



Aviva Health Schools Fitness Barometer 2013



The Schools Fitness Challenge is sponsored by Aviva Health Insurance. It was developed by Dublin City University and the Wellness Economic Initiative Alliance and is supported by Elvery's Sports. The challenge was overseen and assessed by exercise physiologist Dr. Sarah Kelly and by the creator of the Schools Fitness Challenge, exercise physiologist, Professor Niall Moyna from the Centre for Preventive Medicine, DCU. The software programmes to calculate and analyse the results of the Aviva Health Schools Fitness Challenge were developed by Dr. Mark Roantree, Senior Lecturer at the School of Computing Dublin City University.



Alison Burns
CEO Aviva Health
Insurance Ireland Limited

As CEO of Aviva Health, Alison is passionate about preventative health and is an advocate for the Aviva Health Schools Fitness Challenge. The benefits of the Schools Fitness Challenge for Aviva Health are numerous. The initiative is primarily contributing to our long-term strategy of improving the health of children in Ireland and future generations.

Alison has international experience in health insurance having worked in BUPA previously. She is a mother of two children a boy (17) and girl (15) who are actively involved in sports.



Professor Niall Moyna
Centre for Preventive
Medicine, DCU

Niall is a Professor in the School of Health and Human Performance and a member of the Centre for Preventive Medicine in DCU. A familiar face, Niall actively highlights the importance of childhood fitness as the key to tackling the effect of inactivity and low fitness on lifestyle-mediated diseases, primarily cardiovascular disease.

Prof. Moyna received his Master's degree from Purdue University, Indiana, PhD from the University of Pittsburgh, and completed a three year National Institute of Health Post-Doctoral Research Fellowship in immunology at the University of Pittsburgh Medical Centre.



Dr. Sarah Kelly
School of Health and
Human Performance,
DCU

Sarah is an exercise physiologist and advocate of the School's Fitness Challenge. Sarah is currently lecturing in sports science in Waterford Institute of Technology and recently completed her PhD in Dublin City University under the supervision of Professor Niall Moyna.

She also holds a Bachelor of Science degree in Sport Science and a Masters in Exercise Physiology both from Dublin City University. A major focus of Sarah's research is the role of exercise in the prevention of cardiovascular disease, specifically examining how a single exercise session and exercise training effects blood vessels in healthy and diseased individuals. Sarah was a Super League basketball player.



Dr. Mark Roantree
School of Computing,
DCU

Mark is a Senior Lecturer at Dublin City University with 27 years experience in both an academic and industrial capacity. Mark developed the programs that calculate the fitness levels analysis and the results of the Aviva Health Schools Fitness Challenge.

Working at Dublin City University for 18 years, Mark is founder of the Interoperable Systems Group. He has been awarded €2.3 million in research funding over the last decade, where he has published over 80 research papers and graduated 15 PhD and MSc students.



Ciaran Faughnan
CEO Wellness Economic
Alliance

Ciaran is the CEO of the newly formed Wellness Economic Alliance. Ciaran brought Aviva Health Insurance and DCU together to deliver the Schools Fitness Challenge. The vision of the Alliance is an Ireland in which wellness is a core value at individual, community and national levels. The mission is to identify, develop and deliver targeted wellness economic initiatives in Ireland, but with a global potential. This is on a basis which is collaborative, inclusive, measurable, and sustainable. The goal is transformative long term behavioural change in health utilising the latest ITC technologies, new applications and an incentivised economic model to support this objective.

About the Aviva Health Schools Fitness Challenge

Aviva Health's Schools Fitness Challenge is a national fitness initiative that was designed to assess fitness levels among Irish students with the aim of improving overall health and fitness in 2013.

The Challenge invited secondary schools throughout the country to join in making physical fitness a national priority, and to encourage young people to adopt a healthier and more active lifestyle for the benefit of their future health.

The challenge was open to all 1st and 2nd year pupils, and ran over a ten week period from January to April 2013, assessing the fitness levels of Irish school children and advocating the improvement of their overall health.

There are three phases to Aviva Health's Schools Fitness Challenge.

- 1) Initial fitness test to measure current fitness levels
- 2) A six week intervention training programme to improve cardiovascular fitness
- 3) Repeat fitness test to measure new fitness levels

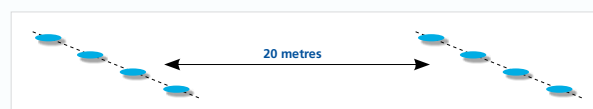
In total, over 227 schools signed up to the challenge, representing 15,000 1st and 2nd year students (7,158 girls, 7,702 boys) and 710 classes across Ireland.

