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## **HEPS Inventory Tool**

*An inventory tool including quality assessment of school interventions on healthy eating and physical activity*

## ■ COLOPHON

### Title

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# HEPS Inventory Tool

*An inventory tool including quality assessment of school interventions on healthy eating and physical activity*

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## ■ INTRODUCTION

We all care about our children; they are the future of Europe. Currently about one in four children are overweight. To help tackle this problem, the HEPS project supports countries in Europe to promote healthy eating and physical activity in schools in a positive and sustainable way. HEPS uses the health promoting school approach as an effective way of developing school health policy. HEPS as a European project is linked with the Schools for Health in Europe (SHE) network and has two general aims:

1. To develop, implement and evaluate effective national policy and sustainable practice for work on healthy eating and physical activity in schools in all EU member states.
2. To support the development and implementation of comprehensive, sustainable and evidence-based school programmes in the member states for promoting healthy eating and physical activity based on the health promoting school approach.

Across EU member states there are many initiatives aimed at reducing the number of children who are overweight with a practical focus towards developing activities, programmes and teaching methods. However, currently no EU member state has an effective national school policy in operation. HEPS aims to bridge this gap by being a policy development project on a national level across Europe. HEPS will help to implement these programmes in a sustainable way at school level.

### → The HEPS Schoolkit

The HEPS project will produce the HEPS Schoolkit. The HEPS Schoolkit will help EU member states to develop national policy promoting healthy eating and physical activity in schools, based on the health promoting school approach. It consists of the following six components.

1. HEPS Guidelines: a set of principles on promoting healthy eating and physical activity in schools, meant for organisations working on the national level in Europe.
2. HEPS Advocacy Guide: a tool assisting those advocating for the development of national school policy towards promoting healthy eating and physical activity.

3. HEPS Inventory Tool: a set of qualitative criteria for school programmes for the promotion of healthy eating and physical activity.
4. HEPS Tool for Schools: a manual that will help schools in the member nations to introduce and implement a school programme promoting healthy eating and physical activity.
5. HEPS Teacher Training resource: a programme that will be used to train teachers to promote healthy eating and physical activity in schools.
6. HEPS Monitoring Tool: will be used to monitor how effectively the HEPS schoolkit is being implemented in each member state.

## ABOUT THE HEPS INVENTORY TOOL

This tool gives guidance on how to develop a structured inventory of existing school based interventions on healthy eating and physical activity at national or regional level. It also guides users on what constitutes a high quality school based intervention in these areas. The quality indicators which are presented in Chapter 2 and in Appendix 1 will enable EU member states to assess the quality of existing school based interventions and to promote sustainable quality development.

In this document the term intervention is defined as “planned actions, which are founded in health sciences and aim at systematic and sustainable changes of individual behaviour and/or surrounding conditions. Health interventions can aim at the promotion of health/ well-being (health promotion) or at the avoidance of diseases (prevention)” (1).

The HEPS Inventory Tool is complementary in two ways: it provides guidance on how to make an inventory of available school based interventions and a set of quality indicators on which each EU member state can build with its own experiences and developments. In addition, as part of the HEPS schoolkit the HEPS Inventory Tool is complementary to the other HEPS components which also support the implementation of school health promotion at various levels.

## AIM AND TARGET GROUP OF THE INVENTORY TOOL

The HEPS Inventory Tool aims to support stakeholders working in school health promotion to promote quality and transparency of school based interventions on healthy eating and physical activity in a structured way. With the HEPS quality checklist as a main part of the HEPS Inventory Tool, indicators are available which help its users to assess the quality of existing school based interventions in this field. The inventory tool makes sure that a comprehensive understanding of quality of school health promotion takes into account both a perspective on health and on education. Through standardised quality indicators and a framework for describing school based interventions on healthy eating and physical activity, users are encouraged to develop an inventory of available interventions in that field. This allows the quality based selection and recommendation of school based interventions which are promising.

The main target group of the HEPS Inventory Tool are national and regional stakeholders, i.e. governmental organisations (e.g. ministries, municipalities), public organisations (e.g. health insurances) and NGOs or private organisations (e.g. foundations, associations) working in the field of health promotion and prevention and especially in school health promotion. This document will support them to make a national or regional inventory of existing school based interventions available in the area of healthy eating and physical activity.

The HEPS Inventory Tool is not directly intended for schools. However, the results of the quality assessment and the development of an inventory can support schools in selecting interventions which fulfil quality requirements and fit to specific school needs. Also providers of already developed interventions and developers of new interventions can benefit from the HEPS Inventory Tool, giving them a better understanding of the quality components of an intervention and therefore how they can improve the quality of their intervention.

## WHY AND HOW TO USE THE HEPS INVENTORY TOOL

Due to the still increasing number of school children in Europe who are overweight most EU member states are currently prioritising the development of school based interventions on healthy eating and physical activity. Although international research has demonstrated indicators which are associated with good quality school based work in this area, so far most EU member states have no quality measures in place which have a special focus on school based interventions. As a result a gap exists between what is known in research and what is implemented in practice (2). Based on the health promoting school approach, the HEPS Inventory Tool builds on international experience and evidence in terms of healthy eating and physical activity. Through the development of uniform quality indicators it aims to reduce this gap by supporting regional and national stakeholders from all EU member states to put more emphasis on quality assurance and development.

The HEPS Inventory Tool suggests specific methods and strategies for mapping school based interventions on healthy eating and physical activity with an emphasis on quality assessment and development.

It can be used as a tool that offers:

- A step-by-step approach on how to develop a national or regional inventory of existing school based interventions on healthy eating and physical activity.
- A comprehensive understanding about quality and its dynamics in school health promotion.
- Specific quality indicators that enable a comprehensive quality assessment of already developed school based interventions on healthy eating and physical activity.

All components of the HEPS Inventory Tool are intended to be a source of inspiration which guides its users through the process of quality development and improvement. Since stages of development and experiences differ significantly among EU member states the HEPS Inventory Tool is designed to be adaptable to the specific needs of any member.

## ■ CHAPTER 1

# THE NEED FOR QUALITY IN (SCHOOL) HEALTH PROMOTION

This chapter offers an introduction to the field of quality in (school) health promotion. It gives information about the historical development, understandings and main definitions of quality and related terms. Further the difference between quality on different school levels is described. Finally, the HEPS quality model is introduced and explained.

### 1.1 DEVELOPMENTS AND DEFINITION OF BASIC TERMS

During the last decade terms such as quality, quality development and evaluation have become more relevant and have rapidly gained interest. Quality is now an integral part in the area of health promotion. It is now expected that interventions in this field will be undertaken to meet certain standards where previously under the Ottawa charter (3) this was not the case. Now each provider has to ensure that their activities fulfil qualitative demands and reach the intended goals. This is the result of developments such as increased professionalisation and the fact that health promotion has had to legitimate itself as an effective counterpart to the medical model which is long established (3). Decreasing resources make measurable quality a prerequisite for funding and resources.

As a consequence of all of this a growing emphasis has been put on the development of quality concepts and instruments which foster quality in health promotion research and practice. Many current developments are based on methods and concepts which are common practice in the medical sector (e.g. evidence based medicine). Although these methods and concepts are useful for the medical sector it is not always possible to transfer them into the discipline of health promotion (3, 4). Health promotion, including school health promotion is grounded on different values and pillars. The Schools for Health in Europe (SHE) network has developed five core values and five pillars for school health promotion in Europe: equity, empowerment, action competence, democracy and participation (5). It is essential that quality in school health promotion reflects these underlying principles and values.

Although quality and related terms such as quality assurance have gained currency within (school) health promotion, there are as yet no common definitions of these terms. A reason given for this is that quality relies on personal or institutional interests, perception and awareness as well as understandings (e.g. ideals of health and illness). To deal with this there is a distinction made between the different stances of the ‘expert’, the ‘consumer’ and ‘management’ (6, 7). The **expert perspective** refers to health promotion professionals and asks whether the intervention or measure is based on knowledge and is provided in a way that fits with the needs of the professional. This perspective can also be called the “technical quality”. On the other hand, the **consumer perspective** is focused on the individual for whom the intervention is intended. This perspective looks at whether the intervention or measure gives its target group what they want or need (people’s satisfaction etc.). Finally, the **management perspective** measures whether resources are used in an efficient way.

These three perspectives demonstrate how difficult it is to comprehensively define quality. A widely used approach from the American Institute of Medicine defines quality as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge” (8).

Although this definition is focused on professional knowledge (expert perspective) and health outcomes, it can serve as starting point to explain two different quality paradigms (9). Within the first one quality is assessed at a certain point with the help of given criteria and standards (“paradigm of compliance”). Once a measure or intervention fulfils the criteria and standards, quality is given. The more dynamic “paradigm of optimisation” is not merely focused on the fulfilment of given criteria; it also aims at continuous and systematic improvement of the quality of interventions. Since health promotion in schools is very complex in nature and acts in environments which continually change, the quality paradigm of optimisation should be primary. Therefore the HEPS Inventory Tool should not only focus on quality assessment of any given school based intervention on healthy eating and physical activity, but also provide opportunities on how to improve quality.

Table 1: Quality assessment at school level (selection)

Quality assessment tools at setting/school level	Country
Audit healthy school	GER
Frame of reference of school health promotion	GER
Healthy schools assessment tool	UK
INDI9 – Self evaluation tool for Czech HPS model	CZ
Instrument for quality development in schools (IQES)	GER
National healthy school audit	UK
Quality criteria for health promoting schools/Radial profile	CH
School mental health quality assessment questionnaire (SMHQAQ)	USA
The health promoting school national certificate	POL

Table 2: Quality instruments to assess health interventions (selection)

Quality assessment tools for health interventions	Country
Criteria for good practice in health promotion for socially disadvantaged people	GER
European quality instrument for health promotion (EQUIHP)	EU
Preffi	NL
Quality in prevention (QiP)	GER
Quality criteria for programmes towards the prevention and treatment of children and adolescents who are becoming or are overweight and/or obese	GER
Quint essenz	CH
SchoolBeat checklist	NL
Succeeding with health promotion projects	SE
The program plan index	USA

Another important term which is in line with the quality paradigm of optimisation is ‘quality assurance’. Although this term is used in different ways it is agreed that quality assurance refers to a continuous and dynamic process in which desirable levels of quality are assessed and, if needed, actions taken to improve quality (10, 11). It includes activities such as setting quality standards, measuring performance, taking actions to improve quality and making regular reviews (11).

The HEPS Inventory Tool works towards quality assurance and lays the foundations for quality improvement. This process will expose areas which are of low quality and therefore need to be improved. Given that this procedure is ongoing and dynamic, quality assurance is an ongoing cycle of assessment and improvement. That distinguishes quality assurance from evaluation which is focused on outcomes at a particular point.

## 1.2 WHAT QUALITY ARE WE TALKING ABOUT?

The frame of reference is not always clear when talking about quality. In school health promotion at least two levels can be distinguished (12).

### a) Quality of settings and organisations

This quality level refers to the health promoting school setting well as to the school as an organisation. Many different concepts have been developed for looking at quality from the setting. On the whole most of these embed quality in policy and strategy. Within this context school success can be assessed with self assessment tools as well as audit, both internal and external. The audit tools can also include indicators measuring educational quality which allow direct comparisons with health related quality indicators (e.g. instrument for



quality development in schools – IQES; SEIS-Anschub). A selection of such tools are listed in Table 1.

#### b) Quality of health interventions in the school setting

This quality level is more focused on specific health interventions which are often provided by external health services. To assess whether the intervention fulfils quality requirements, specific criteria and indicators are needed. Although progress on this has been made, in recent years most of the quality instruments available in this area aim at health promoting interventions in general and are not focused on specific settings such as the school setting. A selection of these quality instruments are listed in Table 2.

When quality is assessed it is important to be clear which frame of reference this relates to. Due to a lack of school based quality instruments the frame of reference of the HEPS Inventory Tool is focused on school based interventions on healthy eating and physical activity.

### 1.3 THE HEPS QUALITY MODEL

As already discussed the term quality is a broad concept with different perspectives. To assess the quality of school based interventions in its entire scope it is necessary to consider all relevant aspects of an intervention and not just to focus on a specific part such as the achieved outcomes. According to Donebedian, quality can be assessed by three dimensions: quality of structure, quality of process and quality of outcome (13).

