



trendy cycling


20


good reasons for cycling

trendy travel

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TRENDY TRAVEL is a European project supported by the IEE (Intelligent Energy Europe). The main objective of Trendy Travel is to achieve a modal shift from the car to healthier, more eco-friendly transport modes by making sustainable transport more emotionally appealing with various approaches. Storytelling, Ritualisation, Raising the image of Cycling, interesting design and children that guide their parents are used to achieve a positive attitude towards and perception of soft mobility.

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This publication was developed during the project Trendy Travel using original texts from a publication of the City of Graz: 21 good reasons to cycle. We kindly invite you to use and copy the contents of this brochure. May we ask you to refer back to the website www.trendy-travel.eu when you use and disseminate material from this brochure.



FOREWORD



Cycling is the simplest, most natural means of transport, after walking. So natural in fact and useful that many cities often forget to take it into account. This brochure is intended to consider and return to the advantages of bicycle traffic and to back up arguments with analyses and facts.

It is surprising how many advantages bicycle traffic combines:

- ◊ Regular cycling improves health and prolongs life expectancy.
- ◊ Cycling requires no fossil fuels – it only burns our own fat.
- ◊ Cyclists save space, are quiet and move about without producing pollutants
- ◊ Our children love the bike, if we let them
- ◊ Promotion of bicycle traffic costs little but brings a lot of profit in return – 3 Euros invested in cycle traffic mean 5 Euros less expenses for the National Health System.

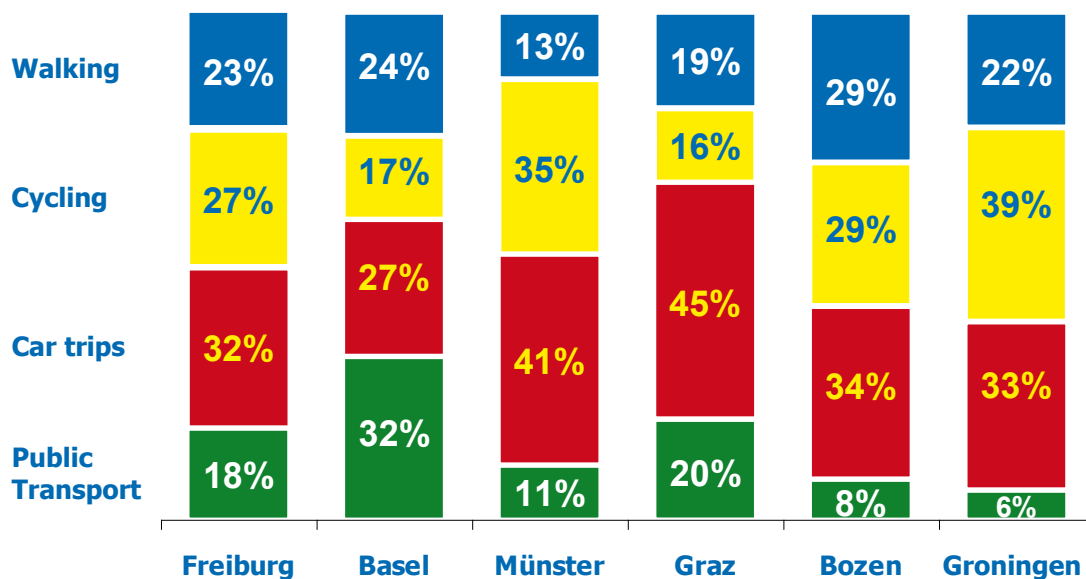
Cities that have a high percentage of bicycle and pedestrian traffic usually have a high quality of life.

Everybody interested in such a feel-good experience should visit the Cities of Groningen (NL), Odense (DK), Ferrara or Bolzano (IT). The calmness and at the same time vibrancy, compared to mainly car-frequented cities, immediately becomes obvious.

However, besides all good arguments presented in this brochure, intended to promote bicycle traffic, it is important to be aware that cycling first and foremost is one thing:

“Cycling is Emotion” – something that thankfully cannot be expressed through numbers!

Modal Split: Comparison of European cities

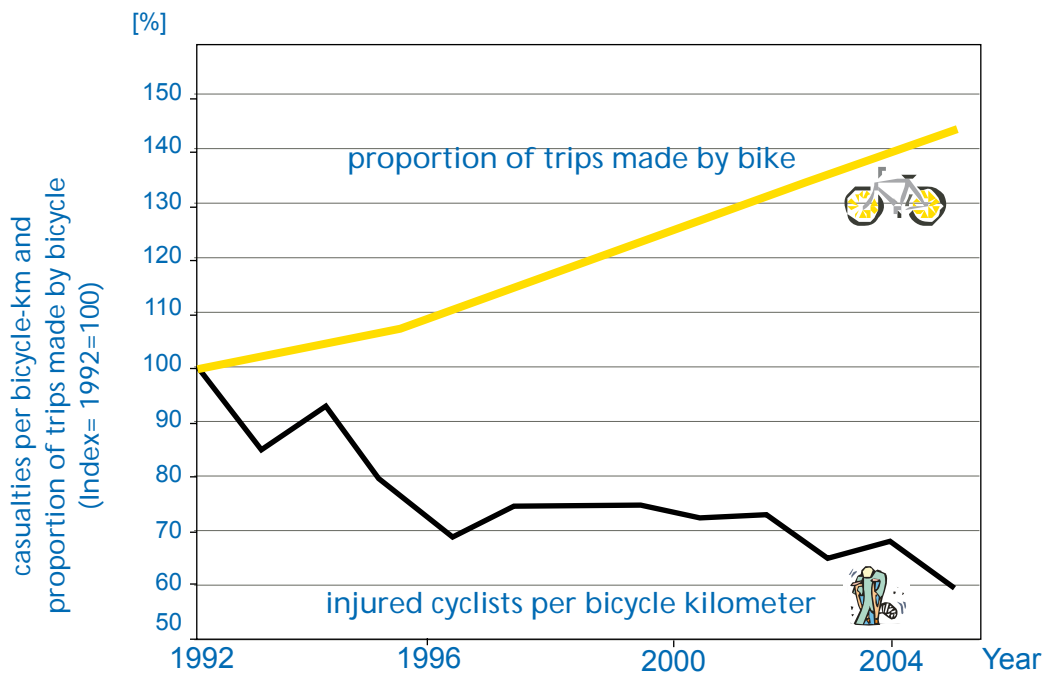


Source: Mobilitätsverhalten der Grazer Wohnbevölkerung, 2008. Amtsblatt der Stadt Freiburg, 2005. Corporate Cycling Bozen, 2001. Stadtplanungsamt Münster, 2001. Survey Bolzano: Institut Apollis. Calculations: FGM-AMOR.

