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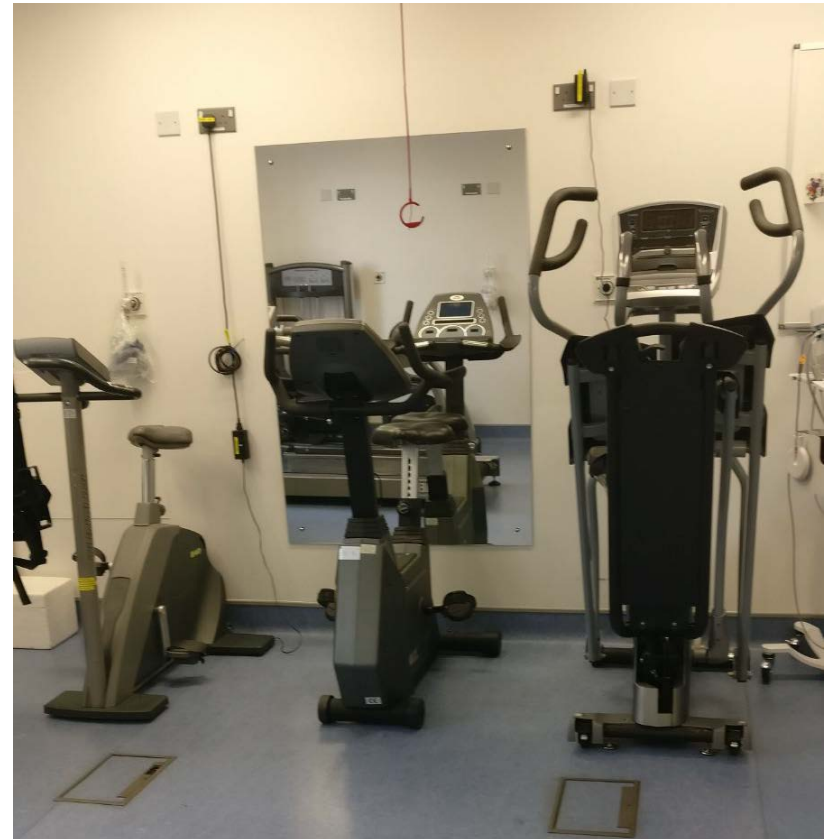
Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin

Laboratory based research into exercise and physical activity among those living with HIV

Dr Cuisle Forde

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Recent peer reviewed publications

AIDS Behav

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ORIGINAL PAPER

Physical Activity is Associated with Metabolic Health in Men Living with HIV

Cuisle Forde¹  · Aisling Loy³ · Siobhan O'Dea³ · Fiona Mulcahy³ · John Gormley¹ · Caroline Daly²

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Participant characteristics

Table 1 Participant characteristics, physical activity and venous blood results

N = 37 (19 HIV-, 18 HIV +)	HIV-negative		HIV-positive		Difference between groups
	Mean or median	SD	Mean or median	SD	
Height (cm)	178	7	178	7	t(35) = 0.01, p = 0.99
Weight (kg)	86.8	12.8	85.3	9.3	t(35) = 0.41, p = 0.69
BMI (kg.m ⁻²)	27	4	27	2.5	t(35) = 0.43, p = 0.67
Waist circumference (cm)	96	10	101	24	t(35) = 0.84, p = 0.41
Pack years ^b	0		0		U = 167, p = 0.65
Alcohol ^b (reported average units per week)	8		10		U = 169, p = 0.74

Physical activity

Table 1 Participant characteristics, physical activity and venous blood results

N = 37 (19 HIV–, 18 HIV +)	HIV-negative		HIV-positive		Difference between groups
	Mean or median	SD	Mean or median	SD	
Number of daily PA bouts	0.6	0.5	1.7	1.3	t(35) = –3.63, p < 0.01 ^a
Time spent in PA bouts a day (min)	16	16	33	24	t(35) = –2.54, p = 0.02 ^a
Number of daily sedentary bouts	15	6	14	4	t(35) = 0.59, p = 0.56
Time spent in sedentary bouts a day (min)	323	140	299	96	t(35) = 0.61, p = 0.549
Sedentary ^b (min)	526		490		U = 141, p = 0.36
Light PA (min a day)	230	87	248	91	t(35) = –0.60, p = 0.55
Moderate PA (min a day)	29	17	50	34	t(35) = –2.45, p = 0.02 ^a
Vigorous PA ^b (min a day)	0.3		2		U = 160, p = 0.75
Total MVPA (min a day)	31	17	55	35	t(35) = –2.57, p = 0.02 ^a
Steps a day	5946	2368	9016	4183	t(35) = –2.77, p < 0.01 ^a

