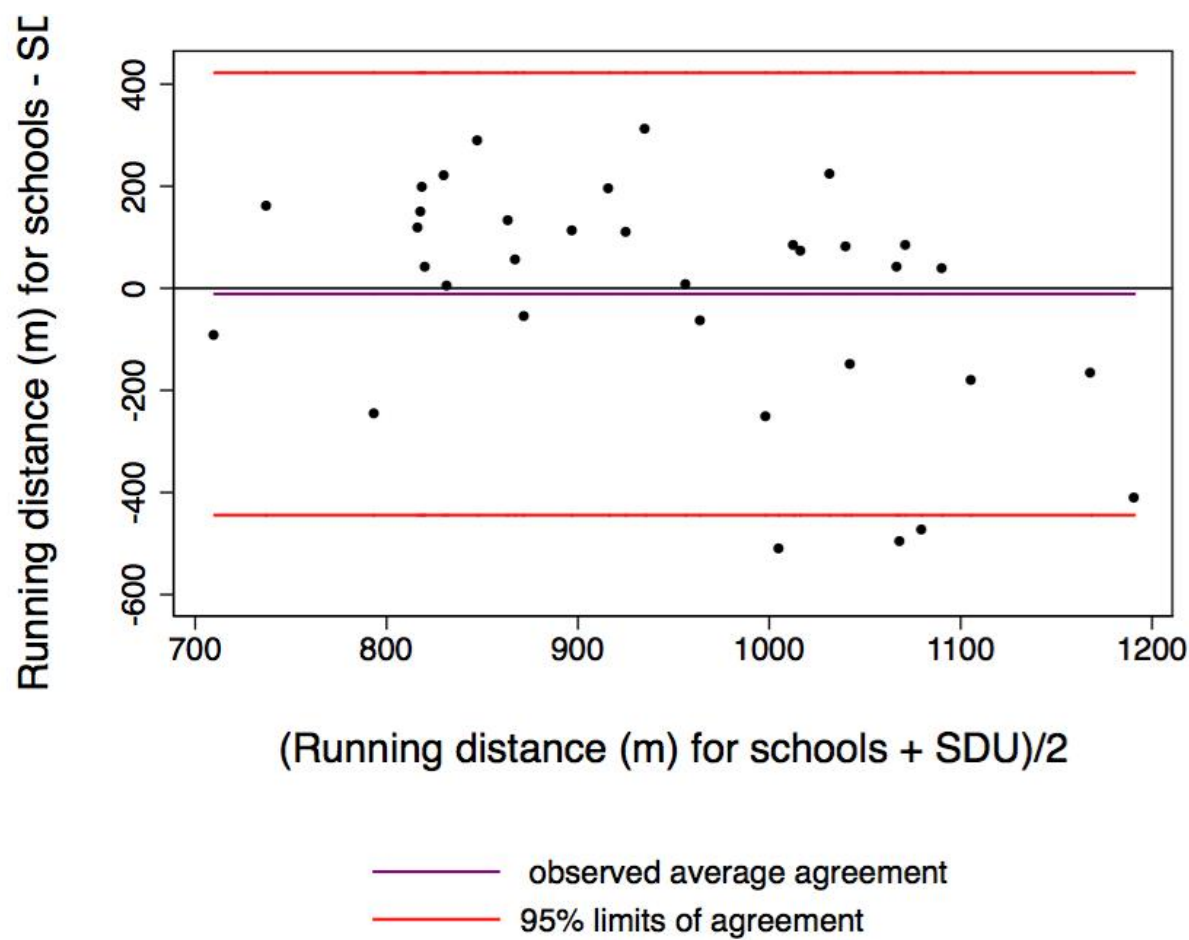


Figure 112. The Andersen test. 4th-6th grades

