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Development of raw acceleration cut-points for wrist and hip accelerometers to assess sedentary behaviour and physical activity in 5-7 year old children

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Article

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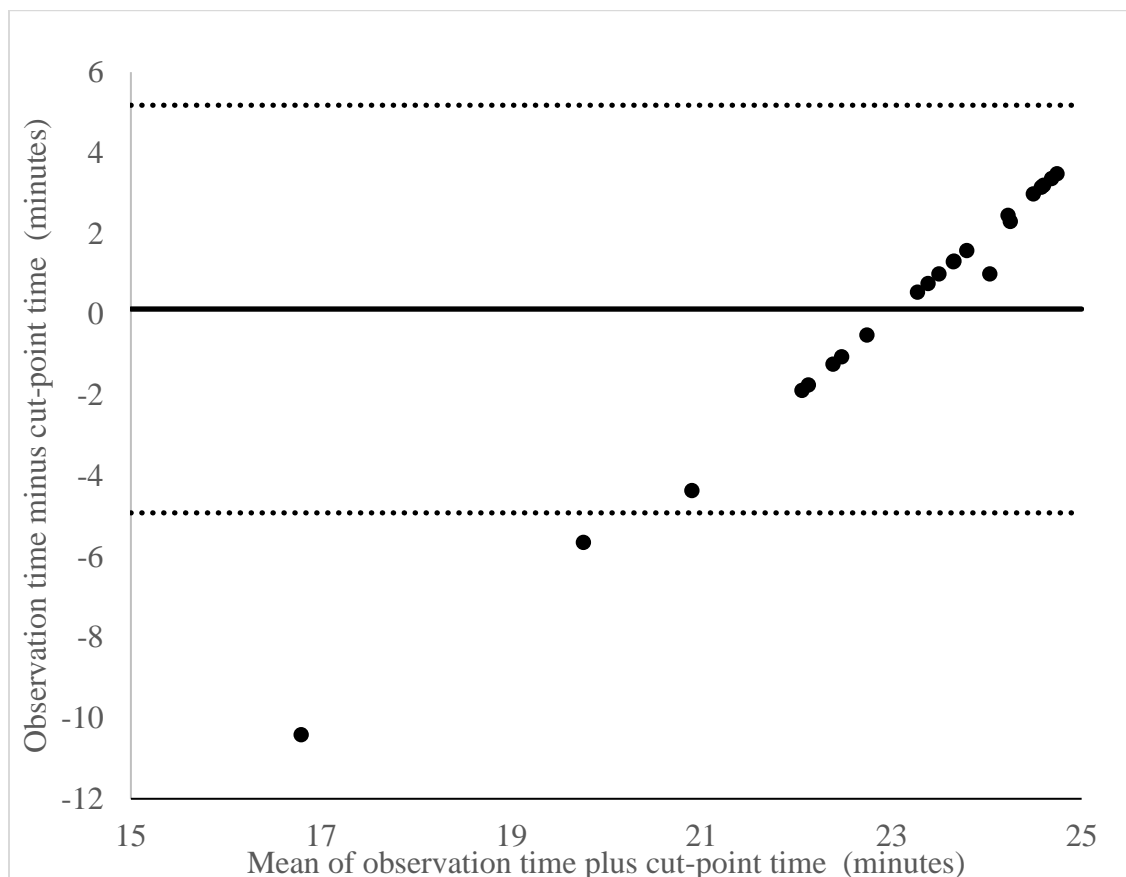
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Supplementary Material 2

Phase 2 data analysis - Bland Altman Plots

Supplementary Figure 1. Non-dominant wrist - Sedentary behaviours



Phase 2 cut-point: <36

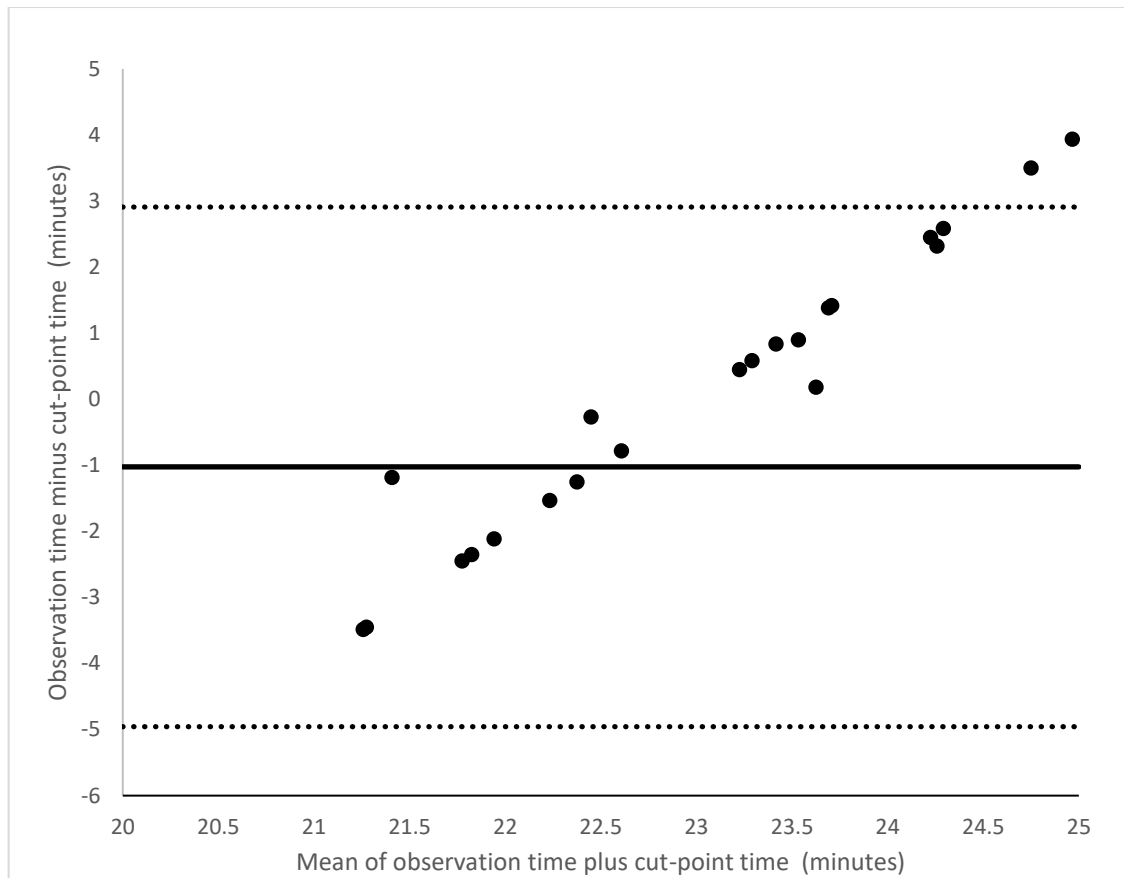
Mean difference: 0.132

Upper limit of agreement: 5.181

Lower limit of agreement: -4.917

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedentary behaviours as children engaged in approximately the same amount of Sedentary behaviours (23min). This is because they engaged in little or no Sedentary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 2. Dominant wrist - Sedentary behaviours



Phase 2 cut-point: <39

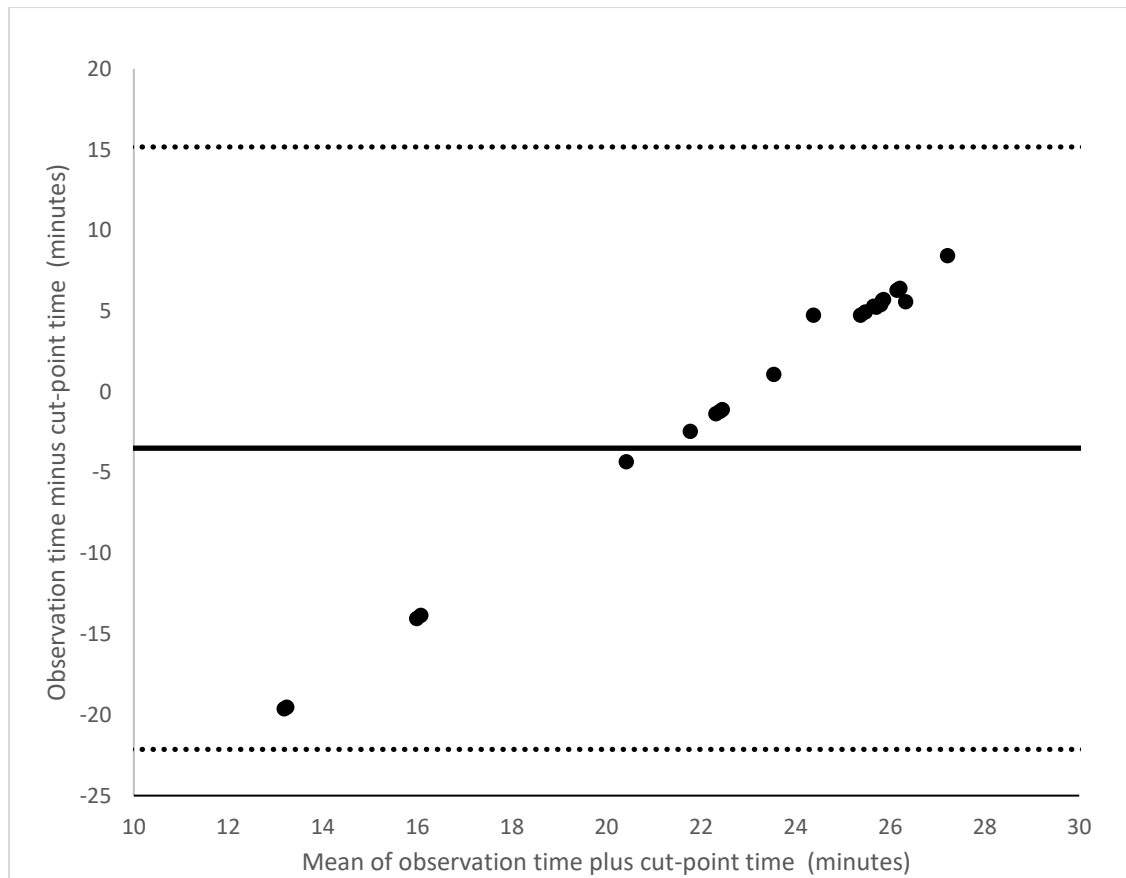
Mean difference: -1.023

Upper limit of agreement: 2.910

Lower limit of agreement: -4.957

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedentary behaviours as children engaged in approximately the same amount of Sedentary behaviours (23min). This is because they engaged in little or no Sedentary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 3. Hip - Sedentary behaviours



Phase 2 cut-point: <20

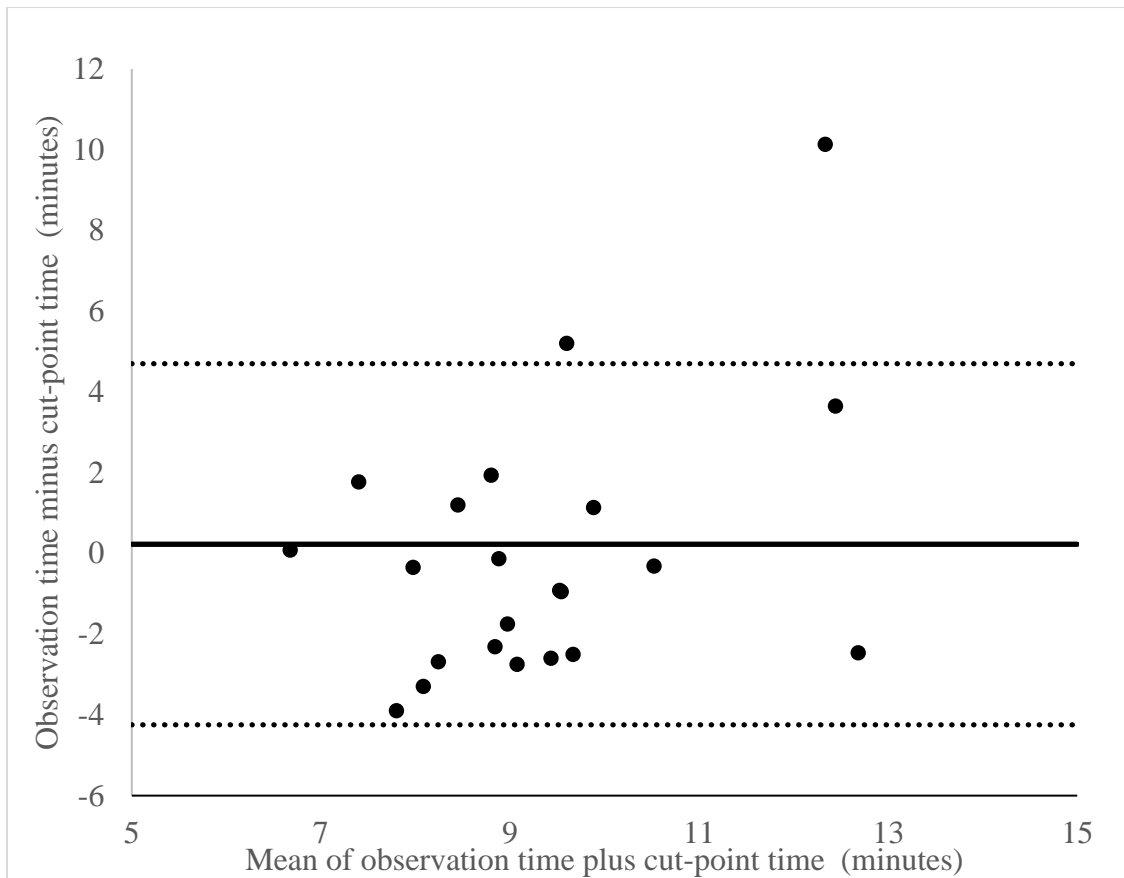
Mean difference: -1.023

Upper limit of agreement: 15.170

Lower limit of agreement: -22.137

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedentary behaviours as children engaged in approximately the same amount of Sedentary behaviours (23min). This is because they engaged in little or no Sedentary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 4. Non-dominant wrist - Light physical activity