Fact is: Bicycle friendly politics increases the share of cyclists

A cycling city is the product of an active promotion of bicycle traffic through politics. Good examples are Freiburg, in Germany, and Bolzano, in Italy. By actively promoting cycling in Freiburg it was possible to double the share of bicycle traffic in only 20 years and today it stands at 27%. At the same time the proportion of public transport increased too. In Bolzano it was possible to increase the proportion of bicycle traffic from 18 to 29 % in only 7 years. This was achieved with innovative and creative marketing, creation of a corporate identity and a coherent bike network.

More bikes, less accidents



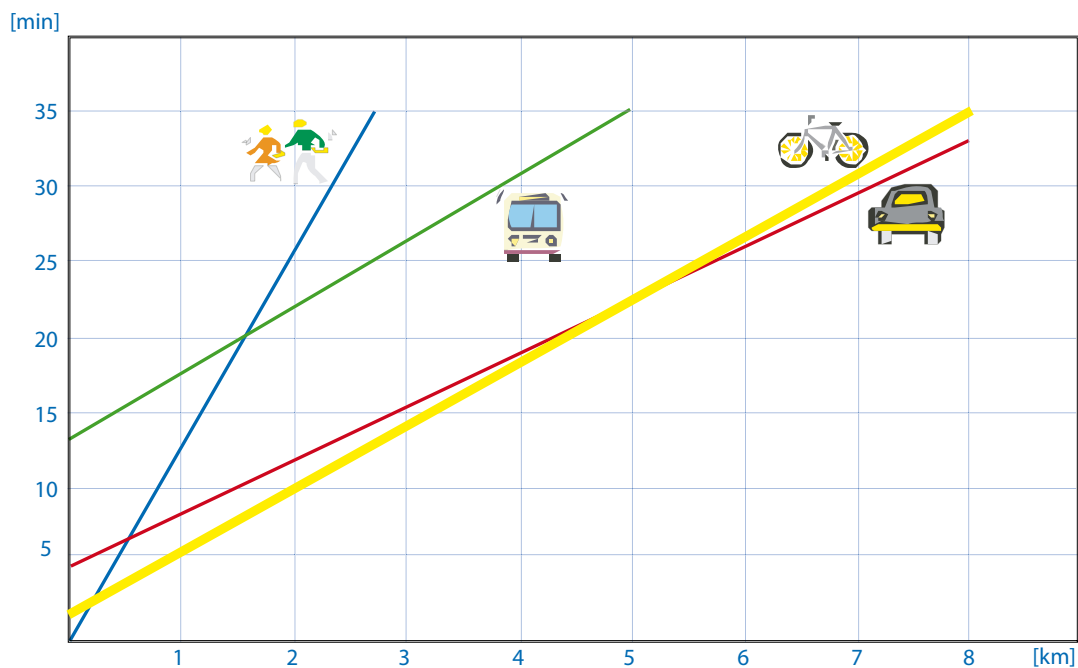
Source: Herry Consult/ IGF Institut Grundlagenforschung, Statistik Austria, 2004

Fact is: Where biking is concerned the phrase: “less is more” doesn’t apply.

It should rather be: “more is less”. It has been demonstrated that an increase in the use of bicycles reduces the risk of accidents.

A study in Salzburg between 1992 and 2004 showed that while the percentage of bicycle traffic increased by 40 % the number of injured persons per bike kilometre decreased by about 40%. The graph below clearly shows that the risk of bicycle accidents decreases when bicycle traffic increases. The german city of Kiel achieved similar results. A comparison of bicycle accidents in various countries with differing proportions of bicycle traffic points into the same direction.

When time is the issue



Source: Mobility-Cultura 2003, www.mobility-cultura.net

Fact is: Not only is it proven that biking is the fastest means of transport in the city where distances of up to 5 km are concerned...

... but there's also no better way with regards to flexibility. Just imagine. You can drive into town, are free to stop in front of every shop. Stop at your favourite café for a refreshment and then carry on to your next appointment – all without the need to look for a parking space or worry about delays caused by traffic jams and waiting for public transport.

Radius of action of senior citizens

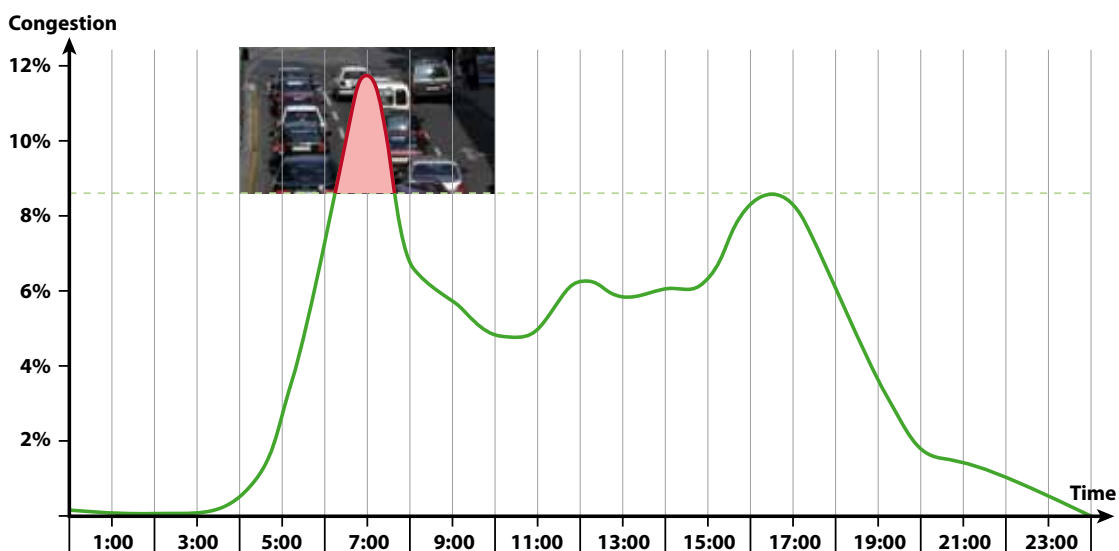


Source: "Brochure Nahmobilität" AGSF - Arbeitsgemeinschaft Fahrradfreundlicher Städte (DE, 2008)

Fact is: Older people have a reduced radius of action

The percentage of older people increases constantly in our society. In 2035 more than half of the population will be over 50 and by 2050 every third person in Germany will be over 75 years old. Senior citizens would like to stay mobile as long as possible. However, with increasing age the number of trips undertaken by foot, bike or public transport rises significantly. It is important to note that the radius of action decreases with age. While the radius of activity in the working population is around 18 km it is reduced to 5 km in senior citizens. The distances of bicycle traffic correlate with the action radius of elder people. Good possibilities to use their bikes are important for them in order to stay actively mobile as long as possible.

