



Public Health  
England

# **Guide to online tools for valuing physical activity, sport and obesity programmes**

# About Public Health England

Public Health England's mission is to protect and improve the nation's health and to address inequalities through working with national and local government, the NHS, industry and the voluntary and community sector. PHE is an operationally autonomous executive agency of the Department of Health.

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## Introduction

There is a growing evidence base to support investment in public health approaches to promoting physical activity and sport, and preventing or treating obesity. Decisions on the level and type of investment in such approaches can be informed by many different types of evidence. These can include: evidence of effectiveness; economic 'return on investment' evidence; examples of 'best practice' from other practitioners; or guidance from government or NICE. Increasingly, such decisions are informed by modelling or scenario planning, using published tools or calculators.

There have been a number of online tools published recently that help the user to perform calculations to make the case for investment in the promotion of physical activity and/or the prevention of obesity. These share a general common aim (to help decision makers decide whether and how to invest) but each tool tends to have a specific focus and may use different data sources or assumptions. The result has been that users may not be clear about which tool is best for their specific purpose.

The purpose of this briefing is therefore to summarise the available tools and provide guidance on which tool to use in which situation. The briefing is written primarily for practitioners working in local authorities who may wish to make an assessment of health benefits in order to guide planning and investment decisions. This is likely to include health and social care professionals; sport and physical activity providers and planners; transport professionals; and academics.

Tools have been included if they:

- are publicly available (online or available from the publishers)
- have been published since 2010
- enable the user to make an assessment of the value of the health benefits of physical activity (including sport) or weight management

The outputs of the tools are wide-ranging and in some cases include many of the benefits of physical activity that are beyond physical health impacts. Conversely in some cases, a tool may focus only on one aspect of health and exclude many of the additional co-benefits. It is important to bear this in mind when conducting any assessment. It is also important to consider what data are available for use in

assessments, before choosing a tool. In many cases tools can be used with hypothetical or modelled data rather than actual data. For example, a calculation could be performed to estimate the benefits to health of achieving higher levels of physical activity, or lower levels of obesity in a community.

There is a glossary of terms at the end of the document. Inclusion of a specific tool in this briefing does not imply endorsement of the tool by Public Health England.

Please contact us with any queries or suggestions for additional tools to include in any update of this briefing [ObesityKnowledge&Intelligence@phe.gov.uk](mailto:ObesityKnowledge&Intelligence@phe.gov.uk)

## Online tools: Obesity

### Public Health England obesity economic impact tool

<b>Publisher of this tool</b>	Public Health England
<b>Purpose of the tool</b>	To help public health professionals make an economic assessment of existing or planned interventions that result in weight loss (including weight management interventions).
<b>Primary target audience</b>	Health and social care professionals; health economists.
<b>Use this tool if you want to:</b>	Estimate the value of any weight loss in a defined population.
<b>How does it work?</b>	It considers a group of adults who have had their body mass index recorded before and after taking part in a programme or intervention. It models weight loss over time (in terms of reduced BMI) and uses this to estimate reduced incidence of diabetes, coronary heart disease, stroke, colorectal cancer and breast cancer among that population due to their lower BMI. It then estimates the change in healthcare costs as a result of reduced morbidity, and compares this to the costs of the intervention.
<b>What data do you need?</b>	Characteristics of the population group (including mean starting body mass index); details of the programme (including costs); weight loss; duration of weight loss.
<b>What are the outputs?</b>	Savings in healthcare costs; benefit:cost ratios.
<b>Strengths</b>	Easy to use; unique in using weight loss as input data.
<b>Limitations</b>	It does not currently attempt to put a value on the wider health benefits that might result from the intervention, or to estimate social care costs.
<b>Available from:</b>	<a href="http://www.noo.org.uk/visualisation">http://www.noo.org.uk/visualisation</a>

## Online tools: Physical activity

### World Health Organization Health Economic Assessment Tool (HEAT) for walking and cycling

<b>Publisher of this tool</b>	World Health Organization regional office for Europe
<b>Purpose of the tool</b>	To help conduct an economic assessment of the health benefits of walking or cycling by estimating the value of reduced mortality that results from specified amounts of walking or cycling.
<b>Primary target audience</b>	Transport professionals (including transport advocacy or campaign groups); health and social care professionals; physical activity providers and planners; academics.
<b>Use this tool if you want to:</b>	Estimate the value of real or estimated increases in walking or cycling (primarily for use by or communication with transport professionals).
<b>How does it work?</b>	The HEAT takes a volume of walking or cycling among a defined population and estimates the reduction in the number of deaths expected compared to a population that does not walk or cycle at that level. It then uses the <i>value of a statistical life</i> to estimate the economic benefit of the reduced deaths in the walking and cycling population.
<b>What data do you need?</b>	Number of people; distance or duration walked or cycled; (and a number of other optional data fields).
<b>What are the outputs?</b>	Deaths prevented; value of these prevented deaths.
<b>Strengths</b>	Online tool; very easy to use.
<b>Limitations</b>	The use of <i>value of a statistical life</i> is less familiar to public health audiences.
<b>Available from:</b>	<a href="http://www.heatwalkingcycling.org/">http://www.heatwalkingcycling.org/</a>