The **quality of structure** is primarily related to the conditions under which the intervention is provided. This includes for example the organisational structure, material resources such as equipment, financial resources and human resources such as qualified personnel. **Quality of process** refers to actions within the delivery phase of the intervention including support, monitoring, attainability and acceptability of the target group. **Quality of results** includes the desirable and undesirable changes in the target group and the setting. This usually includes aspects of effectiveness and aspects of efficiency.

For health promotion and prevention these approaches are often transferred and applied. It has been proposed that the quality of intervention also takes into account other aspects such as assessment and planning (9, 14). Since both aspects refer to the same phase of an intervention, the term **quality of concept** is used here. This dimension refers to how the intervention is conceptually based and includes amongst other things a needs assessment, a definition of target groups and objectives as well as the development of intervention methods.

The HEPS quality model which is illustrated in Figure 1 builds on the four quality dimensions described above. As a structured sequence it reflects a holistic view of quality. To assess the quality of a health related intervention it is necessary to consider each quality dimension. As illustrated in the model each dimension has an influence on the following one. Failures and mistakes, for example in the planning phase, can lead to inconsistencies and realisation difficulties in the process and evaluation phase. If no or only unspecific

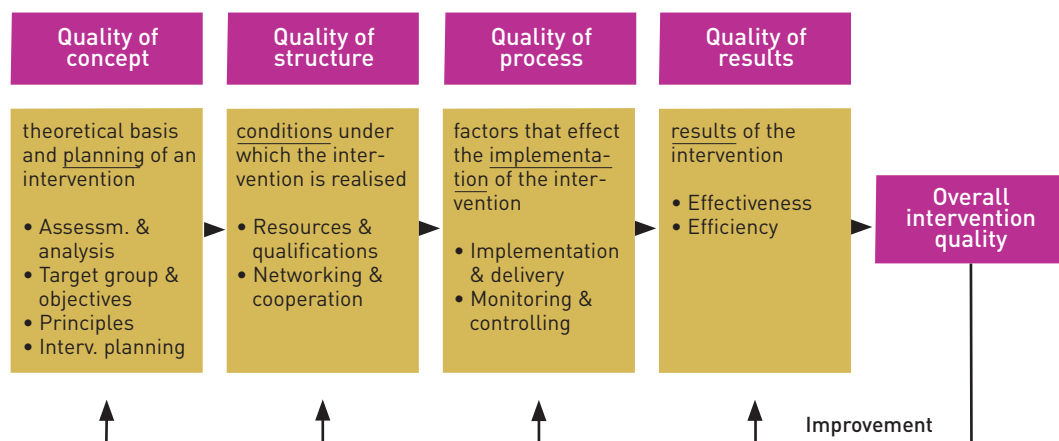


Figure 1: The circular HEPS quality model

aims were formulated in the planning phase, their achievement is not assessed in the evaluation. Derived from the quality paradigm of optimisation, a circular perspective is included in the HEPS quality model. This means that the results of the comprehensive quality assessment should be used for continuous quality improvement.

## ■ CHAPTER 2

# THE HEPS INVENTORY TOOL

The HEPS Inventory Tool helps to make a national or regional inventory of currently existing school based interventions on healthy eating and physical activity. First, a step-by-step approach on how to develop an inventory is described. Secondly, the HEPS quality checklist as a main part of the inventory tool is introduced in the second part of this chapter.

### 2.1 THE HEPS INVENTORY PROCESS

Mapping the field of school based interventions on healthy eating and physical activity can produce a clear overview of existing interventions which can then support schools to select interventions which match their needs and expectations. Both on a regional and national level the development of an inventory will take time and personnel resources for stakeholders. Having a clear structure on how to do this can reduce timescales considerably. To guide the process of developing an inventory the following seven steps are suggested:

1. Establish a working group
2. Set inclusion and exclusion criteria
3. Collect relevant interventions and information
4. Analyse and describe the interventions
5. Obtain verification and give feedback
6. Disseminate the results
7. Make periodical updates

Below each step is described briefly.

#### 2.1.1 Step 1: Establish a working group

The first step is the creation of a working group which has the task of developing an inventory of existing school based interventions on healthy eating and physical activity. Although there is no limit on who is part of the group, each member should have experience in the field of school health promotion, healthy eating or physical activity. The working group can consist of members from one or several organisations, ideally both from the health promotion as well as the educational sector. Since the development of a national inventory is more time and labour intensive, in this case the working group should be composed of several stake-

holders (e.g. ministries, universities and foundations). It is important to clarify the roles and responsibilities of each member at the beginning of the work process to avoid role confusion.

#### 2.1.2 Step 2: Set inclusion and exclusion criteria

Before starting to carry out a search of available school based interventions it should be clear what the focus of the inventory is and under which conditions an intervention will be included in it. The more specific the inclusion criteria are defined, the better a search can be performed. To set clear inclusion criteria the following questions might be helpful: *At which target group should the intervention be aimed? What should be the scope of the intervention? At which geographical level should the intervention aim? What should the intervention cover?*

Based on the health promoting school approach the following inclusion criteria could be useful:

- The intervention is primarily implemented in the school setting, i.e. primary and secondary schools.
- The intervention aims at young people aged 6 to 18 years and/or at teaching and non-teaching school staff.
- The intervention is focused on health promotion and prevention. Interventions that are focused on treatment or rehabilitation are excluded.
- The intervention is aimed at healthy eating, physical activity and mental health as a related topic.
- The intervention is already developed and still in use on a national (or regional) level.
- There is enough information available about the intervention.

#### 2.1.3 Step 3: Collect relevant interventions and information

Once inclusion criteria are defined, the working group can start to identify appropriate interventions and to collect information about them. The kind of information required depends on the inclusion criteria which have been defined in the second step, the categories of the description scheme (see step 4) as well as the quality indicators for which information is needed (see chapter 2.2).

To identify relevant interventions different sources can be used. These include for example online databases, printed publications or information which is gathered by surveys. On a national level many EU member states have developed databases which can be browsed via a search engine. Examples are the databases for eating and activity (peb) and for health promotion for the socially disadvantaged from Germany, the I-database from the Netherlands or the healthy school database from Austria (see useful web resources). Scientific databases as a starting point for a systematic literature review can be useful. Other relevant sources are the national or regional networks on school health promotion as well as the SHE national coordinators who can be involved in the working group or asked for information on existing interventions. Further to this, organisations active in the field of healthy eating and physical activity in schools can be identified and asked via a survey which school interventions on healthy eating and physical activity are known to them. Once an intervention is identified it is useful to get in direct contact with the provider to ask for a description and additional information e.g. data on evaluation.

**2.1.4 Step 4: Analyse and describe the intervention**

After the collection of relevant interventions is complete, the information for each intervention needs to be systemised and analysed. To systemise involves separating relevant from irrelevant information and summarising the information so it can be used for a clear and comprehensive description of the intervention. The analysis is part of the quality assessment, its results should be included in the intervention description. How to perform a quality assessment of a school based intervention on healthy eating and physical activity is described in chapter 2.2 in detail. Both the quality assessment and the description of the intervention should be done by at least two people. The advantage of this is that the results of the quality assessment and description can be compared and differences discussed. To allow direct comparisons between the interventions which are included in the inventory, a standardised description format should be used. Derived from a search of existing description formats (15-17) the following format comprises a set of categories which are typically of relevance for schools and stakeholders. Two examples for which this description format is applied can be found in chapter 3.

Table 3: Format for the description of school based interventions on healthy eating and physical activity

Category	Description
1. Title	Title of the intervention
2. Provider	Short description of the provider of the intervention, including type of organisation and contact details.
3. Target group	Information about the target group of the intervention is presented. Descriptions in terms of age, school grade, gender and socio-economic characteristics or between primary and secondary target groups (e.g. pupils and parents) are given.
4. Objectives	Precise description of the objectives of the intervention is given here. Are there short term and long term objectives? Does the intervention aim at the prevention of specific health risk behaviours or at the promotion of skills or conditions that enhance healthy eating and/or physical activity?
5. Scope	Information about the scope of the intervention is given. This includes information about the level of intervention realisation (class room based, whole school, wider school environment).

6. Content	Besides the description of the general content the components of the intervention are listed and described in detail. Components can be categorised for example in person oriented vs. conditional oriented elements; class level focused vs. environmental focused components etc.
7. Methods & Didactics	Description of methods and didactics, which are applied in the intervention e.g. transfer of knowledge, group-dynamic oriented exercises, trainings etc. This category also contains information about materials (brochures, DVDs etc.) intended for implementation.
8. Duration	Information about the duration of the intervention including overall time frame for the whole intervention, time needed for separate components/elements/sessions (including number of sessions per week) etc.
9. Delivery of programme	Information about the competencies needed of those persons, who carry out the programme. This includes a description about the qualifications needed and information about whether a specific training is necessary in order to implement the intervention. If different components require different qualifications and professions information should be given.
10. Training/ Manual	This addresses whether a training for teachers/programme deliverers is needed and/or available. Under which conditions, for whom and how often? Is a programme manual available?
11. Costs of the intervention	Information about all costs which are required to carry out the intervention. A special focus is on costs for schools, which contains a description of personnel and financial costs (training, materials), preparation time etc.
12. Evaluation	This category contains information about the evaluation of the intervention with regard to processes and results. What kind of evaluation was conducted (process evaluation, effect evaluation, cost effectiveness etc.)? Are effects documented in terms of the promotion of healthy eating and physical activity?
13. Quality rating	On the basis of the results of the HEPS quality checklist a quality rating of the intervention is given here. Alongside the assessment results of the four quality dimensions, the total quality of the intervention is indicated and its strengths and weaknesses are highlighted. A recommendation can be given if the intervention can serve as "model of good practice".
14. Miscellaneous	Information that is not covered through the other categories but which is essential for understanding the intervention is given here (e.g. literature).

### 2.1.5 Step 5: Obtain verification and give feedback

As a final step the provider of the intervention should be informed that their intervention is included in the inventory. They should be asked to check the description and complete it if necessary. This reduces the likelihood of errors and ensures that the provider is involved in the developmental process.

Each provider whose intervention is included in the inventory should be given feedback about the results of the quality assessment. As emphasised in chapter 1 the HEPS Inventory Tool is an instrument for quality assurance (see HEPS quality model). This requires actions to improve the quality (11) and one of these is to give concrete feedback to the provider. All feedback should include the main results from the assessment for each quality dimension as well as a description of the strengths and weaknesses of the intervention. The more detailed these descriptions are, particularly with regard to weaknesses, the better the provider will be able to implement change to improve the intervention. A good way to illustrate the quality results of one intervention is to provide comparison with the results of all the other interventions which were assessed at the same time. These benchmarks can be used for all quality dimensions (concept, structure, process, results) or be more detailed for each criteria of the HEPS quality checklist (see chapter 2.2). Along with feedback about the weaknesses, actions which need to be taken could be described.

### 2.1.6 Step 6: Disseminate the results

After a cross-check is done for each intervention, the inventory can be published. All barriers to anyone who might benefit from receiving it (e.g. schools, stakeholders) should be removed if possible: for example, the final inventory could be free or very inexpensive to buy. Added to this, widespread dissemination is promoted by targeting groups appropriately with different strategies reaching different groups: for example, a conference could be held at which the inventory is introduced and distributed. Alternatively, a copy could be sent to regional or national stakeholders who are active in the field of school health promotion and/or who support schools in the field of healthy eating and physical activity. Stakeholders are a target group themselves and can also act as distributors. As many people and organisa-

tions have access to the internet, it too can be an effective dissemination tool. The inventory tool can be put on different education and health related websites which are relevant for schools and stakeholders. Also corresponding newsletter services can be used to call attention to the inventory. The results of the inventory could be transmitted to existing databases available in that field (see step 3). If no regional or national database exists, the inventory on school interventions could be a good reason to start developing one.

### 2.1.7 Step 7: Make regular updates

Following the cyclical understanding of quality assurance, the development of quality is an ongoing process of assessment and improvement. As a consequence it is necessary to review the situation again after a certain time period. This makes it possible to compare the quality of the same intervention at different points in time and to determine whether the intervention has undergone a positive quality development. Given the growing relevance of healthy eating and physical activity it is to be expected that the number of school based interventions in that field also will increase over the next years. Therefore a regular update of an inventory of school based interventions on healthy eating and physical activity is recommended.