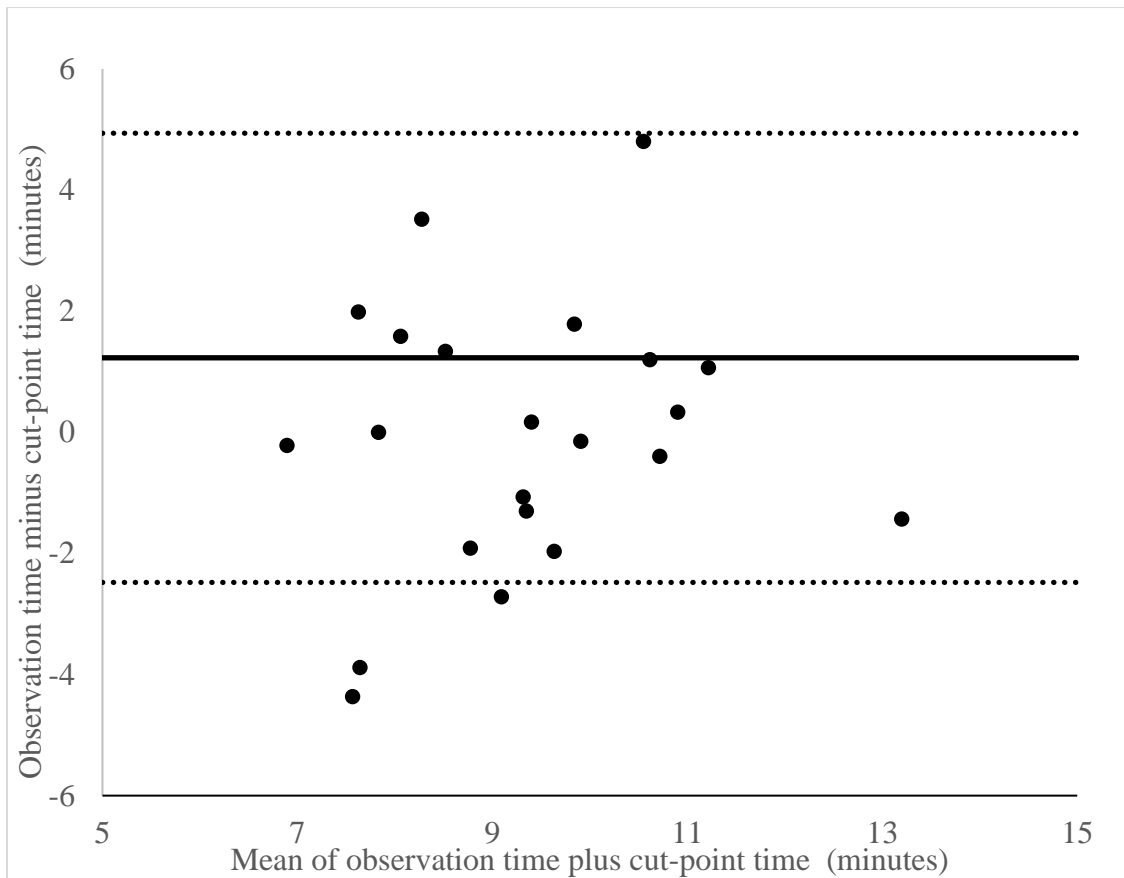
Phase 2 cut-point: ≥ 36 & < 189

Mean difference: 0.227

Upper limit of agreement: 4.610

Lower limit of agreement: -4.246

Supplementary Figure 5. Dominant wrist - Light physical activity



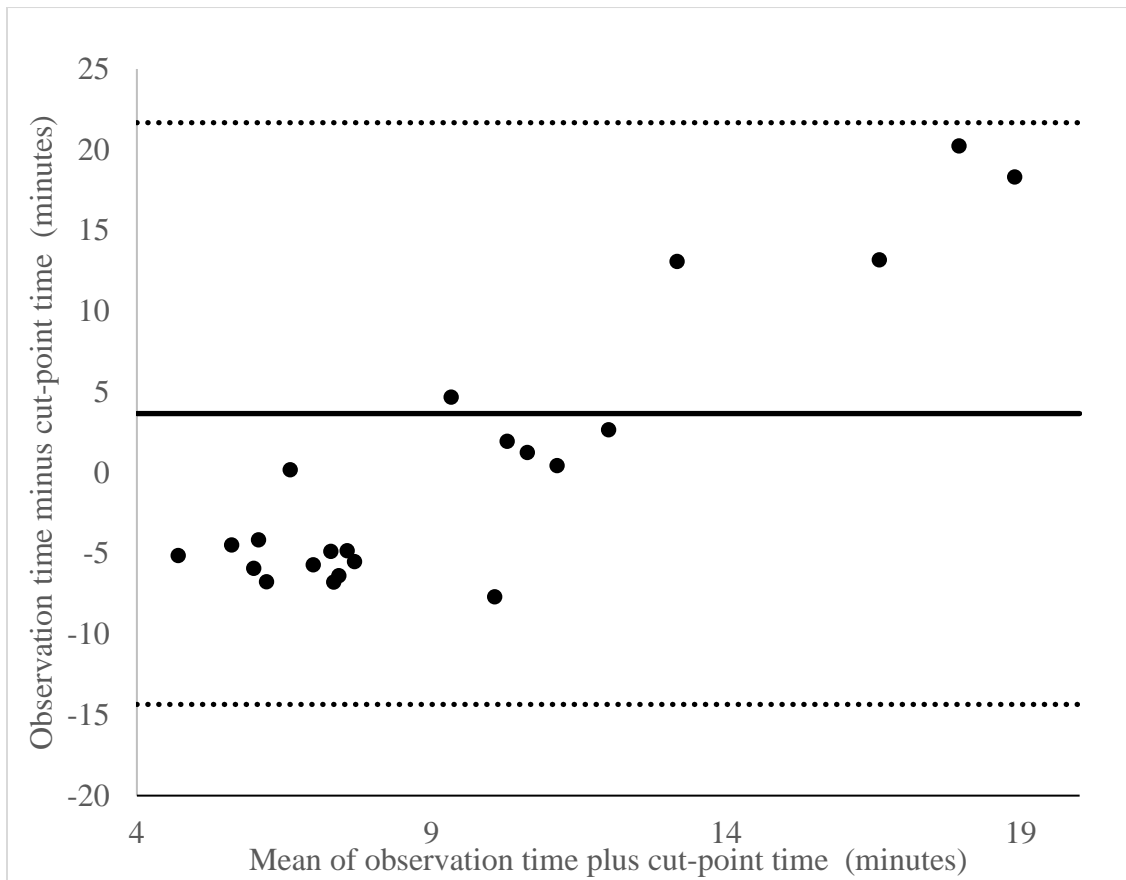
Phase 2 cut-point: ≥ 39 & < 181

Mean difference: 1.230

Upper limit of agreement: 4.939

Lower limit of agreement: -2.479

Supplementary Figure 6. Hip - Light physical activity



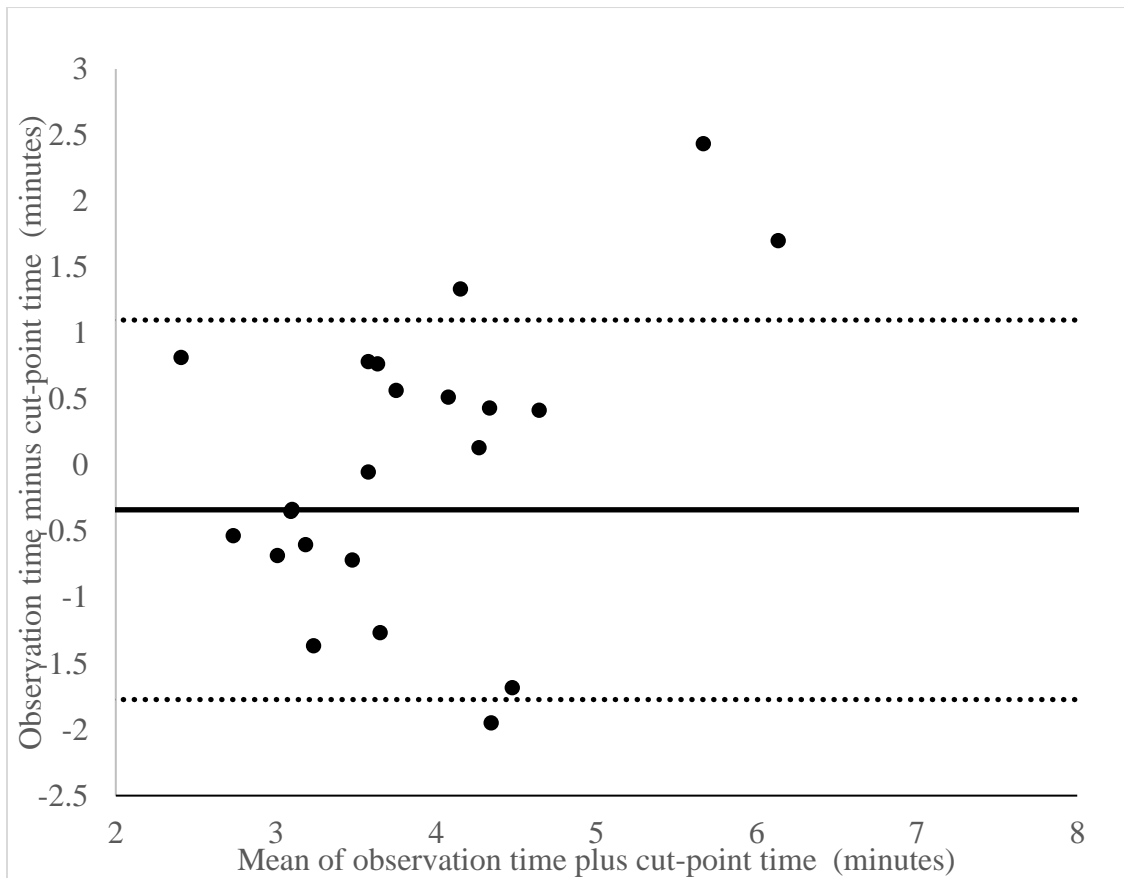
Phase 2 cut-point: ≥ 20 & < 95

Mean difference: 3.660

Upper limit of agreement: 21.673

Lower limit of agreement: -14.353

Supplementary Figure 7. Non-dominant wrist - Moderate physical activity



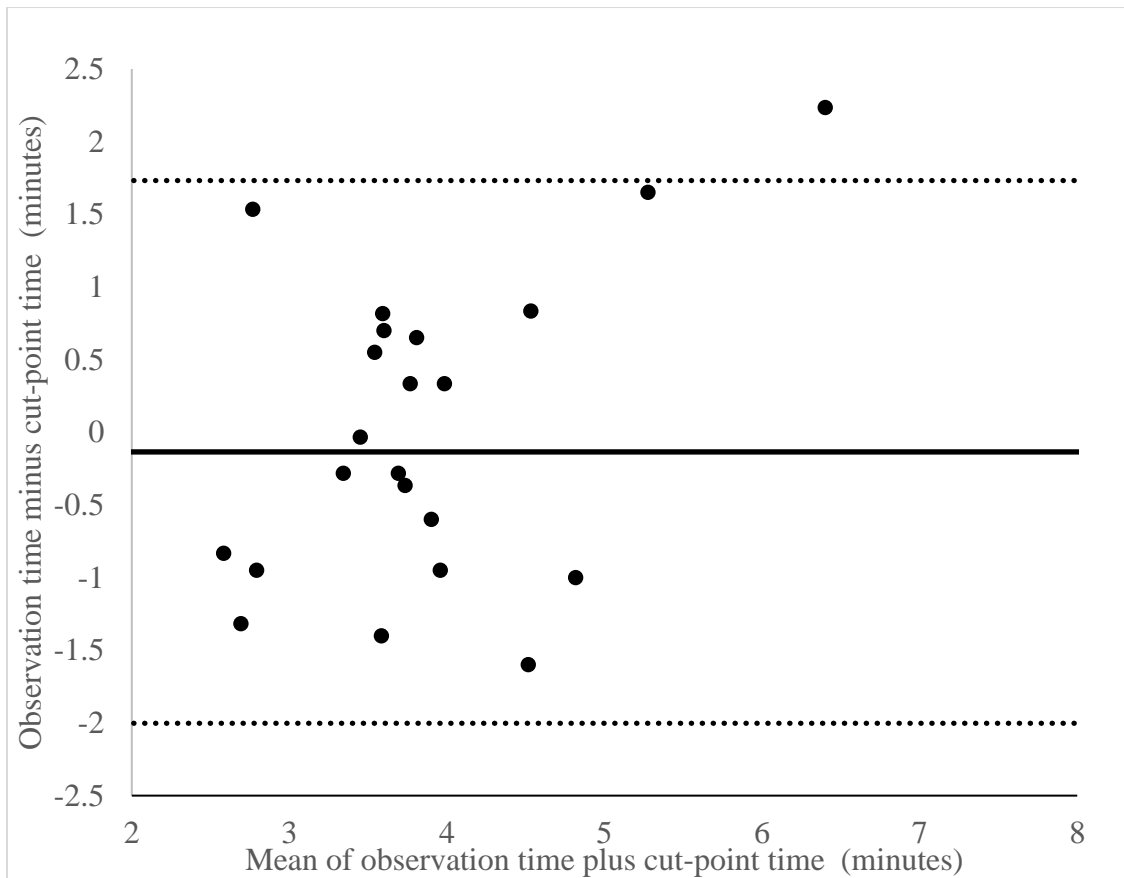
Phase 2 cut-point: ≥ 189 & < 536

Mean difference: -0.337

Upper limit of agreement: 1.010