## Sport England Model for estimating the Outcomes & Values in the Economics of Sport (MOVES)

<b>Publisher of this tool</b>	Sport England
<b>Purpose of the tool</b>	To help to demonstrate the economic benefits of improved health through participating in sport and wider physical activity.
<b>Primary target audience</b>	Sport and physical activity providers and planners; health and social care professionals; academics.
<b>Use this tool if you want to:</b>	Estimate the value of an existing or planned programme of physical activity and sport among a specific population group.
<b>How does it work?</b>	It compares groups or populations of participants engaging in a sport or physical activity with the same group as if they had not taken part in that activity. It estimates the reduction in risk of key diseases from increased physical activity, and assigns an economic value to the resulting health improvements.
<b>What data do you need?</b>	Sex, age and (pre-programme) activity level of target audience; details of activity type; frequency of participation; drop-out rate and programme costs.
<b>What are the outputs?</b>	Incremental cost effectiveness ratios; return on investment (value per £ invested); QALYs return on investment; prevention of cases of disease.
<b>Strengths</b>	Allows estimates for the value of small targeted programmes; evidence-based.
<b>Limitations</b>	Does not include wider costs to society (eg social care costs).
<b>Available from:</b>	The tool can be accessed from the Sport England website. Please contact <a href="mailto:Get.Healthy@sportengland.org">Get.Healthy@sportengland.org</a> if you have any problems accessing this tool.

## NICE Physical activity return on investment tool

<b>Publisher of this tool</b>	National Institute of Health and Care Excellence (NICE)
<b>Purpose of the tool</b>	To help decision making in physical activity programme planning at local and sub-national levels.
<b>Target Audience</b>	Health and social care professionals; sport and physical activity providers and planners; transport professionals; and academics.
<b>Use this tool if you want to:</b>	Decide how to allocate investment in physical activity interventions across a local area
<b>How does it work?</b>	The tool enables the user to evaluate a portfolio of interventions in their geographical area (eg region, county or local authority) and models the economic returns that can be expected in different payback timescales. The thirteen different interventions included in the tool can be mixed and matched to see which intervention portfolio or package provides the best 'value for money', compared with 'no package of interventions' or any other specified package.
<b>What data do you need?</b>	Name of local authority (or own custom data); decisions on allocation of each intervention to try in scenario planning. Numerous other optional custom data fields are available.
<b>What are the outputs?</b>	The tool provides a detailed report including a number of key outputs: cost of the package; total cost savings; breakdown of costs savings (including health care cost savings); productivity gains (for adults); education benefits (for children).  Return on investment metrics include: benefit-cost ratio; Net Present Value (NPV); Avoidable Burden of Disease (number of QALYs); Incremental cost-effectiveness ratio (including all benefits and cost savings).
<b>Strengths</b>	Based on published evidence of effectiveness for specified interventions and evidence-based estimates of programme costs. Comprehensive and flexible. Includes wider societal costs.
<b>Limitations</b>	Interventions limited to the main thirteen for which published economic evidence was available. Less straightforward to use than some other tools.
<b>Available from:</b>	<a href="http://www.nice.org.uk/About/What-we-do/Into-practice/Return-on-investment-tools/Physical-activity-return-on-investment-tool">http://www.nice.org.uk/About/What-we-do/Into-practice/Return-on-investment-tools/Physical-activity-return-on-investment-tool</a>