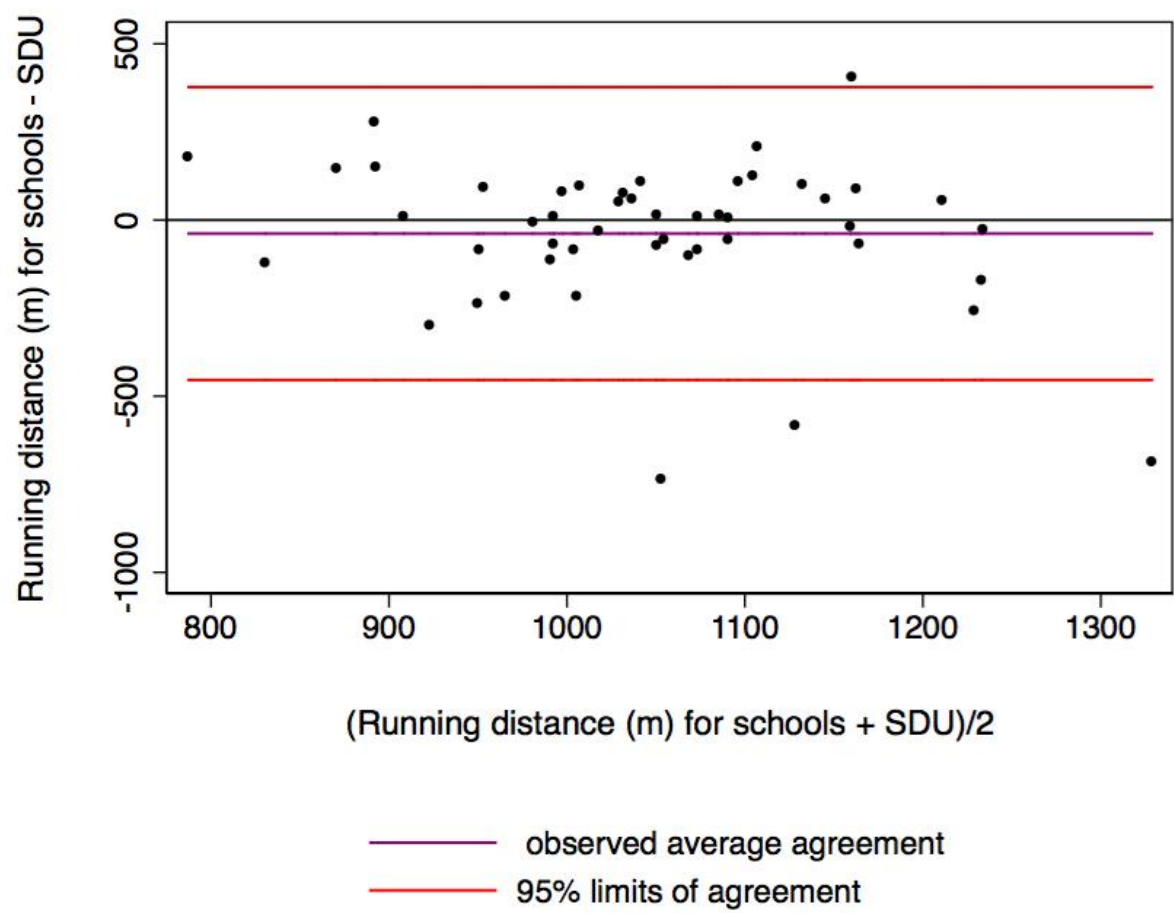
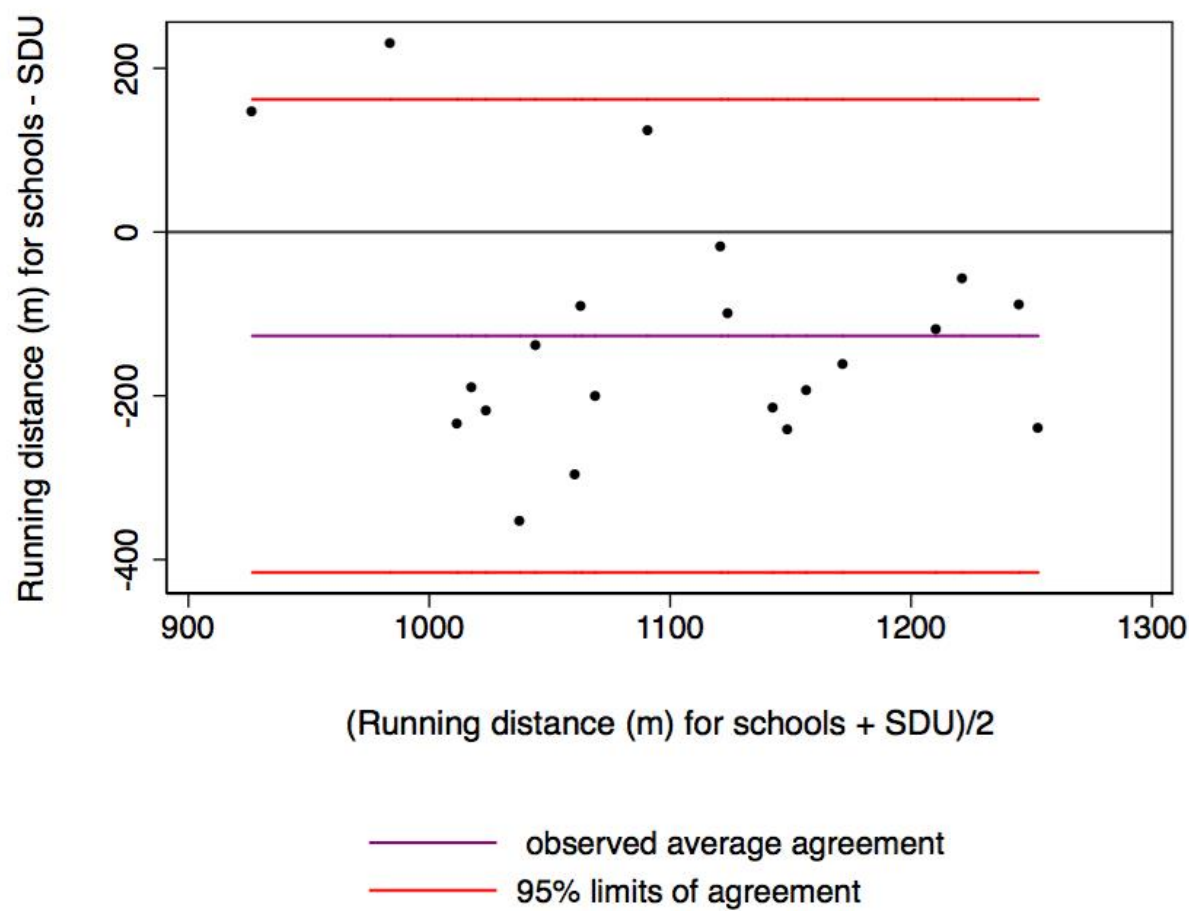


