

Webinair WORKSHOP 2 The Bike Project 09/06/2020		
9:00	Introduction - Inleiding	Pro Velo
9:15	Fiscalité vélo - De fiets fiscaliteit	Pro Velo
9:45	Marketing social - Sociale marketing	Xavier Van Roy
10:30	Présentation par chaque organisation - Presentatie van elke organisatie	
11:00	Pause - Pauze	
11:15	Le vélo et la santé - Fiets en gezondheid	Bas de Geus
12:00	Fin - Einde	

Présentation par chaque entreprise

1. VRT
2. CHU Saint Pierre
3. Bruxelles Propreté
4. Urban.brussels
5. Brusafe.brussels
6. FOD Bosa
7. Vivaqua
8. Crelan
9. Solvay



1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie

Corona-proof heropgestart

Pop-up Fietshersteldienst

Donderdag:

13 februari

5 en 19 maart

~~2 en 23 april~~

~~7 en 28 mei~~

11 en 25 juni

van 10u tot 14u,
voorlopige garage

Start 2020
Donderdag
13.02
Trap je warm, drink
chocomelk en laat
je ketting smeren.

Pop-up fietshersteldienst



Actiepunt:

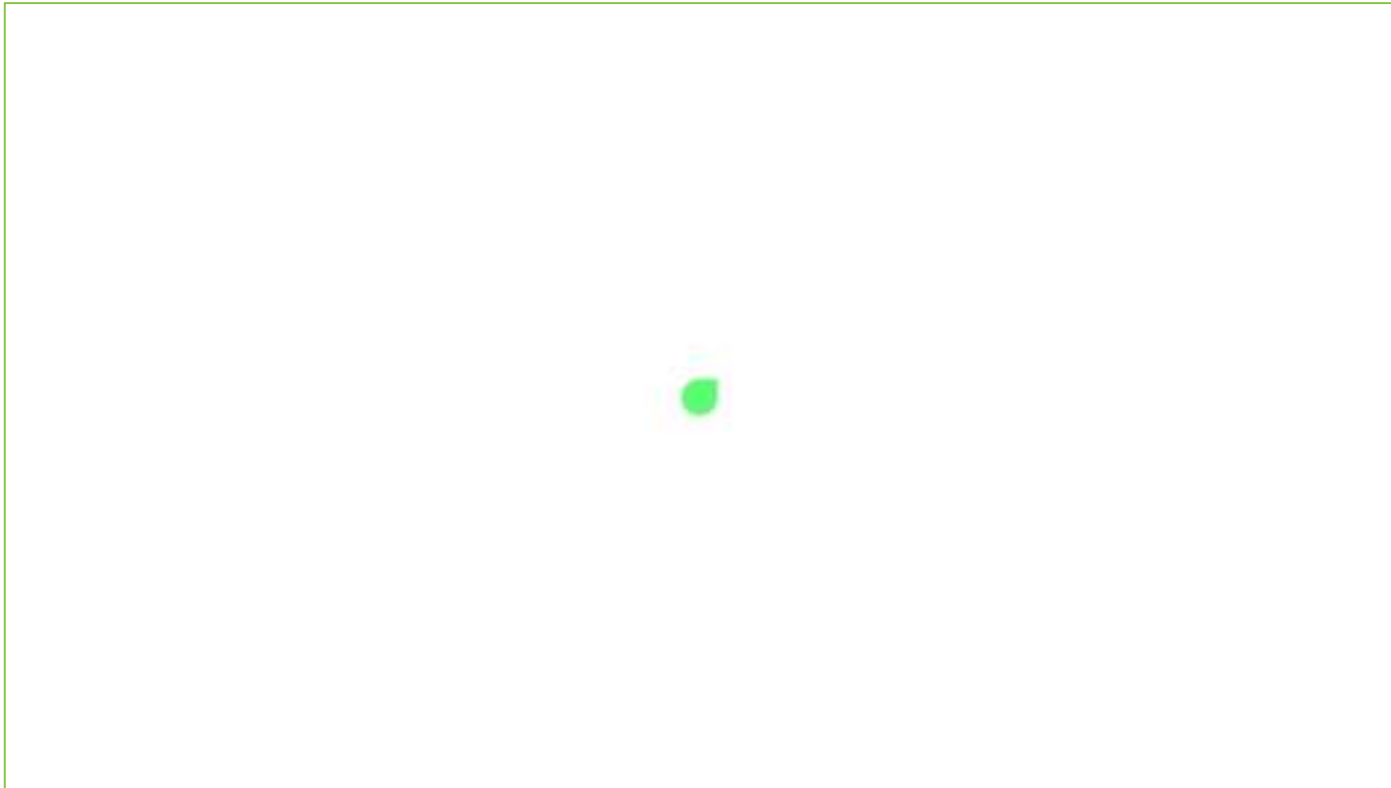
Tijdens zomerstop
bekijken en bespreken met RTBF en Groep Intro
of we na zomer kunnen variëren in dagen en uren
om bredere groep collega's te kunnen ondersteunen.