Traffic peak

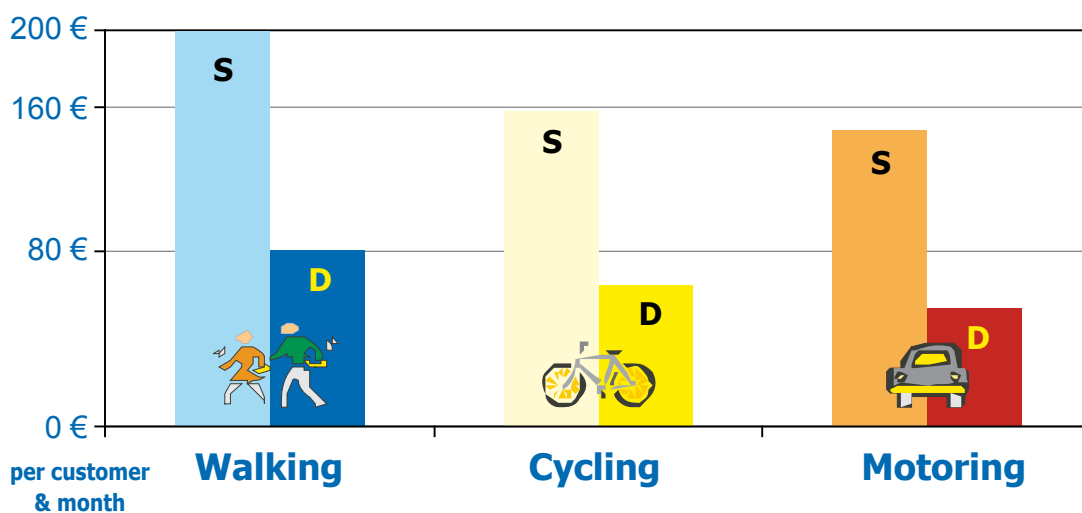


Source: Amt der Niederösterreichischen Landesregierung 2003

Fact is: Promotion of bicycle traffic brings positive effects for all traffic participants

The morning hours bring about the heaviest burden for the road network – this is the time when everybody wants to get to work, to school or to the kindergarten. The rush hour brings traffic jams on the roads but the space in cities cannot be extended at will. At the same time public transport is overloaded as well and the ride becomes uncomfortable. However, economically it is irrational to purchase additional buses and trams for just one or two hours a day. Bicycle traffic offers the only possibility to deal with traffic in the peak hours in an efficient way. The promotion of bicycle traffic therefore has positive effects for all traffic participants. Hence, cities with a high percentage of bicycle traffic focus on a high efficiency within the entire traffic system.

Sales per means of transport



S = Supermarket
D = Departement store

* in Münster

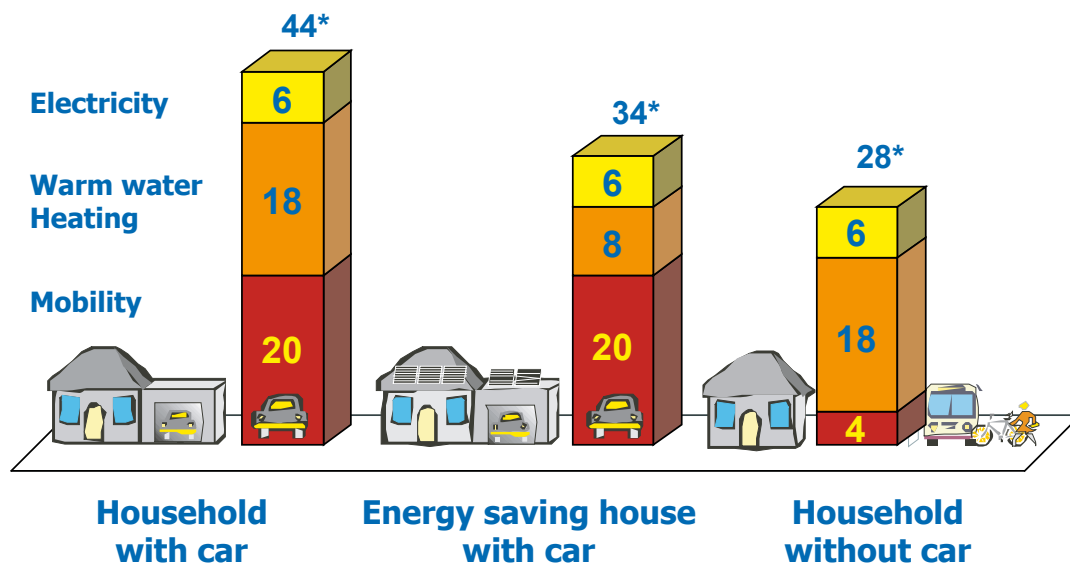
Source: Wissenschaft & Verkehr, Nahversorgung versus Einkaufszentren, Wien, 1999.

Fact is: Bikers possess high purchasing power.

According to studies cyclist buy less at a given time but visit the shops more frequently. A detailed study in Münster, Germany, showed that cyclists spent on average 10 Euros more than motorists each month.

A survey of 1200 persons in Bern demonstrated how the shopping value is connected with the actually required parking area. The result argues for cyclists as customers: with an average purchase capacity of 7.500 Euro per taken up parking area they lie ahead of motorists spending 6.625 Euros a year on average.