## 2.2 THE HEPS QUALITY CHECKLIST

As a main part of the HEPS Inventory Tool, the HEPS quality checklist provides a set of criteria and indicators which enables its users to assess the quality of existing school based interventions on healthy eating and physical activity. The HEPS quality checklist can also serve as a foundational framework for the development of new school based interventions in this field. The criteria and indicators are the result of comprehensive research on existing quality instruments in the field of health promotion and prevention (18-24) as well as on scientific evidence and experiences of healthy eating and physical activity in schools (25-37). Based on the HEPS quality model described in chapter 1.3, for each quality dimension different criteria were developed, which in turn contain a set of related indicators. An indicator can be defined as “a specially selected measure that may indicate and point to good or poor quality” (10). The HEPS quality checklist has been pre-tested with regional and

national stakeholders from health promotion and education sectors in selected EU member states. The HEPS quality checklist can be found in Appendix 1. Below instructions are given on how to use the checklist.

### 2.2.1 Assessing interventions – general procedure

The HEPS quality checklist comprises 37 indicators which are distributed into 10 criteria and 4 quality dimensions. It contains indicators which are relevant for both health promotion and education sectors. Based on the underlying quality model (see chapter 1.3), a comprehensive quality assessment of all relevant phases of an intervention (planning, implementing and evaluation) is ensured.

In general, the quality assessment always refers to the school based intervention itself (i.e. to how it was planned and organised by the provider) and not to the way it is implemented in a school. Bearing in mind that the quality checklist is an evaluation tool, an assessment needs to be done on the basis of published or unpublished information from the provider and not on the experiences of the school.

#### Resources for assessment

Relevant resources include published materials such as manuals, books and scientific articles which are pertinent to the evaluation or the theoretical model used for a particular intervention. Also the results from other external evaluations can be incorporated in the quality assessment. If any information is missing the provider can be asked for additional information such as unpublished reports, case studies, manuals etc. However, information that is not available in writing should not be used for the assessment (see 2.2.3).

#### Assessor

As already mentioned in 2.1.4 it is recommended that each quality assessment is conducted independently by at least two assessors. The advantage of two assessors is that the results of the assessment can be compared and any discrepancies discussed and clarified if required. Preferably both assessors should be familiar with health promotion and prevention and especially school health promotion. Given that the quality checklist aims at the educational setting, ideally each school based intervention should be assessed by one expert from the educa-

tional sector and one from the health promotion sector (18). This ensures that the educational realities are considered adequately. Further it is recommended that an inexperienced assessor be supervised by an experienced professional before an assessment is made.

#### Assessment support

To make it easy to use and to ensure a shared understanding of the indicators of the HEPS quality checklist, each indicator is described in more detail (see Appendix 1). This should be read carefully before a judgement is made, because it describes what exactly is meant by each indicator and what it takes to meet the requirements. In the quality checklist the page number included after each quality indicator refers to the page on which the indicator is described in more detail. Further, a glossary has been developed and is attached in Appendix 2. It provides a description of important terms used in this checklist.

#### Time needed for assessment

The amount of time required to apply the quality checklist to any given intervention depends on aspects such as the scope of the intervention and the availability of information as well as the assessor's level of experience. The results of the pre-test show that the average time varies between interventions. If the assessor is experienced in the field and used to handling the HEPS quality checklist the time needed for the assessment will decrease.

### 2.2.2 Scoring and interpreting the indicators and dimensions

To illustrate whether each indicator shows strengths or weaknesses, a scoring form is included in the HEPS quality checklist. Each indicator should be marked by using one of three options for assessment (yes, partly, no); each option has a different score (number of points).

- Yes (2 points): indicates that the indicator is “fully achieved”.
- Partly (1 point): indicates “to some extent yes, to some extent no”.
- No (0 points): indicates “not achieved”.

If an indicator cannot be assessed due to lack of information this indicator can be evaluated with “no” (not achieved, 0 points). At the end of each dimension the number of points should be added up and the sum

assigned in the field “overall score”. After the overall score is calculated, the value can be compared to and interpreted by using the assessment table which follows each dimension. As a result each dimension can be assessed as having a high quality (2 points), an average quality (1 point) or as having a low quality (0 points) (see right column “final scores”).

After the assessment and interpretation of each quality dimension a final overall score can be calculated by adding up the “final score” of each dimension (right column). The result can be compared and interpreted by using the overall evaluation table at the end of the checklist which can result in “high intervention quality”, “average intervention quality” and “low intervention quality”.

To interpret the quality of a school based intervention on healthy eating and physical activity it is recommended to use not only the overall assessment of the whole intervention, but also the assessment results of each dimension. This ensures a more detailed picture of the intervention quality with its strengths and weaknesses.

As pointed out in chapter 2.1.5 an additional more flexible way to illustrate the results of the quality assessment is to compare the results, or scores, of one intervention with the results of other interventions. This benchmarking also allows the identification of areas which need to be improved. Once a quality assessment is complete for all school based interventions on healthy eating and physical activity, the reached scores can be transferred to a database. After calculating the means for all quality criteria and dimensions for each intervention it can be decided which intervention falls in a certain quality area; under the mean or over the mean. It is important for this kind of procedure that the interventions should be comparable, i.e. are characterised by similar conditions such as type of school, scope, level of implementation etc.

### 2.2.3 Difficulties and how to overcome these

Although the HEPS quality checklist is intended to support its users in assessing the quality of school based interventions in the field of healthy eating and physical activity some challenges may occur in applying this checklist. The following sections identify some poten-

tial challenges and provide recommended ways to overcome these.

#### Collection of information

To assess a school based intervention a lot of information is needed such as published materials, books etc. as well as unpublished information, including “grey literature”. For some indicators it could be difficult to obtain information which allows the assessment of these indicators. This is especially true for unpublished materials due to restricted access, or simply because there is no information available. To ensure that all available information is considered in the assessment, it is suggested that the provider is involved in the process as early as possible. However, information that is not available in writing (e.g. verbal messages from the provider) cannot be used for the assessment. This is because information not available for the assessor is also not available for the deliverer who has to carry out the intervention. This can be regarded as a lack of quality.

#### Assessors qualification

Another important issue concerns the assessor, i.e. the person who applies the HEPS quality checklist. The knowledge and experience which is required to make use of the quality checklist should not be underestimated. To achieve valid quality ratings it should be ensured that persons who are inexperienced in this field are trained first. Also it is important to apply the checklist as objectively as possible. It must be ensured that the assessor is not affected by any circumstances which might bias the quality rating. So for example it would be inappropriate for an assessor to be someone personally involved in the development of the intervention being assessed.

#### When to apply the different types of intervention

It is expected that all indicators formulated in the HEPS quality checklist are highly relevant for all existing school based interventions on healthy eating and physical activity. However, due to various differences some indicators may be more important for some types of interventions than others. Although several types of health promotion interventions can be distinguished (19, 22), only two different types are of relevance for the HEPS quality checklist. These are interventions which are already developed and implemented but not yet evaluated and interventions which are developed, implemented and evaluated. For those interventions which have been evaluated all indicators can be used as intend-



ed. However for those not yet evaluated the indicators of the fourth quality dimension (quality of results) are difficult to apply. That does not necessarily mean that interventions for which no evaluation has been conducted are of low quality and for this reason it is enough to assess this type of intervention by focusing on the first three quality dimensions in the first instance. This could be especially relevant for regional interventions which are sometimes smaller and have only limited resources for a comprehensive and prompt evaluation. Nevertheless, it is to emphasise that each quality dimension is relevant for the overall quality of any intervention. If no evaluation is carried out over a longer time frame, this should be regarded as reducing quality. The HEPS quality checklist should not be applied for interventions which are in developmental stage.

#### Application at different levels

The target group for the HEPS Inventory Tool are national and regional stakeholders. Although the HEPS checklist may be more compatible with interventions on a national level, the pre-test results of the HEPS quality checklist show that a high percentage of respondents also see it as appropriate for a regional level. Given that interventions on a local level are mainly very small and often limited in their scope and resources, we assume that in this kind of instance some indicators in the HEPS quality checklist will not be easily applied. One of the future challenges will be to adapt the HEPS quality checklist to local needs.

#### Information value and context dependence

The HEPS quality checklist is based on empirical evidence and practical experiences in healthy eating and physical activity in the school setting. Although the HEPS quality checklist with its criteria and indicators imply normative requirements and standards which are drawn from an expert perspective (see 1.1), the quality checklist and its results should mainly be regarded as an orientation and a source of inspiration for quality and its development. This does not automatically imply that an intervention of high quality will also be of high value for a particular school or vice versa that a low quality intervention will be of no value for a school. The meaningfulness of any intervention for a school depends on its conditions and specific needs. It is recommended to include low quality interventions in the inventory as well as those which are of high and average quality. This better enables schools to select an intervention which fits their specific needs.



## ■ CHAPTER 3

# THE HEPS INVENTORY TOOL IN USE - TWO EXAMPLES

The focus in this chapter is the practical application of the tool on two school based interventions on healthy eating and physical activity. Both interventions; the “Children’s Health Interventional Trial” from Germany as well as the “Growing through Adolescence” programme from Scotland were assessed by the HEPS quality checklist and described by the format which is presented in section 2.1.4. The results of both interventions are outlined below.

### 3.1 THE “CHILDREN’S HEALTH INTERVENTIONAL TRIAL” (CHILT) FROM GERMANY

The “Children’s Health Interventional Trial” (CHILT) is a German intervention which can be divided into different sub-interventions that cover a sequence from universal prevention/health promotion (CHILT I – healthy eating and physical activity) to selective prevention

(CHILT III – obesity prevention/treatment). The emphasis of this example is on CHILT I as it is focused on health promotion and aims at all pupils from primary schools, whereas CHILT III is not applied in the school setting and is aimed at obese children and adolescents. The CHILT intervention was identified over an internet and literature search. On the basis of manuals, books and articles which were accessible through the internet and several literature databases, the CHILT I intervention was assessed. After a first assessment was made, the CHILT I intervention was described by using the HEPS standardised format (see 2.1.4). The provider of the CHILT intervention was informed and asked for additional material which might be helpful for the quality assessment.<sup>a)</sup> Based on their responses a re-assessment as well as an adaptation of the description of the intervention was made. Again the provider was asked to check the intervention description at the end of this process. The result of this assessment and description is presented in table 4.

