



RESEARCH TENDER CALL

TENDER INFORMATION DOCUMENT

Project Reference No. 01-2015

Project Title: Lifetime Costs of childhood overweight & obesity

1. *Objective/Knowledge Gap*

Aims: The overall aim is to make as accurate an estimate as possible of the lifetime costs associated with overweight and obesity in childhood on the island of Ireland.

Objectives:

- To determine the lifetime direct health care costs per capita of an obese child.
- To determine, where available, the lifetime indirect costs (loss of earnings attributed to premature mortality, disability or illness) per capita of an obese child.
- To assess the financial benefits of prevention and early intervention in childhood obesity.

2. *Background*

Obesity is defined as excess body fat accumulation that may impair health.¹ It is measured by means of body mass index (BMI), an index of weight-for-height (kg/m^2), with an adult with a BMI greater than or equal to 30 classified as obese. The classification is not easily transferable to children however, because children's BMI changes as they grow.² On the island of Ireland the classification of a child as obese is determined on the basis of a growth chart.³

The prevalence of child obesity on the island of Ireland rose steadily until the mid-2000s. However, although there is an indication, overall, of child and adolescent obesity levelling off, this has varied by population groups, and there is evidence that obesity levels among children and adolescents of low socio-economic status have continued to rise.⁴ Several studies show that almost 1 in 4 children currently carry excess weight.

Child obesity has been associated with a wide range of health and psychosocial problems in childhood.⁶ These include respiratory disorders, high blood pressure, sleep apnoea (interrupted breathing during sleep) and musculoskeletal disorders,⁶ with evidence also pointing to an elevated risk of developing type 1 or type 2 diabetes.^{7,8} Obese children are also more likely than non-obese children to experience psychological or psychiatric problems, including low self-esteem, depression, conduct disorders, and reduced school performance and social functioning.^{8,9,10}

A recent analysis of hospital admissions for obesity-related diagnoses among 5-19 year olds in England found these to have more than quadrupled since 2000, from 93 per million children to 414 per million in 2009.¹¹ The majority of admissions were for conditions where obesity was mentioned as co-morbidity, that is, hospital care was directed at addressing associated conditions rather than obesity itself; the most common reasons for admission included sleep apnoea, asthmas and complications of pregnancy.

Child obesity is also linked to poorer health outcomes in adulthood.^{5,12} Thus, between 50% and 75% of those who are obese as children or adolescents are likely to grow in obese adults.^{8, 13, 14} Also, co-morbidities developed in obese children, such as type 2 diabetes, are likely to progress more rapidly and to lead to earlier presentation of adult-life complications such as cardiovascular disease.⁶ There is evidence that childhood BMI is associated with type 2 diabetes, hypertension and coronary heart disease in adulthood; however, it remains uncertain whether child obesity increases adult morbidity and mortality independently of adult BMI.¹⁵

Costs associated with child obesity

Compared with adult obesity, work that has sought to assess the economic costs associated with child obesity is still emerging.¹⁶ A review of nine recent studies of the economic burden of child obesity in different countries reported that most, but not all, found elevated or excess healthcare costs for obese children.¹⁷ Importantly, studies vary in design and approach to estimating costs and it is therefore difficult to generalise findings across countries.¹⁸

Studies have looked at the incremental lifetime costs of an obese child relative to a normal weight child who maintains a healthy weight through adulthood; while alternatively studies have estimated costs based on the reality of weight gain throughout adulthood (currently 2 out of 3 adults on the island of Ireland are either overweight or obese). Appropriate inflation and discounting economic analyses have been incorporated into these studies.¹⁹

3. Approach

The proposal will involve collecting and collating data from a wide range of sources. Prevalence and population attributable fraction of key conditions attributed to overweight and obesity need to be determined. All available healthcare and other costs are to be considered.

4. Technical Specification

- (a) Literature Review
- (b) Explanation and justification of the proposed study methodology
- (c) Outline of proposed data sources
- (d) Estimation of disease prevalence of the conditions under study
- (e) Cost calculations for direct and indirect costs for each condition
- (f) Analyses
- (g) Data Handling and reporting
- (h) Quality Assurance

(a) Literature review

A full and thorough review of the literature of the cost of childhood overweight and obesity should be done. It should include peer reviewed publications and also a full search of the grey literature including government and other organisation reports, and conference proceedings etc.