There are six difference prize categories, and depending on the category, winners receive a gift voucher from Aviva Health Insurance to the value of €500 or €1,000 towards their choice of sports equipment available from Elvery's Sports.*

Aviva Health's Schools Fitness Challenge would like to thank all principals, physical education teachers and teachers for supporting the challenge, which would not have been a success without them.

For more information on the Aviva Health Schools Fitness Challenge visit www.avivahealth.ie/fitnesschallenge

The Bleep Test



The fitness test or bleep test as it is often called involves continuous running between two lines, 20 metres apart, in time to recorded bleeps. The running speed is increased at approximately 1-minute intervals. Participants attempt to complete as many runs (shuttles) as possible while keeping in time with the bleeps.

* For competition terms and conditions see www.avivahealth.ie/fitnesschallenge

Analysis of Results

The goal of Aviva Health's Schools Fitness Challenge is to highlight the importance of cardiovascular fitness and establishing the habit of being regularly active from an early age. The challenge also demonstrates that as little as six weeks of exercise training can lead to significant improvements in fitness in young girls and boys, and that tailored interventions are extremely effective.

Inactive children are at an increased risk for the early development of health related problems such as heart disease, diabetes, obesity, cancer, depression, osteoporosis etc. A recent study found that only 86%¹ of Irish 10–18 year olds are not meeting the current physical activity recommendations (almost 9 out of 10 Irish children are not active enough to benefit their health now or in the future.)²

Cardiovascular disease is the number one cause of death in men and woman in Ireland and the EU.³ Modifiable risk factors such as inactivity, obesity, high blood pressure, diabetes, smoking and stress are related to the development of cardiovascular disease.

One in four Irish⁴ children already have one or more of the risk factors for cardiovascular disease. An above average cardiovascular fitness level can reduce the likelihood of having one or more of these risk factors.

Main Points

- A total of 8,047 first and second year students (4,390 boys, 3,657 girls) completed all three phases of the Aviva Health Schools Fitness Challenge.
- Following a six week exercise intervention, boys completed an average of 62 shuttle runs and girls completed an average of 38 shuttle runs in the fitness assessment. These results show Irish girls are 60% less fit than boys, and are at greater risk of cardiovascular disease.
- The winning girls class significantly increased their shuttle runs in a short period of time from 18 to 42, and improved their aerobic fitness levels by 133%.
- The winning boys class increased their shuttle runs in a short period of time from 51 to 82, and improved their aerobic fitness levels by 60%. However, there is still room for fitness improvement.
- Large improvements in fitness were observed after a relatively short period of exercise training, highlighting that fitness levels of children in Ireland should be continually assessed to improve their overall health and well being.
- Kerry was named as the fittest county in Ireland, with Tipperary, Monaghan, Mayo and Meath following close behind.

1 Ref: Woods, C.B., Tannehill D., Quinlan, A., Moyna, N. and Walsh, J. (2010). The Children's Sport Participation and Physical Activity Study (CSPPA). Research Report No 1. School of Health and Human Performance, Dublin City University and the Irish Sports Council, Dublin, Ireland. (page 14 in CSPPA report)

2 Ibid

3 Ref: https://www.irishheart.ie/open24/facts-heart-disease-stroke-t-7_18.html

4 Ref: 1 Woods, C.B., Tannehill D., Quinlan, A., Moyna, N. and Walsh, J. (2010). The Children's Sport Participation and Physical Activity Study (CSPPA). Research Report No 1. School of Health and Human Performance, Dublin City University and the Irish Sports Council, Dublin, Ireland. (page 2 in CSPPA report)

Winning Schools

Fittest School		Class	Prize
Fittest Mixed/Overall Winners	Oaklands Community College, Offaly	1.1	€1,000 voucher for sports equipment
Fittest Boys School	St. Macartan's College, Monaghan	2.4	€500 voucher for sports equipment
Fittest Girls School	St. Joseph of Cluny, Killiney, Dublin	1.1	€500 voucher for sports equipment

Most Improved School		Class	Prize
Most Improved Boys/Overall Winners	Abbey CBS, Tipperary	1.3	€1,000 voucher for sports equipment
Most Improved Girls	Mercy College, Sligo	1.1	€500 voucher for sports equipment
Most Improved Mixed	Scoil Mhuire Community School, Clane, Kildare	1.2	€500 voucher for sports equipment