Energy consumption per household



* in 1000 kWh / year
 Energy house = optimal insulation solar warm water preparation and semi solar heating

Source: VCÖ, Add home 2008

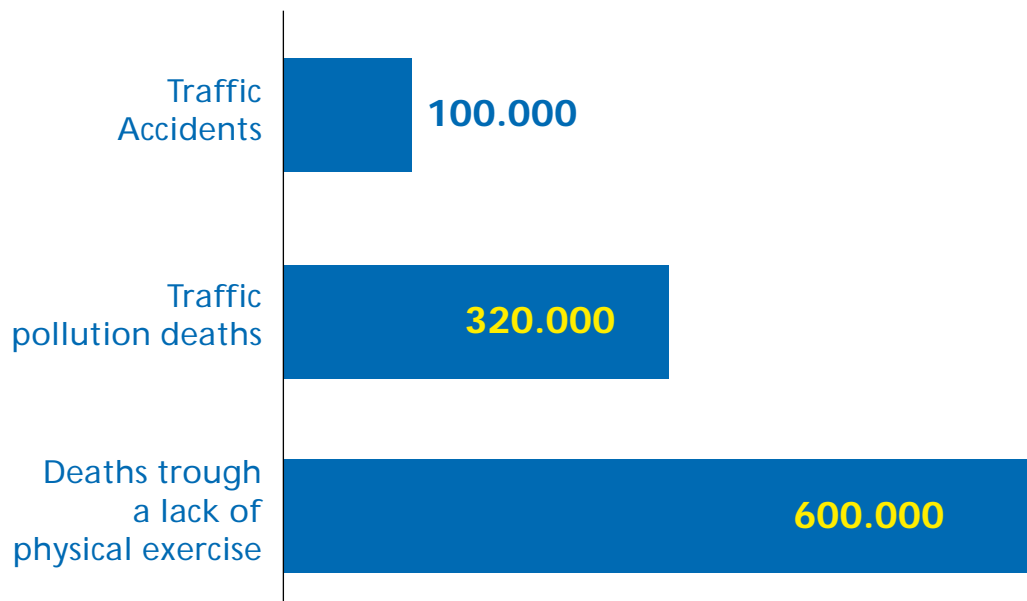
Fact is: Cycling is energy efficient.

An average household in Austria spends more than a third of the total energy consumption on mobility and the remains on heat and electricity.

In an energy saving building the total energy requirement decreases per year from 44.000 kWh to 34.000 kWh. That corresponds to savings of 23%. However, if a household needs no car the total energy requirement drops 39% to 27.500 kWh.

This demonstrates that within the transport sector, there are enormous possible savings with regard to the domestic energy requirements. However, so far there are no subsidies available for the deregistration of cars yet.

How traffic shortens the life of Europeans

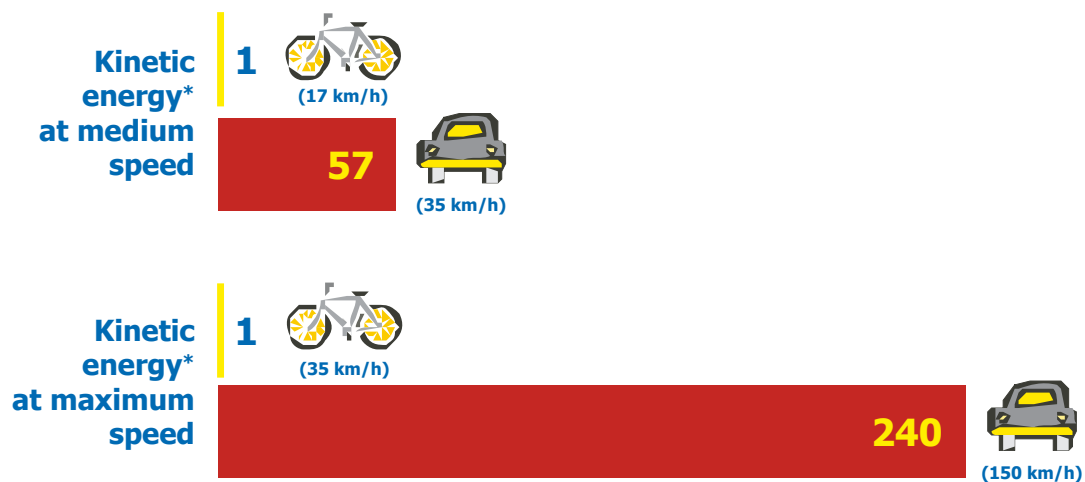


Source: traffic casualties Europe 2008 WHO, OECD, World Road Statistics. 2003

Fact is: Cycling extends life

Accidents only amount to 10% of casualties in traffic. Three times as many people die from the consequences of traffic emissions. The highest percentage namely 600.000 persons die in Europe from a lack of exercise every year. More bicycle traffic is an effective instrument to combat the lack of exercise as a cause of death as well as emissions. A comprehensive Danish health survey demonstrated that cyclists have 30% less risk of mortality (source: Lars Bo Andersen).

Potential dangers of bicycles and cars



* Kinetic energy ($E_{kin} = m \cdot v^2 / 2$), depending on weight and speed

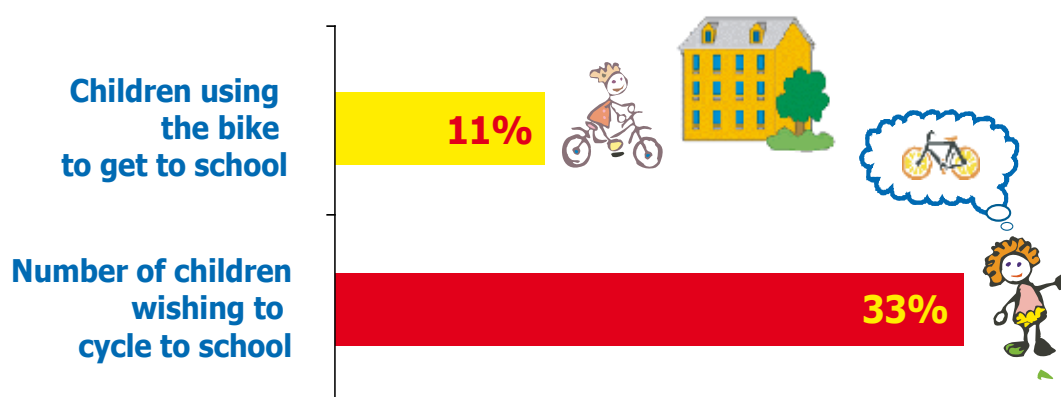
Source: Competence 2004. www.transportlearning.net

Fact is: Cars are more dangerous than bikes.

The kinetic energy of a car at the impact (at an average speed of 35 km/h) is 57 times higher than on a bike (at an average speed of 17 km/h). At the assumed maximal speed of 150 km/h of a car (for a bike the number is 35 km/h) the kinetic energy is about 240 times higher.