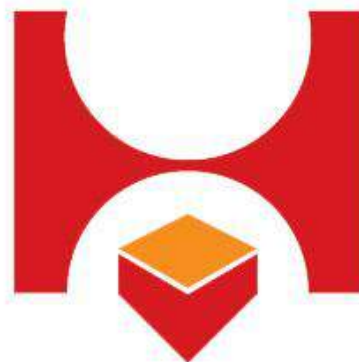
2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

E-dienstfietsen onderbenut

Naast pure communicatie (o.a. filmpje onder) nu inzetten op verdere ondersteuning door o.a. aangename/veilige fietsroutes ter beschikking te stellen + fietsvergoeding bij dienstverplaatsingen in de verf zetten





CHU Saint-Pierre
UMC Sint-Pieter

1. Action réalisée en 2019-2020

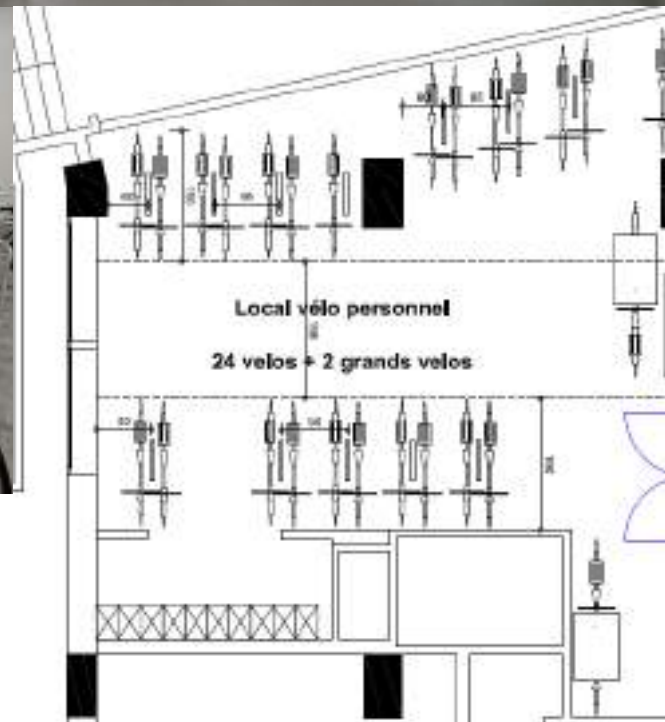
Rénovation et création de parkings vélo



- Mise aux normes du parking vélo existant (Aout 2019)
- Création d'un nouveau parking sur le site principal (Sept. 2019)
- Création d'un nouveau parking sur le site secondaire (Juin 2020)

1. Action réalisée en 2019-2020

Rénovation et création de parkings vélo



2. Une difficulté rencontrée (action en cours)



Possession de 3 véhicules Diesel, à changer dans les 3 ans (LEZ)



**1 navette inter-sites pour le personnel (capacité 8 passagers + chauffeur)
– 1,4 km**

Moyenne de 1,8 personne transportée par voyage



**2 camionnettes "citroen jumper" servant pour les « déménagements »
et le transport de gros matériel (palettes etc.)**

Trajets fréquents à vide ou presque avec 1 personne seulement



Remplacer la navette par une flotte de vélos (ass. Élect.)