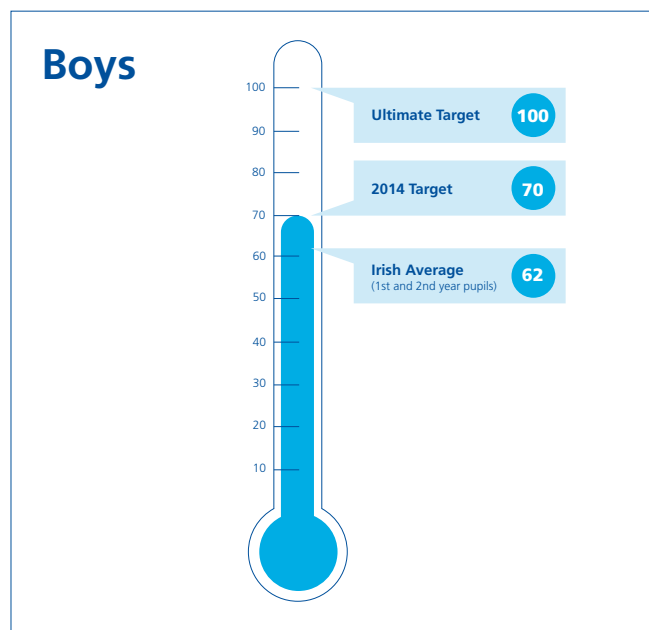
For competition terms and conditions see www.avivahealth.ie/fitnesschallenge

Level of Fitness Ranking by County

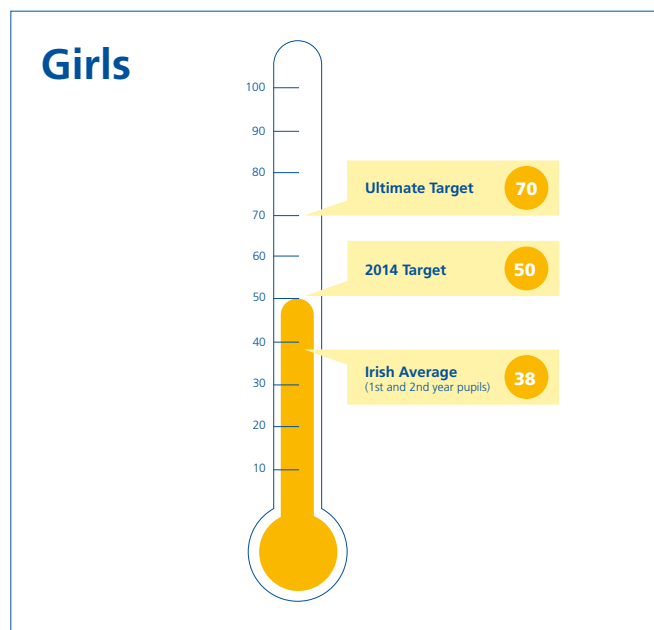
Ranking of counties who completed all three phases of the Aviva Health Schools Fitness Challenge.

Ranking	County	Schools	Classes	Girls	Boys	Overall
1	Kerry	11	23	197	233	430
2	Tipperary	4	8	20	171	191
3	Monaghan	4	13	77	213	290
4	Mayo	11	17	88	207	295
5	Meath	11	43	288	741	1029
6	Donegal	7	24	209	254	463
7	Wexford	8	16	172	140	312
8	Limerick	10	14	165	105	270
9	Cork	25	36	344	304	648
10	Offaly	8	20	149	191	340
11	Galway	10	6	40	72	112
12	Dublin	51	48	454	439	893
13	Clare	3	3	32	48	80
14	Longford	5	16	145	163	308
15	Roscommon	3	14	134	178	312
16	Carlow	5	30	428	166	594
17	Westmeath	8	3	26	34	60
18	Cavan	3	3	29	50	79
19	Waterford	8	11	31	163	194
20	Sligo	3	9	133	53	186
21	Kildare	7	12	114	114	228
22	Wicklow	7	13	223	28	251
23	Louth	4	17	159	184	343
24	Kilkenny	3	5	0	139	139
n/a	Laois	0	0	0	0	0
n/a	Leitrim	0	0	0	0	0

Shuttle Barometers



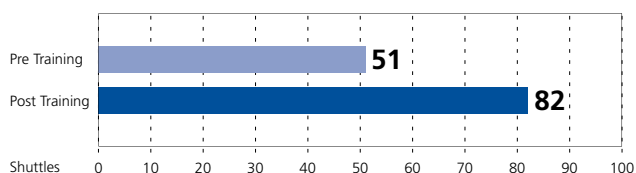
Average number of shuttles completed by Irish 1st and 2nd year boys during the Aviva Health Schools Fitness Challenge, the 2014 and ultimate target as recommended by the Centre for Preventive Medicine, DCU.