Lower limit of agreement: -1.773

Supplementary Figure 8. Dominant wrist - Moderate physical activity



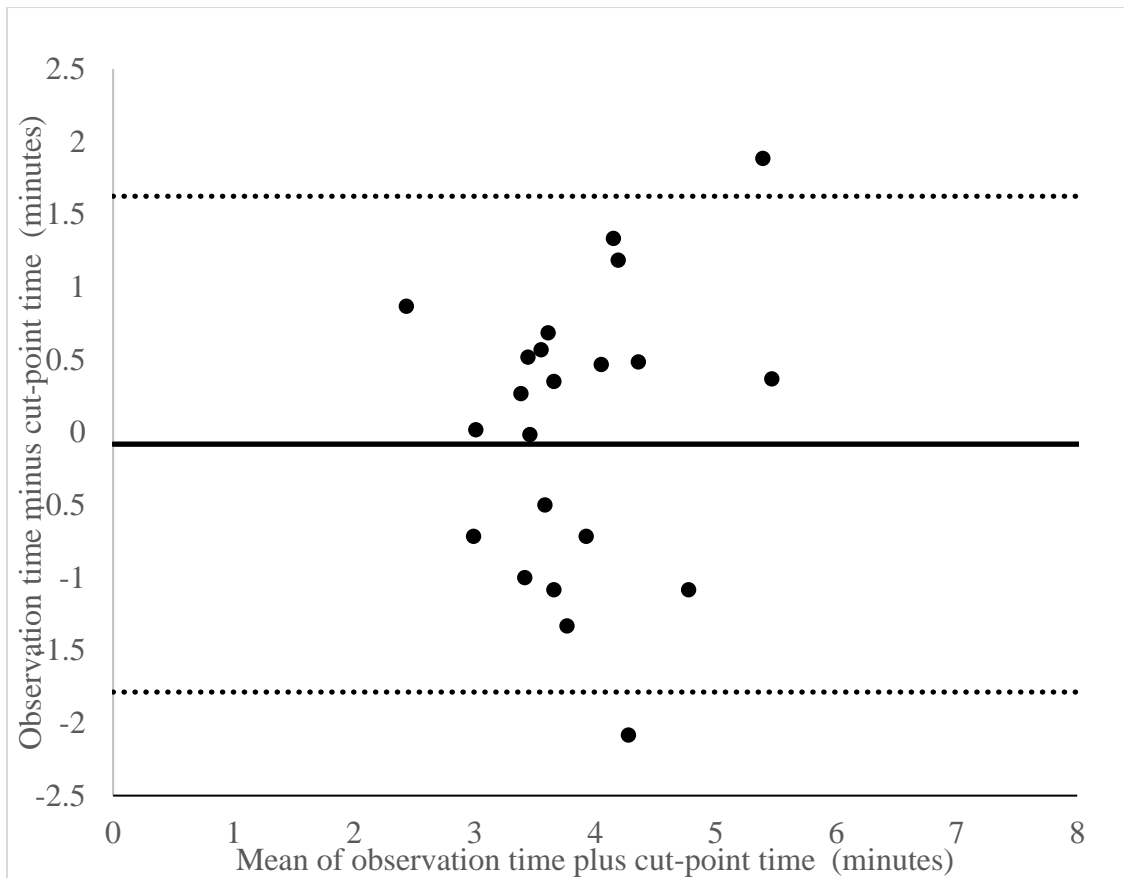
Phase 2 cut-point: ≥ 181 & < 534

Mean difference: -0.135

Upper limit of agreement: 1.732

Lower limit of agreement: -2.002

Supplementary Figure 9. Hip - Moderate physical activity



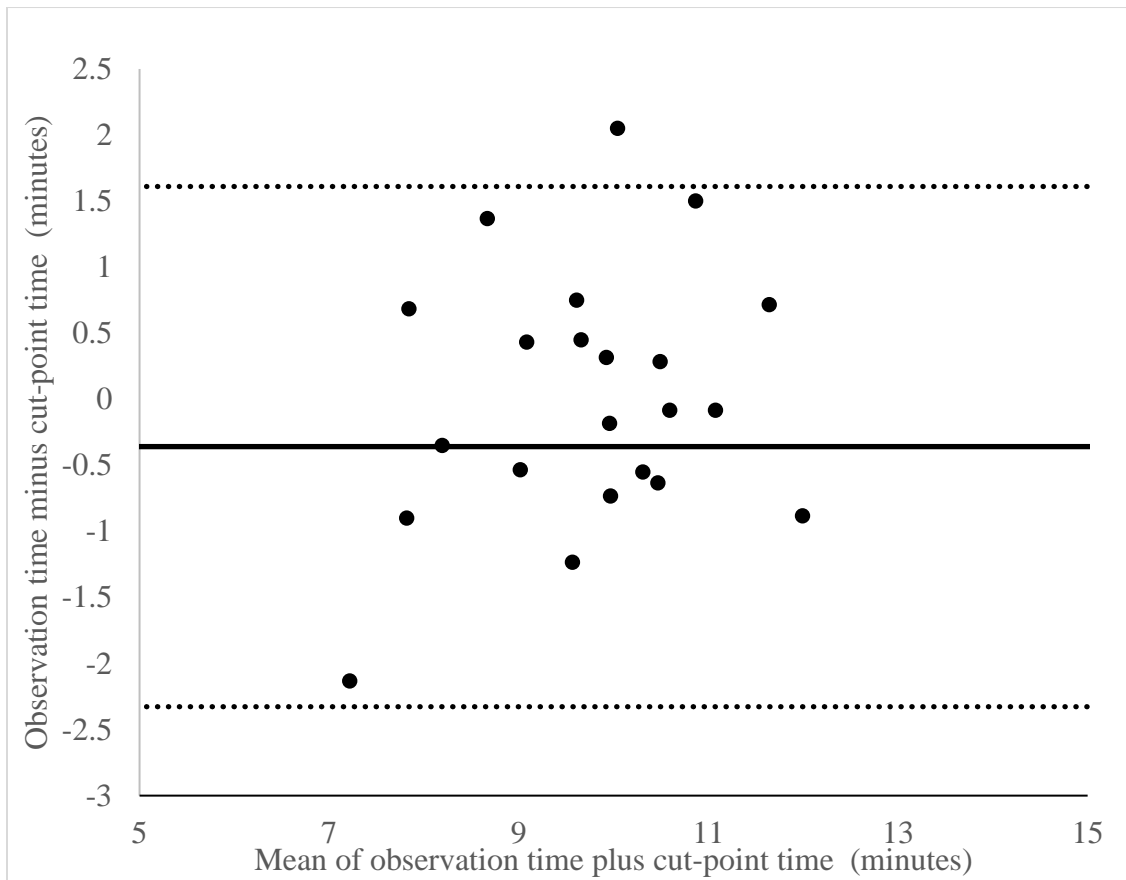
Phase 2 cut-point: ≥ 95 & < 325

Mean difference: -0.0817

Upper limit of agreement: 1.624

Lower limit of agreement: -1.787

Supplementary Figure 10. Non-dominant wrist - Moderate to vigorous physical activity



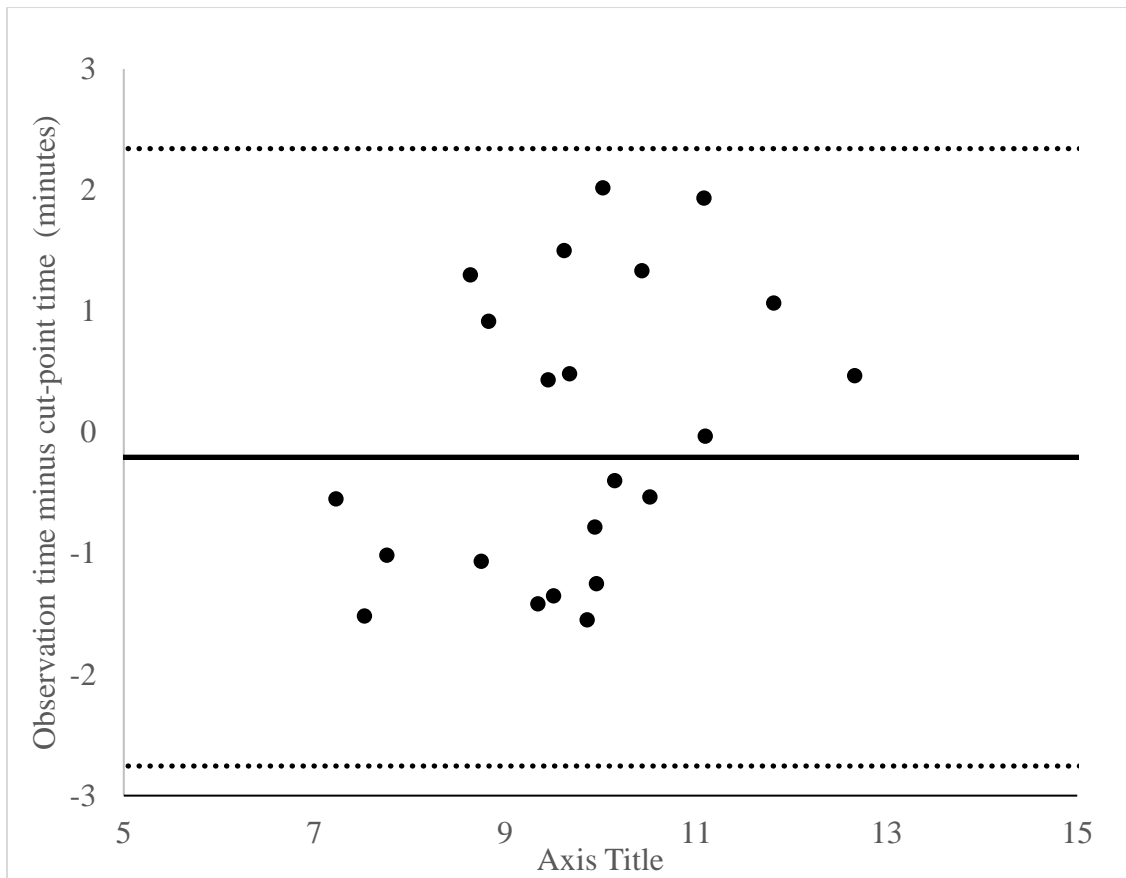
Phase 2 cut-point: ≥ 189

Mean difference: -0.358

Upper limit of agreement: 1.610

Lower limit of agreement: -2.327

Supplementary Figure 11. Non-dominant wrist - Moderate to vigorous physical activity