Table 4: Description of the Children’s Health Interventional Trial I (CHILT-I)

Title	CHILT programme – Children’s Health Interventional Trial
Provider	German Sport University Cologne Institute of Kinesiology and Neurosciences Division III – Activity and health promotion Am Sportpark Müngersdorf 6 50933 Köln Mail: <a href="mailto:chilt@dshs-koeln.de">chilt@dshs-koeln.de</a> Web: <a href="http://www.chilt.de">http://www.chilt.de</a>
Target group	In general CHILT-I is aimed at children from primary schools (grades 1 to 4). Depending on the CHILT intervention level, three different target groups can be distinguished. <sup>b)</sup> CHILT-I is focused on universal prevention and therefore is aimed at all children from primary school including those who are not at risk of becoming overweight. CHILT-II is aimed at children who are at risk of being overweight and have a BMI greater than the 90 percentile. CHILT-III is a targeted prevention approach for children and adolescents who are obese ( $\geq 97$ . percentile). CHILT III is not applied in the school setting.

a) We wish to thank Dr. Dr. Christine Graf (German Sport University Cologne) for her valuable support.

b) This intervention description is focused on CHILT-I

Objectives	<p>The general aim of the CHILT-I project is to promote the fun element of health and physical activity amongst children in primary schools. In particular CHILT-I wants to increase the total energy expenditure from physical activity during school lessons and breaks, to optimise physical education lessons and to enhance pupils health' knowledge. The project also has a stated aim of reducing the number of children who go on to become overweight.</p>
Scope	<p>The project operates on a class basis and in the school environment. The primary operation level of the CHILT-I project is class room based through health education lessons given by teachers. In addition children were encouraged to increase their physical activity during leisure periods and breaks by using playground equipment such as ropes, balls, jungle-gyms etc.</p>
Content	<p><u>Class focused content:</u> health education lessons on healthy eating and physical activity as well as activity breaks  <u>School environment focused content:</u> promotion of physical activity during leisure periods and breaks</p> <p>Teachers were asked to give a health education lesson once a week (appr. 30 min) as well as at least one physical activity break (5 minutes) during the lessons each morning. In addition teachers were asked to arrange physical-activity-friendly school breaks. After initial training teachers received instruction materials for the health education lessons and for the promotion of physical activity during the school day. The health education material covers different topics such as biological background (31 lessons), nutrition (13 lessons), psychosocial aspects (16 lessons), hygiene (9 lessons), recipes (6 lessons) and others. The health education material covers 106 lessons in total.</p> <p>To give pupils the opportunity to increase their physical activity during the lessons, the leisure periods and within their physical education lessons additional instruction material for teachers was developed. It contains recommendations for back training (12 exercises), for physical education lessons (6 exercises on coordination; 6 on body strengths; 7 on endurance; 2 on acrobatic; 3 on rhythm and dance; 3 on swimming; 4 on cooperation and competition and 20 running games), for activity breaks (32 exercises on relaxation and 26 on activity, each divided for different space requirement) and for the creation of an activity friendly schoolyard as well as a manual for a motor ability test. For the creation of activity friendly schoolyards a step-by-step procedure is described. Further potential external partners and funders are considered and 13 games were developed which could be adapted to the available school facilities. All materials are appropriate for cross-disciplinary use.</p>
Methods & Didactics	<p>All applied methods and didactics are dynamic and range from discussion rounds, games, recipes, group exercises etc. For each health education lesson a worksheet is available as master copy. All worksheets have a common structure and include information about objectives, material requirements/preparation, social form (e.g. chair circle), realisation/progress, time needed, target group, methodical and didactical hints and cross references to other exercises and worksheets. All materials for the CHILT-I project are published in two books which also include all required master copies on a CD. Depending on pupils and</p>

	<p>school needs teachers can use the material in a flexible manner and can complement their lessons through other materials available in that field. Often references to already existing materials are made. Cross references between both books are highlighted and allow interactive working.</p>
Duration	<p>All materials were intended to be applied as long as possible over several years. In the intervention trial the intervention lasted almost 4 years. Health education lessons were carried out once a week of 20-30 minutes each. Physical activity breaks of 5 minutes should be conducted as part of this programme once during lessons each morning..</p>
Delivery of programme	<p>Teachers from primary schools are the main deliverer of the CHILT-I intervention. To carry out the intervention a basic training is needed. There is no information available as to what kind of qualification is needed for programme realisation.</p>
Training/ manual	<p>Before implementation a basic teacher training is offered by the provider of the CHILT-I intervention. It has three main goals: 1) enhance the teachers' awareness of the need for a healthy lifestyle; 2) assist the teachers to design and implement health education and physical activity during the school day; and 3) develop teachers' instructional skills to enhance physical activity in order to focus on general activity and skill acquisition. In addition to the basic training further workshops on specific topics are provided on a voluntary basis. All materials required to realise the intervention are provided to the teacher.</p>
Costs of the intervention	<p>There are costs especially for the teacher training and the materials which are necessary. Costs for basic training are about 200,- €/teacher. The two books which contain all relevant material cost 35,- € each. There is no information available about additional costs.</p>
Evaluation	<p>The implementation intensity for the education lesson ranged from once per semester to twice a week over a four year period. Also the frequency of physical activity breaks during the lessons ranged from twice a week to three times a morning. The effects of CHILT-I on obesity and physical performance were studied after four years in 12 primary schools compared to five control schools. The results show no effect on the incidence of children becoming overweight or obese in the intervention group. But the increase in BMI was reduced in the schools with the intervention indicating a high commitment to the programme. With regard to endurance performance children from the intervention group show a slightly higher increase but not significant increase. Also for coordination ability a non-significant increase for children from the intervention group was observable. A significant improvement was made for motor skills such as lateral jumping and balancing backwards in the intervention group. There was no examination of the impact that health knowledge or health promoting behaviour has on healthy eating, physical activity or educational outcomes</p>

Quality rating <sup>c)</sup>	<p>Using the HEPS quality checklist the quality assessment of the CHILT-I intervention revealed 50 out of 74 points in total. On a 3-point quality scale (high, average, low quality) this result reflects a high quality. Broken down into the four quality dimensions of the HEPS quality checklist the following picture can be drawn:</p> <p>Quality of concept: 28/34 points (high quality)  Quality of structure: 10/14 points (high quality)  Quality of process: 6/12 points (average quality)  Quality of results 6/14 points (average quality)</p> <p>Based on the results of each quality dimension CHILT-I has particular strengths in the quality area of concept and structure and some weaknesses in the quality areas of process and results. Concerning the quality of concept CHILT-I is based on a needs assessment and is rooted in scientific theory. Its target group and objectives are defined clearly. It operates on different school levels (class, school environment) and is based on a comprehensive concept of health. The degree of family involvement is very limited in CHILT-I. Moreover the intervention is less linked with educational goals. In the quality area of structure a very good comprehensive manual is available which provides its users a tremendous variety of exercises. In addition a training program is available. However, components which have to be realised as planned are not defined. Also strategies for the sustainable involvement of external partners are not intended/ described. There is no information available how the deliverer can monitor the implementation phase. With respect to the quality of results evaluation methods are based on agreed standards. Information about the effects on educational outcomes and the efficiency of the intervention is scarce.</p>
Miscellaneous	<p><u>Published materials for CHILT I:</u></p> <p>Graf, C., Koch, B.&amp; Dordel, S. (2008). CHILT-G. Gesundheitsförderung [CHILT-G. Health Promotion]. Dortmund: Verlag modernes Lernen.</p> <p>Dordel, S., Koch, B. &amp; Graf, C. (2008). CHILT-B. Bewegungsförderung [CHILT-B. Activity Promotion]. Dortmund: Verlag modernes Lernen.</p> <p><u>Scientific publications (selection):</u></p> <p>Graf, C., Koch, B., Falkowski, G., Jouck, S., Christ, H., Stauenmaier, S., Tokarski, W., Gerber, A., Predel, H.-G. &amp; Dordel, S. (2008). School-based prevention: Effects on obesity and physical performance after 4 years. <i>Journal of Sports Sciences</i>, 10, 987-994.</p> <p>Graf, C., Tokarski, W., Predel, H.-G., Koch, B.&amp; Dordel, S. (2006). Overweight and obesity in childhood – how can physical activity help? <i>Physical Education and Sport</i>, 50, 54-59.</p> <p>Graf, C., Koch, B., Falkowski, G., Jouck, S., Christ, H., Stauenmaier, S., Bjarnason-Wehrens, B., Tokarski, W., Dordel, S. &amp; Predel, H.-G. (2005). Effect of a school-based intervention on BMI and motor abilities in childhood (mid point data of the CHILT-Project). <i>Journal of Sport Science and Medicine</i>, 4, 291-299.</p>

<sup>c)</sup> The quality rating is based on a rigorous assessment of the intervention. If information are not available to assess a certain indicator this were interpreted as a lack of quality.

### 3.2 “GROWING THROUGH ADOLESCENCE” FROM SCOTLAND

Table 5: Description of “Growing through adolescence”

Title	Growing Through Adolescence
Provider	NHS Health Scotland Elphinstone House Glasgow G2 2AF
Target group	It has been produced for <u>trainers to use in training sessions with teachers</u> of pupils in upper primary and lower secondary school. The target group may be defined in two ways. It is a resource to support the continuing professional development (CPD) of teachers. The ultimate beneficiaries being children and young people. Through the evaluation experience has shown that this training is also valued by wider school staff and partner agencies– e.g. physical activity specialists and catering staff.
Objectives	Growing Through Adolescence (GTA) was developed on the need for a comprehensive resource which would support the continuing professional development (CPD) of teachers and others in the area of healthy eating and physical activity. The objective is ‘to enable trainers to build on teachers existing skills and experience, and consequently increase their confidence in exploring a broad range of issues relating to young people and their food choices within a health promoting school approach’. Each training session or activity has clearly stated objectives. These are both achievable and realistic when delivered by experienced trainers.
Scope	The resource adopts a psycho-social model of health and adopts a whole school approach to healthy eating. As such it provides a comprehensive, evidence based overview of healthy eating in relation to young people, and addresses many of the physical, social, mental and emotional aspects of this complex area. It may be used at a whole school level, or equally well at a regional level. It is not designed for the class room.
Content	Book 1, provides Evidence and Overview. Book 2 provides Training Materials or Activities. Factsheets It is important to note that in the European version of GTA both books have combined into one.
Methods & Didactics	Book 1 provides current factual information in relation to nutrition and energy balance as is relevant to the UK Book 2 has a range of interactive and engaging activities to ensure participative learning. Factsheets have a common structure and are useful when delivering training. The importance of planning and preparation for training is given attention in a dedicated section within the resource. Two separate books makes cross referencing possible both in preparation and delivery of the training. The methodology underpinning the resource is further reinforced in the section designed for the planning and delivery of Training.

Duration	The resource does not provide a prescriptive set of activities for delivery but provides suggested training sessions for inclusion for example in a one day event, although there is great flexibility within the resource to construct 1 day or even 3 day training events.												
Delivery of programme	The resource is a training or continuous professional development resource and should be used by trainers working within a health or education context. One component within the resource focuses on planning and organising the Training.												
Training/ Manual	Before the resource is given out Training for Trainers events have been offered at a national level. These have been successful and have been replicated at a regional level bringing together partner organisations from cross education and health, and focusing on local resources that will further support delivery.												
Costs of the intervention	There is no charge for the resource to anyone who has undergone the training. Costs in the region of £50 apply outside Scotland. Training has been provided free of charge by NHS HS.												
Evaluation	<p>An evaluation has been carried out and details can be found below. It focused on delivery of training, the resources itself and lessons for the future.</p> <p>A process evaluation of the GTA programme was conducted from September to December 2007. The methodology consisted of stakeholder interviews; interviews with training for trainers event organizers / facilitators; observation/participation and consultation at the training for trainers event; survey of training for trainer participants; survey of local participants; case studies and interviews with national strategic partners.</p> <p>The key themes emerging from the findings are that GTA is a relevant, innovative programme and resource; that there have been low level of roll-out among local trainers; that there is confusion around the roles of trainers and the purpose of the GTA resource; that local partnerships/networks are crucial for the successful roll-out of GTA training; and that this need to be linked to classroom teaching resources.</p> <p>Key point from the evaluation will be used to inform future work with GTA</p> <p><a href="http://www.healthscotland.com/documents/2409.aspx">http://www.healthscotland.com/documents/2409.aspx</a></p>												
Quality rating	<p>Using the HEPS quality checklist the quality assessment of the GTA intervention revealed 51 out of 74 points in total. On a 3-point quality scale (bad, average, high quality) this result reflects a high quality. Broken down into the four quality dimensions of the HEPS quality checklist the following picture can be drawn:</p> <table border="0"> <tr> <td>Quality of Concept</td> <td>31/34</td> <td>high quality</td> </tr> <tr> <td>Quality of Structure</td> <td>10/14</td> <td>high quality</td> </tr> <tr> <td>Quality of Process</td> <td>4/12</td> <td>low quality</td> </tr> <tr> <td>Quality of Outcomes</td> <td>6/14</td> <td>average quality</td> </tr> </table>	Quality of Concept	31/34	high quality	Quality of Structure	10/14	high quality	Quality of Process	4/12	low quality	Quality of Outcomes	6/14	average quality
Quality of Concept	31/34	high quality											
Quality of Structure	10/14	high quality											
Quality of Process	4/12	low quality											
Quality of Outcomes	6/14	average quality											



	<p><b>Comments</b></p> <p>On the HEPS Quality checklist Growing Through Adolescence scored 51 out of 74, this reflects high quality. GTA is not an intervention or programme focused on delivery at a school or pupil level but a CPD Tool/ Resource. As such questions under the Quality of Process and Outcomes are not pertinent, and therefore score low/medium in assessment. However as a CPD resource and under the Quality of Concept and Structure, it is regarded as a model of good practice.</p>
Miscellaneous	<p>The resource was produced on the back of a great deal of research, and piloting and pre-testing. As well as the Scottish version, a European version also exists.</p> <p><a href="http://www.healthscotland.com/documents/2409.aspx">http://www.healthscotland.com/documents/2409.aspx</a></p> <p>NHS Health Scotland (2005). <i>Growing through Adolescence</i>. NHS Health Scotland, Edinburgh; <a href="http://www.euro.who.int/document/e87579.pdf">www.euro.who.int/document/e87579.pdf</a></p> <p>NHS Health Scotland (2007) <i>Evaluation of Growing Through Adolescence Resource and Associated Training for Trainers Course</i>. NHS Health Scotland, Edinburgh;  <a href="http://www.healthscotland.com/documents/2409.aspx">http://www.healthscotland.com/documents/2409.aspx</a></p> <p><a href="http://www.healthscotland.com">www.healthscotland.com</a></p>



■ APPENDIX 1

## HEPS QUALITY CHECKLIST

### Checklist for assessing the quality of school interventions on healthy eating and physical activity

Before assessing a school based intervention on healthy eating and physical activity please read the user instruction carefully (see chapter 2.2). For further assistance have a look at the indicator description and at the glossary which can be found in Appendix 2.