1,4 km = 4 min à vélo



Acquérir un vélo cargo pour petites livraisons et interventions rapides service technique

Bruxelles-Propreté

Net Brussel

1. Action réalisée ou en cours



1. Een gerealiseerde of lopende actie

Campagne de communication : Journal interne/Affiches/Spot vidéo –
conditions matinales

On se lève tôt pour le Bike Project



2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- Difficulté liée aux inscriptions informatiques : le personnel ouvrier n'a pas accès à des ordinateurs

Urban.brussels

1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie

- Intranet accessible depuis avril
 - L'accès a été donné pour pouvoir l'alimenter librement
 - L'onglet spécifique pour la mobilité doit être complété
- Vélos de service & vélo cargo
 - Dossier d'achat prêt;
 - Feux vert concernant le budget
 - Cahier des charges à réaliser pour le marché
- Répertorier les applications cartographiques
 - Les recherches sont finies la communication doit être diffusée
 - Ce n'était pas une action prioritaire mais vu l'engouement pour la mobilité active, c'est intéressant de la réaliser plus tôt que prévu.

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- Le télétravail généralisé n'a pas permis de mener le plan d'action comme prévu. Plus personne n'avait besoin de se déplacer vers son lieu de travail. Les magasins étant fermés, il était plus compliqué de se renseigner pour l'achat de vélos de service. La charge de travail de beaucoup de membres de l'équipe bike project a été modifiée et/ou s'est alourdie.



1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie

1. Infrastructures & Equipements	1.1	Mettre à disposition des vélos (électriques) pour les déplacements professionnels + accessoires (cadenas, casque, etc)
	1.2	Prévoir des casiers grillagés (idéalement avec chauffage) pour faire sécher les affaires
	1.3	S'assurer de la sécurité du parking vélo
2. Sensibilisation & Information	2.1	Communiquer à propos du test plusieurs semaines avant le test à l'entrée du bâtiment et via des flyers et des affiches
	2.2	Créer un groupe des cyclistes sur Sharepoint avec tuyaux, astuces, liens utiles, etc.
	2.3	Communiquer sur les bienfaits pour la santé, les avantages du vélos, la sécurité. Inclure une section vélo dans chaque newsletter
	2.4	Réaliser une campagne en interne et en externe (sur l'intranet + instagram) de Brusafe avec des photos, témoignages, vidéos d'expériences positives,...sur le vélo à Brusafe autour du test vélo

3. Actions pour mettre en selle de nouveaux employés	3.1	Tester une flotte de vélos pendant 2 semaines
	3.2	Organiser une action de clôture du test (lunch, bbq, etc.)
	3.3	Organisation d'une ou plusieurs balades à vélo
	3.4	Communiquer des itinéraires personnalisés aux participants du test vélo
	3.5	Organiser un système de parrainage interne de type Bike Experience (un cycliste expérimenté aide et accompagne un novice)

	4.1.	Organiser un atelier participatif d'entretien et de réparation vélo
	4.2	Participer à la semaine de la mobilité
	4.3	Afficher une grande carte à l'entrée du bâtiment avec les différents itinéraires cyclistes pour rejoindre le site
	4.4	Organiser une action team building autour du vélo (Apéro / brunch / bbq cycliste)
5. Incitants financiers	5.1	Analyser la meilleure formule pour pouvoir mettre des vélos à disposition des employés pour trajets D-T et usage privé (leasing, vélos d'entreprises, etc)
	5.2	Offrir une combinaison de pluie brusafe pour les cyclistes qui en font la demande
	5.3	Mettre en place l'indemnité kilométrique
	5.4	Offrir un soutien financier (ex: bon d'achat) pour l'achat d'un casque, de bons phares, d'un bon cadenas)?