(b) Explanation and justification of the proposed study methodology

It is envisaged that a mixture of methodologies will need to be employed, depending on the condition being assessed, and the information sources available both nationally and internationally. For each condition and/or service, a full explanation of the proposed approach and a justification of this will be required. **safe food** are open to suggestions on the detail of the approach.

(c) Outline of proposed data sources

For this study, a large number of different data sources will be required. The researcher must enumerate the sources they intend to use, and demonstrate access and experience in the use of the proposed data sources, as well as the relevant permissions to do so.

(d) Estimation of disease prevalence of the conditions under study

The quality of data on disease prevalence varies widely, and for some illnesses is not available. The researcher must demonstrate what approach they will take to make estimates of disease prevalence for all the conditions listed, and justify these approaches.

(e) Cost calculations for direct and indirect costs for each condition

The researcher must demonstrate which approach they will use to calculate the costs involved in the study, and justify their approach. It is likely that a variety of techniques will need to be used.

(f) Analyses

This research will involve an estimation of the disease burden attributable to childhood overweight and obesity, and other associated health conditions. It will then require that a cost estimate, or where appropriate, a range of lifetime cost estimates be calculated for each disease and healthcare activity, and in addition the indirect costs due to lost productivity and increased mortality be calculated. For each component, the researcher will be required to give a detailed and transparent explanation of how these costs are arrived at, and a comparison with other national and international methods will be required. The final result will be presented as a range, from which a mid-point estimate can be used as the most reliable approximation to the lifetime cost of childhood overweight and obesity on the island of Ireland.

(g) Data Handling and Reporting

1. The contractor will submit to **safefood**, on a six monthly basis, a summary interim report containing details of the progress for each deliverable of the project.
2. The contractor is responsible for collating all results and a final report will be submitted to **safefood** on completion of the study.
3. All forms, documentation and electronic files must be retained by the contractor until further notice for **safefood** in case of issues arising after the completion of the research.

(h) Quality Assurance

1. To ensure transparency and reproducibility, all data sources used in the research must be specified, and all data used must be explicitly specified and justified.
2. **safefood** may visit the contractors during the course of the research to assess how the work is being carried out.

5. Proposed Activities/Deliverables

- Systematic literature review
- Report on the prevalence of childhood obesity on the island of Ireland
- Report on the fraction of diseases that can be attributed to overweight and obesity
- Report on the lifetime direct costs to the health care system on the island of Ireland of treating obesity itself and the associated diseases. This should be done by type of expense, including General Practitioner consultations, hospital admissions, hospital day cases, outpatient attendances and pharmaceutical prescriptions
- Report on the lifetime indirect costs of childhood obesity and overweight on the island of Ireland, including lost earnings due to attributable mortality and lost earnings due to attributable sickness
- Submission on a 6 monthly basis of a summary report on progress.
- Recommendations for future **safefood** interventions
- Analysis of the final dataset, collation of the results and drafting of a final report to be submitted to **safefood** within the 12 month study period.

6. Evaluation of Tenders

Tender bids will be evaluated according to the quality of proposals and applicants using the following criteria:

Quality of the proposal:

- ✓ Anticipated deliverables;
- ✓ Research method and facilities;
- ✓ Value for money;
- ✓ Potential for application;
- ✓ Work plan, including the overall timeframe.

Quality of Applicants:

- ✓ Experience in subject area;
- ✓ Quality Assurance and Quality Control.

7. Duration of Project

Estimated duration of the project: Total of 12 months. A detailed timescale of research should be submitted by the applicant. Preference may be given to an application that can achieve the objectives in shorter timeframes.

8. Scientific Aspects

Potential applicants are encouraged to contact the Research Administration Office at **safe food** for further information about this research project.

9. Tender Application Forms and Guidelines

The Tender Application Form and associated Guidelines can be downloaded from www.safe food.eu. They can also be obtained by emailing research@safe food.eu, quoting the project reference number 01-2015. Alternatively please contact **safe food** as per the details below.

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References

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