This is to say that undisciplined traffic participants can do much more harm with a car than with a bike. Therefore, it is quite clear that traffic safety efforts should be focused on those presenting the biggest danger.

Wishful thinking and reality in children aged 10 - 14 years



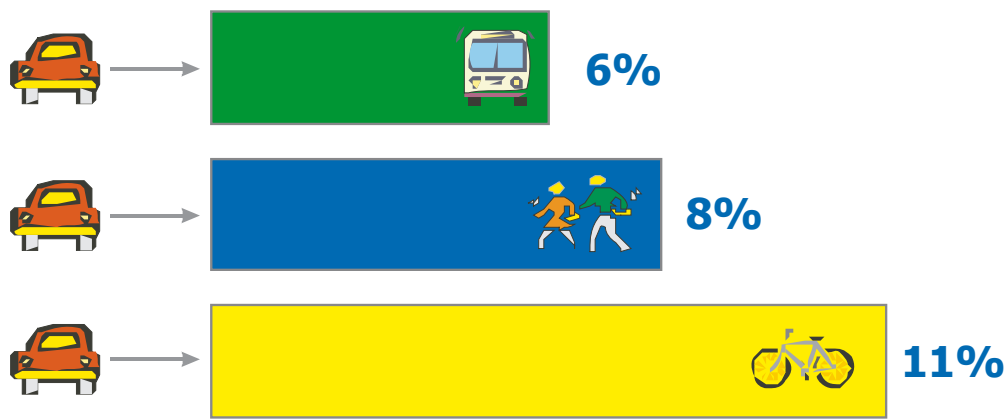
Source: www.schoolway.net 2009

Fact is: Children like cycling.

An ongoing and on-line nation-wide survey showed that 33 % of Austrian children would like to cycle to school. However, only 11% actually use the bicycle to get to school. One of the main reasons for this discrepancy between the wishes of children and reality is that parents are concerned for the safety of their children. This is also the reason why the percentage of children that walk to school has decreased from 82% to 14% within the last 30 years.

It is not surprising then that almost every 5th child in Europe is overweight and in Austria every 10th child is seriously overweight.

Switching potential of motorists



Objective freedom of choice for motorists
to switch to other means of transport

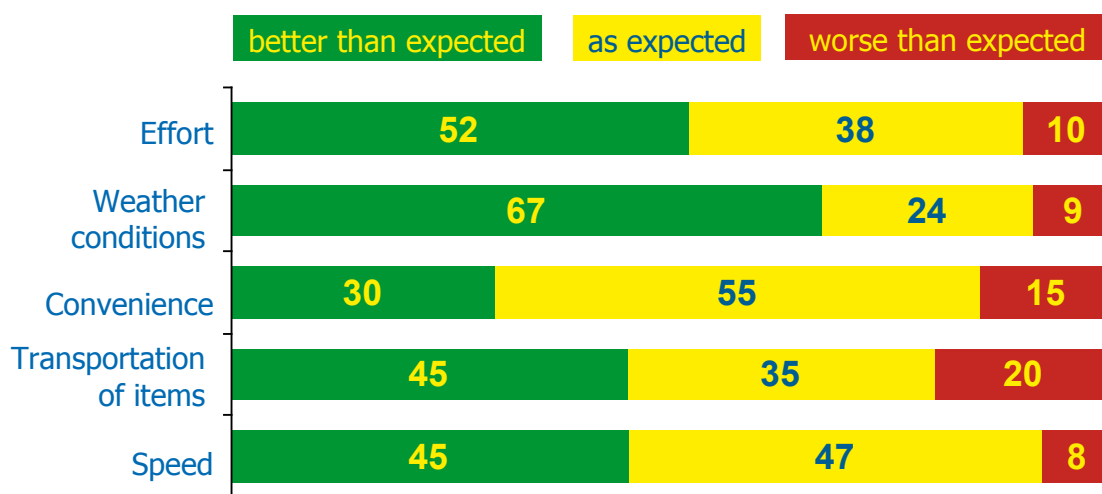
Source: G. Röschel, Graz 2004; derived from "Mobilität der Grazer Wohnbevölkerung"

Fact is: The bike is the first alternative for motorists.

A survey, conducted in Graz, demonstrated the reasons why motorists choose the car instead of other means of transport. The result of this survey was that the bicycle had the highest potential as an alternative. Because 11% of all motorists could in theory, after elimination of all objective obstacles, be transferred to the bike. That implies that every 8th car trip could be accomplished by bike.

At least 8% of the car trips could be done on foot, 6% with a bus or tram. The most likely alternative however is the bike.

Opinions of motorists having switched to cycling

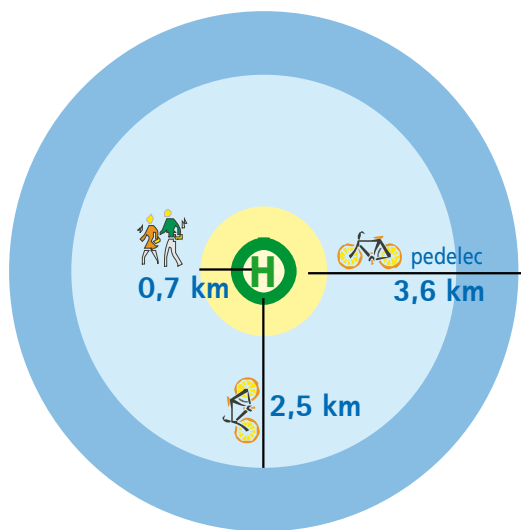





Source: Mobility Cultura 2003, www.mobility-cultura.net

Fact is: Motorists think positive about cycling as soon as they've tried it.

Research in the Netherlands showed that motorists that are forced to have their car repaired often discover the bike as a daily means of transportation instead. During the test phase half of the people that switched to the bike thought that cycling was less strenuous and faster than expected. 45% stated that transporting items was easier than expected and at least 30% considered the bike more comfortable than initially expected.