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- Confinement

- Problème de communication:
 - absence de communication spontanée,
 - absence de communication face to face,
 - absence de communication directe
- Pas encore d'intranet commun avec les 4 écoles donc communication uniquement via Newsletter mais taux de lecture peu élevé (chômage économique, etc.)



- Déménagement

- Retardé à cause du confinement
- Idem problème de communication
- Attrait pour l'inscription : les écoles ne seront pas toutes présentes lors du prêt de vélo

FOD BOSA/SPF BOSA

1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie

- We proberen bij FOD BOSA en bij Belspo een actie te voltooien rond het toelaten van bezoekers in onze garage en fietsenparking. De fietsenparking werd aanzienlijk vernieuwd en er staat nog een fase op de planning waarbij de parking alleen nog maar voor fietsers zal zijn en alle motorvoertuigen en moto's verdwijnen uit de parking. Op dat moment is het de bedoeling dat we ook een toegang scheppen voor fietsers die als bezoeker naar het gebouw WTC III komen. Dit is nu in een voorstel gegoten dat momenteel voorligt bij de Regie der Gebouwen

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

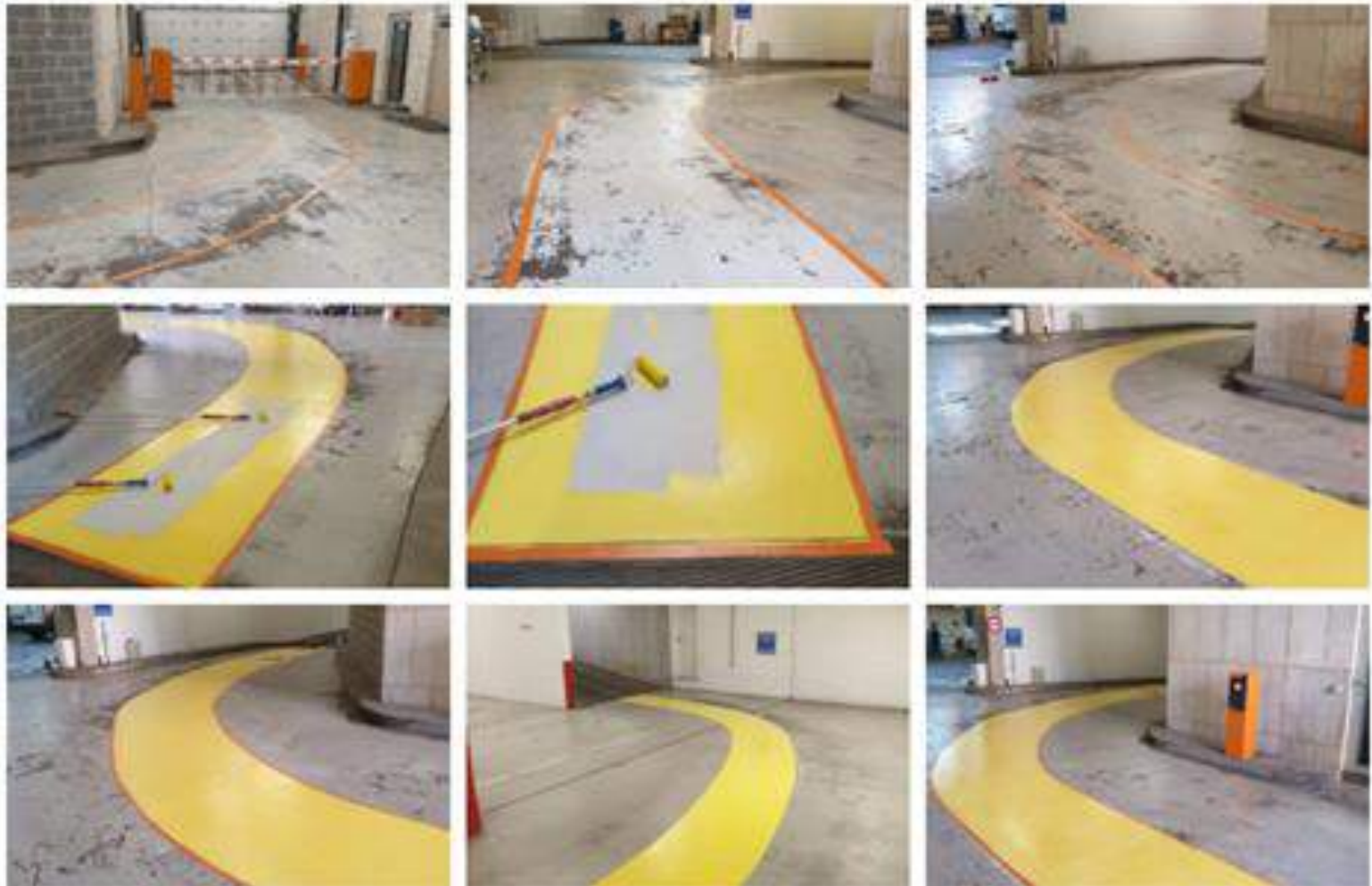
- De huidige situatie waarin er slechts heel weinig personen wegens Covid-19 in het gebouw werken en er ook heel weinig bezoekers zijn, bemoeilijkt de bespreking van het item.

