

# A community-based intervention for young people with disability increases physical activity participation: a stepped wedge cluster randomised trial

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# Background

Increasing the participation in physical activity of young people with disability is important

- Most do not meet physical activity guidelines
- At risk of developing secondary health conditions
- Missing opportunity for social connections

Exercise interventions are usually implemented in clinical or segregated setting

- Expensive as a high degree of specialist supervision
- Preference for community settings
- Community 'invisibility' makes inclusion harder



- A model of exercise for young people with disability that overcomes environmental barriers to participation
- Match a young person with disability with a student mentor
- Pair exercise together at their local gym
- 12-week program, 2 sessions a week (24 sessions total)
- Individualised
- Moderate to high intensity exercise

### **Aim**

To determine the **efficacy** of *FitSkills* in improving exercise participation compared to usual activities for young people with disability





# Study design

- Stepped wedge cluster randomised trial
- 163 young people with disability to train at 11 trial sites (gyms)
  - Each site represents a cluster unit.
  - Four groups, each containing 2 or 3 **randomly allocated** cluster units.

Randomise (Clusters 1-4)	4					FitSkills Site 8 FitSkills Site 7			
	3				FitSkills Site 6				
					FitSkills Site 5				
	2			FitSkills Site 4					
				FitSkills Site 3					
	1		FitSkills Site 2						
			FitSkills Site 1						
	Time	T0	T1	T2	T3	T4	T5	T6	T7
	Months	(0-3)	(4-6)	(7-9)	(10-12)	(13-15)	(16-18)	(19-21)	(22-24)





## **Participants**

### Inclusion criteria

- Aged 13 to 30 years and identify as having a disability
- Ability to follow simple verbal instructions in English
- Able to take part in moderate to high intensity exercise

### Exclusion criteria

- Medical condition rendering them unfit to take part
- Participation in a high-intensity exercise program within 3 months prior to the trial
- Significant psychological or behavioural challenges that would impact their participation

# **Outcomes measuring participation**

Domain	Measure	What	Scored
Attendance	Physical Activity Recall	Formal activities Informal activities	No of activities Duration
	Sedentary Activity	11 sedentary behaviours	Duration
	CAPE	16 physical activity items	No of activities Frequency
	PEM-CY	10 community items	Frequency
Involvement	PEM-CY	10 community items	Involvement Desire for change
Preference	PAC	16 physical activity items	Preference





## **Data analysis**

- Intention to treat analysis
- Self-report and proxy-report data were combined
- Data were analysed using linear mixed effects models and generalized estimating equations
- Analyses were adjusted for baseline data (e.g. age and gender)
- Non-normally distributed outcomes were log-transformation and estimates reported as percentage change
- Outliers a robust version of a linear mixed-effects model was used
- Sensitivity analysis for missing data





#### **Trial participants** Expressions of interest (n=287) Excluded (n=124) General inquiries (n=4) Medical reasons (n=15) Already doing high intensity exercise (n=13) Outside age range (n=11) No local site (n=18) Did not respond to follow-up (n=39) Withdrawals (n=21) Not interested (n=16) Enrolled (n=163) No longer interested/fell out of contact (n=2) No disability (n=1) Participation no longer feasible due to changed Too busy (n=1) circumstances (n=3) Wanted to commence exercise immediately (n=1) Unable to complete FitSkills during trial timeline Unable to make time commitment (n=5) Preferred alternate arrangement such as exercising with health professional (n=2) Completed exercise consultation (n=142) Withdrawals (n=12) Moved out of area (n=4) No longer interested/fell out of contact (n=5) Burden of assessment (n=5) Participation no longer possible due to changed family Changed participant health or behaviour status circumstances (n=2) Unable to complete FitSkills during trial timeline (n=1) Moved out of area (n=1)Changed participant health status (n=3) Commenced *FitSkills* (n=130) Cluster A (n=38) Cluster B (n=19) Cluster C (n=39) Cluster D (n=34) 24 allocated to site 1 8 allocated to site 4 13 allocated to site 9 10 allocated to site 6 7 allocated to site 2 11 allocated to site 5 13 allocated to site 7 9 allocated to site 10 7 allocated to site 3 16 allocated to site 8 12 allocated to site 11 Withdrawals (n=7) Participation no longer feasible due to changed circumstances (n=1) Preferred alternate arrangement such as exercising with health professional (n=3) Completed FitSkills (n=123) Changed participant health or behaviour status (n=1) Student mentor withdrew & replacement could not be found (n=2) Withdrawal (n=1) Moved out of area (n=1) Completed a post *FitSkills* assessment (n=122)





# Results - Participant demographic data

	N (%)
Sex (female)	61 (37)
Primary diagnosis	
Cerebral palsy	59 (36)
Down syndrome	40 (25)
Autism	30 (18)
Other (e.g. ID, ABI, VI)	34 (20)
Difficulty with communication	78 (48)
Behavioural challenges	39 (24)
Required support with mobility support	46 (28)

Mean age 19 years 3 months (SD 4y 10mo)

Mean number of co-occurring conditions 1.1 (SD 1.0)

### **Overall results**

Domain	Scored	Measure	Results
Attendance	Duration	Physical Activity Recall	<b>✓</b>
		Sedentary Activity	<b>V</b> .
	Frequency	CAPE	<b>✓</b>
		PEM-CY	<b>✓</b>
	No of activities	Physical Activity Recall	No change
		CAPE	No change
Involvement	Involvement	PEM-CY	No change
	Desire to change	PEM-CY	2
Preference		PAC	*



### **Implications**

- Context of international physical activity guidelines (Bull et al 2020)
  - some physical activity is better than none
  - more physical activity is better
  - reducing sedentary behaviours is recommended

- Strengths and limitations
  - A large longitudinal pragmatic trial in a community setting testing a model of exercise addressing the wants of young people with disability
  - Self-reported outcomes with participants who could not be blinded





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### FitSkills Steering committee members

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- Justine Robbins (Joanne Tubb Foundation)
- Richard Amon (Disability Sport and Recreation)
- Simone Power, Rebecca McCabe (CPSN)
- Debby Fraumano (Down Syndrome Victoria)
- Fiona Kriaris (YMCA Victoria)
- Sam Taylor (City of Boroondara)
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