Average number of shuttles completed by Irish 1st and 2nd year girls during the Aviva Health Schools Fitness Challenge, the 2014 and ultimate target as recommended by the Centre for Preventive Medicine, DCU.

Most Improved Class – Boys

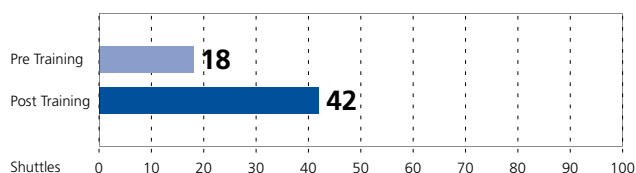
Abbey CBS, Tipperary



Average number of shuttles completed before and after the six weeks of exercise training in the Most Improved boy's class. Boys increased their cardiovascular fitness levels by more than **60%** over the six week period.

Most Improved Class – Girls

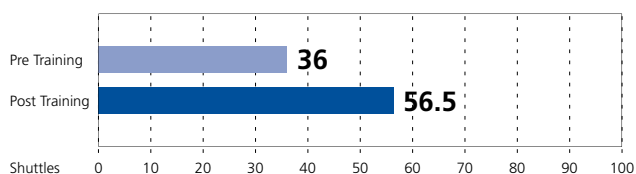
Mercy College, Sligo



Average number of shuttles completed before and after the six weeks of exercise training in the Most Improved girl's class. Girls **more than doubled** their cardiovascular fitness levels over the six week period.

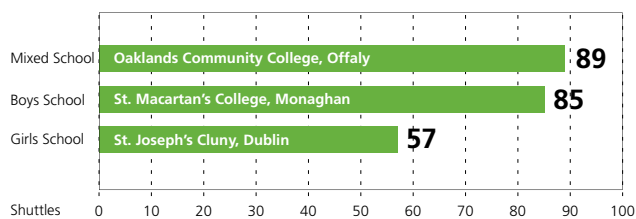
Most Improved Class – Mixed

Scoil Mhuire Community School, Kildare



Average number of shuttles completed before and after the six weeks of exercise training in the Most Improved mixed class. The mixed class increased their cardiovascular fitness levels by approx **57%** over the six week period.

Fittest Class

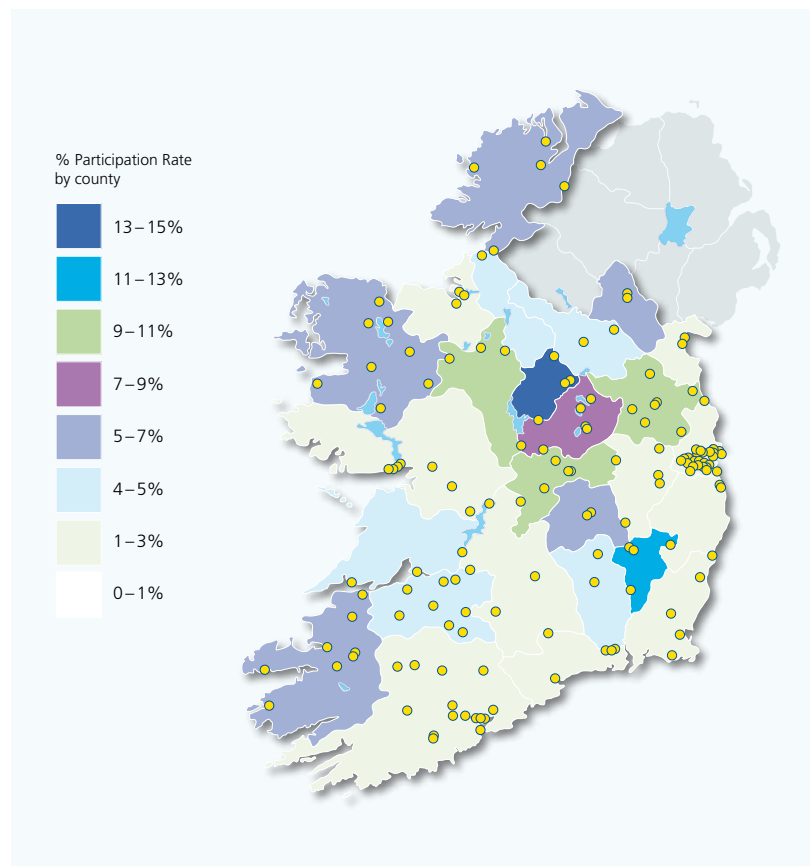


Average number of shuttles completed in the fittest boys, girls and mixed classes after post-training was completed.