VIVAQUA

1. Action réalisée

1. Een gerealiseerde actie

Notre équipe bâtiment à profité de la faible circulation dans notre parking en cette période confinement, pour réaliser un **marquage au sol jusqu'au parking vélo** (point 1.3 de notre plan d'action)



1. Action en cours

1. Een lopende actie

Renouveler la flotte de VAE au Siège social (action 1.1.) :

- o **Budget 2020 accordé** pour le renouvellement complet de la flotte
- o **Prospection réalisée** (marchés publics) :
 - Plusieurs entreprises déjà contactées (offres remises)
 - Comparaison achat / location
 - (en cours): Prospection BE pour achat groupé
- o Sur base du test « vélo » (octobre/novembre): achat ou leasing vélo
- o Années à venir:
 - **Renouvellement d'une flotte vélo d'un site par an** sur base de la méthodologie BE / Pro Vélo
 - Budget annuel demandé pour renouvellement (2019-24)

Soutien de notre Direction et inscrit

VIVAnext
PLAN STRATÉGIQUE 2019-2024

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- o Vu la situation actuelle **COVID-19**, notre Direction devant prendre des mesures (souvent urgentes) tant pour le confinement, que maintenant pour la reprise progressive de nos activités, est un peu moins disponible.
- o Malgré l'agenda chargé de notre Sponsor, le plan d'action a été validé.
- o Du fait de notre structure décisionnelle, le Plan doit être approuvé par notre Comité de direction (le 16 juin).



1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie

- Lancement d'un plan cafétéria qui inclut un important volet mobilité
- Période de choix par les collaborateurs du 28/05 au 11/06.

Avantages possibles:

- remboursement de l'abonnement de stationnement voiture ou vélo
- remboursement de l'abonnement pour un service de voitures partagées (p. ex., Cambio, Poppy, ...)
- remboursement de l'abonnement pour un service de vélos partagés (p. ex., Blue Bike, Villo!, ...)
- upgrade de l'abonnement de train vers la 1ère classe
- vélo en leasing (en collaboration avec notre partenaire Team Cyclis : https://www.cyclis.be/fr_BE/)
- intervention dans l'épargne pension individuelle
- jours FIP (jours de vacances supplémentaires)
- plateforme d'avantages Ekivita (Film : <https://youtu.be/5ZpGc1H549k> ; Ouvrir avec firefox)