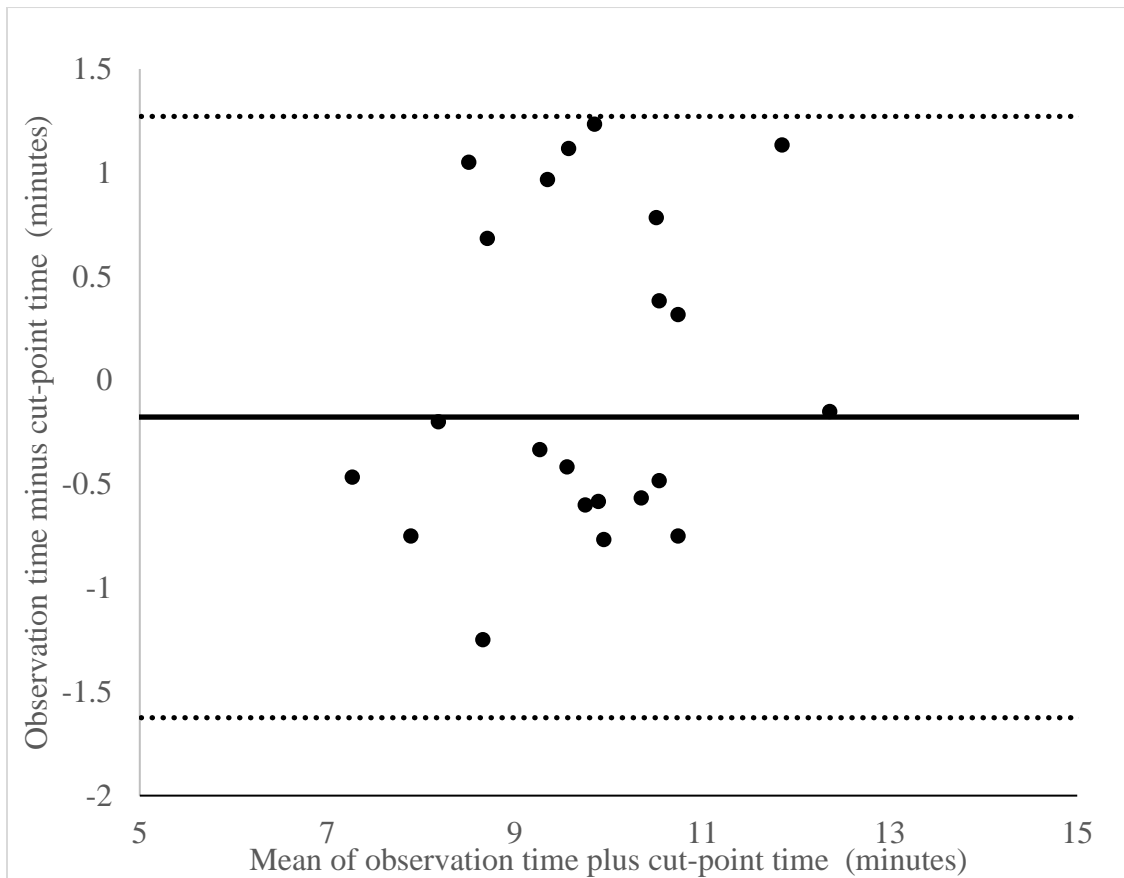
Phase 2 cut-point: ≥ 181

Mean difference: -0.207

Upper limit of agreement: 2.342

Lower limit of agreement: -2.756

Supplementary Figure 12. Hip - Moderate to vigorous physical activity



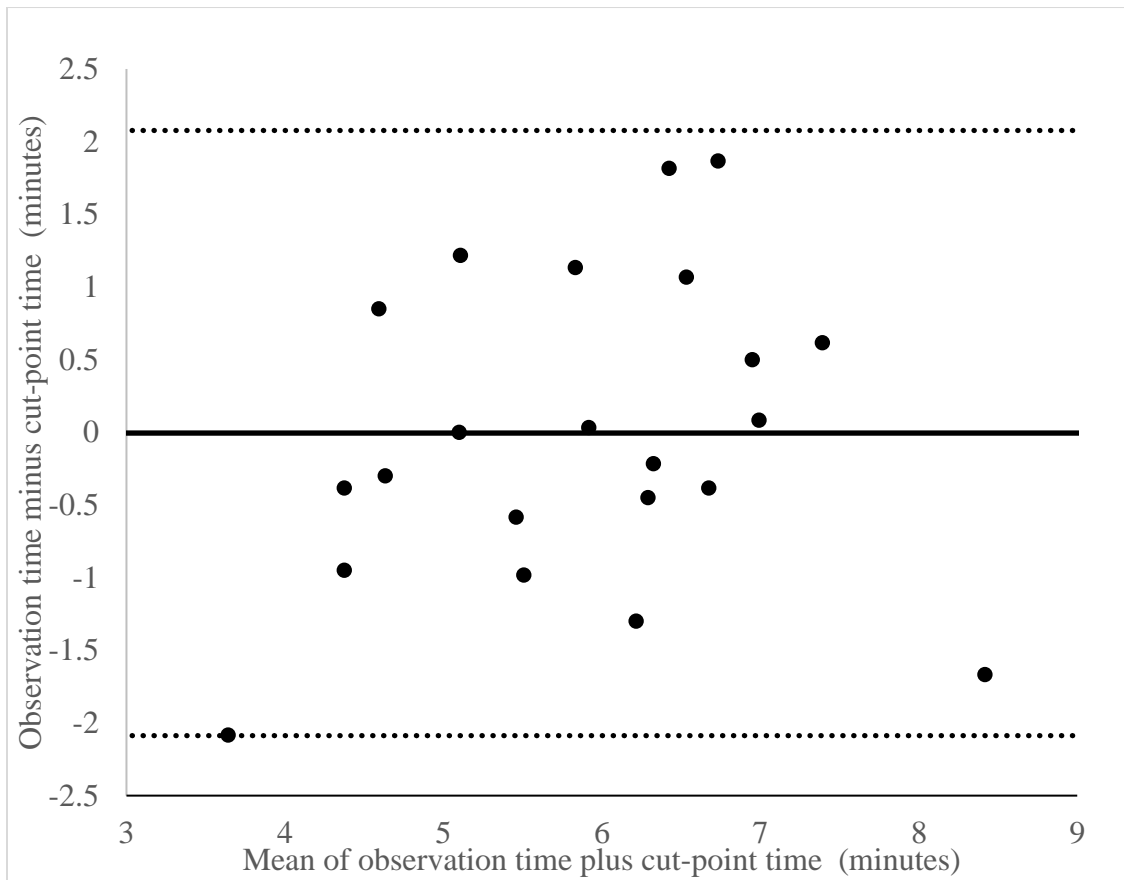
Phase 2 cut-point: ≥ 95

Mean difference: -0.177

Upper limit of agreement: 1.271

Lower limit of agreement: -1.625

Supplementary Figure 13. Non-dominant wrist - Vigorous physical activity



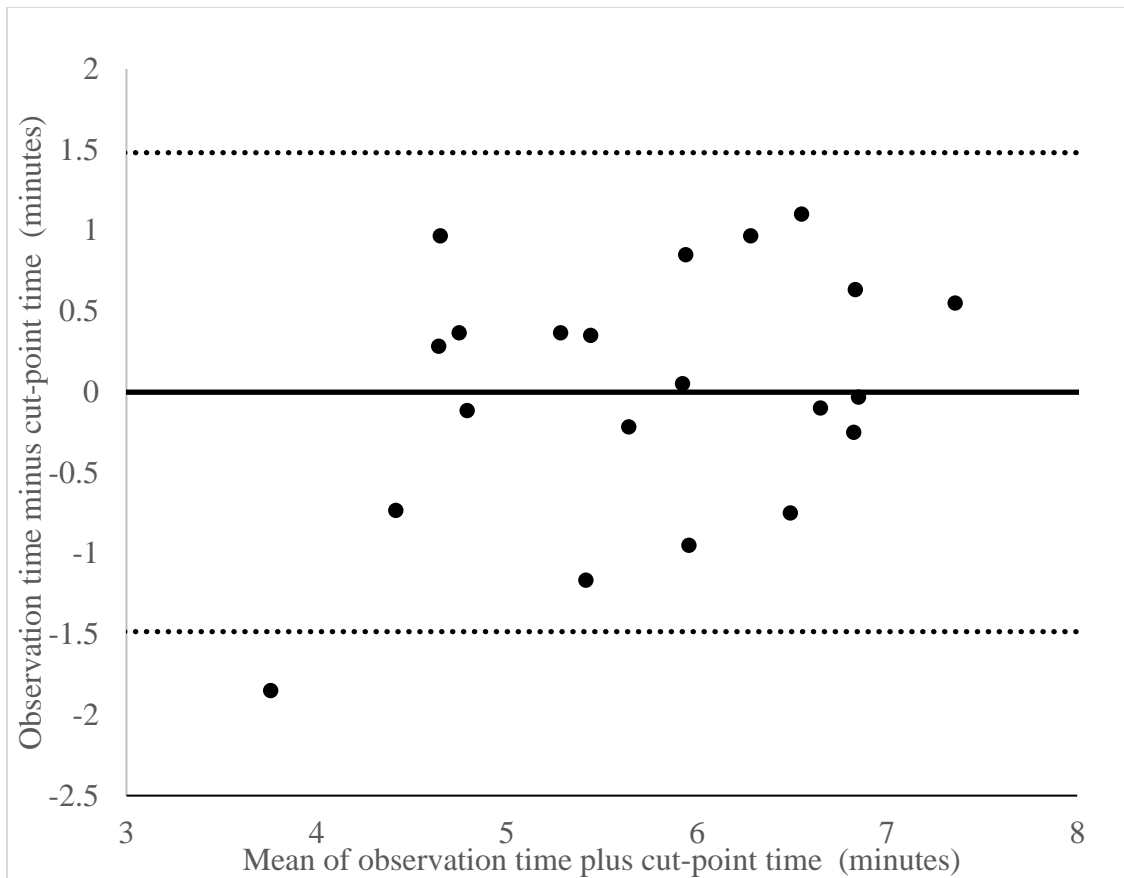
Phase 2 cut-point: ≥ 536

Mean difference: -0.005

Upper limit of agreement: 2.077

Lower limit of agreement: -2.087

Supplementary Figure 14. Dominant wrist - Vigorous physical activity



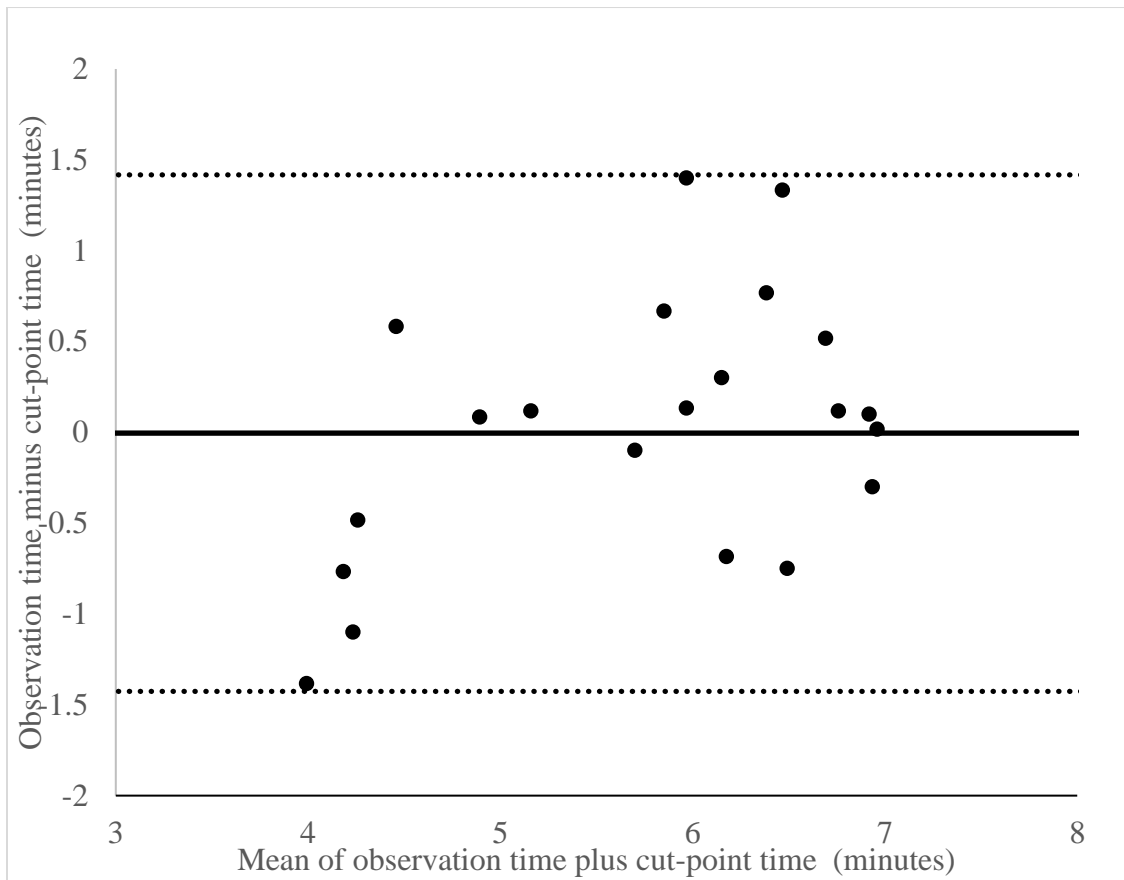
Phase 2 cut-point: ≥ 534

Mean difference: -0.002

Upper limit of agreement: 1.481

Lower limit of agreement: -1.485

Supplementary Figure 15. Hip - Vigorous physical activity



Phase 2 cut-point: ≥ 325

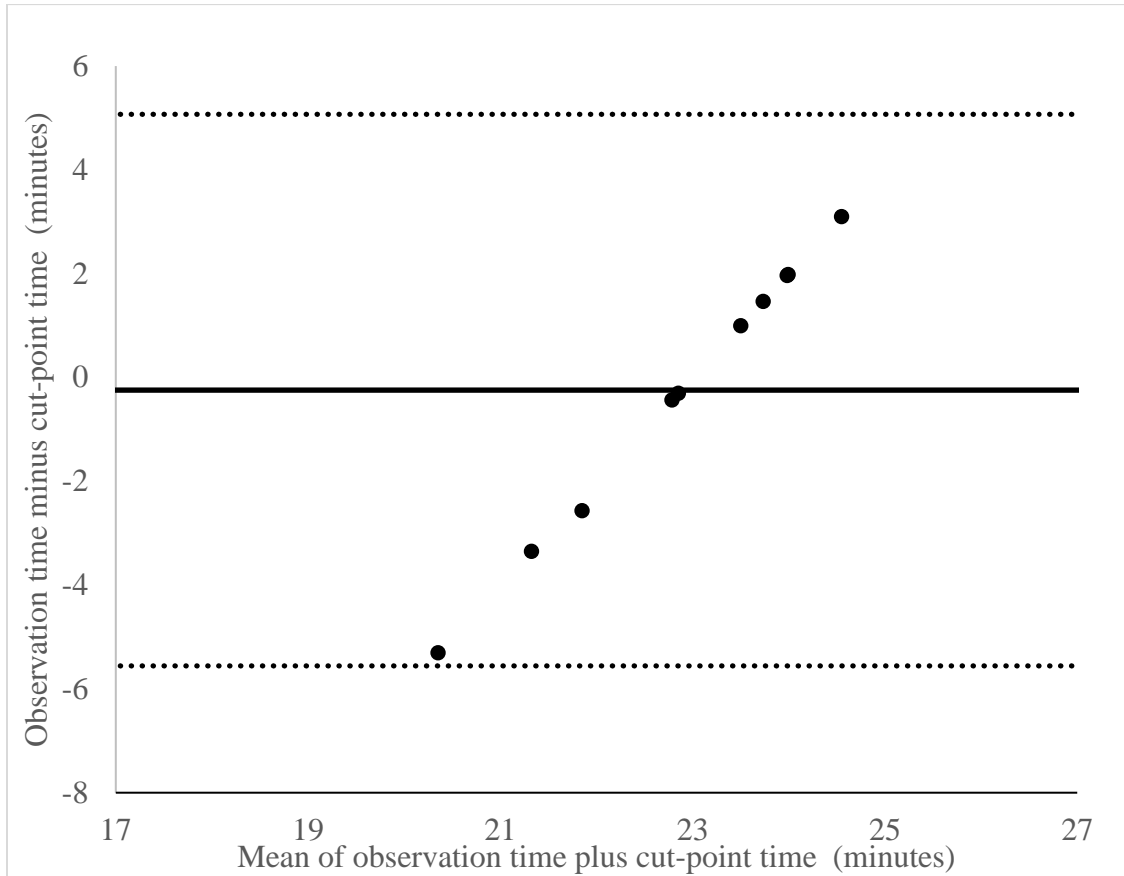
Mean difference: -0.005

Upper limit of agreement: 1.417

Lower limit of agreement: -1.426

Phase 3 data analysis - Bland Altman Plots

Supplementary Figure 16. Non-dominant wrist - Sedantary behaviours



Phase 2 cut-point: <36

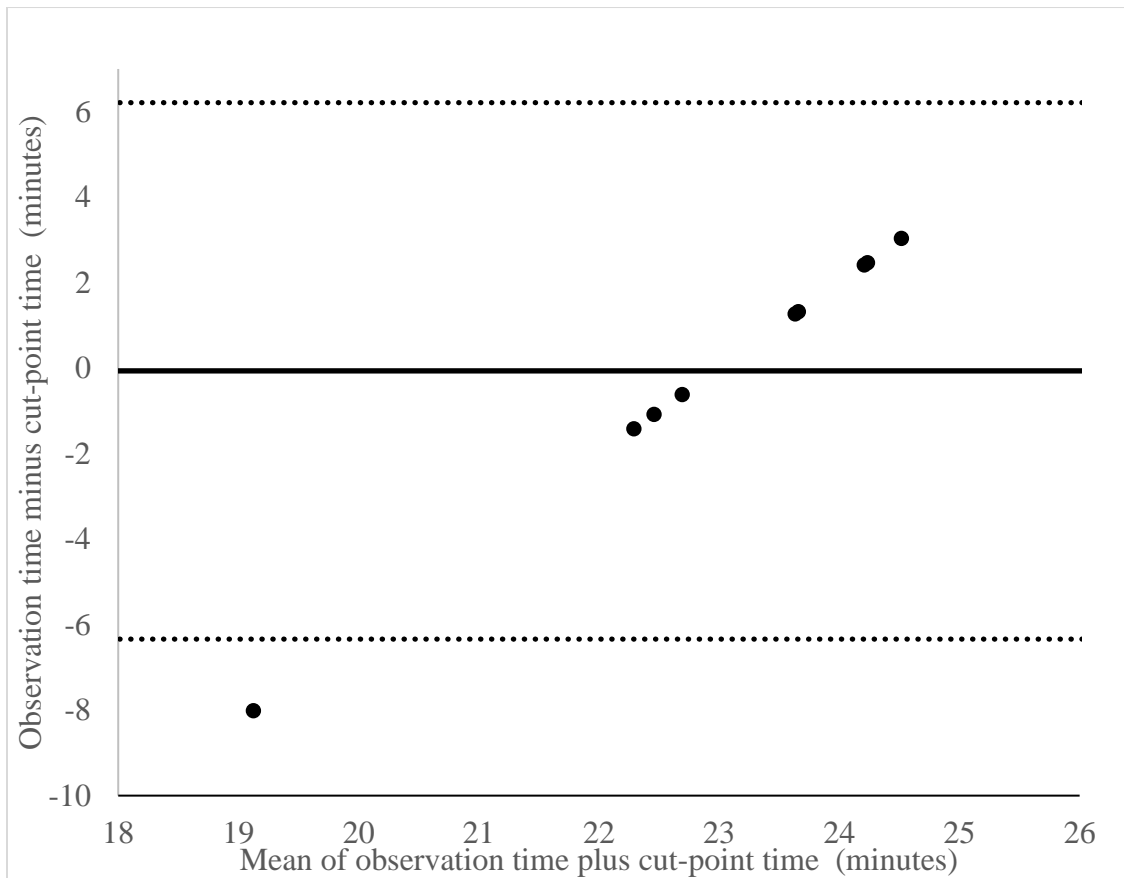
Mean difference: -0.243

Upper limit of agreement: 5.070

Lower limit of agreement: -5.557