Fitness Map of Ireland

Participation Map

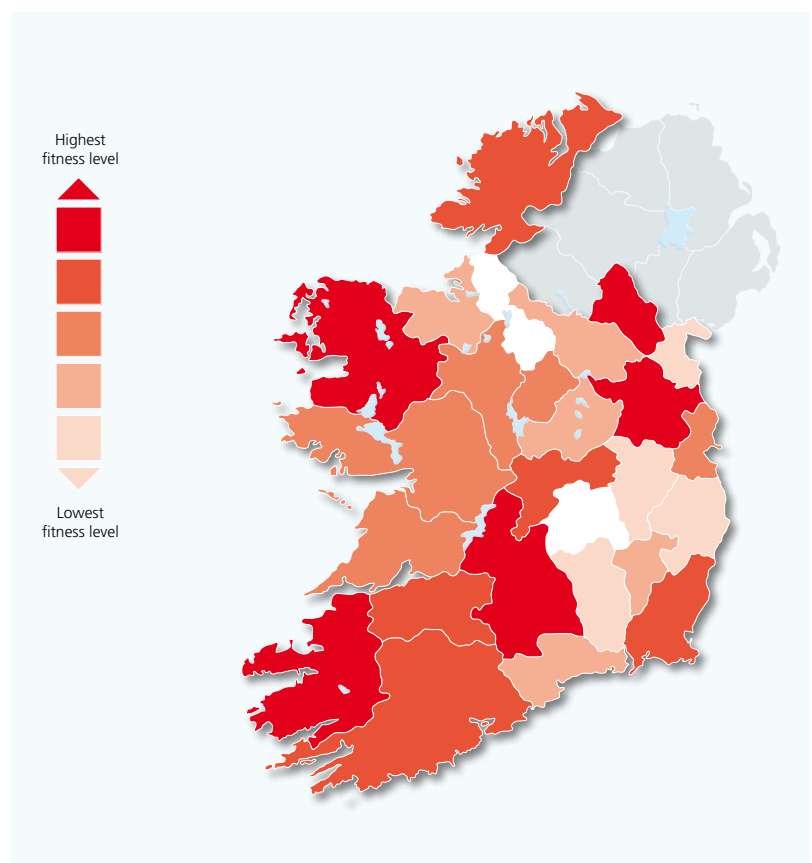
This map shows the number of schools who registered for the Schools Fitness Challenge.



Fitness Map

Ranking of counties who completed all three phases of the Schools Fitness Challenge.

Total Number of Counties:	24
Total Number of Schools:	219
Total Number of Classes:	404
Total Number of Girls:	3,657
Total Number of Boys:	4,390
Total Number of Students:	8,047



Summary

Important Points

- Cardiovascular fitness is vital to our overall health
- Fit, active children are more likely to be fit active adults
- Research has shown that regular exercise can have a positive effect on mental health and academic performance, reduce rule-breaking behaviour, improve attention span and classroom behaviour
- Physical activity can play a significant role in the enrichment of a child's social life and development of social interaction skills

Recommendations

- The Aviva Health Schools Fitness Challenge demonstrates that exercise intervention at a young age can improve fitness among school-going children and that fitness levels could be continually assessed to improve the overall health of the nation.
- Physical activity among school-going children needs to be viewed as a national priority if we are going to reduce the disease burden on our health service.
- There is a need to move away from our current disease-based model of health care to a health-based model.
- Children don't have to be overweight to be unfit. There are many boys and girls who are categorised as normal weight but who have very low cardiovascular fitness. Therefore, it's important that all children are made aware of their cardiovascular fitness levels and adapt their behaviour earlier in life.
- The cardiovascular health of young people can be improved through a series of measures including assessing their fitness levels at the start and end of each school year, making Physical Education compulsory, and including it as a subject on the Report Card.
- To encourage children to start good fitness behaviour early, a new Health Science curriculum could be developed at both a Junior and Senior cycle that combines education on human biology, chronic diseases and lifestyle (including physical activity, diet, smoking, alcohol, stress etc.) Educating children about what physical activity actually does physiologically (e.g. to the heart, lungs etc.) will help them understand how the body responds to exercise.
- Ideally Irish girls should be completing a minimum of 70 shuttle runs in the bleep test.
- Ideally Irish boys should be completing a minimum of 100 shuttle runs in the bleep test.

Niall Moyna

Professor Niall Moyna



Aviva Schools Fitness Challenge 2014

Aviva Health Insurance is committed to supporting the continued roll out of the Schools Fitness Challenge to schools and classes across Ireland over the next three years, working in close partnership with Dublin City University and the Wellness Economic Initiative Alliance.



www.avivahealth.ie/fitnesschallenge