=> 5 avantages sur 8 liés à la mobilité

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- Contexte actuel très difficile...
 - Crelan a pris le parti de laisser ses collaborateurs continuer le télétravail, ce qui est évidemment un “plus” très important en termes de mobilité et le nombre de km-voitures épargnés les derniers mois dépasse toutes les espérances!!!
=> soyons positifs: la mobilité n'est donc pas un problème en soi pour le moment 🙌😊🙌
 - La situation actuelle se prête difficilement à des campagnes de communication vélo à l'heure où des familles sont affectées par le virus, des solutions à trouver pour la garde des enfants etc.
 - Lancer un plan cafétéria de manière entièrement virtuelle sans pouvoir organiser des sessions d'information en face-to-face n'est pas idéal... L'intake reste, au moment d'ouvrir la période de choix, un gros point d'interrogation...



Solvay Campus Brussels

1. Action réalisée ou en cours

1. Een gerealiseerde of lopende actie



● Entretien nouveaux engagés et potentiel cyclistes

- ✂ Présentation offre de leasing vélo
- ✂ Proposition d'itinéraire personnalisé
- ✂ Proposition co-biking

BY BIKE

15 minutes with normal bike

12 minutes with electrical bike

429 grams CO2 not emitted

429 grams CO2 not emitted

81 kcal burned

38 kcal burned

Advantages

- + Non-polluting
- + Competitive during peak hours
- + Not schedule-dependent
- + Queue reduction
- + Improvement of well-being

BY BIKE

Commandez la vôtre !

Mobility budget framework

- Lasting the budget available
- No restrictions on use

Without Mobility Budget

- Minimum usage for 2 return
- Price per week
- Or distance of more than 1,000 kilometers
- Flat rate contribution of €40

40 months of leasing

Distance of 8 240 km traveled

Pay a fee in advance, appointments in advance

Category	Price
1	40
2	40
3	40
4	40
5	40
6	40
7	40
8	40
9	40
10	40
11	40
12	40
13	40
14	40
15	40
16	40
17	40
18	40
19	40
20	40

2. Une difficulté rencontrée

2. Een ervaren moeilijkheid

- Infrastructures et équipements :
revisions des priorités
- Prépondérance des voitures de
société



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UTILITARIAN CYCLING & HEALTH

Brussels Bike Project

09 juni 2020

prof dr Bas de Geus

Human Physiology and Sports Physiotherapy Research Group (MFYS)
Mobility, Logistics and Automotive Technology Research Group (MOBI)
Vrije Universiteit Brussel



HUMAN PHYSIOLOGY &
SPORTS PHYSIOTHERAPY
RESEARCH GROUP



Societal Challenges

Mobility



Health care



Air pollution



Climate change / fossil fuels

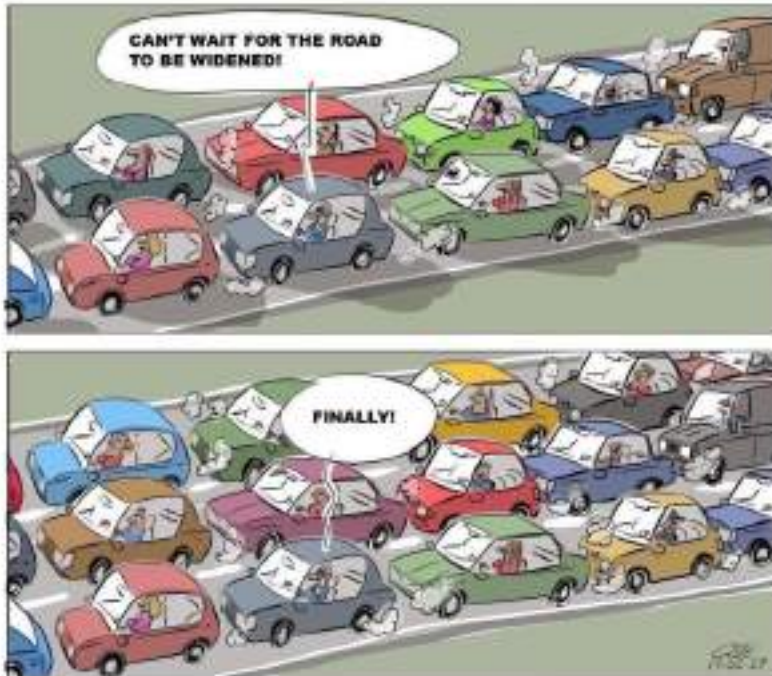


Parc de véhicules (pour l'ensemble de la Belgique)



Source : Statbel

Societal Challenges - Sustainability



Amount of space required to transport the same number of passengers by car, bus or bicycle.