Catchment area of stops within walking distance of 10 minutes

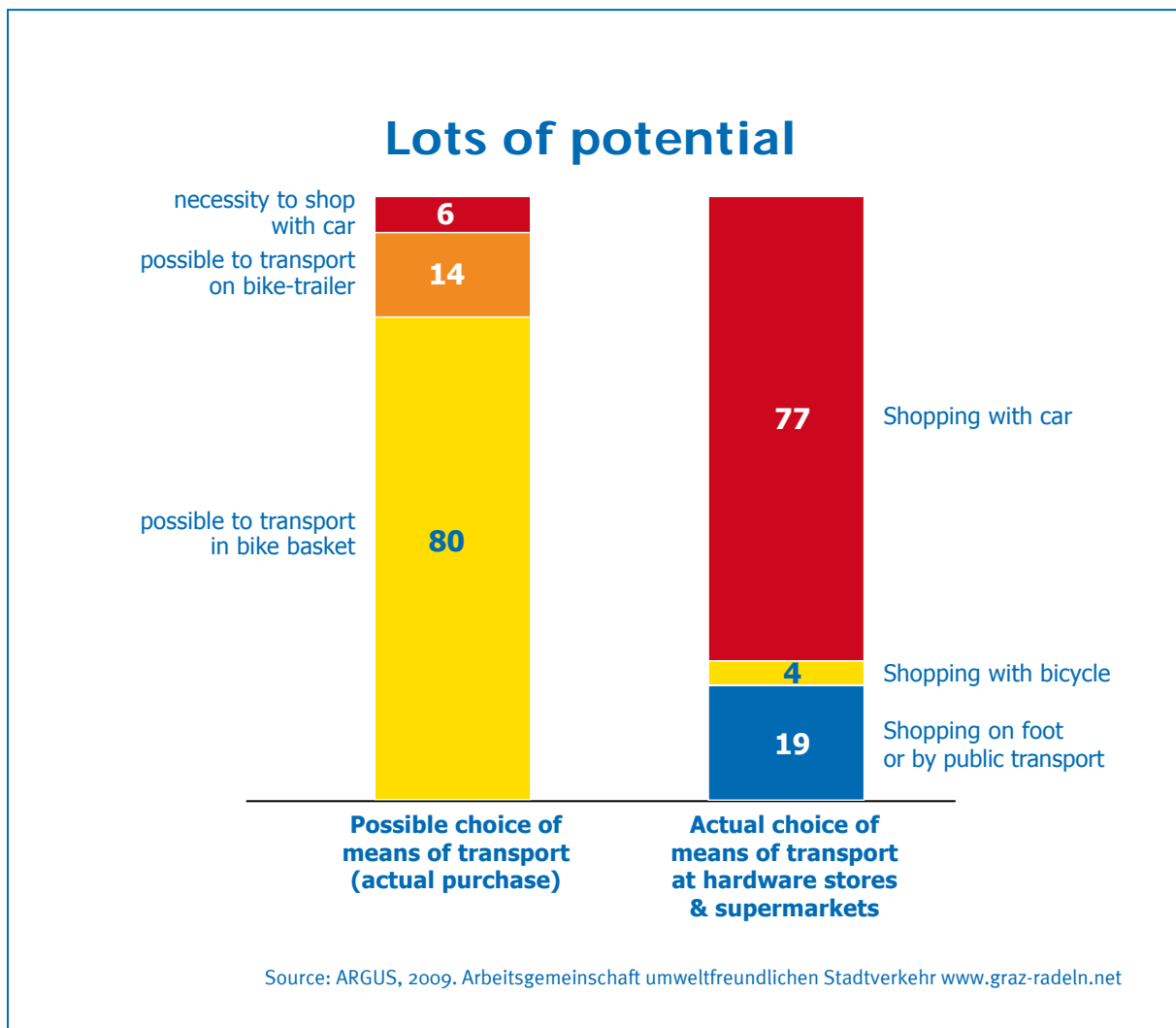


Average speed	Distance covered in 10 minutes	Catchment area
 4 km/h	0,7 km	ca. 1,5 km ²
 15 km/h	2,5 km	ca. 20 km ²
 22 km/h pedelec	3,6 km	ca. 40 km ²

Source: Pressl/Reiter 1999.

Fact is: It's easy to combine the bicycle and public transport.

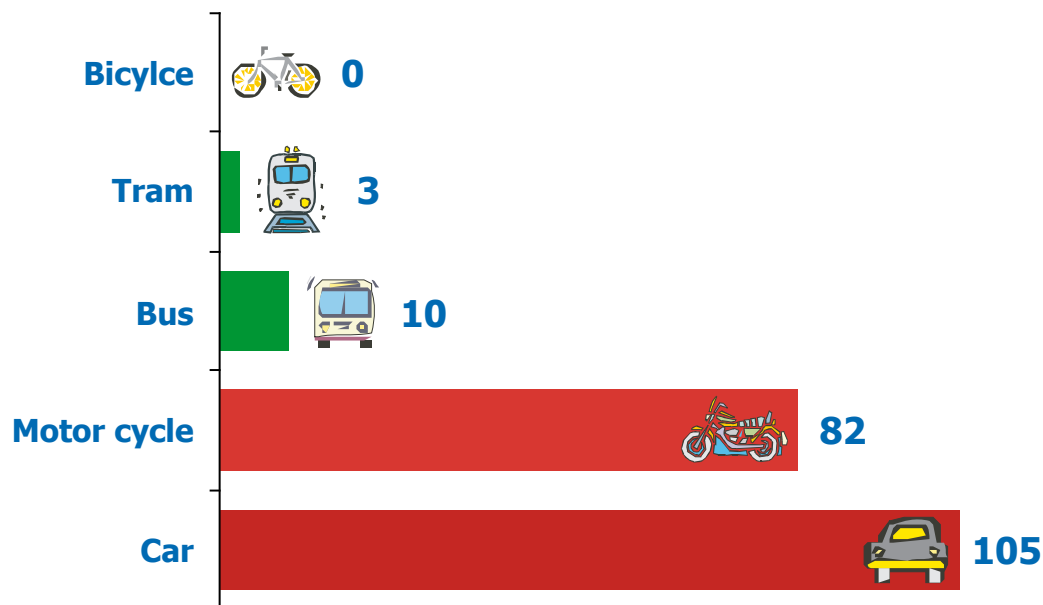
The catchment area of a station/stop that can be reached on foot within 10 minutes increases 13-fold with the bike and with a Pedelec (Pedal Electric Cycle) and an E-bike, respectively, even 26-fold. The quality of a public transport station is enhanced if it possesses a covered bicycle parking area. Thief-proof parking facilities are especially important for the more expensive Pedelecs and E-bikes. Permission to transport bikes free of charge on public transport is another big incentive.



Fact is: the bike can easily be used for most shopping trips.