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedantary behaviours as children engaged in approximatively the same amount of Sedantary behaviours (23min). This is because they engaged in little or no Sedantary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 17. Dominant wrist - Sedentary behaviours



Phase 2 cut-point: <39

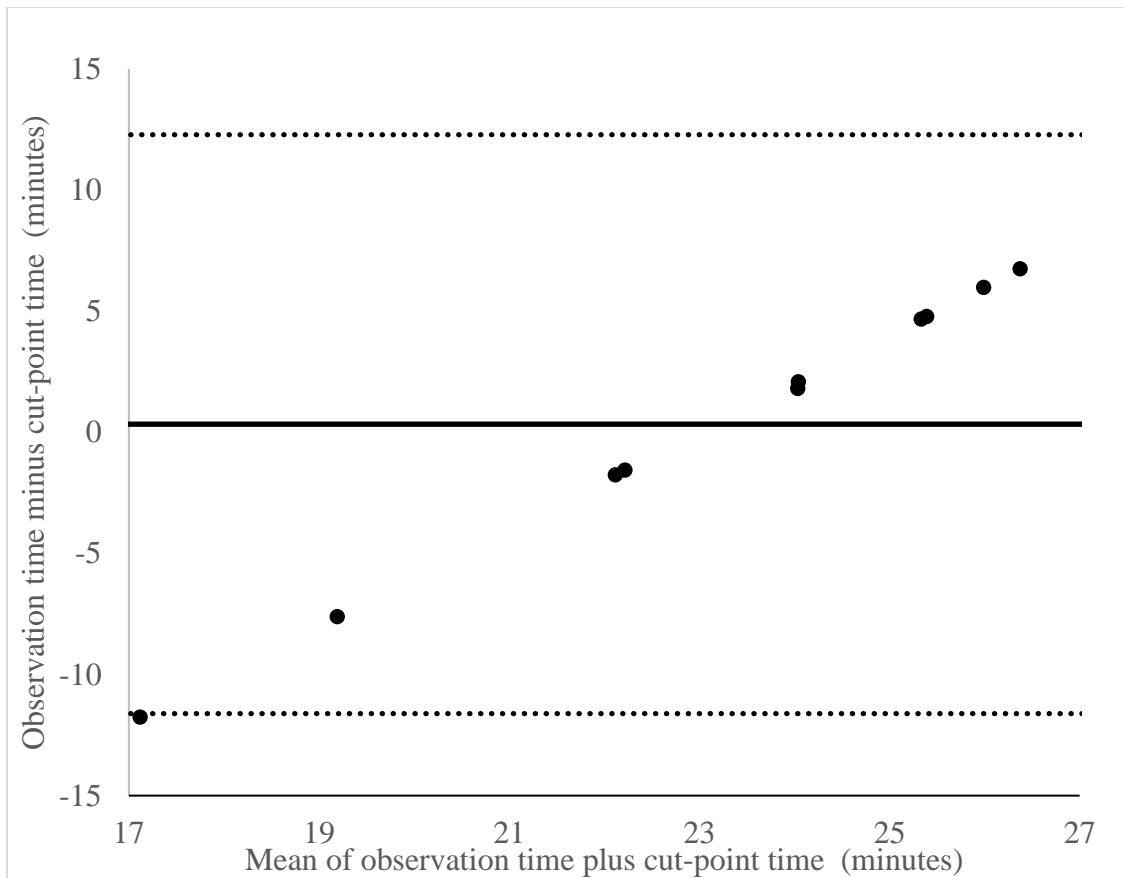
Mean difference: -0.063

Upper limit of agreement: 6.212

Lower limit of agreement: -6.338

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedentary behaviours as children engaged in approximately the same amount of Sedentary behaviours (23min). This is because they engaged in little or no Sedentary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 18. Hip - Sedentary behaviours



Phase 2 cut-point: <20

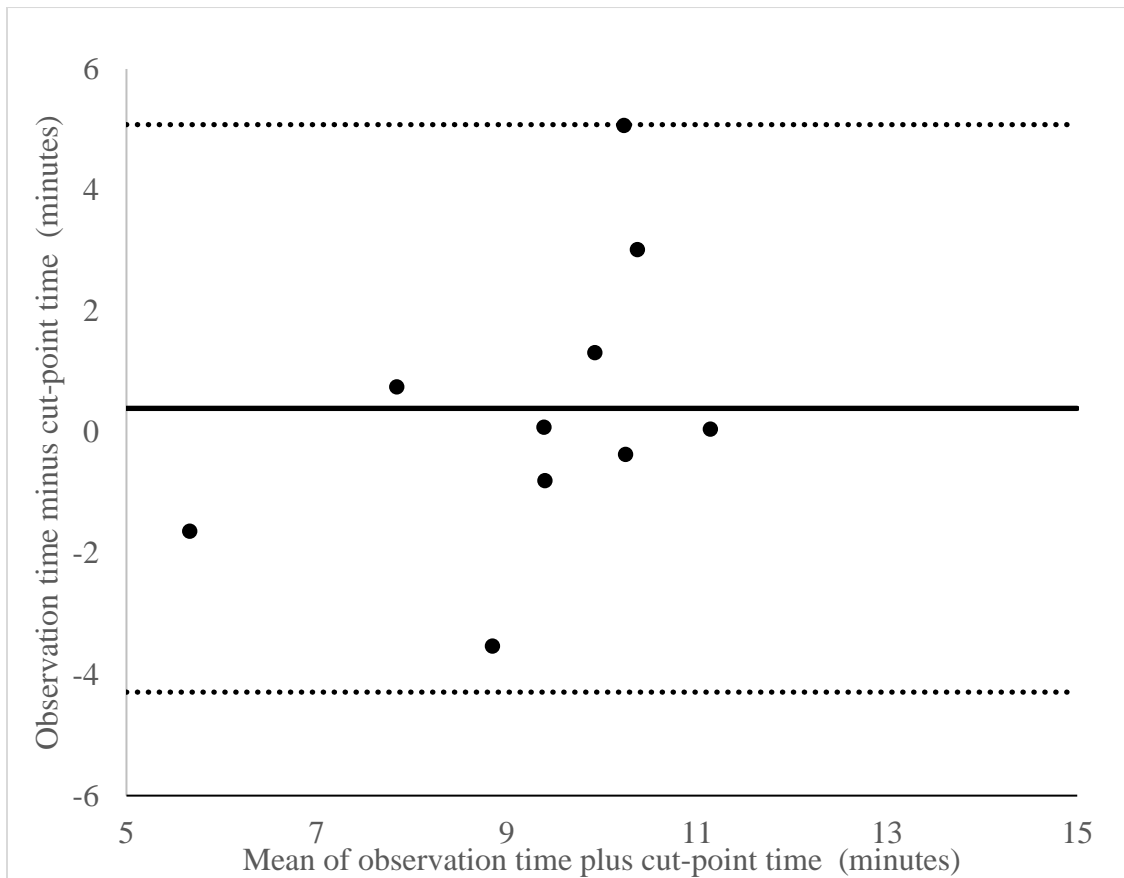
Mean difference: 0.335

Upper limit of agreement: 12.284

Lower limit of agreement: -11.614

A linear relation between bias and average of the differences was observed in Bland Altman plots of Sedentary behaviours as children engaged in approximately the same amount of Sedentary behaviours (23min). This is because they engaged in little or no Sedentary behaviours during playtime. Therefore an increase in the Cut-points derived sedentary behavior would result in a linear increase in observation time minus cut-point time (y axis).