Title of the intervention:

Assessor

Name:

Organization:

E-mail address:

Date of assessment:

**Quality Dimension 1: Quality of concept (yes = 2 points, partly = 1 point, no = 0 points)**

1. Assessment & analysis		Page	Score
1.1	Is the intervention based on a needs assessment (e.g. epidemiological or learning outcome data)?	34	
1.2	Is the intervention based on an assessment of the school context in which the intervention will be implemented?	34	
2. Target group & objectives			
2.1	Is the target group clearly and specifically defined?	34	
2.2	Are the objectives clearly and specifically described?	34	
3. Principles & Health Promoting School approach			
3.1	Is the intervention based on a positive and comprehensive concept of health, which is focused on the promotion of resources and skills to enhance healthy eating and physical activity?	35	
3.2	Does the intervention include active participation from all the students of the school?	35	
3.3	Is the intervention focused on individual/ group behaviour, as well as on those school conditions which have an impact on healthy eating and physical activity?	35	
3.4	Does the intervention consider the whole school (class, school & surrounding school community) to promote healthy eating and physical activity?	35	
4. Intervention planning			
4.1	Is the intervention based on scientific evidence?	36	
4.2	Does the intervention involve parents/family?	36	
4.3	Is the intervention a multi-component approach, i.e. does it contain a combination of healthy eating and activity based components?	36	
4.4	Does the intervention include mental health aspects (e.g. body image, self esteem, coping strategies) in relation to the promotion of healthy eating and physical activity?	36	
4.5	Is the intervention linked with educational goals of the school?	36	
4.6	Have teachers or other professionals from the education sector been involved in the development of the intervention?	37	

4.7	Is the duration and intensity of the intervention based on scientific knowledge and experience?	37	
4.8	Do the intervention methods fit with the health promotion school approach?	37	
4.9	Do the intervention methods and contents fit with the target group requirements (e.g. age, gender, cultural background)?	37	

Overall score		
Score	Assessment	Final Score
34 – 24	High quality of concept	2
23 – 12	Average quality of concept	1
11 – 0	Low quality of concept	0

Please circle the final score in the right column which matches with the reached score in the left column

**Quality Dimension 2: Quality of structure (yes = 2 points, partly = 1 point, no = 0 points)**

5. Resources & qualifications		Page	Score
5.1	Are the costs of the whole intervention for the school clearly described?	38	
5.2	Are financial and other resources with regard to the intervention goals reasonable?	38	
5.3	Are the competencies (e.g. qualifications, skills) for realising the intervention described clearly?	38	
5.4	Is a training programme available to enhance skills for implementation?	38	
5.5	Is a manual available for the implementation of the intervention?	38	
6. Networking & cooperation			
6.1	Are strategies described on how to involve relevant partners outside the school setting?	38	
6.2	Does the intervention stimulate sustainable cooperation with organisations, groups or people outside the school setting?	39	

Overall score		
Score	Assessment	Final Score
14 – 10	High quality of structure	2
9 – 5	Average quality of structure	1
4 – 0	Low quality of structure	0

Please circle the final score in the right column which matches with the reached score in the left column

**Quality dimension 3: Quality of process (yes = 2 points, partly = 1 point, no = 0 points)**

7. Implementation & delivery		Page	Score
7.1	Are teachers and pupils involved in how to deliver the intervention?	39	
7.2	Does the implementation of the intervention fit with daily school routines and conditions?	39	
7.3	Are the intervention components described, which are essential for reliability of the intervention described?	39	
7.4	Is ongoing support (e.g. counselling/supervision) provided to those delivering the intervention (e.g. teachers)?	39	
8. Monitoring & controlling			
8.1	Are the methods which are going to be used to evaluate the process of the intervention described (e.g. implementation fidelity, satisfaction, acceptability)?	40	
8.2	Have strategies been devised to improve the intervention based on the results of the process evaluation and are these described?	40	

Overall score		
Score	Assessment	Final Score
12 – 9	High quality of process	2
8 – 4	Average quality of process	1
3 – 0	Low quality of process	0

Please circle the final score in the right column which matches with the reached score in the left column

**Quality dimension 4: Quality of results (yes = 2 points, partly = 1 point, no = 0 points)**

9. Effectiveness		Page	Score
9.1	Does the intervention achieve the objectives formulated in the planning of the intervention?	40	
9.2	Do the intervention results demonstrate a positive impact on health in terms of healthy eating and physical activity?	40	
9.3	Is there evidence that the positive impact on health related outcomes is sustained over a period of at least 6 months?	41	
9.4	Are the evaluation methods and procedures based on agreed scientific standards?	41	
9.5	Does the intervention demonstrate a positive impact on educational outcomes (e.g. learning, academic achievement, school climate, school absenteeism)?	41	
10. Efficiency			
10.1	Is the overall effort (costs, time) in balance with the effectiveness of the intervention?	41	
10.2	Are the costs (e.g. preparation time, personnel) for the school/ teachers in balance with the benefits of the intervention?	41	

Overall score		
Score	Assessment	Final Score
14 – 10	High quality of outcome	2
9 – 5	Average quality of outcome	1
4 – 0	Low quality of outcome	0

Please circle the final score in the right column which matches the reached score in the left column



## Summary

In the table below you can summarise the scorings of the intervention. Please fill in the achieved score of each quality dimension in the middle column and a final rating in the right column, which indicates a final assessment of each dimension (see table above). After summing up the final scores the total value can be compared with the overall evaluation table.

Quality Dimension	Reached score	Final Score
Quality of Concept	_____ /34	
Quality of Structure	_____ /14	
Quality of Process	_____ /12	
Quality of Outcomes	_____ /14	
Total		

Total Score	Overall evaluation of intervention quality
8-6	High intervention quality
5-4	Average intervention quality
0-3	Low intervention quality

## Description of indicators

Below you can read a short description for each indicator, which will assist you in using the HEPS quality checklist. Please read these carefully before assessing each indicator. Specific terms which are marked in italic are described in the glossary in more detail.

### 1. Quality of concept

#### 1.1 Is the intervention based on a needs assessment (e.g. epidemiological or learning outcome data)?

The starting point for each *intervention* is a comprehensive and systematic analysis of the health problem, its scope and its consequences [9, 18, 19, 21, 39]. This includes, for example the collection of epidemiological data about the *prevalence* and/ or *incidence* of being overweight, physical inactivity and related health problems in childhood and youth. Also data about the distribution of the problem should be available with regard to gender, age and socio-economic background. It should be clear from available literature what kind of individual (diseases) and societal (costs) consequences are caused by the problem.

#### 1.2 Is the intervention based on an assessment of the school context, in which the intervention will be implemented?

Based on the results of the needs assessment (1.1) an analysis of the school in which the *intervention* will be implemented should be completed [19]. This analysis could include information about the type of school and / or the grade level for which the *intervention* is intended as well as looking at specific access points (e.g. school head), barriers (e.g. teachers are not interested) and facilitating factors (e.g. motivation of the school head, consent from parents) which might effect implementation. Also helpful is information on the subjective demand, implementation readiness and wishes of pupils and teachers. This can be gathered by personal interviews, questionnaires beforehand or from a review of already established interventions.

#### 2.1 Is the target group clearly and specifically defined?

It must be made clear for which target group the *intervention* has been developed. [10, 18, 19, 20, 21] and the more specifically the target group is defined the better. This then makes it possible to evaluate whether the target group was reached successfully. Inclusion criteria which specify the target group should be stated such as age, gender, type of school and grade level as well as BMI, (e.g. boys and girls from the primary school with special focus on 10 to 12 year olds). If different target groups are intended for the *intervention* each group needs to be specified. Exclusion criteria such as BMI or type of school can also be stated. Interventions which address young people with obesity or further *secondary disorders* or diseases are not the subject of the HEPS quality checklist, if the *intervention* is focused on treatment. The HEPS quality checklist is oriented on school health promotion.

#### 2.2 Are the objectives clearly and specifically described?

It is important to be clear about what it is hoped the *intervention* will achieve [10, 18, 19, 20, 21]. The key in *intervention* success lies in clear and specific objectives. An objective should be defined clearly and specifically with little scope for interpretation. “Specific” means that the objective has to be defined by the measurable variables which the *intervention* aims to change. For example: increase the weekly hours spent doing physical activity in the playground for boys and girls aged 8 to 10 years.

Having specific and measurable objectives is a prerequisite to being able to assess the degree of target achievement. Unspecific and unclear objectives do not allow for meaningful evaluation and increase the chance that any change could be claimed a success for the *intervention*. Objectives must be realistic and sensible. For example, while it may be desirable to reduce the number of overweight young people by 100% it is in fact unrealistic and would depend on a great number of factors which cannot all be changed within the school setting.

3.1 Is the intervention based on a positive and comprehensive concept of health, which is focused on the promotion of resources and skills to enhance healthy eating and physical activity?

A positive concept of health focuses on the resources, skills and abilities of people which enable them to cope with everyday demands and make healthy decisions [19, 21, 40]. Interventions which are based on this positive *health promotion* concept improve the health by strengthening skills and capabilities of individuals to enable them to take responsibility and increase control over their life and health, for example in the field of healthy eating and physical activity. Interventions that are solely focused on the treatment of risks and complaints by viewing the individual as a patient are not based on a positive concept of health.

3.2 Does the intervention include participation of students of the school?

It is important that the students, who are the main target group of school interventions, feel like real participants who are not merely passive recipients but rather take an active part in the whole intervention [41, 42]. Active means that participation is not an empty catchword, which is fulfilled if children and young people are present in decision making processes and getting information about the results. Interventions, which are based on active participation, give them the power to influence and initiate decisions together with adults. The degree of active participation will not be the same with different age groups. Older children will need to participate more.

Examples: Decisions are made without students (no participation); students can take part in decision making processes but without the mandate to decide (partial participation); students have the power to initiate decisions or influence decisions and actions (active participation).

3.3 Is the intervention focused on individual/ group behaviour as well as on school conditions which have an impact on healthy eating and physical activity?

Interventions are more likely to be effective if they focus on factors influencing individual behaviours as well as looking at the school environment. Using this approach takes into account health related behaviours such as diet and physical activity and their modification as well as related health topics like coping with stress or *self-esteem* and *self-efficacy*. These apply directly on the individual level.

‘School conditions’ refers more to the physical, economic and social environment within the school setting, which have an impact on individual health like healthy eating and physical activity. These include measures such as the creation of playgrounds, schoolyards, school canteens or the reduction of vending machines in the school.

3.4 Does the intervention consider the whole school (e.g. class, school & surrounding school community) to promote healthy eating and physical activity?

This item refers to the *whole school approach to health* and to the necessity that interventions should consider different levels both within and outside the school [43, 44]. The class is clearly one operating level but the term ‘school’ refers more widely to the physical building and includes not only the class-rooms but also other facilities like the school canteen, the corridors and recreation rooms. The school environment relates further to the surroundings outside school like playgrounds, the schoolyard etc. Then beyond this again the wider environment is more focused on the surrounding school community and involves external organisations like sport clubs, counselling and health services.

The intervention does not need to focus on all different levels, but it has to ensure that more than one level is included.