2009 a survey was conducted amongst malls and hardware stores in Graz. It turned out that out of 1635 monitored shopping trips a car would have only been necessary for a very small percentage, namely 6% (!). 14% of the shoppers could have fitted their purchase into a bike trailer. The biggest group by far however, 70%, were purchases that could have been easily transported on a bike, in a conventional bike basket and 10% of customers didn't even by anything. The sobering finding was the actual choice of the mode of transport: nobody used a bike trailer. The bike was used only in 4% of the cases. At least 19% arrived on foot or by public transport. However, as expected, the car dominated with 77%.

Environmental impact related to means of transport



Accumulative quality of all pollutants
(= Emission of all pollutants per person km assessed by toxicity and added)

Source: Mobility-cultura. 2003

Fact is: The bicycle is clean.

With regard to causing pollution the car produces by far the most emissions (immediately followed by the motor cycle). With regard to traffic emissions the bike is unbeatable and doesn't stir up particulate matter.

Research studies in congested urban areas show that every 90th inhabitant falls ill with lung cancer caused by the diesel exhaust particulates and benzene emissions of road traffic. At main roads it is even every 39th resident.

7- 9 bicycles on 1 car parking space



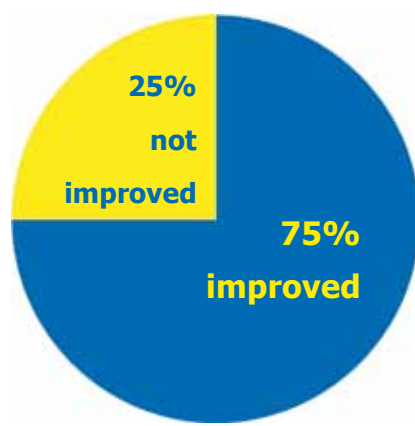
Source: Diagram from Austrian Mobility Research, 2004

Fact is: Cycling creates space.

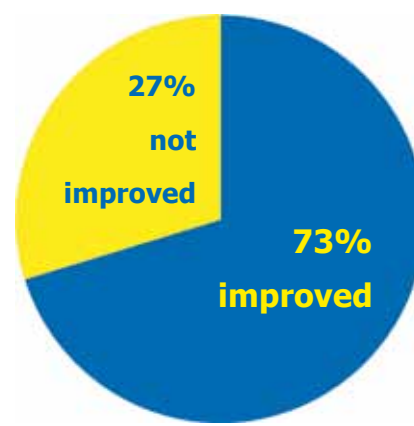
A bike requires much less space than a car. An average parking space for a car would provide parking spaces for 7–9 bikes. For bicycles no underground parking spaces are necessary. The cost for one underground car parking space amounts to 16.000 Euros and that for a covered car parking space to 8.000 Euros. A regular parking space without protection still amounts to 4.000 Euros.

On the other hand, the cost for a bicycle parking area for an average of 8 to 10 bikes is around 1.000 Euros. The costs for one bicycle parking space within a bicycle station are about 1.100 to 1.300 Euros. These parking spaces can definitely be compared with an underground parking space for cars, because they are covered and equipped with a controlled entry way. Hence, the costs for an underground parking space are 12 times higher than those for a bicycle space in a bicycle station.

Results after a 12-week exercise programme



fitness values



values of body fat

Source: GOAL project 2003

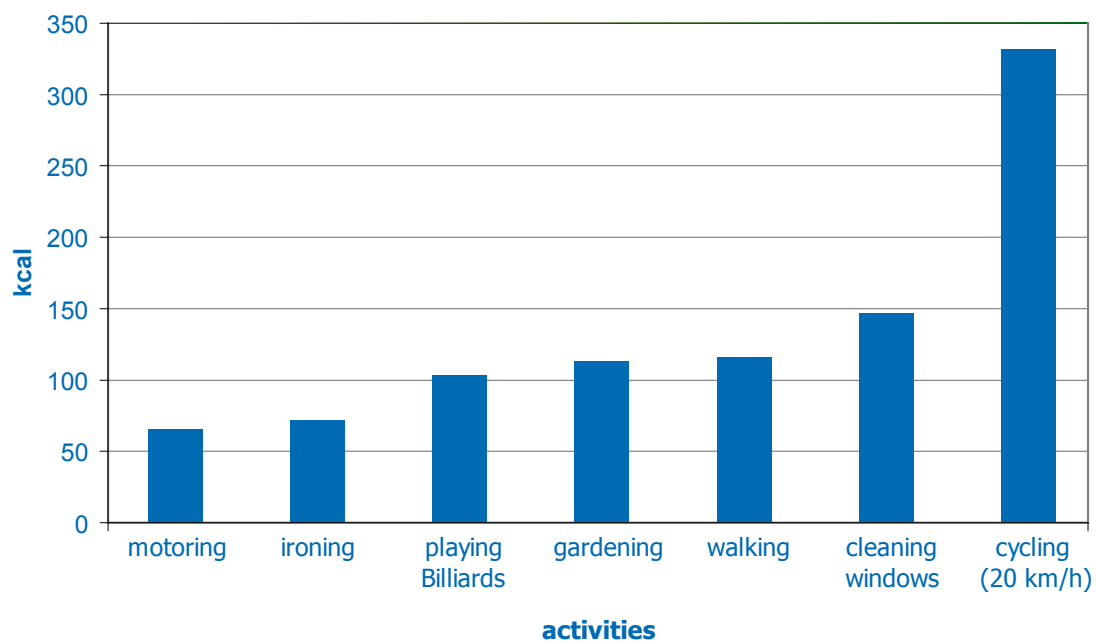
Fact is: Cycling improves the personal fitness.

100 people from Graz took part in an exercise programme that lasted 12 weeks in 2003. The aim was to integrate more movement and exercise into daily life, because 9 out of 10 people are diagnosed with a lack of exercise in the yearly health checks.

The daily exercise definitely had an impact: 3 out of 4 participants improved their fitness values. Almost $\frac{3}{4}$ improved their body fat values. More than half of the participants felt much better afterwards.

A Norwegian study demonstrated that cycling also creates an economically measurable benefit: the net health benefit of cycling constitutes 15 Cent per kilometre covered by bike.

