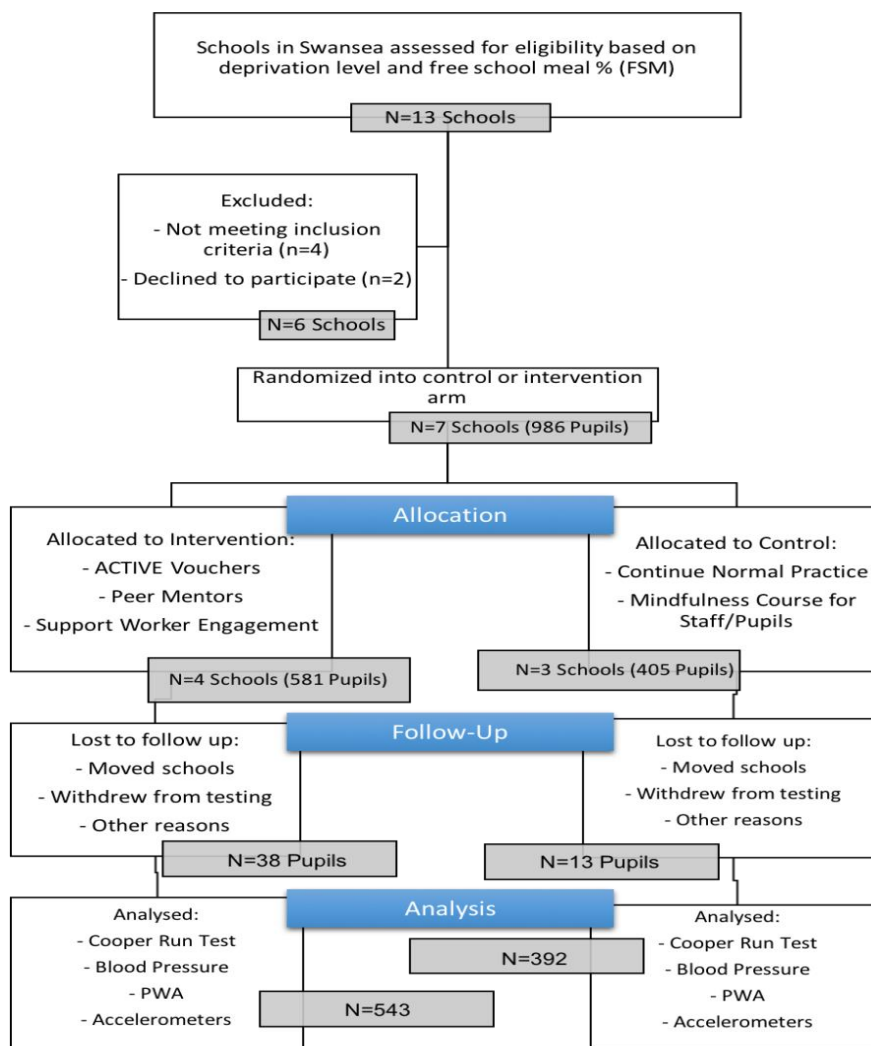


Increasing physical activity levels in children: the ACTIVE project (ISRCTN75594310)

Participant Flow

A total of 13 schools were assessed for eligibility; four did not meet inclusion criteria of being deprived or located in one of Wales' most deprived areas. Two schools declined to participate. This meant 7 secondary schools took part in the RCT; four intervention and three control schools. Following initial school recruitment and head teacher approval, participants (in school year 9, aged 13 – 14) were recruited for secondary outcome measures via school assemblies and information sheets. Consent was voluntary and involved both written parental consent and pupil assent forms. ACTIVE recruited 909 pupils. As well as this, members of the local council sport development team (n=15) were recruited at twelve months to take part in a one-off focus group.



Baseline Characteristics

School level deprivation was derived from the Welsh Index of Multiple Deprivation (WIMD) which is used to identify areas of deprivation based on income, employment, health, education, access to services, community safety, environment and housing.

Demographics of Schools		
	Number of pupils in the study (n=boys)	Free school meal % in the school*
School One	113 (n=56)	26.4%
School Two	231 (n=107)	19.2%
School Three	125 (n=59)	10%
School Four	128 (n=62)	38.1%
School Five	97 (n=50)	50.5%
School Six	142 (n=77)	21.7%
School Seven	190 (n=105)	27.5%

*Free school meal eligibility is a marker that the family income is below the poverty threshold

Randomisation into either intervention or control was done by an external statistician and occurred prior to baseline data collection. Characteristics of both arms are in the table. Due to the nature of

the study, participants were aware of which arm they were allocated.