Supplementary Figure 19. Non-dominant wrist - Light physical activity



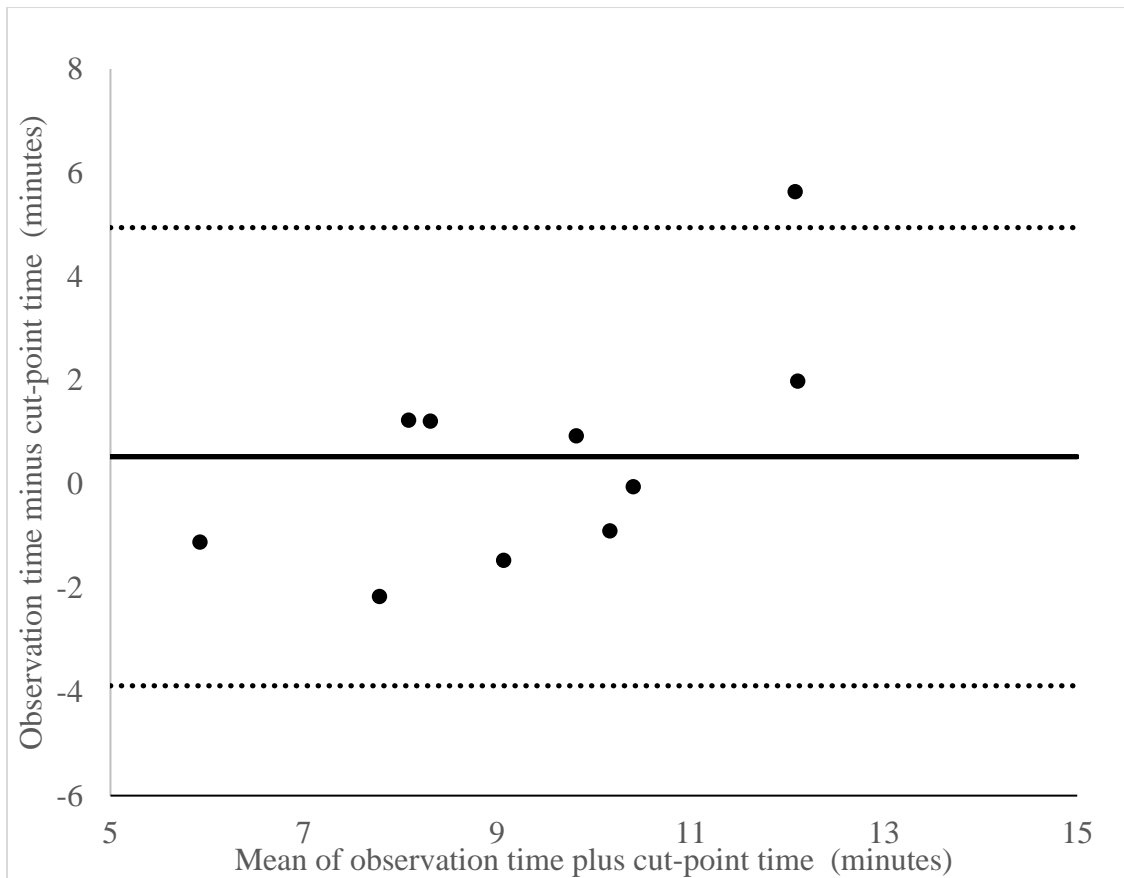
Phase 2 cut-point: ≥ 36 & < 189

Mean difference: 0.395

Upper limit of agreement: 5.081

Lower limit of agreement: -4.291

Supplementary Figure 20. Dominant wrist - Light physical activity



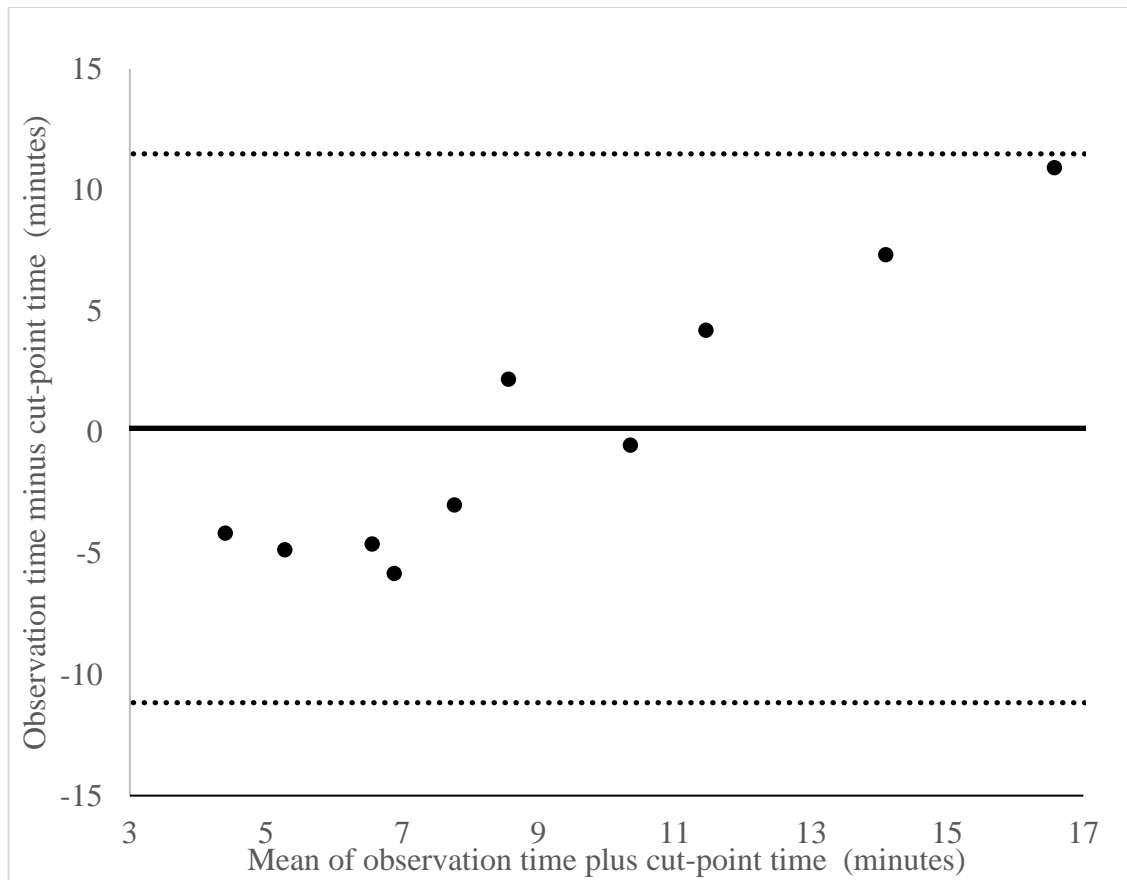
Phase 2 cut-point: ≥ 39 & < 181

Mean difference: 0.53

Upper limit of agreement: 4.944

Lower limit of agreement: -3.884

Supplementary Figure 21. Hip - Light Physical activity



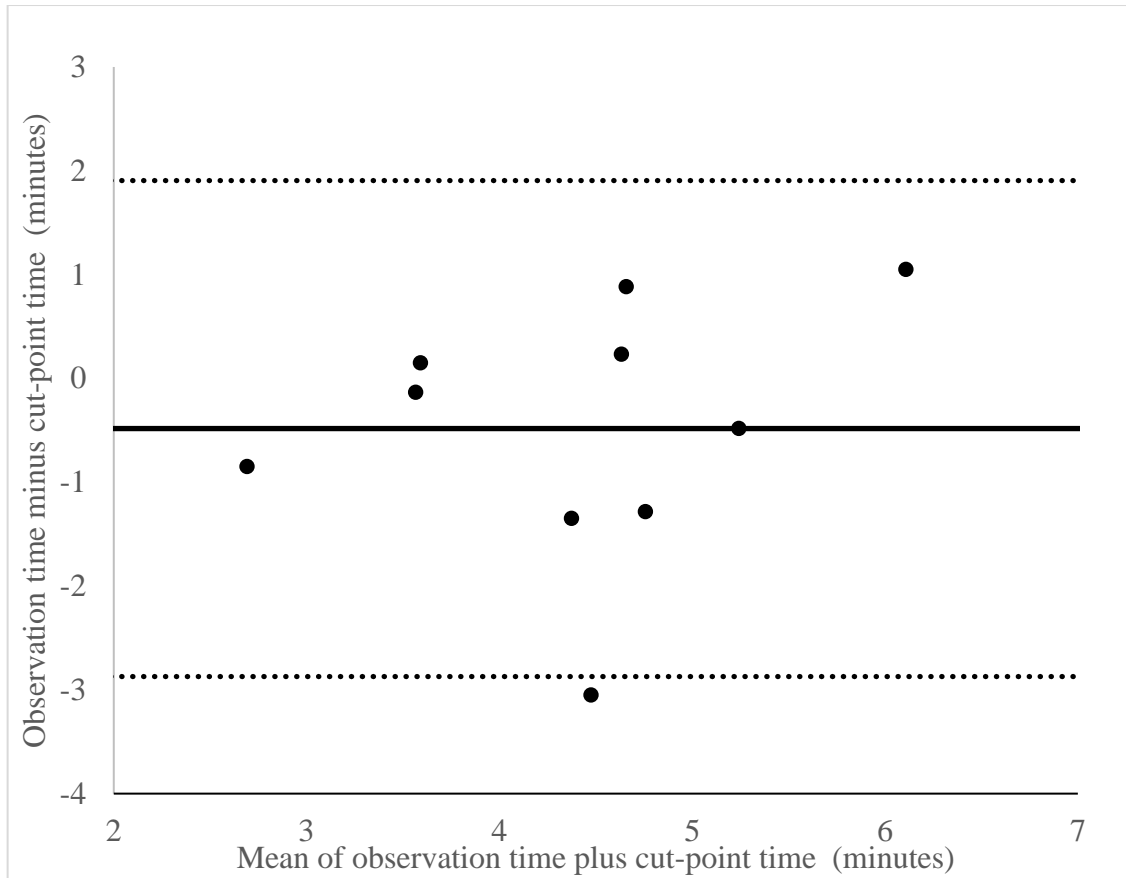
Phase 2 cut-point: ≥ 20 & < 95

Mean difference: 0.165

Upper limit of agreement: 11.495

Lower limit of agreement: -11.165

Supplementary Figure 22. Non-dominant wrist - Moderate Physical activity