Blood pressure and venous blood results

Table 1 Participant characteristics, physical activity and venous blood results

N = 37 (19 HIV–, 18 HIV +)	HIV-negative		HIV-positive		Difference between groups
	Mean or median	SD	Mean or median	SD	
Systolic BP (mmHg)	126	12	124	10	t(35) = 0.56, p = 0.58
Diastolic BP (mmHg)	81	9	78	6	t(35) = 1.18, p = 0.25
Total cholesterol (mmol/L)	4.92	1.08	4.72	0.91	t(35) = 0.60, p = 0.55
LDL (mmol/L)	2.91	1.01	2.62	0.84	t(35) = 0.94, p = 0.35
HDL (mmol/L)	1.38	0.26	1.34	0.38	t(35) = 0.37, p = 0.71
Triglyceride ^b s (mmol/L)	1.30		1.21		U = 152, p = 0.56
Fasting glucose (mmol/L)	5.0	0.6	5.2	0.5	t(35) = –1.14, p = 0.26
Insulin resistance ^b (HOMA- IR)	1.35		1.40		U = 145, p = 0.59

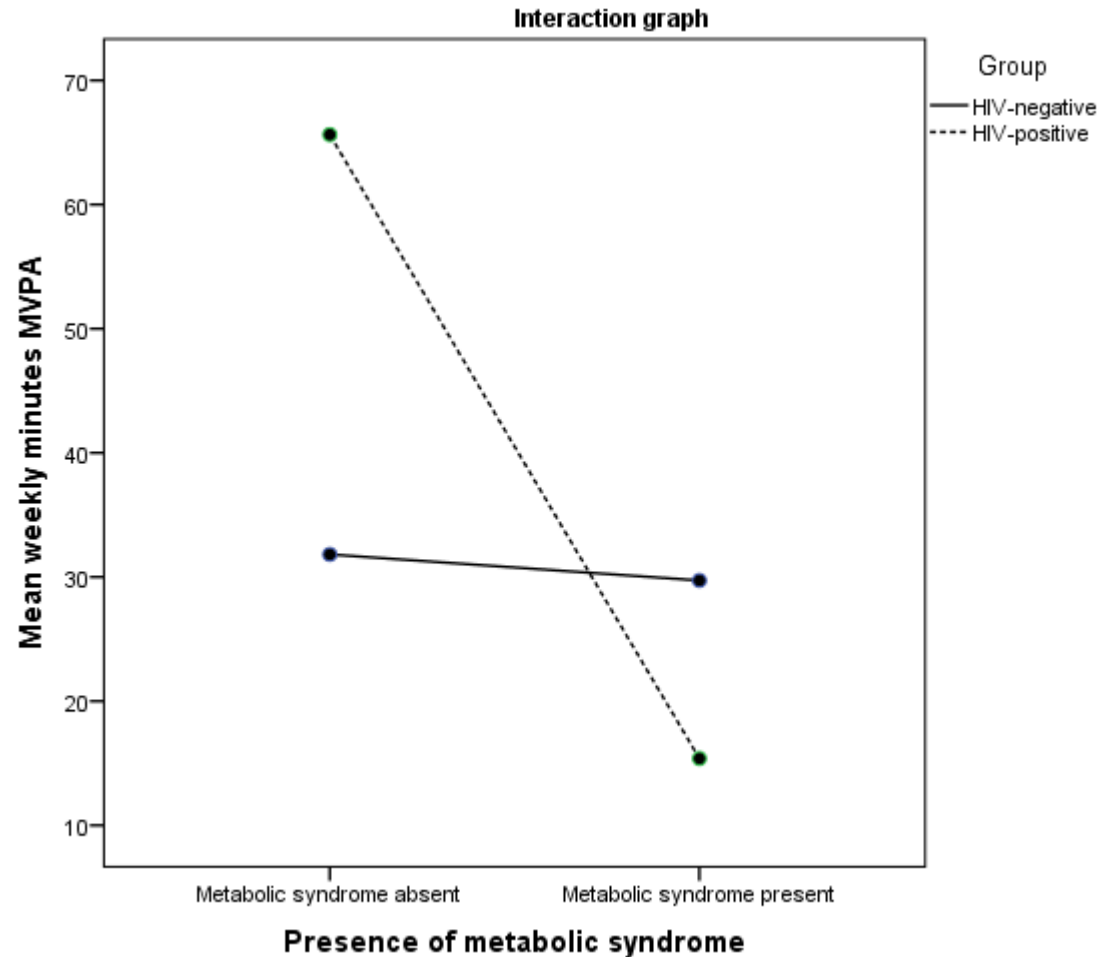
Correlation analysis

HIV –ve group No significant relationships between indices of metabolic health and PA

HIV +ve group Significant inverse relationship between time spent in moderate PA and both insulin resistance and triglycerides (q -0.847; p<0.001 and q -0.575; p = 0.013 respectively).

