

# Health Economic Assessment Tool for walking and cycling -HEAT

Transport is an essential part of living, enabling us to access our home, work and leisure activities as well as our friends and family. Every form of transport has a different impact on society in terms of health, social and environmental considerations.

In order to maintain good health, the World Health Organization (WHO) <sup>1</sup> advises at least 60 minutes a day of physical activity for children, and a minimum of 30 minutes for adults. In other words, at least 150 minutes of moderate intensity physical activity per week for adults. WHO confirms **that active transport, like walking and cycling, is a valid form of moderate physical activity.** It contributes to reducing chronic diseases such as respiratory difficulties, obesity, heart diseases and certain cancers.

The promotion of daily 'active' transport is a perfect solution for the general population to reach the recommended levels of physical activity. Active mobility is not only good for health but also positive the environment, notably when walking or cycling replaces a car journey.

The Conference of the parties to the United Nation's Convention on Climate Change, which will occur at the end of 2015 in Paris, will re-affirm the **central role of transport for sustainable development.** It should encourage the development of transport modes that don't give off greenhouse gases, such as active transport.



## THE PEP, a programme for transport, health and the environment

To promote transport that respects health and the environment, the Pan European Programme for transport, health and the environment (THE PEP) in 2002 was created by the World Health Organisation's Regional Office (WHO-Europe) and the United Nations Economic Commission for Europe. In April 2014, its 56 country-members including France, signed the **Declaration of Paris**, which re-endorsed 4 existing objectives that must be met before 2020, and agreed a new fifth one (see box below).

### The Declaration of Paris

THE PEP programme's Declaration of Paris identifies 5 priority objectives that must be reached before 2020 :

- to contribute to sustainable economic development and stimulate job creation through investment in environment and health-friendly transport;
- to manage sustainable mobility and promote a more efficient transport system;
- to reduce emissions of transport-related greenhouse gases, air pollutants and noise;
- to promote policies and actions conducive to healthy and safe modes of transport; and
- (the new fifth goal) to integrate transport, health and environmental objectives into urban and spatial planning policies.

<sup>1</sup> WHO (2010), *Global Recommendation's for Physical Activity*, WHO Geneva.

## LE POINT VILLES-SANTE SUR...

### The Health Economic Assessment Tool for active mobility: HEAT

The WHO French Healthy Cities National Network (Réseau français des Villes-Santé de l'OMS - RFVS) piloted a tool in France that was developed by the European programme THE PEP (see page 1). The Health Economic Assessment Tool (HEAT) is based on the evidence that the development of more active transport increases the amount of physical activity undertaken by the population, which in turn increases health and reduces mortality. HEAT's aim is to **evaluate the economic benefits for health caused by regular biking or walking**.

Available free on line <sup>2</sup>, HEAT can support local governments :

- to value the reduced mortality from past, current and/or future levels of cycling or walking,

- to help to make the case for investment in new infrastructure (bike lanes, adapted crossings...) or other projects,

- to contribute to a Health Impact Assessment (HIA) when planning new cycling or walking structures.

HEAT helps to answer the following question:

**« If x people cycle or walk for y minutes on most days, what is the economic value of the health benefits that occur as a result of the reduction in mortality due to their physical activity? ».**



HEAT was created by an international group of experts after an extensive literature review on the relationship

between active mobility and reduced mortality risks. A couple key pointers about the tool :

- HEAT should be only used for assessments at the population level, not for individuals. It is designed for adult populations, there are insufficient studies to enable the calculation of the relative risk for children, older people or patients who have a chronic disease.
- The tool is designed for habitual walking or cycling behaviour, such as for commuting or regular leisure-time activities. In particular, it should not be used for the evaluation of one-day events or competitions (such as walking days), since these are unlikely to reflect long-term average activity behaviour.

### Using HEAT for your local area (in France).

From a Household Travel Survey (Enquête Ménage Déplacement -EMD), you will need the following data in order to complete the HEAT calculation :

- Total population of the area under consideration
- Average number of journeys/trips per day (all types of transport)
- Percentage of trips/journeys using active transport (walking or cycling)
- Average distance of a journey/trip using active transport (walking or cycling)

Then go the web site :

**[www.old.heatwalkingcycling.org](http://www.old.heatwalkingcycling.org)**

This WHO site is in English. French speakers can find a document that explains each step of the calculation <sup>3</sup> via [www.villes-sante.com](http://www.villes-sante.com) Page : Activités > HEAT

Like all economic assessments, HEAT suggests a default standard **value of a statistical life (VSL)**. It is set at 4.0 million euros per life for France (EU average 3.37 m€). This type of value is not frequently used in the field of public health, however, urban planners appear to use VSL more regularly. It should be noted that it is possible to use HEAT to calculate only **the number of lives saved**, without associating them with a monetary value.

<sup>2</sup> [www.old.heatwalkingcycling.org](http://www.old.heatwalkingcycling.org)

<sup>3</sup> RFVS (2015), *Application de l'outil d'évaluation économique des effets sanitaires (HEAT) liés aux mobilités actives en France –Etapes pour réussir*

## LE POINT VILLES-SANTE SUR...

### IDEAS FOR ACTION

#### A TOOL TO SUPPORT DECISION MAKING

The most important aim of HEAT is to inform decision makers of the economic impact on health of using active transport methods. The results can be shared with local government politicians responsible for a variety of sectors, with health professionals, urban planners and developers however the results should be presented with care as they are only estimates.