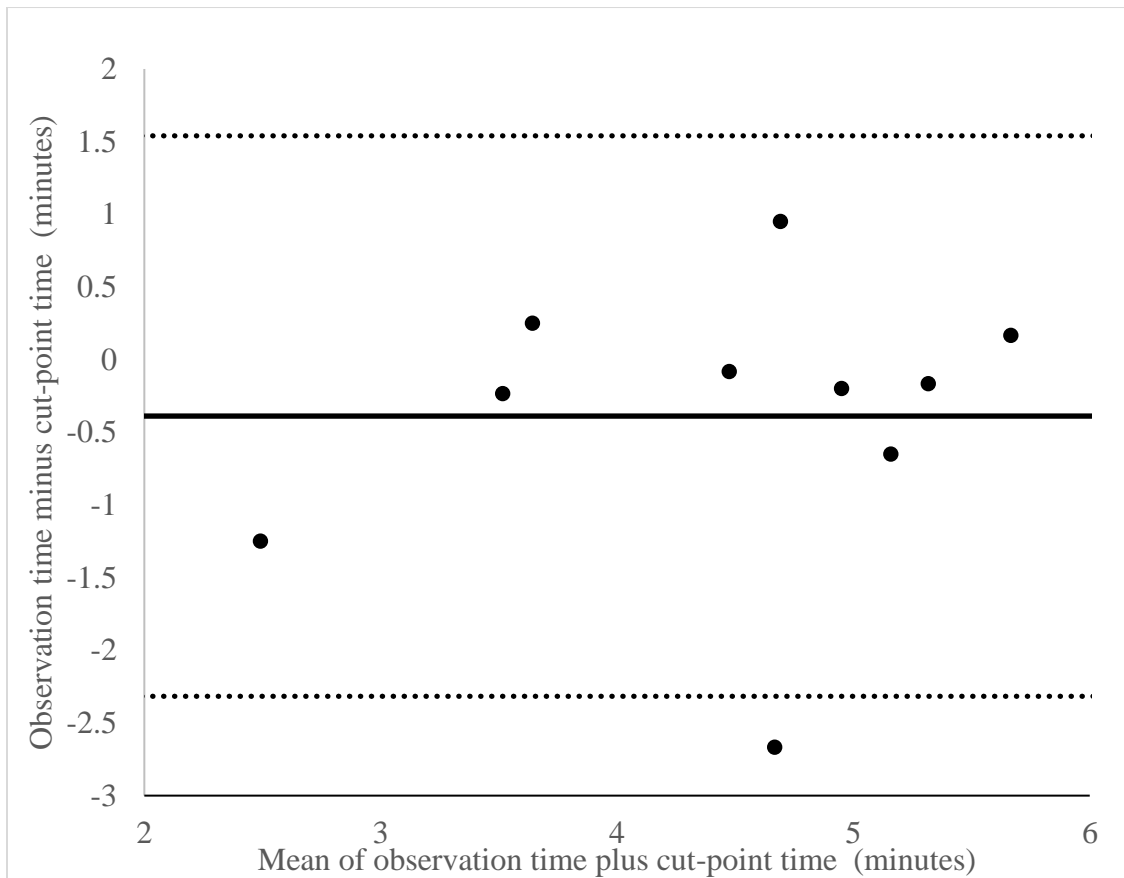
Phase 2 cut-point: ≥ 189 & < 536

Mean difference: -0.483

Upper limit of agreement: 1.906

Lower limit of agreement: -2.872

Supplementary Figure 23. Dominant wrist - Moderate physical activity



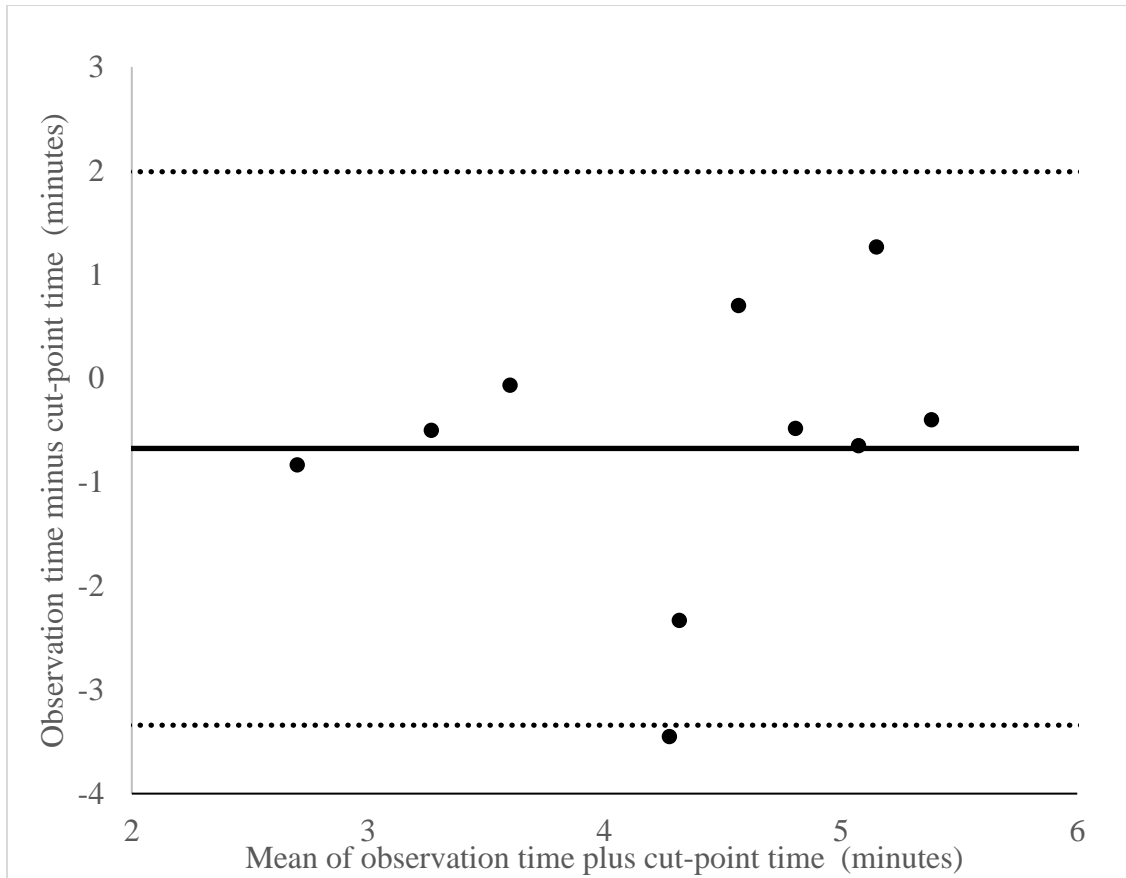
Phase 2 cut-point: ≥ 181 & < 534

Mean difference: -0.388

Upper limit of agreement: 1.540

Lower limit of agreement: -2.317

Supplementary Figure 24. Hip - Moderate physical activity



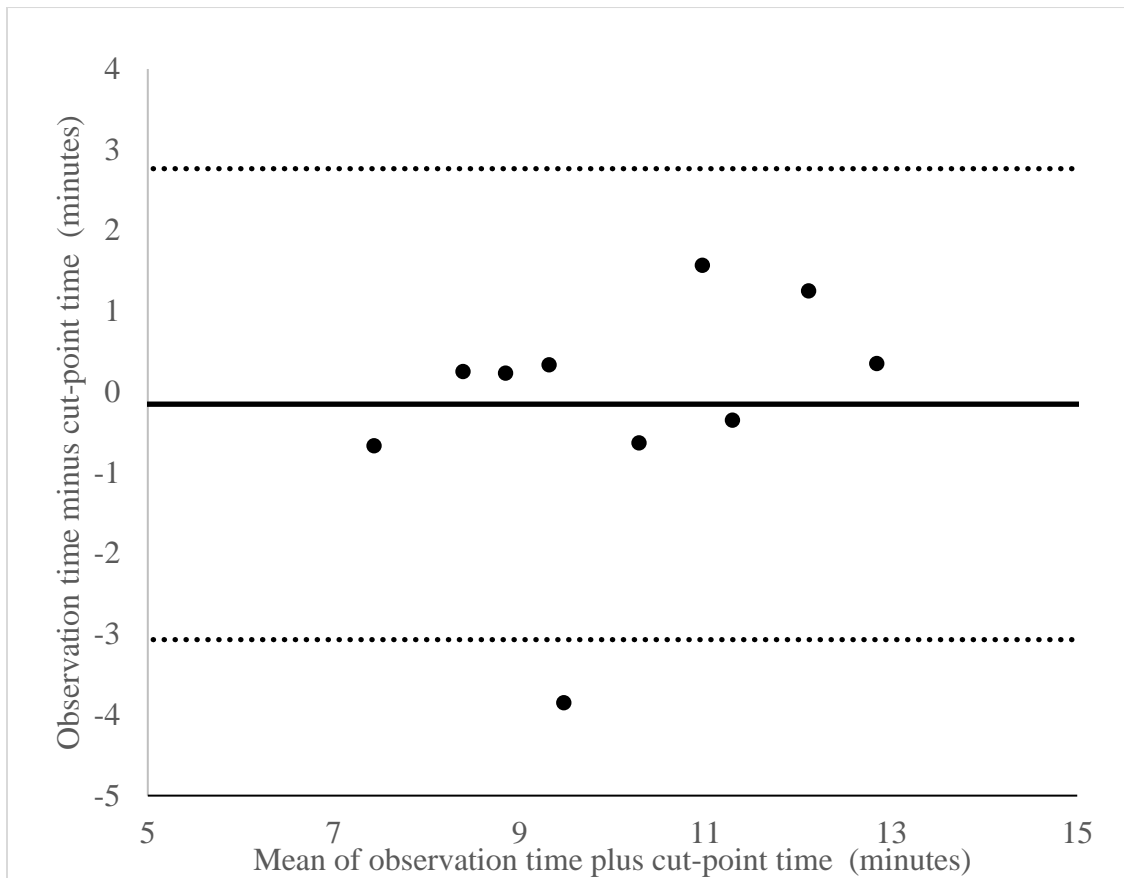
Phase 2 cut-point: ≥ 95 & < 325

Mean difference: -0.675

Upper limit of agreement: 1.991

Lower limit of agreement: -3.341

Supplementary Figure 25. Non-dominant wrist - Moderate to vigorous physical activity