Characteristics of Intervention and Control Arm			
Arm	Boys	Girls	Total
Intervention	254(48%)	270(52%)	524
Control	213(55%)	172(45%)	385

Outcome Measures

Primary Outcome – Cardiovascular Fitness

Intervention Compared to Control			
Cooper Run (% Fit)	Control (n=384)	Intervention (n=524)	Difference
Baseline (Total)	35.9% (n=138)	33.5% (n=176)	2.4% (95% CI: -3.9% to 8.6%)
12 Months (Total)	30.4% (n=117)	33.0% (n=173)	-2.6% (95% CI: -8.6% to 3.6%)
Difference (Total)	5.4% (95% CI: -.6% to 1.6%)	0.5% (95% CI: -4.5% to 5.7%)	4.9% (95% CI: 2.7% to 7.6%)
	Control Boys (n=212)	Intervention Boys (n=254)	Difference
Baseline (Boys)	22.1% (n=47)	24.4% (n=62)	-2.3% (95% CI: -9.9% to 5.5%)
12 Months (Boys)	18.3% (n=39)	20.0% (n=51)	-1.7% (95% CI: -8.9% to 5.5%)
Difference (Boys)	3.8% (95% CI: -3.5% to 11.1%)	4.4% (95% CI: -2.1% to 10.8%)	-.6% (95% CI: -2.2% to 4.6%)
	Control Girls (n=172)	Intervention Girls (n=270)	Difference
Baseline (Girls)	52.9% (n=91)	42.2% (n=114)	10.7% (95% CI: 11.5% to 20.2%)
12 Months (Girls)	45.3% (n=78)	45.1% (n=122)	.2% (95% CI: -9.4% to 9.7%)
Difference (Girls)	7.5% (95% CI: -2.8% to 17.9%)	-2.9% (95% CI: -10.8% to 4.8%)	10.4% (95% CI: .4% to 9.7%)
	Control Deprived Pupils (n=146)	Intervention Deprived Pupils (n=431)	Difference
Baseline (Deprived)	36.3% (n=53)	35.0% (n=151)	1.3% (95% CI: -7.7% to 10.2%)
12 Months (Deprived)	30.8% (n=45)	32.4% (n=140)	-1.6% (95% CI: -10.4% to 7.1%)
Difference (Deprived)	5.5% (95% CI: -4.4% to 15.4%)	2.6% (95% CI: -3.1% to 8.2%)	2.9% (95% CI: -.4% to 7.9%)
	Control Not Deprived Pupils (n=238)	Intervention Not Deprived Pupils (n=93)	Difference
Baseline (Not Deprived)	35.7% (n=85)	26.8% (n=25)	8.9% (95% CI: -2.4% to 20.1%)
12 Months (Not Deprived)	30.2% (n=72)	35.4% (n=33)	-5.2% (95% CI: -16.4% to 5.9%)
Difference (Not Deprived)	5.5% (95% CI: -2.4% to 13.3%)	-8.6% (95% CI: -20.6% to 3.4%)	14.1% (95% CI: 4.1% to 19.2%)
Cooper Run (Distance, m)	Control (n=384)	Intervention (n=524)	Difference
Baseline (Total)	1811.8 (±365.5)	1781.9 (±373.5)	29.9 (95% CI: -18.9 to 78.6)
12 Months (Total)	1756.0 (±384.4)	1762.3 (±421.1)	-6.3 (95% CI: -59.8 to 47.2)
Difference (Total)	55.7 (95% CI: 11.1 to 100.3)	19.6 (95% CI: -16.7 to 55.9)	36.1 (95% CI: -93.1 to 20.9)
	Control Boys (n=212)	Intervention Boys (n=254)	Difference
Baseline (Boys)	1989.9 (±346.0)	2010.9 (±335.7)	-21 (95% CI: -83.1 to 41.2)
12 Months (Boys)	1897.1 (±390.7)	1953.2 (±400.3)	-56.1 (95% CI: -128.4 to 16.3)
Difference (Boys)	92.8 (95% CI: 26.4 to 159.1)	57.7 (95% CI: .2 to 115.2)	35.1 (95% CI: -122.2 to 52.0)
	Control Girls (n=172)	Intervention Girls (n=270)	Difference
Baseline (Girls)	1592.2 (±252.1)	1566.5 (±263.1)	25.7 (95% CI: -23.9 to 75.3)
12 Months (Girls)	1582.1 (±295.8)	1582.7 (±356.8)	-.6 (95% CI: -64.7 to 63.5)