#### 4.1 Is the intervention based on scientific evidence?

Each intervention should be based on sound scientific theory and research [10, 32]. A theoretical basis provides an understanding about the *determinants* of a health related topic and describes how different factors are interconnected. It also gives *evidence based* information on how factors can be influenced through organised and professional activity. Each *intervention* should provide detailed information on the theoretical basis, which underlies it and specifically its content and its methodological approach. Scientific evidence from empirical research which underscores this theoretical basis, should also be given.

#### 4.2 Does the intervention involve parents/ the family?

Healthy eating and physical activity are topics, which are influenced not only by the school, but also by family and social background [25, 29, 28, 38]. Through the involvement of parents/guardians or other family members in the intervention it should be ensured that initiated changes in attitudes and behaviours are also established, promoted and maintained in the family context. Involvement of parents/family may increase co-operation readiness and thematic sensibility. The degree of parents/family involvement depends on the age of the children or young people [20]. Especially for young children whose eating and physical activity is strongly influenced by what is happening at home the degree of involvement by parents/family should be high. This involvement could include special trainings for parents or several parent-teacher conferences and common activities in the school. As the age of the target group increases (especially as they become young people in adolescence) the degree of involvement can decrease but should always remain on a minimal level which could mean a parent-teacher conference or an information sheet at the start of the *intervention*.

#### 4.3 Is the intervention a multi component approach, i.e. does it contain a combination of healthy eating and activity based components?

It is suggested that combined approaches involving healthy eating elements as well as activity based elements are most effective [20, 29, 27, 28]. An example of a combined approach is an intervention which includes classroom based education to increase fitness and nutrition, a regular breakfast club as well as the creation of an activity friendly schoolyard.

#### 4.4 Does the intervention include mental health aspects [e.g. body image, self esteem, coping strategies] in relation to the promotion of healthy eating and physical activity?

Healthy eating and physical activity are linked with various aspects of mental health. Overweight and obese children and young people are more often affected with *psychosomatic complaints* and disorders [45]. Further, reduced physical activity in childhood and youth is associated with reduced *self-efficacy* [46]. Mental health related aspects should not be neglected in interventions, which aim at the promotion of healthy eating and physical activity. Mental health should be recognisable, meaning that the intervention also includes aspects of mental health. For example, the *intervention* fosters a positive body image or improves *coping strategies*, which avoid inappropriate behaviours in stressful situations. Also the promotion of *self esteem*, *self-efficacy* or other personal resources could be part of these interventions.

#### 4.5 Is the intervention linked with educational goals of the school?

The primary task of schools is the fulfilment of educational responsibilities for children and young people. Health related *interventions* in the school setting are more feasible (for implementation) and effective if the educational mandate of school is widely recognized in the intervention [47]. Several research results show that physical inactivity and *overweight* children are associated with lower results in school [48]. The more the interventions consider education related indicators and their link to health in the planning, the better. Educational indicators are academic achievement, learning aptitude, *social climate* in schools or school absenteeism. If the intervention considers this aspect explicitly, the item can be marked as fulfilled.

4.6 Have teachers or other professionals from the education sector been involved in the development of the intervention?

Teachers, principles or other professionals from the education sector (e.g. school psychologist, school social worker) are an important target group in the planning of an intervention. Since the school context is their primary field of work, they have an overview about what works and what does not. Therefore they should be involved in the planning of any school based intervention, especially if they have to carry out the intervention [18]. They can give valuable support and feedback on the content and methodology, at the planning stage. Active involvement at this stage increases motivation and awareness of the intervention. Further this ensures that the mismatch between planned implementation and real implementation is reduced. Interventions that involve teachers and other professions from the education sector in a systematic and active way in the planning of the intervention meet the demand of this indicator.

4.7 Is the duration and intensity of the intervention based on scientific knowledge and experience?

Reviews demonstrate that interventions, which are applied over a long term (e.g. 6 months) are more effective than short term interventions [29]. This does not necessarily mean that interventions which are implemented over a period of at least 6 months are automatically of high quality and interventions which were applied for a shorter term are of low quality. It has to be clearly explained why the intervention is planned for a specific duration (i.e. the length of the whole intervention) and intensity (i.e. frequency e.g. 3 times a week). This explanation should be based on scientific knowledge.

4.8 Do the intervention methods fit with the health promoting school approach?

The health promoting school approach as described in 3.1 to 3.4 requires methods and strategies, which are based on democracy and participation through active involvement of different groups like teachers, pupils, families etc. and which are based on equity through equal access. Methods using the health promoting school approach are focused on the empowerment of children and young people and supports them to increase their action competence [49]. In doing so, the methods include group work, discussion circles, shared actions, games, simulations etc. [50]. They are not focused on moralising. Appropriate methods contain positive messages, which motivate and support a sense of responsibility and manageability of ones own health behaviour, including healthy eating and physical activity.

4.9 Do the intervention methods and contents fit with the target group requirements (e.g. age, gender, multicultural background)?

Each intervention has to show that the content and applied methods are sensible for the intended target group in terms of gender, age, socioeconomic und multicultural background. With regard to age, methods should be appropriate for different physical and cognitive developmental stages. For example, young children have other sporting interests and movement skills than adolescents. In addition family involvement is more important in childhood than in youth. Body image is more a topic for girls, whereas bullying or video games (as sedentary behaviour) is of greater relevance for boys. Also with regard to multicultural issues, the intervention should be sensitive. Eating habits and behaviours depend greatly on different cultural norms and values. Interventions that comprehensively and systematically consider target group characteristics in the planning of the intervention content and methods fully meet the demand of this indicator.

## 2. Quality of structure

### 5.1 Are the costs of the whole intervention for the school clearly described?

It has to be clear through available descriptions what exactly the *intervention* will demand in the way of resources from the school. [19, 21]. Schools can then estimate the effort required to implement the *intervention*. Ambiguity about costs for schools can cause difficulties and frustration in the *implementation* and can affect the success of the *intervention*. Resources required of the school include time for *intervention* realisation as well as personnel, material and financial resources. *Interventions* which provide comprehensive information about these resources, fulfil this indicator. It is desirable that *interventions* also give information on how to obtain the resources through for example sponsoring, fundraising.

### 5.2 Are financial and other resources with regard to the intervention goals reasonable?

A balance must be struck between the goals of the *intervention* and the resources required for the whole *intervention* (not only those which are school related) [10, 18]. Especially in times of scarce resources this question is of high relevance. The correct balance can be made based on the given information about what will be required in terms of financial resources on the one side and the aims and objectives of the *intervention* on the other. The results of other external evaluations can be useful here.

### 5.3 Are the competencies (e.g. qualifications, skills) for realising the intervention described clearly?

It is important to know what competencies and qualifications are needed to carry out the *intervention* [10, 18, 19, 20, 21]. Whereas some *interventions* require an academic degree for example, in home economics and nutrition, sport sciences or public health others call for experiences and skills in psychological topics. Even if no special competencies or skills are needed to implement the *intervention*, information should be given. If no information is available, it is not clear who exactly should carry it out. If no-one is given the overall responsibility of *implementation* then formal monitoring of that role is not possible. This could be very counterproductive and minimise the success of the *intervention*.

### 5.4 Is a training programme available to enhance skills for implementation?

If special competencies are required to implement the *intervention*, a training programme should be available to prepare the teachers or other persons to deliver it [18, 19, 20]. In case there is no training programme available, although special competencies and qualifications are needed, it could be regarded as a lack of structural quality, which may lead to difficulties in the *implementation* phase. Together with the availability of a training programme it is desirable for the *intervention* to provide information about the frequency of trainings and the costs as well as the required attendance.

### 5.5 Is a manual available for the implementation of the intervention?

A detailed manual is required which gives instructions and support on how to conduct the components of the *intervention* [20]. Such a manual or guide should contain an overview of the processes and contents of the whole *intervention*. It does not only include a comprehensive description of the *intervention* and its components, it ideally also contains a detailed schedule list of required materials and information about difficulties and how to overcome these. This should support a high quality *implementation* phase. Also it ensures that the *intervention* is implemented in a way, which is in line with the planning phase.

### 6.1 Are strategies described on how to involve relevant partners outside the school setting?

*Interventions* on healthy eating and physical activity which are also embedded in the surrounding school community, are more promising than *interventions* that exclusively focus on one school level (e.g. class). Relevant partners outside the school setting are for example local sport and youth clubs, health authorities, health insurances, counselling providers, restaurants and also parents, family etc. Information or recommendations that include a list of relevant local partners and organisations which are active in the field of

healthy eating and physical activity are useful. It is also useful to develop a strategy which could be adopted by these external partners on how they can be involved practically in the intervention. Through the involvement of external organisations and persons productive collaborations can be established [19, 21].

#### 6.2 Does the intervention stimulate sustainable co-operation with organisations, groups or people outside the school setting?

It is important that the “school – school community network” lasts over the time period of the implementation phase. Interventions which are of high quality include instructions about how sustainable networks/cooperation can be reached. Methods and strategies are developed towards co-operation with relevant partners becoming a daily part of the school life to promote healthy eating and physical activity.

### 3. Quality of Process

#### 7.1 Are teachers and pupils involved in how to deliver the intervention?

This indicator focuses on an assessment of the extent of involvement of pupils and teachers during the implementation phase. Participation and involvement should be an integral part of the whole intervention which ranges from the planning to the implementation [10, 18, 19, 21, 41, 42]. Do pupils and teachers have a say in how the intervention is delivered? Involvement in the implementation phase could include for example, pupils and teachers influencing how to create the schoolyard and playing facilities, what kind of food is prepared or which health topics they want to discuss in the classroom. More examples are presented in the HEPS Guidelines [51]. The intervention should contain detailed information how the active involvement within the implementation is ensured.

#### 7.2 Does the implementation of the intervention fit with daily school routines and conditions?

Daily school routines and conditions refer to the way the school is organised. This includes the administrative structure, the timetable, the curriculum and the activities beyond the curriculum such as school conferences. Promising interventions have to assure that the intervention is properly and appropriately embedded within the individual school context. Intervention components are implemented within school hours without compromising the regular teaching, that class based lessons on healthy eating and physical activity fit with regular school hours or that the intervention deliverer from outside the school has consulted teachers about the implementation of the intervention. If the intervention has been planned with consideration to how the implementation fits with school routines and conditions in a systematic manner, this indicator is fulfilled.

#### 7.3 Are intervention components described, which are essential for intervention fidelity?

Intervention fidelity refers to whether the whole intervention or intervention components were delivered in the school setting as planned. It reflects the degree of consistency between the planning and the implementation. If this kind of information is unknown, it is not clear if poor outcomes are caused by an ineffective intervention, or an intervention which is implemented poorly [37]. One way to increase intervention fidelity is to specify which intervention components have to be implemented as planned without any adaptations and which components and parts are flexible for school adaptations. Without this information the fidelity will decrease, which may lead to a lack of effectiveness. Therefore available literature and descriptions of the intervention has to demonstrate which parts and components are essential for intervention success. The components which are suitable for adaptation should be marked and a description of what exactly can be changed attached.

#### 7.4 Is ongoing support (e.g. counselling) provided to the deliverer of the intervention (e.g. teachers)?

It should be ensured that those who are responsible for carrying out the intervention, can receive support to discuss problems and difficulties in implementing the intervention [18, 21]. Ongoing means that the provider of the intervention offers a continuous support in addition to the initial training. This can include

a helpdesk via telephone or email or periodic meetings, counselling or supervision by an experienced professional. The intervention should also give information about the frequency of available support and its costs.

8.1 Are methods described, how to evaluate the process of the intervention (e.g. implementation fidelity, satisfaction, acceptability)?

Assessment and monitoring of the implementation of the intervention is important [9, 19, 21, 37, 52]. Difficulties at this stage will result in decreased effectiveness. If it is identified early on that difficulties are being encountered then measures can be taken to address this. Monitoring indicators include an assessment of readiness for implementation, satisfaction with the planned implementation and how acceptable it is as a choice of intervention. *Intervention fidelity* (see 7.3) can be assessed by monitoring the frequency, duration and degree to which the intervention is delivered as planned. It should be made clear how monitoring will be ensured and this is done through available literature or the description of the intervention. This description should indicate which methods and materials will be used in the assessment of the process.

