The ACTIVE MOVEMENT programme in Slough primary schools

Background

Primary schools are the most formative time for children in their education. They move from the freer, practical life of Early Years into a more structured, controlled and less physical environment. Education content increasingly supersedes active play. Children become more sedentary. The stress and demands on teachers' and children's performance increase.

It is perhaps not surprising that some 80% of 5-15 years olds fail to fulfil PHE's minimum requirement of one hour's moderate activity every day and three hours muscle strengthening each week. In Slough, 21.9% of children start primary school over weight or obese and 41.0% start Secondary school overweight or obese[1]. 30.8% of Slough children do less than 30 minutes of physical activity a day (National recommendation is 60 minutes a day)[2]. Once Slough children become adults, 31.9% are physically inactive (less than 30min a week)[3] and 67.5% are overweight/obese[4].

Now we can add a further worry through a lifestyle choice that seriously affects our health. Extensive sitting down is causing more damage to our bodies than we ever imagined and so is recognised as a separate health risk from lack of fitness[5]. A recent study by Belfast University suggested that 11.6% of all adult deaths are due to people sitting too much, which in 2016 equated to 70,000 people[6].

There is some good news though. Studies have shown that even low-level activity, including reducing our sitting time, can have major effects on our bodies, emotional well-being and long-term health.

"Compared with those that sit least, those that sit most have twice the risk of developing diabetes and cardiovascular disease"[7]

"MRI scan studies shows fat around the organs (bad fat) is associated with sedentary time more so than BMI"[8]

"Reducing sedentary behaviour improves mental health"[9]

[1]National Child Measurement Programme, PHE, 2018/19
[2]Sport England Active Lives Survey for Children, 2018/19
[3]Sport England Active Lives Survey, 2018/19
[4]Sport England Active Lives Survey, 2018/19
[5]Sedentary Time and Its Association With Risk for Disease Incidence, Mortality, and Hospitalization in Adults, A Systematic Review and Meta-analysis Aviroop Biswas et al.
[6]https://www.theguardian.com/society/2019/mar/26/long-sedentary-periods-are-bad-for-health-and-cost-nhs-700m-a-year
[7]Biswas A, et al. "Sedentary time and it's association with risk for disease incidents, mortality,and hospitalisation in adults: a systematic review and meta- analysis". Ann Intern Med 2015.
[8]Smith L ,Thomas EL, Bell JD, et al. "The association between objectively measured sitting and standing with body composition : a pilot study using MRI". BMJ open 2014. Henson J, Edwardson CL, Morgan B, et al
[9]Teychenne M et al. Physical activity, sedentary behaviour and depression among disadvantaged women Health Educ Res 2010.

Initiative and project

Active Movement understood that this is the real wellbeing opportunity. Prof. Mike Loosemore MBE, one of the world's pioneers in exercise medicine and lead at the Institute of Sport, Exercise and Health at the UCL recognised there was need for an approach that was more empathetic and relevant to the attitudes and lifestyles of those who needed support the most. It was also clear it was not an exercise regime or physical fad that was required but a behaviour change that could integrate non-sedentary behaviour and low-level activity into everyday routine.

This was the unique approach that led to the creation of Active Movement. As the name suggests, its central theme is that every movement you make is an active one and that it is the consistent and frequent small steps one takes every day (as opposed to the usual doctrine of activity bursts) that builds into a lifestyle of movement and activity that any child can undertake.

In early 2017 Slough Borough Council commissioned Active Movement's behaviour change programme to educate children about the benefits of moving more and sitting less and inspiring them to do so. This has since expanded to over 40 settings of all ages across Slough. Qualitative and quantitative evidence produced from Active Movement's own data collecting has shown the programme to have had outstanding results and this report will also include the results of an independent review of the programme.

Planning and initiation

Though the concept was well understood, the requirement to embed a new initiative came with the usual school and teacher concerns about time and workload of 'another thing to do', and the day to day challenges of education and exams.

The principles of the programme were designed to overcome these barriers by:

- Avoiding the need for equipment, space, facilities, class re-organisation, extra-curricular activity, bureaucracy or compromising teaching time
- A comprehensive training and educational programme
- A programme structure to enable easy implementation and engagement
- A full communication programme in situ and online
- Ongoing support for the entire 12-months
- Opportunity for pupils to take ownership and responsibility for the programme

The programme is also designed to be self-contained with all resources co-ordinated and delivered by Active Movement.

Implementation and content

The Active Movement system is a multi-layered approach to all facets of school life across the classroom, lessons, school environment, homelife and personal responsibility. These layers interlink to integrate non-sedentary behaviour and low-level activity via a 12-month template of options, communication and support. Specifically:

- **Active Classrooms** to add more moving and less sitting to classroom routine (for example Active Movement schools always stand to answer questions not merely put a hand up)
- **Active Lessons** in which the benefits to memory, focus, energy and behaviour from moving more and sitting less are integrated into lesson delivery
- **Active Events** are as series of school-wide opportunities to collectively integrate moving more and sitting less across every class whilst offering greater creativity and fun. For example Active Reading challenges conventions around reading and sedentary behaviour. Special end-of-term challenges add a competitive edge.
- **Active AMbassadors** are children who are selected each week to act as support to teachers to remind them about the programme as well as lead, engage and encourage their classmates

Programme delivery

Though the concept was well understood and the results encouraging, Slough Borough Council required a more independent evaluation if the programme was to be extended in time and coverage.