Difference (Girls)	10.1 (95% CI: -46.6 to 66.9)	-16.1 (95% CI: -61.4 to 29.0)	26.2 (95% CI: -98.5 to 46.1)
	<i>Control Deprived Pupils (n=146)</i>	<i>Intervention Deprived Pupils (n=431)</i>	Difference
Baseline (Deprived)	1806.2 (±295.4)	1783.1 (±371.6)	23.1 (95% CI: -43.4 to 89.6)
12 Months (Deprived)	1770.5 (±359.3)	1763.5 (±412.5)	7 (95% CI: -68.2 to 82.1)
Difference (Deprived)	35.7 (95% CI: -27.9 to 99.4)	19.6 (95% CI: -19.2 to 58.4)	16.1 (95% CI: -92.2 to 60.0)
	<i>Control Not Deprived Pupils (n=238)</i>	<i>Intervention Not Deprived Pupils (n=93)</i>	Difference
Baseline (Not Deprived)	1815.2 (± 403.0)	1776.3 (±384.1)	38.9 (95% CI: -56.7 to 134.6)
12 Months (Not Deprived)	1747.1 (±363.2)	1756.5 (±461.1)	-9.4 (95% CI: -109.8 to 91.1)
Difference (Not Deprived)	68.1 (95% CI: 7.3 to 128.7)	19.8 (95% CI: -79.9 to 119.5)	48.3 (95% CI: -163.2 to 66.6)

Secondary Outcome – Cardiovascular Health

Intervention Compared to Control

Blood Pressure (% High)	<i>Control (n=384)</i>	<i>Intervention (n=524)</i>	Difference
Baseline (Total)	1.6% (n=6)	5.3% (n=28)	-3.7% (95% CI: -5.5% to .2%)
12 Months (Total)	3.1% (n=12)	2.7% (n=14)	.4% (95% CI: -1.7% to 2.9%)
Difference (Total)	-1.4% (95% CI: -3.7% to .6%)	2.6% (95% CI: -3.0% to 5.0%)	-4% (95% CI: -9% to 3.0%)
	<i>Control Boys (n=212)</i>	<i>Intervention Boys (n=254)</i>	Difference
Baseline (Boys)	2.4% (n=5)	6.7% (n=17)	-4.3% (95% CI: .4% to 8.3%)
12 Months (Boys)	4.2% (n=9)	3.5% (n=9)	.7% (95% CI: -2.9% to 4.3%)
Difference (Boys)	-1.8% (95% CI: -1.7% to 5.7%)	3.2% (95% CI: -.7% to 7.2%)	(95% CI: -1.9% to 4.4%)
	<i>Control Girls (n=172)</i>	<i>Intervention Girls (n=270)</i>	Difference
Baseline (Girls)	0.6% (n=1)	4.1% (n=11)	-3.5% (95% CI: .3% to 6.6%)
12 Months (Girls)	1.7% (n=3)	1.9% (n=5)	.2% (95% CI: -3.3% to 2.7%)
Difference (Girls)	-1.1% (95% CI: -1.7% to 4.4%)	2.2% (95% CI: -.7% to 5.4%)	-3.3% (95% CI: -2.1% to 3.7%)
	<i>Control Deprived Pupils (n=146)</i>	<i>Intervention Deprived Pupils (n=431)</i>	Difference
Baseline (Deprived)	2.0% (n=3)	4.6% (n=20)	-2.6% (95% CI: -1.5% to 5.3%)
12 Months (Deprived)	3.4% (n=5)	2.3% (n=10)	1.1% (95% CI: -1.6% to 5.5%)
Difference (Deprived)	-1.4% (95% CI: -2.9% to 5.9%)	2.3% (95% CI: -.1% to 4.9%)	-3.7% (95% CI: -2.6% to 3.0%)
	<i>Control Not Deprived Pupils (n=238)</i>	<i>Intervention Not Deprived Pupils (n=93)</i>	Difference
Baseline (Not Deprived)	1.3% (n=3)	8.6% (n=8)	7.3% (95% CI: 2.5% to 14.8%)
12 Months (Not Deprived)	2.9% (n=7)	4.3% (n=4)	-1.4% (95% CI: -2.6% to 7.7%)
Difference (Not Deprived)	-1.6% (95% CI: -1.1% to 4.8%)	4.3% (95% CI: -3.2% to 12.2%)	-5.9% (95% CI: -1.0% to 8.9%)
Augmentation Pressure (mmHg) (PWA)	<i>Control (n=384)</i>	<i>Intervention (n=524)</i>	Difference