8.2 Are strategies described, how the results of the process evaluation can be used for the improvement of intervention implementation?

Strategies and recommendations should be provided on how to overcome difficulties and problems which arise from the process evaluation. The aim is to describe problematic issues, which typically occur during the implementation and to demonstrate solutions which can be adopted by those who are responsible for the implementation. These could be strategies to increase implementation readiness and motivation as well as recommendations on how to improve the use of available resources (time, personnel etc.).

## 4. Quality of Results

9.1 Does the intervention achieve the desired objectives formulated in the intervention planning?

The achievement of the underlying objectives of the intervention is a fundamental indicator for the assessment of intervention effectiveness and success [18, 19, 21]. The question is whether there is any *evidence* that the objectives formulated in the planning of the intervention are achieved. To evaluate, whether and to what extent the objectives are attained, it is necessary that the goals are defined very clearly at the beginning of the intervention (see 2.2). Information should be given if the objectives are reached for the whole target group or with limitations for certain subgroups and with regard to gender, age etc. If the objectives were not or only partly reached, a critical evaluation about the reasons should also be available.

9.2 Do the intervention results demonstrate a positive impact on health in terms of healthy eating and physical activity?

A successful and effective *intervention* has to demonstrate a positive change in health related parameters with regard to healthy eating and physical activity. There are many indicators, which show whether the intervention is being effective or not [10, 53]. Positive effects on the first outcome level are measured by looking at school structures and practices followed by knowledge about healthy eating and physical activity or attitudes and behavioural intentions. Outcomes on an intermediate level are, for example, change in health behaviour such as an increase of hours spent doing vigorous physical activity per week or an increase of fruit and vegetable consumption. Other intermediate outcomes bear on a healthy school environment like the establishment of a healthy canteen, active-friendly facilities or the reduction of vending machines. More difficult is the evidence of health outcomes like a decrease in the number of *overweight children* because this can not be observed immediately, but only after a long time period and reflects the end of the outcome chain. To meet the requirements of this indicator, the intervention should show a positive outcome on the first and intermediate outcome level with regard to healthy eating and physical activity.



9.3 Is there evidence that the positive impact on health related parameters sustains over a period of at least 6 months?

Interventions, which are of high quality, must also demonstrate that the positive effects persist even after a time period of at least six months. The longer a positive impact like healthy behaviours is evident, the more likely the child or young person will continue this positive behaviour. To examine long term effects follow up studies are required. Interventions that show that at least one positive effect sustained over a half year, fully meet the demands of this indicator.

9.4 Are the evaluation methods and procedures based on agreed scientific research?

Through the information which is available about the intervention it must be apparent that the applied methods and procedures are rooted in sound scientific theory and research [18, 19]. This includes detailed information about the study design, the underlying research questions which emerged from the planning of the intervention, the indicators and variables and the methods which were applied for data collection and statistical analysis. The study design and research methods should be able to verify whether the observed effects are caused by the intervention.

9.5 Does the intervention demonstrate a positive impact on educational outcomes (e.g. learning, academic achievement, school climate, school absenteeism)?

Each intervention which is carried out in the school setting has to consider educational outcomes as well [18, 44]. School and education related indicators are: learning motivation, school climate, school solidarity and academic achievement or school absenteeism. For educational outcomes we also need to distinguish between direct and mid-term outcomes as well as long-term outcomes. Positive changes in learning attitudes and motivation as well as school climate are direct and intermediate outcomes, whereas changes in academic achievement and school absenteeism reflect more long term outcomes. If the intervention shows any educational outcomes this indicator fully meets the quality requirements.

10.1 Is the overall effort (costs, time) in balance with the effectiveness of the intervention?

Even if the intervention yields positive effects this does not mean the intervention has been efficient. Within a cost-effectiveness analysis all expenditures should be set alongside the outcomes. Expenditures relating to the intervention include costs for staff, material, time etc. whereas the outcome is measured in non-monetary effects which are indicated by the effectiveness evaluation.

The intervention can be assessed as being efficient if a cost-effectiveness analysis is conducted, the methods and procedures are clearly described and the results demonstrate a positive balance. Ideally the provider of the intervention will have compared cost-effectiveness results with the cost-effectiveness findings of other school based interventions in the field of healthy eating and physical activity. This requires that the interventions used for comparisons are characterised by similar conditions and features.

10.2 Are the costs (e.g. preparation time, personnel) for the school/ teachers in balance with the benefits of the intervention?

The cost-effectiveness analysis should also include the perspective of the schools in which the intervention is implemented [18]. Costs for the school include time for preparation and school personnel, while outcomes are related primarily to the education of the children and secondarily to their health. Efficiency for schools could also include subjective perceptions from teachers, school heads and other professionals from the education sector. The intervention can be assessed as having been efficient if a cost-effectiveness analysis is conducted, the methods and procedures are clearly described and the results demonstrate a positive balance. Ideally the provider of the intervention will have compared their cost-effectiveness results with the cost-effectiveness findings of other school based interventions in the field of healthy eating and physical activity. This requires that the interventions used for comparisons are characterised by similar conditions and features.



## Glossary of basic terms

Term	Description
Action competence	Action competence is the ability to act and bring about positive change with regard to health (49).
Benchmark	Benchmark can be defined as the use of comparative data from similar interventions, activities etc. to set the standard of best practice and therefore measure success and specific needs for improvement.
BMI	Body mass index (BMI) is the index of weight-for-height that is commonly used in classifying what it means to be overweight or obese. It uses weight in kilograms divided by the square of the height in meters (kg/m <sup>2</sup> ) (54).
Coping	Coping refers to the person's cognitive and behavioural efforts to manage (reduce, minimize, master, or tolerate) the internal and external demands of the person-environment transaction that is taxing or exceeding the person's resources (55).
Cost-effectiveness	Cost-effectiveness indicates the relation between financial expenditures on the one side and the outcome (impact) of an intervention on the other. With a positive cost effectiveness the outcomes exceed the financial expenditures of the intervention.
Effectiveness	Adequacy of an intervention in terms of its intended effect (56).
Efficiency	The relation between a result and the means employed to achieve it (56).
Empowerment	In health promotion, empowerment is a process through which people gain control over decisions and actions affecting their health (40).
Evidence-based health promotion	The use of information derived from formal research and systematic investigation to identify causes and contributing factors to health needs and the most effective health promotion actions to address these in given contexts and populations (39).
Health determinants	Determinants of health encompass a variety of factors which influence the health status of individuals, groups or the whole population. This includes the social and economic environment, the physical environment as well as the person's individual characteristics and behaviours (40).

Health intervention	Health interventions can be defined as actions which are founded in health sciences and aim at systematically and sustainably changing individual behaviour and/ or the surrounding conditions. Two fundamental orientations can be distinguished: health interventions which aim at the promotion of health/ well-being (health promotion) and interventions which are focused on the avoidance of diseases (prevention) (1).
Health promotion	Health promotion is the process of enabling people to increase control over, and improve their health (40).
Health risk	Social, economic or biological status, behaviours or environments which are associated with or cause increased susceptibility to a specific disease, ill health, or injury (40).
Health promotion school approach	A health promoting school is one that constantly strengthens its capacity as a healthy setting for living, learning and working. A health promoting school engages health and education professionals, teachers, students, parents and community leaders in efforts to promote health. It fosters health and learning with all the available measures and strives to provide supportive environments for health and a range of key school health education and promotion programs and services. A health promoting school implements policies, practices and other measures that respect an individual's self esteem, provide multiple opportunities for success, and acknowledge good efforts and intentions as well as personal achievements. It strives to improve the health of school personnel, families and community members as well as students, and works with community leaders to help them understand how the community contributes to health and education (40).
Incidence	Number of new cases of a defined population group at a certain time (57)
Implementation	Implementation refers to how well a proposed programme or intervention is put into practice (52). Different components of implementation are implementation fidelity, frequency and duration of the intervention, quality of delivery, responsiveness of participants (37).
Intervention fidelity	Intervention fidelity or adherence refers to the question, if and to which extent the whole intervention or intervention components is/were delivered in the school setting as planned (37). It reflects the degree of consistency between the planning and the implementation.
Monitoring	Continuous or periodic systematic data collection used for checking processes and results (31).
Overweight	Although there is no consensus on how to define what is overweight in childhood and adolescence it is widely common to use a gender and age specific percentile (value below which a certain percent of observations fall). For Europe 'overweight' is classified as at or above the 85th percentile and obesity as at or above the 95th percentile of BMI (36).

Participation	Participation happens at different levels and can range from a sense of “taking part in” to “having part or share in something”. The latter implies the sharing of power in the decision making processes in relation to contextual matters (like school). This understanding reflects a sense of self-determination, ownership and empowerment in relation to learning about health (20, 40).
Prevention	Whereas health promotion is oriented at the strengthening of health through the improvement of resources and capabilities, prevention is oriented on the conservation of health through avoidance of risks and diseases. Depending on the time it can be differentiated between primary prevention (avoidance of the genesis of a diseases), secondary prevention (early diagnosis of diseases) and tertiary prevention (avoidance of an elapse).
Prevalence	Number of cases of a defined population group at a certain time (56).
Point	prevalence refers to the number of cases to a specific time whereas period prevalence relates to the number of cases in a defined time period (1 month, 12 months etc.)
Psychosomatic complaints	Psychosomatic complaints and illnesses are characterised by physical symptoms that cannot be fully explained by a neurological or generalized medical (“organic”) condition (58).
Quality indicator	A specially selected measure that may indicate a good or poor quality (10)
School climate	School climate can be defined as the quality and frequency of interactions among and between adults and students (59).
Secondary disorders	Secondary disorders are diseases, which were caused by an earlier disease or event. Type II diabetes, high blood pressure, heart attacks for example are secondary diseases which can be caused by obesity.
Sedentary behaviour	Sedentary behaviours are a behavioural pattern involving no or a minimum degree of physical activity. Examples for those behaviours are: TV watching, computing, playing video games etc.
Self-efficacy	Self-efficacy refers to beliefs that individuals hold about their capability to carry out actions in a way that will influence the events that affect their lives (39).
Self-esteem	Self esteem refers to the extent, to which a person values, prizes or likes herself or himself. It describes a favourable or unfavourable attitude towards the self (60).
Socioeconomic status (SES)	‘Socioeconomic status’ describes an individual or family’s economic and social position in relation to others which is usually determined by a family’s income.

Stress	Stress is produced through the relationship between a person and their environment. More specifically an environment that is felt to be taxing or exceeding their resources and therefore as endangering wellbeing (55).
Sustainability	Intended impacts of a project which last longer than the project itself (56).
Whole school approach to health	<p>A whole school approach to health is marked by:</p> <ul style="list-style-type: none"> <li>· a participatory and action-oriented approach to health education in the curriculum</li> <li>· taking into account student's own concept of health</li> <li>· developing healthy school policies</li> <li>· developing the physical and social environment of the school</li> <li>· developing life competencies</li> <li>· making effective links with home and the community</li> <li>· making efficient use of health services (5).</li> </ul> <p>A whole school approach focuses not only on the health of pupils but also of teachers and non-teaching staff. It also aims at the promotion of educational quality through health measures such as the good and healthy school approach (47).</p>