Car?



Bus?



Bicycle?

Societal Challenges – Sustainable cities



Societal Challenges – Sustainable cities



Introduction



Google: Utilitarian Cycling and Health



Google: Commuter Cycling and Health

Hazards of cycling



The analogy: Will you drink dirty water then why you breathe dirty air, it is just brilliant! #AirPollution





3



1

2



4

Is (utilitarian) Cycling good for Health?



Cycling for leisure/sport

YES

Utilitarian Cycling





1. Health benefits of cycling

Cycling & All-cause mortality

ORIGINAL INVESTIGATION

All-Cause Mortality Associated With Physical Activity During Leisure Time, Work, Sports, and Cycling to Work

Lars Bo Andersen, PhD, DMSc; Peter Schnohr, MD; Marianne Schroll, PhD, DMSc; Hans Ole Hein, MD

Conclusions: Leisure time physical activity was inversely associated with all-cause mortality in both men and women in all age groups. Benefit was found from moderate leisure time physical activity, with further benefit from sports activity and bicycling as transportation.

Arch Intern Med. 2000;160:1621-1628

ORIGINAL INVESTIGATION

Active Commuting and Cardiovascular Disease Risk

The CARDIA Study

Penny Gordon-Larsen, PhD; Jarmo Boonie-Heinonen, PhD; Steve Sidney, MD, MPH; Barbara Sternfeld, PhD; David R. Jacobs Jr, PhD; Cara E. Lewis, MD

Conclusions: Active commuting was positively associated with fitness in men and women and inversely associated with BMI, obesity, triglyceride levels, blood pressure, and insulin level in men. Active commuting should be investigated as a modality for maintaining or improving health.

Arch Intern Med. 2009;169(13):1216-1223

RESEARCH ARTICLE

Associations between Recreational and Commuter Cycling, Changes in Cycling, and Type 2 Diabetes Risk: A Cohort Study of Danish Men and Women

Martin G. Rasmussen^{1*}, Anders Grøntved¹, Kim Blond¹, Kim Overvad^{2,3}, Anne Tjønneland⁴, Majken K. Jensen^{5,6}, Lars Østergaard^{1*}

Conclusions

Commuter and recreational cycling was consistently associated with lower risk of T2D in Danish adults. Our results also provide evidence that late-in-life initiation of or continued engagement in cycling lowers risk of T2D.

Cycling & (Over)Weight



Available online at www.sciencedirect.com



ScienceDirect

Preventive Medicine 46 (2008) 29–32

Preventive
Medicine

www.elsevier.com/locate/ypmed

Inverse associations between cycling to work, public transport, and overweight and obesity: Findings from a population based study in Australia

Li Ming Wen^{*}, Chris Rissel

Results. Men who cycled to work were significantly less likely to be overweight and obese (39.8%) compared with those driving to work (60.8%), with an adjusted odds ratio of 0.49 (95% CI: 0.31–0.76) and much less likely to be obese (5.4%) with an adjusted odds ratio 0.34 (95% CI: 0.13–0.87). Men who used public transport to work were also significantly less likely to be overweight and obese (44.6%) with an adjusted odds ratio of 0.65 (95% CI: 0.53–0.81). However, these inverse relationships were not found in women.