Total time spent in moderate to vigorous PA was also significantly correlated with both insulin resistance (q -0.785; p<0.001) and triglycerides (q -0.484; p = 0.042).

Among those living with HIV, those with the metabolic syndrome were much less active



Discussion

Relatively high levels of physical activity among those living with HIV

Prevalence of metabolic syndrome similar to that reported in the wider Irish population

Causality cannot be assumed! However physiologically plausible that PA levels had a positive effect on the metabolic profile of those living with HIV

The effects of a 16-week aerobic exercise programme on cognitive function in people living with HIV

Adam McDermott, Lilia Zaporozhan, Patricia McNamara, Colin P. Doherty, Janice Redmond, Cuisle Forde, John Gormley, Mikel Egaña & Colm Bergin

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Protocol

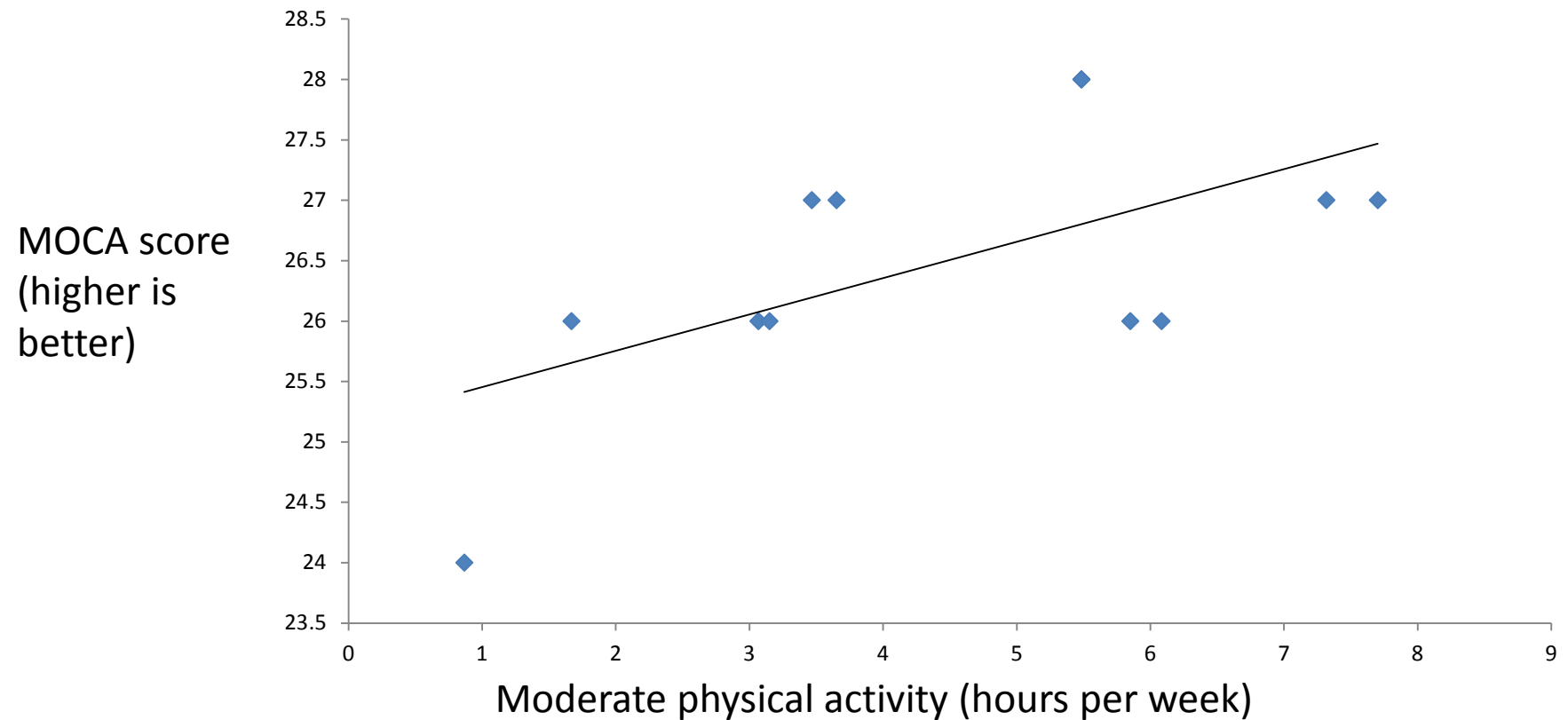


Trail Making Test

Sleep Quality Assessment (PSQI)