Calorie usage of different activities per 30 minutes

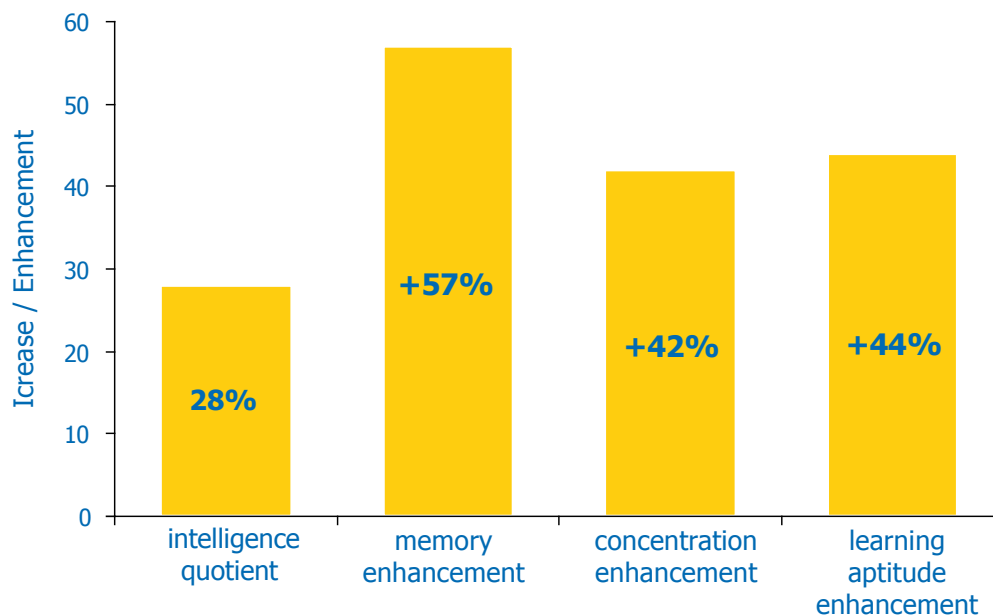


Source: www.fitrechner.de

Fact is: Cycling burns more calories than other activities during the same time period.

Cycling is a pleasant and sustainable way to burn calories. The comparison shows: Cycling consumes in the same period about five times more calories than motoring. One can therefore recycle the approximate 600 kcal of a tuna pizza eaten at lunch time within less than a one-hour ride with the bike!

Effect of physical exercise on intelligence



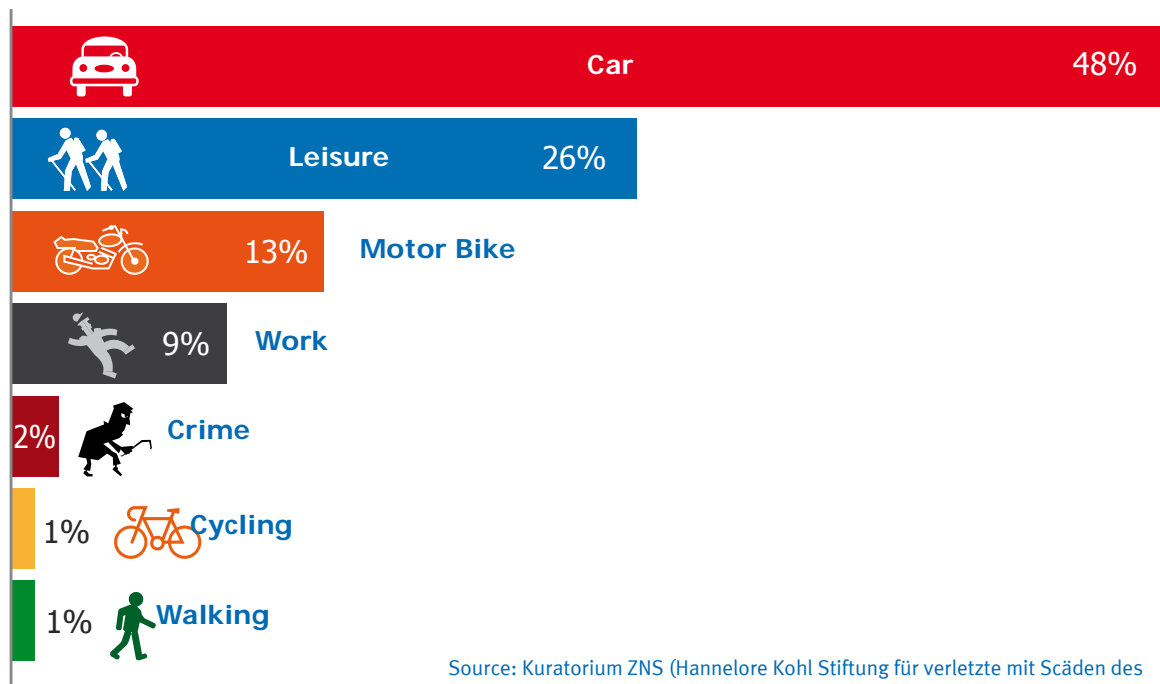
Source: www.medizinauskunft.de Ars medici 12.2007

Fact is: Physical Exercise enhances Intelligence

Various studies have proven that physical exercise is not only beneficial for health but also enhances intelligence. Using a special learning programme on a bicycle ergo metre with 30.000 probands, it was established that the IQ rose on average from 99 to 128 points (that corresponds to approx. 28%). The rhythmical movement that can also be achieved by regular exercise, like biking, also enhances memory, concentration and learning aptitude. Other studies on senior citizens demonstrated an average IQ increase of 15 points after physical exercise. 15 IQ points are about the same difference as that between an average citizen and a student.

Physical exercise seems to lead to reorganizations in the brain and to interactions between the brain hemispheres that facilitate higher cognitive capacities, even after the activity.

Causes of head injuries



Source: Kuratorium ZNS (Hannelore Kohl Stiftung für verletzte mit Schäden des zentralen Nervensystems) Geschäftsbericht 2004, DE

Fact is: Advertising bike helmets makes cycling seem dangerous

In many countries a discussion about the usage of the bicycle helmet arises immediately where bicycle traffic is concerned. Often, it is implied that cycling is a dangerous activity, leading to head injuries. Here, we do not intend to take a stand against the usage of cycling helmets but to put the relevance of this topic into perspective.

German accident statistics demonstrate that only 1% of all head injuries can be attributed to bicycle traffic. That number approximately equals that of pedestrian traffic. However, car occupants, not wearing a helmet, have a much higher risk of suffering a head injury.

Research results from the UK also show that cyclists wearing a helmet get overtaken by cars in a significantly narrower range than those without.

Furthermore, in Australia the compulsory introduction of bike helmets has led to a significant reduction of bicycle traffic and hence to an increase of diseases related to a lack of exercise.



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