After a tender process, SmithHealth were appointed to carry out a Cluster Control Test across two schools. St Anthonys Catholic Primary School was to undergo the Active Movement 12-month programme January-December 2019; *Khalsa Primary* was to act as a control over the same period. These two schools were specifically selected owing to their NCPM data showing they were the two most obese primary schools in the Borough (Accurate as of December 2018).

St Anthonys undertook the programme across all age groups from January to December 2019 including:

- A comprehensive training and educational programme
- A programme structure to enable easy implementation and engagement
- A full communication programme in situ and online
- Ongoing support for the entire 12-months
- Opportunity for pupils to take ownership and responsibility for the programme

In December 2019, the evaluation protocols were repeated to gauge the effectiveness of the programme.

It is also worth highlighting the additional support campaigns that tied into the programme where relevant to the timing and the Active Movement plan. These included Active Protection (flu immunisation), Active Mouthcare (oral heath), Active Nutrition and Active School Travel (Eco Travel).

For more information about the Active Programme in schools and Early Years settings, visit www.activemovementschools.co.uk.

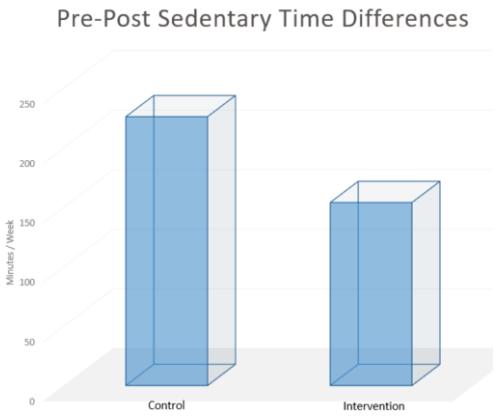
The research programme included

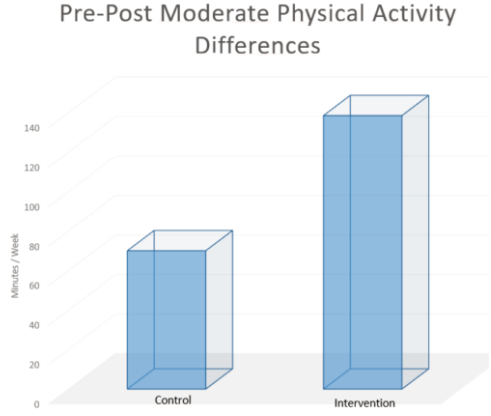
- Actigraph readings on all Year 4 children in both schools to evaluate quantitative data on sedentary time, moderate and intense physical activity levels and steps taken
- Handgrips were used to evaluate strength.
- Waist circumference measurements to evaluate the programme effect on obesity
- Behaviour questionnaire data to evaluate activity in school, after school, in the evening, at weekends and on a daily basis. It also evaluates the amount of sports and activity pastimes undertaken. Note this was reviewed for the entire school (Year 1-5)

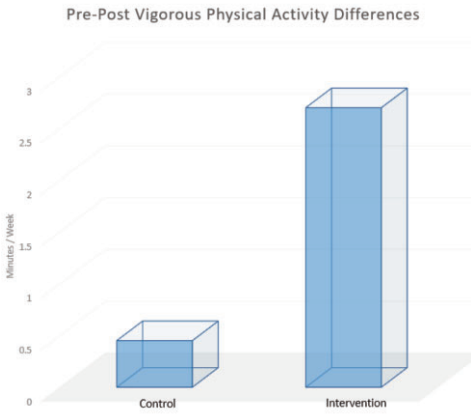
Outcomes

1. Actigraph readings

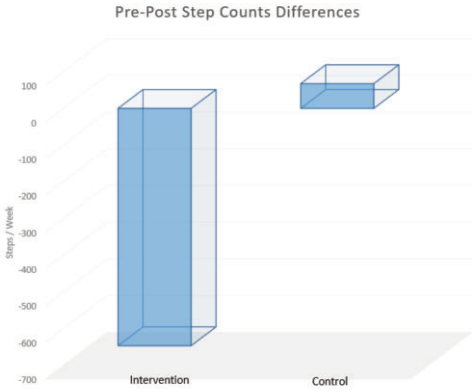
Year 4 children of both control and intervention schools were fitted with Actigraphs for one week to evaluate differences in sedentary behaviour and movement at the beginning of the programme and its end for comparison. The tables below indicate key measures