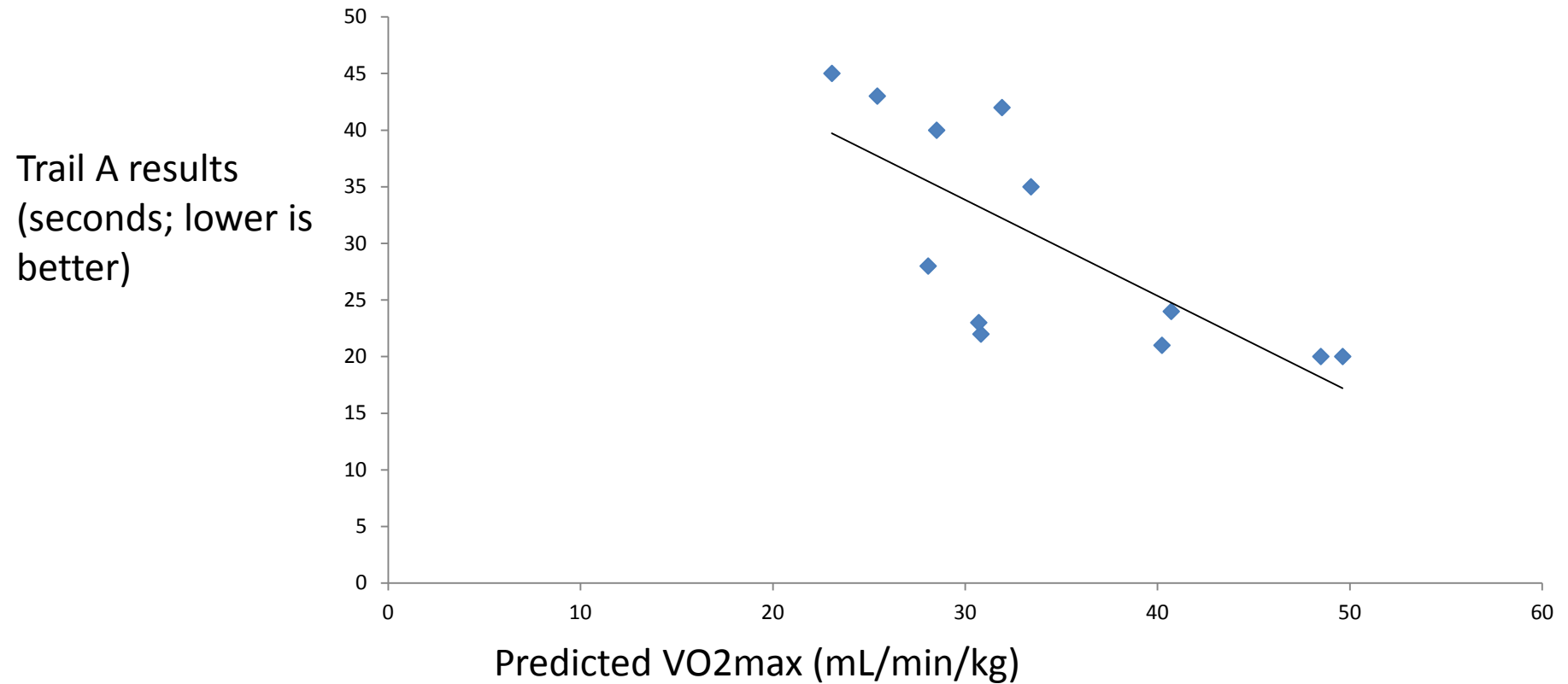
Those who were taking more physical activity scored better in a cognitive test

Correlation between MOCA scores and moderate physical activity



Those who were fitter scored better in a cognitive test

Correlation between Trail A and Predicted VO₂ max



Results

- Average adherence to exercise was 60%
- Baseline correlations were promising but overall the 16 week aerobic exercise intervention **did not** improve cognitive function
- Daytime dysfunction (a subsection of the PSQI) improved in the exercise group alone

What have we learned?

- Adherence
- Need to target those with certain co-morbidities and the aging population
- Expertise needed to prescribe exercise to those with complex clinical needs
- Clear benefits of exercise –
ONLY BECOMING MORE RELEVANT



Thank you and Questions

c.forde@tcd.ie



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Coláiste na Tríonóide, Baile Átha Cliath

The University of Dublin



Wellcome Trust - HRB

Clinical Research Facility

at St. James's Hospital