**The results have more impact if they are compared with other situations or models, for example:**

- the study area is compared the national average, or the city with the highest level of active mobility
- the current data for the area is compared to the data 10 years ago or a planned future hypothesis. Nantes Metropolitan area, for example, hopes that 12% of all journeys in 2030 will be by bike (see table below). The HEAT calculation shows that if this daily level is reached, 67 lives will be saved each year in Nantes (equivalent to 670 lives saved over a 10 year period) compared to 26 avoided deaths/lives saved per year at the moment.

#### SHARING THE RESULTS

Once the calculation has been completed, the best way communicate the information must be chosen. For example, in Nancy the HEAT calculation became the object of a meeting between the metropolitan area's councillor/politician with responsibility for health and Nancy's Urban planning agency.

The city council of Grenoble produced a very thorough report where HEAT was calculated in the context of a recent pedestrian signing scheme (which provides information about the time in minutes of a walking journey. It aims to increase the number of journeys on foot in Grenoble). In Nantes, the HEAT results were favourably received by the transport sub-committee of Nantes Metropolitan area. The findings are also planned to be presented to other political sub-committees such as the social cohesion committee of Nantes City Council and that for environmental affairs.



| <b>BIKE - NANTES</b>   | France | Nantes City<br>(currently) | Nantes<br>Metropolitan area<br>(currently) | Nantes<br>Metropolitan area<br>(model 2030) |
|--|--------|----------------------------|--|---|
| Average distance of a bike trip                                  | 2.6 km | 2.5 km                     | 3.2 km                                     | 3.2 km                                      |
| Average number of trips per day per person (all transport types) | 3.15   | 3.5                        | 3.5  | 3.5   |
| % average number of trips by bike                                | 2.5%   | 5.5 %                      | 4.5 %                                      | 12 %  |
| Population   |        | 287 800                    | 594 000                                    | 594 000                                     |
| <b>RESULTS :</b>   |        |                            |  |   |
| Number of deaths avoided over 10 years                           |        | 120                        | 260  | 670 avoided deaths                          |
| Economic Benefit over a 10 year period                           |        | 461 000 000€               | 1 005 000 000€                             | 2 682 000 000€                              |

## LE POINT VILLES-SANTE SUR...

### WHAT NEXT ?

As they are in touch with the needs of their populations, municipalities and metropolitan areas are well placed to promote active mobility. In order to bring about change, it is necessary for several delegations/services to act together – working intersectorially is the key to success for Healthy Cities.

In order to obtain the required data for the HEAT calculation it is often necessary to contact the metropolitan service for Transport or a local Urban planning agency. In Nantes, just looking for the HEAT data reinforced links between the Public health department and that for Environmentally sustainable transport. This led to the two services collaborating on a detailed cycling survey and in the organisation of an international conference.

Nantes has invested for the last 5 years in its cycling infrastructure and the promotion of bikes. It has created 460 km of bike lanes, 2 major rapid bike-ways separated from general traffic and with their own clear visual identity, 2000 security kits were given out at the start of the academic year, created a self-service bike sharing scheme, 3000 grants for electric bikes since 2010, spaces reserved for bikes only at traffic-lights, and a doubling of number of spaces/bars to lock bikes against. This investment has cost 40 million euros and has led to the doubling of the number of cyclists in Nantes between 2008 and 2012. Estimating the health benefits using HEAT provides extra reasons to support local government to continue this type of significant investment.



The Public and environmental health service of the City of Grenoble put in place a signage for walkers which provides information about the time in minutes between destinations<sup>4</sup>. Grenoble erected a total of 270 signs covering 31

kilometres, ranging from the shortest journey (8 minutes) to the longest at 32 minutes.

<sup>4</sup> Inpes/Ville de Grenoble (2013), *Mise en place d'une signalétique piétonne. Faciliter la marche à pied en milieu urbain en informant sur les temps de parcours : l'exemple de Grenoble*

The press communication that heralded the new signs focused on the health benefits of more walking. The cost of the signs themselves, maps, posters and information leaflets was about 60 000€ (excluding labour costs and a study to evaluate impact). The HEAT calculation has shown that this amount will be recovered by society in less than 1 year if just 1 person starts to walk regularly.



The WHO's HEAT tool can help to justify investment that aims to increase active mobility (also known as sustainable transport): for example by the widening of pavements, creating reduced speed 20km/h zones, new bike paths and lanes, and secure cycle parking. These projects will all increase the attractiveness of the city, quality of life (less noise, better air quality) and people's health.

#### For more information :

[www.villes-sante.com](http://www.villes-sante.com), page **Activités du Réseau > HEAT** (you will find the WHO manual in English and French, and the document for French cities « Etapes pour réussir »)

[www.old.heatwalkingcycling.org](http://www.old.heatwalkingcycling.org) ( WHO HEAT on-line calculator)

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