Baseline (Total)	4.9 (±2.5)	5.0 (±2.6)	-.1 (95% CI: -.5 to .1)
12 Months (Total)	4.1 (±2.2)	4.0 (±2.4)	.1 (95% CI: -.2 to .3)
Difference (Total)	.8 (95% CI: .4 to 1.1)	1 (95% CI: .7 to 1.3)	.2 (95% CI: -.1 to .7)
	<i>Control Boys (n=212)</i>	<i>Intervention Boys (n=254)</i>	Difference
Baseline (Boys)	4.6 (±2.7)	4.6 (±2.6)	.0 (95% CI: -.4 to .5)
12 Months (Boys)	4.1 (±2.2)	4.2 (±2.5)	.1 (95% CI: -.4 to .4)
Difference (Boys)	.5 (95% CI: -.0 to .9)	.4 (95% CI: -.0 to .8)	.1 (95% CI: -.7 to .5)
	<i>Control Girls (n=172)</i>	<i>Intervention Girls (n=270)</i>	Difference
Baseline (Girls)	5.2 (±2.3)	5.5 (±2.4)	-.3 (95% CI: -.7 to .1)
12 Months (Girls)	4.0 (±2.2)	3.9 (±2.2)	.1 (95% CI: -.3 to .5)
Difference (Girls)	1.2 (95% CI: .7 to 1.7)	1.6 (95% CI: 1.2 to 2.0)	.1 (95% CI: -.1 to .9)
	<i>Control Deprived Pupils (n=146)</i>	<i>Intervention Deprived Pupils (n=431)</i>	Difference
Baseline (Deprived)	4.5 (±3.2)	5.2 (±2.4)	-.7 (95% CI: -1.2 to -.1)
12 Months (Deprived)	4.0 (±2.0)	4.1 (±2.3)	-.1 (95% CI: -.5 to .3)
Difference (Deprived)	.5 (95% CI: -.1 to 1.1)	1.3 (95% CI: .8 to 1.4)	.8 (95% CI: .1 to 1.4)
	<i>Control Not Deprived Pupils (n=238)</i>	<i>Intervention Not Deprived Pupils (n=93)</i>	Difference
Baseline (Not Deprived)	5.1 (±2.0)	4.2 (±2.9)	.9 (95% CI: .3 to 1.4)
12 Months (Not Deprived)	4.1 (±2.3)	3.6 (±2.6)	.5 (95% CI: -.0 to 1.0)
Difference (Not Deprived)	1.0 (95% CI: .5 to 1.3)	.6 (95% CI: -.2 to 1.3)	.4 (95% CI: -.12 to .4)
Augmentation Index (%) (PWA)	<i>Control (n=384)</i>	<i>Intervention (n=524)</i>	Difference
Baseline (Total)	9.5 (±4.0)	10.0 (±4.6)	-.5 (95% CI: -1.1 to .0)
12 Months (Total)	7.4 (±3.2)	7.6 (±4.3)	-.2 (95% CI: -.6 to .3)
Difference (Total)	2.1 (95% CI: 1.5 to 2.5)	2.4 (95% CI: 1.8 to 2.9)	-.3 (95% CI: -.4 to 1.0)
	<i>Control Boys (n=212)</i>	<i>Intervention Boys (n=254)</i>	Difference
Baseline (Boys)	8.8 (±3.9)	9.1 (±4.8)	-.3 (95% CI: -1.1 to .5)
12 Months (Boys)	7.9 (±3.1)	8.1 (±4.5)	-.2 (95% CI: -.9 to .5)
Difference (Boys)	.9 (95% CI: .1 to 1.5)	1.0 (95% CI: .2 to 1.7)	-.1 (95% CI: -.9 to 1.1)
	<i>Control Girls (n=172)</i>	<i>Intervention Girls (n=270)</i>	Difference
Baseline (Girls)	10.3 (±3.9)	10.9 (±4.1)	-.6 (95% CI: -1.3 to .2)
12 Months (Girls)	6.9 (±3.2)	7.2 (±4.0)	-.3 (95% CI: -1.0 to .4)
Difference (Girls)	3.4 (95% CI: 2.6 to 4.2)	3.7 (95% CI: 3.0 to 4.4)	-.3 (95% CI: -.7 to 1.3)
	<i>Control Deprived Pupils (n=146)</i>	<i>Intervention Deprived Pupils (n=431)</i>	Difference
Baseline (Deprived)	8.8 (±4.5)	10.4 (±4.3)	-1.6 (95% CI: -2.4 to -.8)
12 Months (Deprived)	7.6 (±3.0)	7.8 (±3.9)	-.2 (95% CI: -.8 to .5)
Difference (Deprived)	1.2 (95% CI: .2 to 2.1)	2.6 (95% CI: 2.0 to 3.1)	-1.4 (95% CI: -2.5 to -.4)