Figure 113. The Andersen test, 7th-9th grades



BLAND-ALTMAN PLOTS OF ANTHROPOMETRY CARRIED OUT BY SCHOOL NURSES (T1) IN ODENSE/DENMARK FOR CHILDREN IN GRADES 0, 1, 2 AND 5, AND BY HSN SCHOOLS IN 2009-2012 (T2). INTER-OBSERVER RELIABILITY

Figure 114. Height, all grades

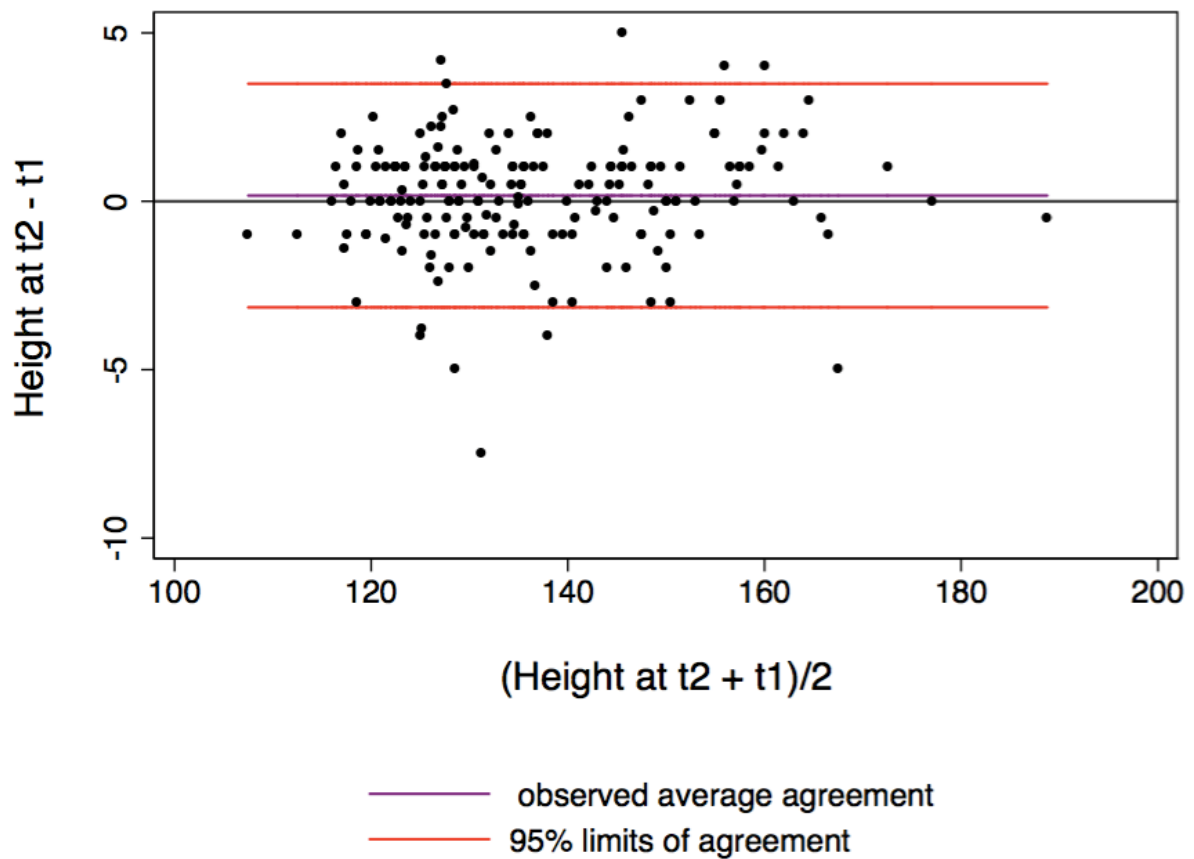


Figure 115. Weight, all grades

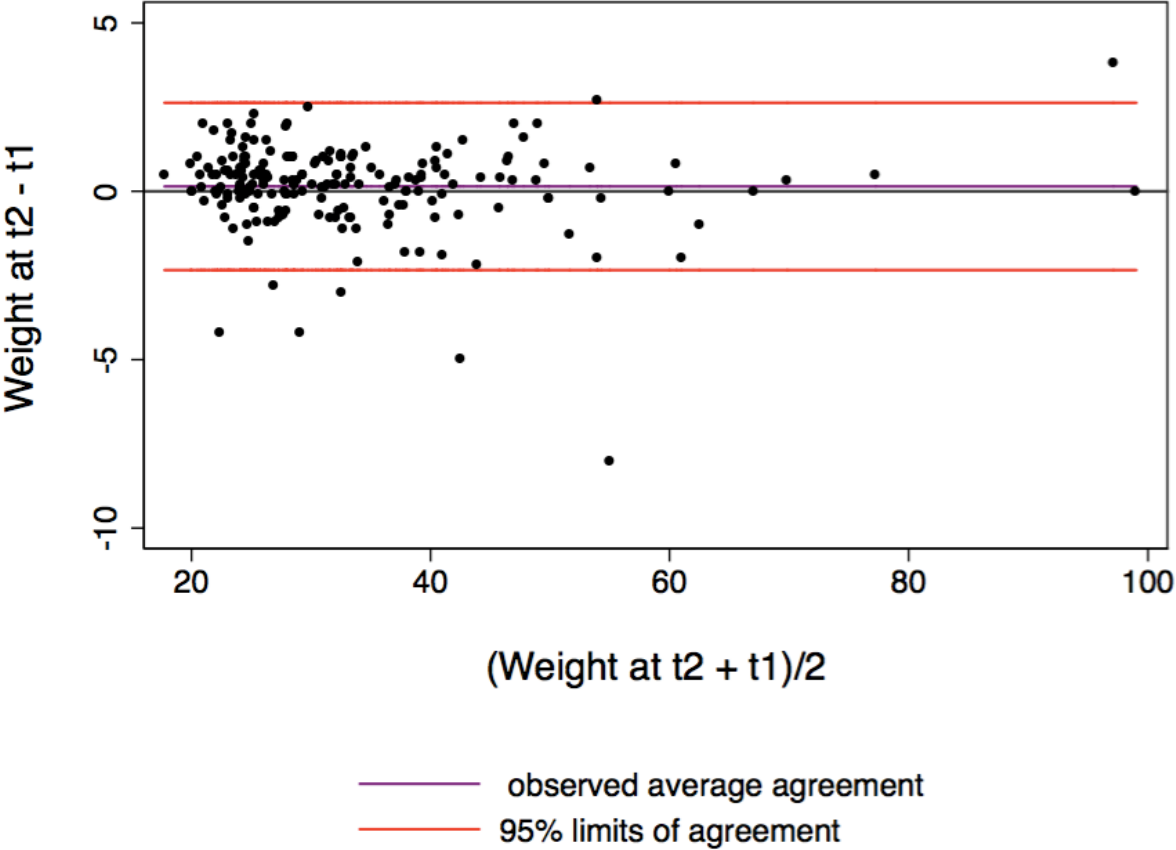


Figure 116. WC, all grades