## ■ REFERENCES

1. Michaelsen-Gärtner, B., Witteriede, H. & Paulus, P. (2009). Gesundheitserziehung in Schulen. [Health Education in Schools]. In B. Wulfhorst & Hurrelmann, K. (Ed.). Hand-buch Gesundheitserziehung [Handbook of Health Education] (160-170). Bern, Hans Huber.
2. Aro, A. A., Van den Broucke, S. & Rätty, S. (2005). Toward European consensus tools for reviewing the evidence and enhancing the quality of health promotion practice. *Promotion & Education, Suppl.* 1, 10-14.
3. WHO (2009). The Ottawa Charter for Health Promotion. Retrieved from the World Wide Web on November 11th 2009, from <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
4. Stewart-Brown, S. (2001). Evaluating health promotion in schools: reflections. In I. Rootman, M. Goodstadt, B. Hyndman, D. V. McQueen, L. Potvin, J. Springett et al. (Ed.). *Evaluation in health promotion. Principles and Perspectives* (271-284). Copenhagen, WHO.
5. Buijs, G. (2009). SHE strategic plan 2008-2012. Woerden, NIGZ.
6. Christiansen, G. (1999). Evaluation as a Quality Assurance Tool in Health Promotion. Köln, BZgA.
7. Øvretveit, J. (1996). Quality in health promotion. *Health Promotion International*, 11, 55-62.
8. Lohr, K. M. (Ed.) (1990). *Medicare – A strategy for quality assurance*. Washington, DC, Institute of Medicine.
9. Ruckstuhl, B., Kolip, P. & Gutzweiler, F. (2001). Qualitätsparameter in der Prävention [quality parameter in prevention]. In BZgA (Ed.). *Qualitätsmanagement in Gesundheitsförderung und Prävention* [Quality management in health promotion and prevention] (38-50). Köln, BZgA.
10. Ader, M., Berensson, K., Carlsson, P., Granath, M. & Urwitz, V. (2001). Quality indicators for health promotion programmes. *Health Promotion International*, 16, 187-195.
11. Parish, R. (2001). Health promotion. Towards a quality assurance framework. In I. Rootman, M. Goodstadt, B. Hyndman, D. V. McQueen, L. Potvin, J. Springett et al. (Ed.). *Evaluation in health promotion. Principles and Perspectives* (171-184). Copenhagen, WHO.
12. Ruckstuhl, B., Studer, H. & Somaini, B. (1998). Eine Qualitätskultur für die Gesundheitsförderung! [A quality culture for health promotion]. *Soz.-Präventivmedizin*, 43, 221-228.
13. Donabedian, A. (2003). *An Introduction to Quality Assurance in Health Care*. New York, Oxford University Press.
14. Trojan, A. (2001). Qualitätsentwicklung in der Gesundheitsförderung [Quality development in health promotion]. In BZgA (Ed.). *Qualitätsmanagement in Gesundheitsförderung und Prävention* [Quality management in health promotion and prevention] (51-72). Köln, BZgA.
15. Buijs, G. & Ruiter de, S. (2008). Summary Dutch toolkit overweight in schools. Woerden, NIGZ.
16. Bühler, A. & Heppekausen, K. (2005). Gesundheitsförderung durch Lebenskompetenzprogramme in Deutschland [Health promotion through life skill programmes in Germany]. Köln, BZgA.
17. Kaluza, G. & Lohaus, A. (2006). Psychologische Gesundheitsförderung im Kindes- und Jugendalter. *Zeitschrift für Gesundheitspsychologie* [Mental health promotion programmes for childhood and adolescence]. *Gesundheitspsychologie*, 3, 119-143.
18. Peters, L. W. H., Leurs, M. T. W., Keijsers, J. F. E. M. & Schaalma, H. P. (2008). Development of the schoolBeat quality checklist for healthy school interventions. In Leurs, M. (Ed.) *A collaborative approach to tailored whole-school health promotion* (69-81). En-schede: Ipskamp.
19. GEP, NIGZ, VIG (2005). European Quality Instrument for Health Promotion (EQUIPH). Retrieved from the World Wide Web on April 15th, from [http://ws5.e-  
vision.nl/system3/images/Annexe%2010%20EQUIHP.pdf](http://ws5.e-<br/>vision.nl/system3/images/Annexe%2010%20EQUIHP.pdf)
20. BZgA (2006). Quality criteria for programmes to prevent and treat overweight and obesity in children and adolescents. Cologne, BZgA.
21. quint-essenz (2009). Quality criteria for projects version 5.0. Retrieved from the World Wide Web on April 15th, from <http://www.quint-essenz.ch/en/files/Quality—criteria—50.pdf>
22. Molleman, G., Peters, L., Hommels, L. & Ploeg, M. (2003). Health Promotion Effect Management Instrument Preffi 2.0. Retrieved from the World Wide Web on April 15th, from <http://www.nigz.nl/index—en.cfm?act=esite.tonen&a=6&b=54>.
23. BZgA. (2005). Kriterien guter Praxis in der Gesundheitsförderung bei sozial Benachteiligten [Criteria of good practice in health promotion for social disadvantaged]. Köln, BZgA.

24. Kliche, T., Töppich, J., Kawski, S., Koch, U. & Lehmann, H. (2004). Die Beurteilung der Struktur-, Prozess- und Ergebnisqualität von Gesundheitsförderung und Prävention. Anforderungen und Lösungen [The assessment of structural, process and outcome quality of health promotion and prevention. Demands and solutions]. *Bundesgesundheitsbl – Gesundheitsforsch – Gesundheitsschutz*, 47, 125-132.
25. Dobbins M, DeCorby K, Robeson P, Husson H & Tirilis D. School-based physical activity programs for promoting physical activity and fitness in children and adolescents aged 6-18. *Cochrane Database of Systematic Reviews* 2009, Issue 1.
26. Dietz, W. H. & Gortmaker, S. L. (2001). Preventing Obesity in Children and Adolescents. *Annu. Rev. Public Health*, 22, 337-353.
27. CDC (2005). Public health strategies for preventing and controlling overweight and obesity in school and worksite settings: a report on recommendations of the Task Force on Community Preventive Services. *MMWR*, 54(No. RR-10).
28. Katz, D. L., O'Connell, M., Njiki, V. Y., Yeh, M.-C. & Nawaz, H. (2008). Strategies for the prevention and control of obesity in the school setting: systematic review and meta-analysis. *International Journal of Obesity*, 32, 1780-1789.
29. Bautista-Castaño, I., Doreste, J. & Serra-Majem, L. (2004). Effectiveness of interventions in the prevention of childhood obesity. *European Journal of Epidemiology*, 19, 617-622.
30. Dehghan, M., Akhtar-Danesh, N. & Merchant, A. T. (2005). Childhood obesity, prevalence and prevention. *Nutrition Journal*, 4:24.
31. Shaya, F. T., Flores, D., Gbarayor, C. M. & Wang, J. (2008). School-Based Obesity Interventions: A Literature Review. *Journal of School Health*, 78, 189-196.
32. Lissau, I. (2007). Prevention of overweight in the school arena. *Acta Pædiatrica*, 96, 12-18.
33. Roe, L., Hunt, P., Bradshaw, H. & Rayner, M. (1997). Health promotion interventions to promote healthy eating in the general population – a review. London, Health Education Authority.
34. Sluijs van, E. M. F., McMinn, A. M. & Griffin, S. J. (2007). Effectiveness of interventions to promote physical activity in children and adolescents: systematic review of controlled trials. *BMJ*, 335, 703.
35. Wechsler, H., Devereaux, R. S., Davis, A. B. M. & Collins, J. (2000). Using the School Environment to Promote Physical Activity and Healthy Eating. *Preventive Medicine*, 31, 121-137.
36. Summerbell, C. D., Waters, E., Edmunds, L. D., Kelly, S., Brown, T. & Campbell, K. J. (2005). Interventions for preventing obesity in children. *Cochrane Database of Systematic Reviews*, 20, 1-73.
37. Barry, M. M., Domitrovich, C. & Lara, M. A. (2005). The implementation of mental health promotion programmes. *Promotion & Education. Supp.2*, 30-36.
38. Müller, M.; Danielzik, S. & Pust, S. (2005). School- and family-based interventions to prevent overweight in children. *Proceedings of the Nutrition Society*, 64, 249-254.
39. Smith, B.J., Tang, K.C. & Nutbeam, D. (2006). WHO Health Promotion Glossary: new terms. *Health Promotion International*, 21(4), 340-345.
40. WHO (1998). Health promotion glossary. Geneva, WHO.
41. Simovska, V. (2007). The changing meaning of participation in school based health-education and health promotion: the participants' voices. *Health Education Research*, 22, 864-878.
42. Simovska, V. & Jensen, B.B. (2009). Conceptualizing participation – the health of children and young people. Denmark: WHO Regional Office for Europe.
43. Stewart-Brown, S. (2006). What is the evidence on school health promotion in improving health or preventing disease and, specifically, what is the effectiveness of the health promotion schools approach. Copenhagen, WHO.
44. Paulus, P. (2007). 20 Years of Health Promotion Research in and on Settings in Europe - the case of School Health Promotion, *Italian Journal of Public Health*, 4(4), 248-254.
45. Eschenbeck, H., Kohlmann, C.-W., Dudey, S. & Schürholz, T. (2009). Physician Diagnosed Obesity in German 6- to 12- Year-Olds. Prevalence and Comorbidity of Internalising Disorders, Externalising Disorders, and Sleep Disorders. *Obesity Facts*, 2, 67-73.
46. Valois, R. F. Umstadtd, M. R., Zullig, K.J. & Paxton, R.J. (2008). Physical Activity Behaviors and Emotional Self-Efficacy: Is There a Relationship for Adolescents? *Journal of School Health*, 78(6), 321-327.



47. Paulus, P. (2009). Anschub.de. Ein Programm zur Förderung der guten gesunde Schule. [Anschub.de – a programme for the promotion of the good healthy school] Münster: Waxmann.
48. Taras, H. (2005). Physical Activity and Student Performance at School. *Journal of School Health*, 75, 214-218.
49. Jensen, B. B. (1997). A case of two paradigms within health education. *Health Education Research*, 12, 419-428.
50. Gray, G., Young, I. & Barnekow, V. (2006). Developing a health-promoting school. A practical resource for developing effective partnerships in school health, based on the experience of the European Network of Health Promoting Schools. ENHPS.
51. Boonen, A., Vries de, N., Ruiter de, S., Bowker, S. & Buijs, G. (2009). HEPS Guidelines. Guidelines on promoting healthy eating and physical activity in schools. Woerden, NIGZ.
52. Durlak, J. A. (1998). Why Program Implementation is Important. *Journal of Prevention & Intervention in the Community*, 17, 5-18.
53. Nutbeam, D. (1998). Evaluating health promotion - progress, problems and solutions. *Health Promotion International*, 13, 27-44.
54. WHO (2006). Obesity and Overweight. Fact sheet N° 311. Retrieved from the World Wide Web on August 11th, 2009 from <http://www.who.int/mediacentre/factsheets/fs311/en/index.html>.
55. Folkman, S., Lazarus, R.S., Gruen, R.J. & DeLongis, A. (1986). Appraisal, Coping, Health Status, and Psychological Symptoms. *Journal of Personality and Social Psychology*, 50, 571-579.
56. Quint-Essenz (2008). Glossary. Retrieved from the World Wide Web on August 11th, 2009 from <http://www.quint-essenz.ch/en/resources>.
57. Bonita, R., Beaglehole, R. & Kiehlström, T. (2006). *Basic epidemiology* (2nd edition). Geneva, WHO.
58. Oatis, M. D. (2002). Psychosomatic Illness in Children and Adolescents. *NYU Child Study Letter*, 6(3).
59. Kuperminc, G. P., Leadbeater, B. J. & Blatt, S. J. (2001): School Social Climate and Individual Differences in Vulnerability to Psychopathology among Middle School Students. *Journal of School Psychology*, 39, 141-159.
60. Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ, Princeton University Press.

### Useful web resources

#### 1. Quality instruments for health interventions (selection)

- Criteria for good practice in health promotion for social disadvantaged people (only available in German)  
<http://www.bzga.de>
- European quality instrument for health promotion (EQUIHP)  
<http://subsites.nigz.nl/system3/site2>
- Preffi  
<http://www.preffi.nl>
- Quality in prevention (only available in German)  
<http://www.uke.de/extern/qip>
- Quality criteria for programmes to prevent and treat children and adolescents who are overweight and obese  
<http://www.bzga.de>
- Quint Essenz  
<http://www.quint-essenz.ch>

#### 2. Databases relating to healthy eating and activity (selection)

- Platform for eating and activity (only available in German)  
<http://www.ernaehrung-und-bewegung.de>
- Platform health promotion for socially disadvantaged (only in German)  
<http://www.gesundheitliche-chancengleichheit.de>

- I-database (only available in Dutch)  
<http://www.loketgezondleven.nl/i-database>
- Healthy school database Austria (only available in German)  
<http://gs.bmgfj.gv.at>

3. Other relevant web resources

- Schools for Health in Europe (SHE) network  
<http://www.schoolsforhealth.eu>
- HEPS supports school health policy  
<http://www.hepseurope.eu>



## HEPS PARTNERS

The Netherlands Institute for Health Promotion (NIGZ) is coordinator of the HEPS project in collaboration with:

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