## Sport England Economic Impact of Sport - Local Model.

<b>Publisher of this tool</b>	Sport England
<b>Purpose of the tool</b>	Uses national and local data to produce area-based estimates of a range of different elements of the sports economy. These are presented in terms of business output (gross value added), jobs and wider benefits including health.
<b>Primary target audience</b>	Sport and physical activity providers and planners; academics.
<b>Use this tool if you want to:</b>	Provide an estimate of the total value of sport across the economy of your local area.
<b>How does it work?</b>	<p>Uses data on the prevalence of sport in each local area to estimate the total value of sport. This includes: the value of wages paid to employees and profits generated by businesses operating in the sports sector; the economic value of sports jobs; health benefits; volunteering.</p> <p>The model operates at three levels:</p> <ol style="list-style-type: none"> <li><b>1. Snapshot.</b> This provides an overall view of the local sport economy in the form of business output and jobs, plus wider benefits including health.</li> <li><b>2. Refined snapshot.</b> This gives users the opportunity to input bespoke data and assumptions for their area.</li> <li><b>3. Impact assessment.</b> Allows users to test sport investment scenarios by inputting local assumptions about effects on participation; volunteering; events and tourism or capital spending.</li> </ol>
<b>What data do you need?</b>	For the snapshot, only the name of local authority, County Sports Partnership or Local Enterprise Partnership is needed. Other uses require additional local data.
<b>What are the outputs?</b>	Value of sport, divided into a number of categories (participation; non-participation; wider impacts including health).
<b>Strengths</b>	Easy to use; provides snapshots of total value, and enables tailoring.
<b>Limitations</b>	Based on a number of assumptions; may be of more value to sport and physical activity providers.
<b>Available from:</b>	<a href="https://www.sportengland.org/research/benefits-of-sport/economic-value-of-sport/">https://www.sportengland.org/research/benefits-of-sport/economic-value-of-sport/</a>

## PHE/Sustrans Health Impact of Physical Inactivity (HIPI) tool

<b>Publisher of this tool</b>	A working group including the South West Public Health Observatory, Sustrans, former National Obesity Observatory, Bristol City Council and South West Public Health Training Scheme
<b>Purpose of the tool</b>	To estimate how many cases of certain diseases could be prevented in each local authority in England, if the population aged 40-79 were to engage in recommended amounts of physical activity.
<b>Primary target audience</b>	Transport professionals (including transport advocacy or campaign groups); health and social care professionals; physical activity providers and planners; academics.
<b>Use this tool if you want to:</b>	Show the number of lives that could be saved (or cases of certain diseases avoided) in a local authority area through more physical activity.
<b>How does it work?</b>	Takes the prevalence of physical activity from the Active People Survey, and models the potential benefit from increased levels of physical activity for each local authority. The tool shows the health impacts of varying proportions of adults achieving the recommended levels of physical activity.
<b>What data do you need?</b>	Name of local authority.
<b>What are the outputs?</b>	Number of total deaths prevented at each level of activity, and separate estimates of prevented new cases of CHD, breast cancer, colorectal cancer.
<b>Strengths</b>	Easy to use; clear outputs.
<b>Limitations</b>	No cost data available at present; only fixed scenarios.
<b>Available from:</b>	<a href="http://www.apho.org.uk/resource/view.aspx?RID=123459">http://www.apho.org.uk/resource/view.aspx?RID=123459</a>

## Glossary of key terms

### Return on investment

The benefit ('return') resulting from an investment. In economic terms this would refer to profits related to capital invested. In public health terms, it refers to the health (and other) benefits resulting from the investment.

### Quality adjusted life year

A measure of the state of health of a person or group in which the benefits, in terms of length of life, are adjusted to reflect the quality of life. One QALY is equal to 1 year of life in perfect health. QALYs are calculated by estimating the years of life remaining for a patient following a particular treatment or intervention and weighting each year with a quality of life score (on a zero to 1 scale). It is often measured in terms of the person's ability to perform the activities of daily life, freedom from pain and mental disturbance.<sup>1</sup>

### Value of statistical life

The value of a statistical life uses a methodology called "willingness to pay" to avoid death in relation to the years this person can expect to live according to the statistical life expectancy. The willingness to pay represents how much a representative sample of the population (who in this instance are potential victims) would be willing to pay (in monetary terms) for example for a policy that would reduce their annual risk of dying from 3 in 10,000 to 2 in 10,000.<sup>2</sup>

### Body mass index

The most common method of measuring obesity is the Body Mass Index (BMI). BMI is calculated by dividing body weight (kilograms) by height (metres) squared. An adult BMI of between 25 and 29.9 is classified as overweight and a BMI of 30 or over is classified as obese.<sup>3</sup>

### Incremental Cost Effectiveness Ratio (ICER)

The difference in the mean costs in the population of interest divided by the differences in the mean outcomes in the population of interest.<sup>4</sup>

### Net present value

The value of the output of the model, which is adjusted to take account of the diminishing value of current savings over time.

### Benefit:cost ratio (BCR)

The ratio of the benefits of the programme compared to the costs. A BCR of 1 or more is seen to be positive.

## References

1. National Institute for Health and Care Excellence (2014). Glossary.  
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<http://www.heatwalkingcycling.org/index.php?pg=requirements&act=vsl>
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