An 83.4% increase in vigorous activity in the AM school

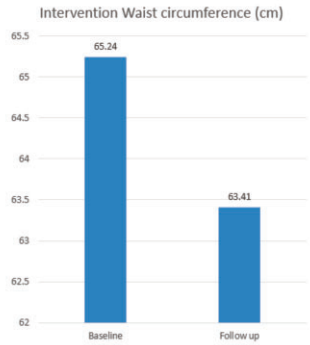


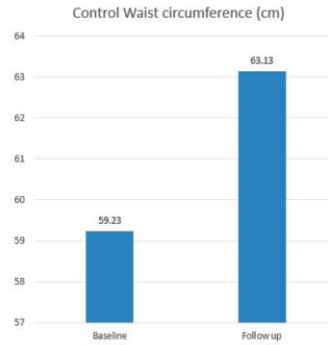
A positive weekly difference in steps of 713.7 steps/week

2. Waist circumference

All children in Year 4 had their waist circumference measured pre- and post-the programme. This is deemed a more effective measurement of obesity levels.

Waist circumference increased by 6.4% in the control School and decreased by 2.8% in the intervention School.

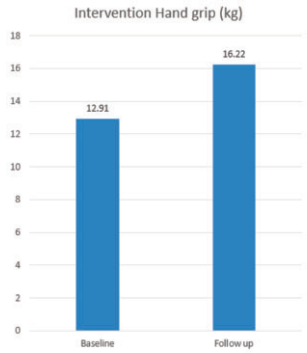




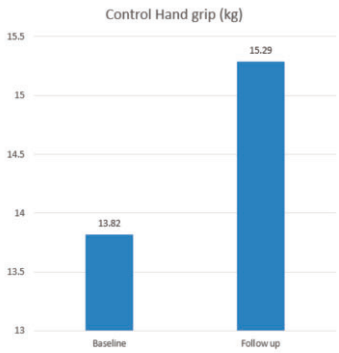
3. Handgrip test

All children in Year 4 undertook a handgrip power test.

Grip strength increased by 13.82% in the control school and increased by 25.6% in the intervention school.



+ 3.31kg



+ 1.47kg

4. Behaviour questionnaire

'It is standard for every Active Movement programme to include a self-completing questionnaire at the programme start and just prior to its completion either at the end of the school year or calendar year depending on the school's start date.

In this instance, Year 2 to Year 6 children were asked to complete the questionnaire in addition to those participating in the Cluster Control test. The questionnaire is wide-ranging in assessing activity levels in school and at home, daily activity levels and how much sport and other activities they were undertaking.

Previously, like-for-like measurements are analysed to review those whose activity levels increased, decreased or stayed the same over the length of the programme. In the context of national data that shows activity decreasing rapidly as children get older, increasing or maintaining activity levels are seen as positive results for Active Movement.

In this instance, the case control study was used to help validate the results of the Active Movement survey against the Actigraph accelerometer and showed good convergent validity from correlation analyses utilizing The Statistical Package for the Social Sciences. This was a major finding. The Active Movement survey has consistently shown improvements in activity. It was now clear that this is a valid measure of physical activity behaviour yielding trustworthy data.

Other qualitative feedback

Some quotes from the various settings taking part in the Active Movement programme:

"It keeps people active inside and outside school." Primary school pupil

"It's part of our daily routine." Primary school pupil

"Reducing sitting times and adding even low-level activity to our daily routine at Montem Academy have further increased activity levels, made sedentary lessons more animated and enabled everyone to join in and reap the benefits" Darren Stewart, Associate Principal, Montem Academy Primary School

"Staff find it easy to embed positive habits and routine that creates a happy class environment, and helps all children learn and enjoy the lessons." Navroop Mehat, Headteacher, Wexham Court Primary School

"Our parents have taken Active Movement on board 100% and have enjoyed being more active with their children, and whole family" Clare Beynon, Headteacher, Castleview Primary School

"We walk pretty well everywhere now: into school, into town - we won't go on a bus unless we absolutely have to" Parent of a pupil taking part in the programme

Conclusions and long-term aims

The aim of the research was to quantify the effect of the overall programme on the physical and sedentary behaviour. The differences between the control school that did not do the programme and the intervention school are stark.

Sedentary behaviour in the intervention school was hugely reduced. Physical activity (both moderate and vigorous) increased enormously. In the control school, average walking paces reduced whilst there was a major weekly increase in the intervention school. Remember this is also in a national context whereby activity decreases during this age group.

The waist circumference data is equally extraordinary. The two schools in the test were amongst the most obese in Slough, yet the intervention school saw a decrease in circumference over the school year against an increase in the control school. Grip strength increased as well.

The results were clear. The Active Movement programme did more than set healthy behaviours within the intervention school. It showed that there is a way to combat activity and obesity levels through a relevant, empathetic approach to well-being that is accessible to everyone and can be achieved by all.

In April 2020 Active Movement was comissioned as part of the new "Health and Wellbeing Slough" integrated service to provide a more hollistic offer to Slough residents.

For further case studies on Early Years and Secondary schools or for more information please email timothy.howells@slough.gov.uk.

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