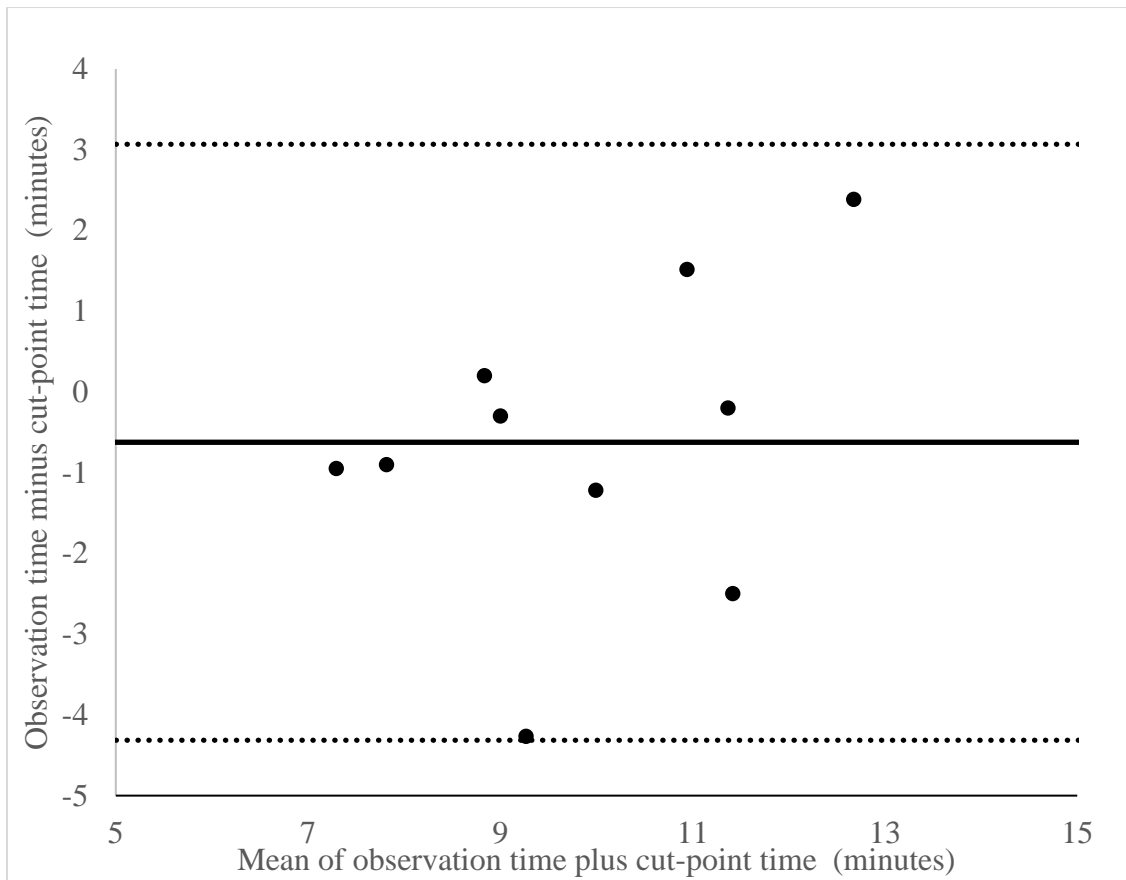
Phase 2 cut-point: ≥ 189

Mean difference: -0.152

Upper limit of agreement: 2.765

Lower limit of agreement: -3.068

Supplementary Figure 26. Dominant wrist - Moderate to vigorous physical activity



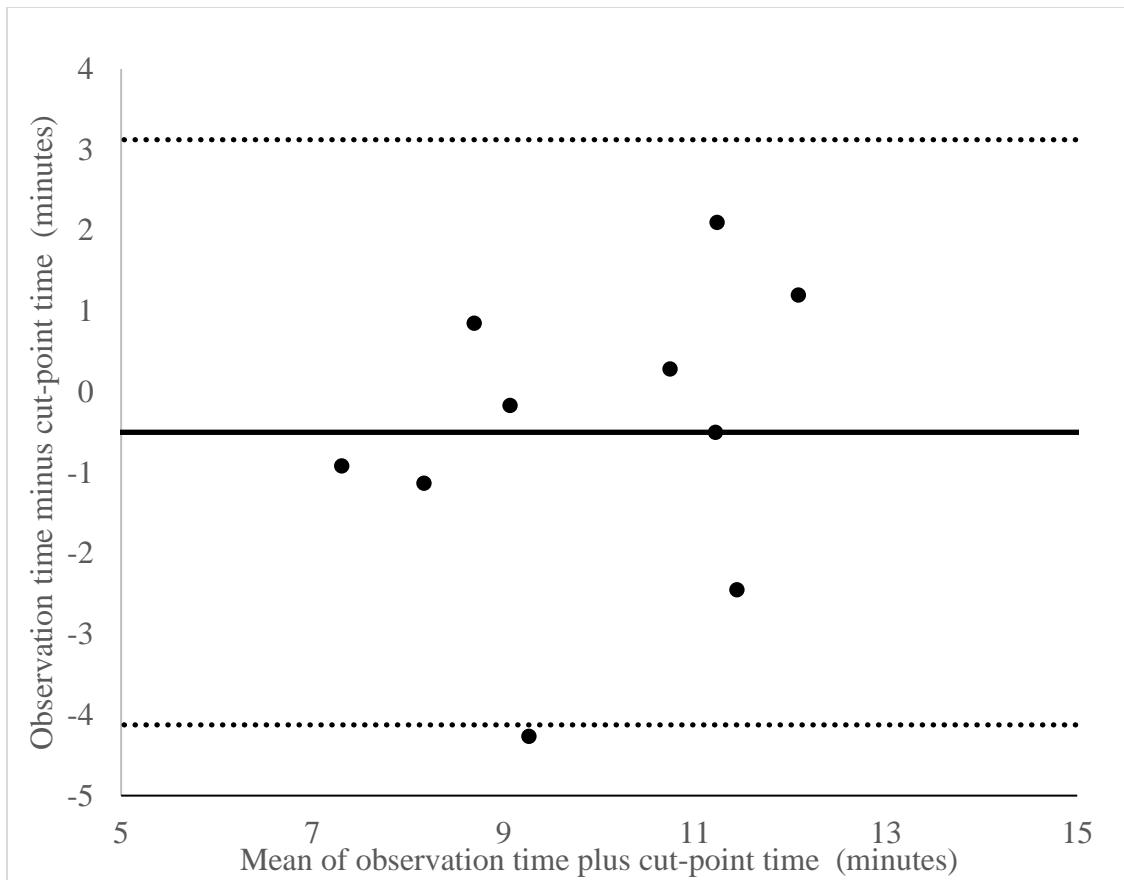
Phase 2 cut-point: ≥ 181

Mean difference: -0.623

Upper limit of agreement: 3.067

Lower limit of agreement: -4.314

Supplementary Figure 27. Hip - Moderate to vigorous Physical activity



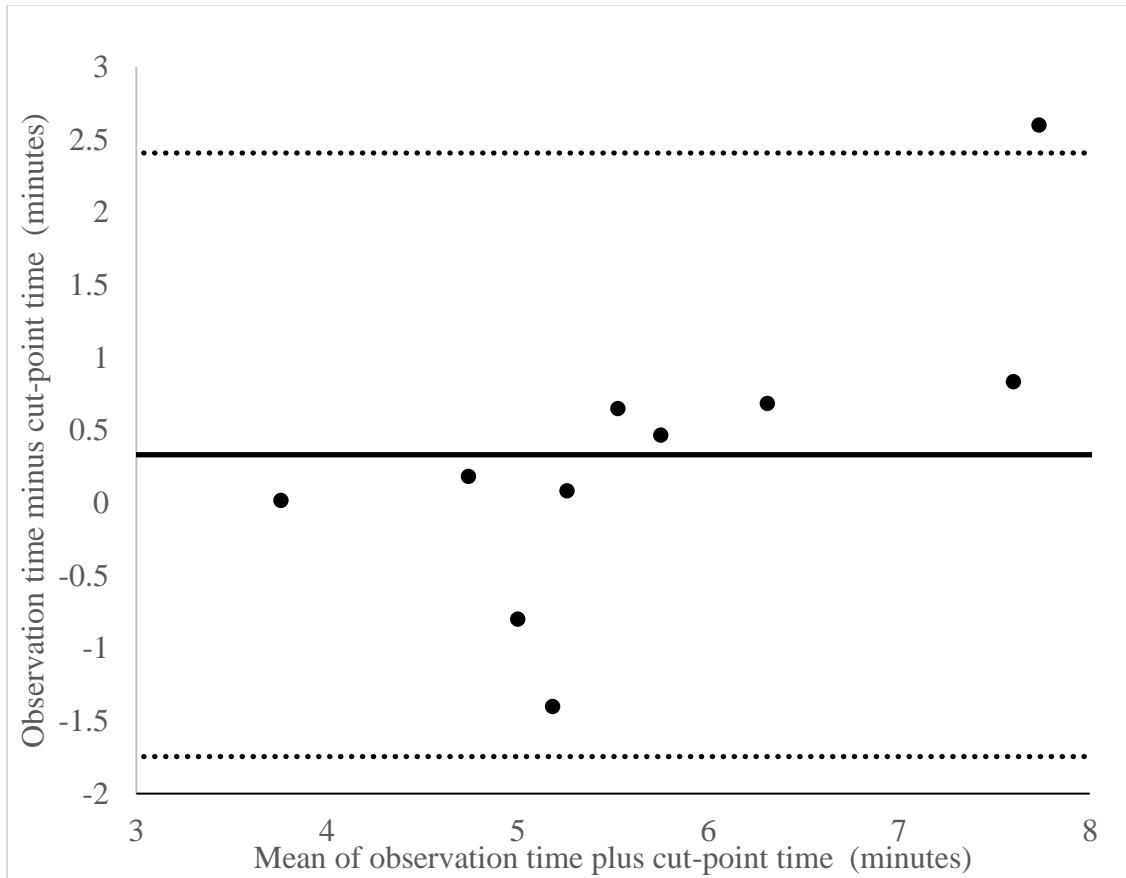
Phase 2 cut-point: ≥ 95

Mean difference: 1.849

Upper limit of agreement: 3.124

Lower limit of agreement: -4.124

Supplementary Figure 28. Non-dominant wrist - Vigorous physical activity



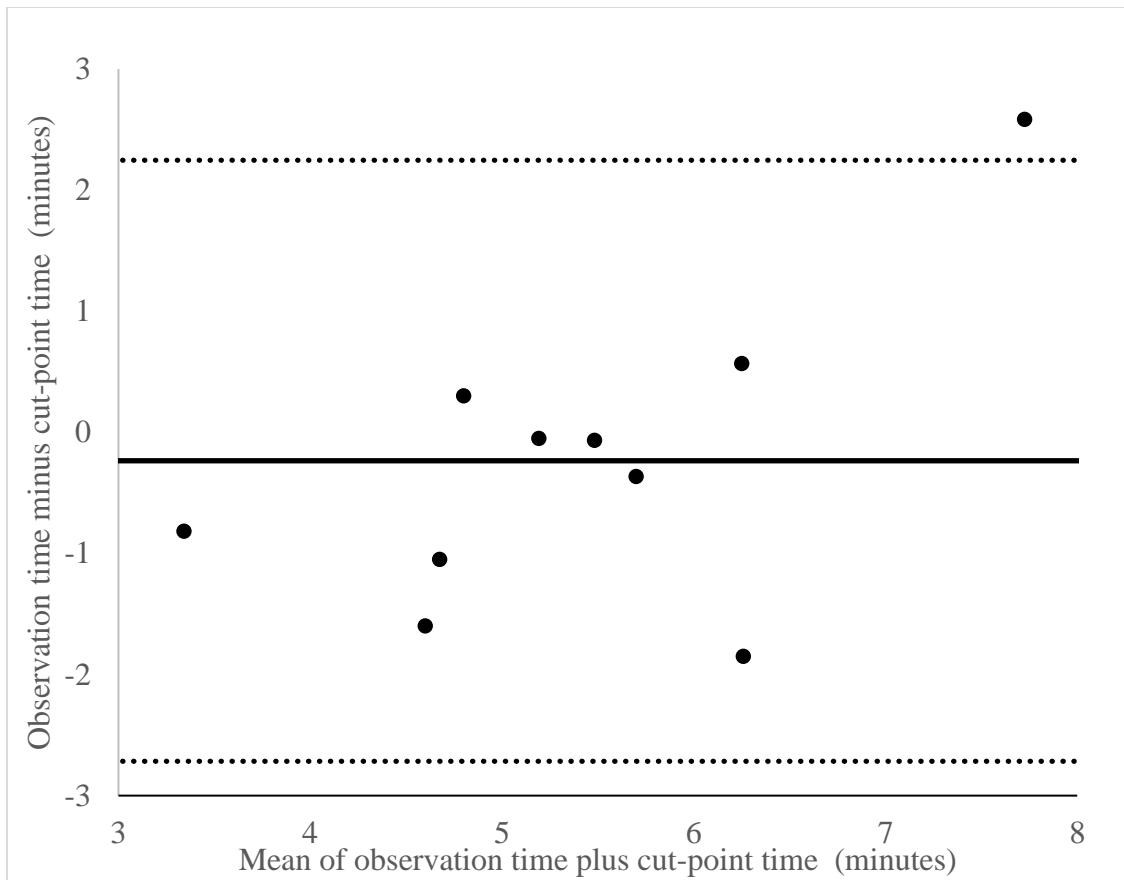
Phase 2 cut-point: ≥ 536

Mean difference: 0.332

Upper limit of agreement: 2.408

Lower limit of agreement: -1.745

Supplementary Figure 29. Dominant wrist - Vigorous physical activity



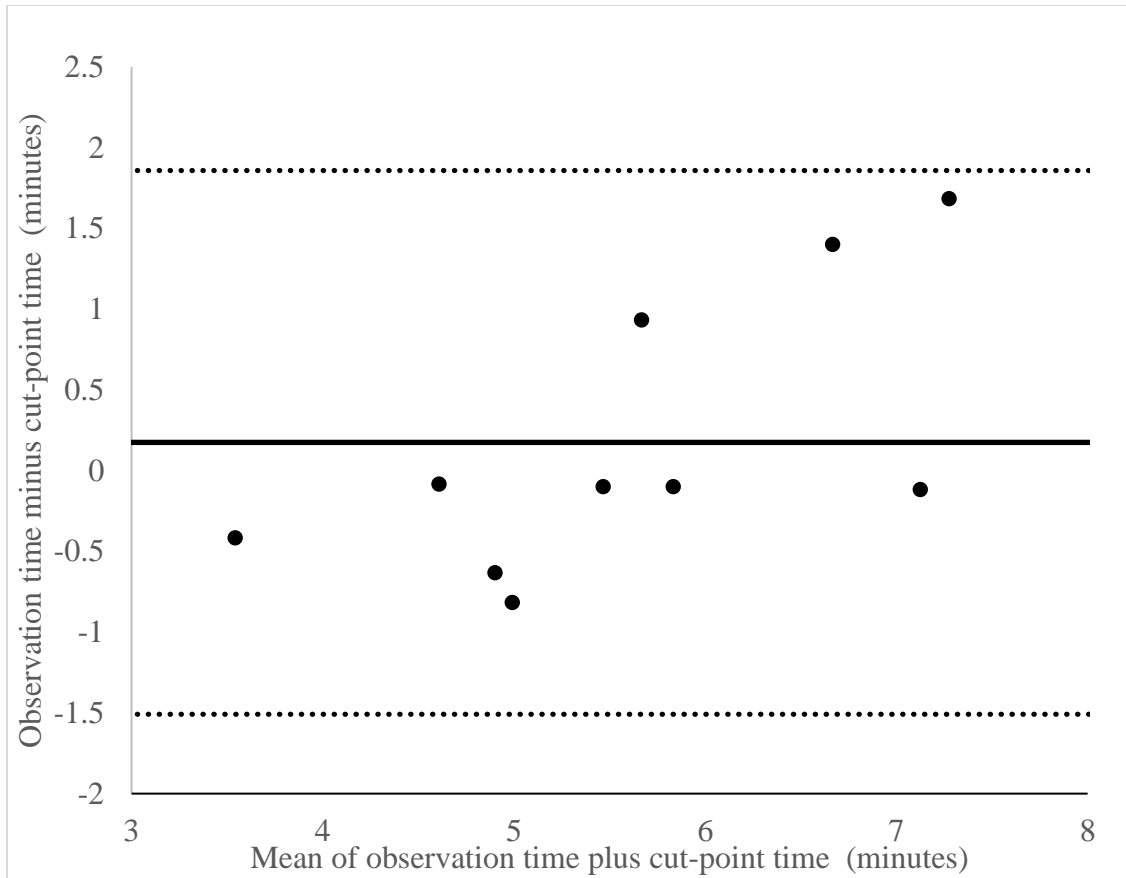
Phase 2 cut-point: ≥ 534

Mean difference: -0.235

Upper limit of agreement: 2.246

Lower limit of agreement: -2.716

Supplementary Figure 30. Hip - Vigorous physical activity



Phase 2 cut-point: ≥ 325

Mean difference: 0.175

Upper limit of agreement: 1.859

Lower limit of agreement: -1.509