	<i>Control Not Deprived Pupils (n=238)</i>	<i>Intervention Not Deprived Pupils (n=93)</i>	Difference
Baseline (Not Deprived)	9.9 (±3.6)	8.3 (±5.2)	1.6 (95% CI: .6 to 2.6)
12 Months (Not Deprived)	7.4 (±3.3)	7.0 (±5.5)	.4 (95% CI: -.5 to 1.3)
Difference (Not Deprived)	2.5 (95% CI: 1.9 to 3.2)	1.3 (95% CI: -.2 to 2.8)	1.2 (95% CI: -.1 to 2.5)

Secondary Outcome – Exercise Motivation

Intervention Compared to Control

Motivation (% Autonomous)	<i>Control (n=384)</i>	<i>Intervention (n=524)</i>	Difference
Baseline (Total)	98.1% (n=378)	97.1% (n=509)	1% (95% CI: -.9% to 3%)
12 Months (Total)	97.9% (n=377)	97.9% (n=513)	0% (95% CI: -1.8% to 1.9%)
Difference (Total)	.2% (95% CI: -1.5% to 2.1%)	-.8% (95% CI: -2.4% to .9%)	.9% (95% CI: -.7% to 1.7%)
	<i>Control Boys (n=212)</i>	<i>Intervention Boys (n=254)</i>	Difference
Baseline (Boys)	98.1% (n=209)	97.6% (n=248)	.5% (95% CI: -2.1% to 3.1%)
12 Months (Boys)	98.5% (n=210)	97.6% (n=248)	.9% (95% CI: -1.5% to 3.4%)
Difference (Boys)	-.4% (95% CI: -2.9% to 1.9%)	0% (95% CI: -2.1% to 2.1%)	-.4% (95% CI: -1.0% to 2.6%)
	<i>Control Girls (n=172)</i>	<i>Intervention Girls (n=270)</i>	Difference
Baseline (Girls)	98.2% (n=169)	96.6% (n=261)	.6% (95% CI: -1.5% to 4.7%)
12 Months (Girls)	97.0% (n=167)	98.1% (n=265)	-1.1% (95% CI: -3.9% to 1.8%)
Difference (Girls)	1.2% (95% CI: -1.6% to 3.9%)	-1.5% (95% CI: -4.0% to 1.0%)	2.7% (95% CI: -3.2% to 3.0%)
	<i>Control Deprived Pupils (n=146)</i>	<i>Intervention Deprived Pupils (n=431)</i>	Difference
Baseline (Deprived)	97.2% (n=143)	98.1% (n=423)	-0.9% (95% CI: -3.5% to 1.8%)
12 Months (Deprived)	99.3% (n=146)	98.1% (n=423)	1.2% (95% CI: -1.1% to 3.5%)
Difference (Deprived)	-2.1% (95% CI: -5.0% to .9%)	0% (95% CI: -1.5% to 1.5%)	2.1% (95% CI: .4% to 5.8%)
	<i>Control Not Deprived Pupils (n=238)</i>	<i>Intervention Not Deprived Pupils (n=93)</i>	Difference
Baseline (Not Deprived)	98.7% (n=235)	92.4% (n=86)	6.3% (95% CI: 2.1% to 10.3%)
12 Months (Not Deprived)	97.0% (n=231)	96.7% (n=90)	3% (95% CI: -3.8% to 4.4%)
Difference (Not Deprived)	1.7% (95% CI: -.6% to 4.0%)	-4.3% (95% CI: -10.3% to 17.0%)	6% (95% CI: -1.0% to 8.9%)

Adverse Effects

There were no adverse events associated with this trial.