Cycling - Mental Health



ELSEVIER

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed



Does active commuting improve psychological wellbeing? Longitudinal evidence from eighteen waves of the British Household Panel Survey

Adam Martin^{a,b,*}, Yevgeniy Goryakin^{a,b}, Marc Suhrcke^{a,b,c}

Results. After accounting for changes in individual-level socioeconomic characteristics and potential confounding variables relating to work, residence and health, significant associations were observed between overall psychological wellbeing (on a 36-point Likert scale) and (i.) active travel (0.185, 95% CI: 0.048 to 0.321) and public transport (0.195, 95% CI: 0.035 to 0.355) when compared to car travel, (ii.) time spent (per 10 minute change) walking (0.083, 95% CI: 0.003 to 0.163) and driving (−0.033, 95% CI: −0.064 to −0.001), and (iii.) switching from car travel to active travel (0.479, 95% CI: 0.199 to 0.758). Active travel was also associated with reductions in the odds of experiencing two specific psychological symptoms when compared to car travel.

Cycling - Sickness absence

Preventive Medicine 51 (2010) 132–135



Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed



The association between commuter cycling and sickness absence

Ingrid J.M. Hendriksen^{a,b,*}, Monique Simons^{a,b,c}, Francisca Galindo Garre^a, Vincent H. Hildebrandt^{a,b}

Conclusion. Cycling to work is associated with less sickness absence. The more often people cycle to work and the longer the distance travelled, the less they report sick.

Intervention studies - Fitness

Scand J Med Sci Sports 2009; 39: 119–127
Printed in Singapore. All rights reserved
DOI: 10.1111/j.1600-0838.2008.02776.x

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SCANDINAVIAN JOURNAL OF
MEDICINE & SCIENCE
IN SPORTS

Commuter cycling: effect on physical performance in untrained men and women in Flanders: minimum dose to improve indexes of fitness

B. de Geus, J. Jonckheere, R. Moenen

Concluding we can state that, based on the results of this study, cycling to work has the potential to increase physical performance in an untrained study population. The maximal external power and peak oxygen uptake significantly changed over time when the IG and CG were compared. Weak, but significant correlations were found between the peak oxygen uptake and total volume in the first period.

Intervention studies – CVD risk factors - QOL - Vitality

Scand J Med Sci Sports 2008; 18: 498–510
Printed in Singapore. All rights reserved
DOI: 10.1111/j.1600-0838.2007.00729.x

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SCANDINAVIAN JOURNAL OF
MEDICINE & SCIENCE
IN SPORTS

Cycling to work: influence on indexes of health in untrained men and women in Flanders. Coronary heart disease and quality of life

B. de Geus¹, E. Van Hoof^{2,3}, L. Aerts¹, R. Meeusen¹

We conclude that this lifestyle intervention study, where subjects had to cycle to and from work for 1 year, had a positive influence on CHD risk factors and was likely to improve the health-related QOL of previously untrained healthy adults.

Systematic Review - Health benefits

Scand J Med Sci Sports 2011
doi: 10.1111/j.1365-0838.2011.01269.x

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SCANDINAVIAN JOURNAL OF
MEDICINE & SCIENCE
IN SPORTS

Review

Health benefits of cycling: a systematic review

P. Oja¹, S. Titze², A. Bauman³, B. de Geus⁴, P. Krenn², B. Reger-Nash⁵, T. Kohlberger²

¹UKK Institute, Tampere, Finland, ²Institute of Sport Science, University of Graz, Graz, Austria, ³School of Public Health, University of Sydney, Sydney, Australia, ⁴Department of Human Physiology and Sports Medicine, Vrije Universiteit Brussel, Brussels, Belgium, ⁵Department of Community Medicine, West Virginia University, Morgantown, West Virginia, USA
Corresponding author: Pekka Oja, F.E.Sillanpäänkatu 4 A 16, 33230 Tampere, Finland. Tel: +358 50 3394 593, Fax: +358 3 2829 559, E-mail: pekka.oja@uta.fi

Accepted for publication 23 December 2010

The purpose of this study was to update the evidence on the health benefits of cycling. A systematic review of the literature resulted in 16 cycling-specific studies. Cross-sectional and longitudinal studies showed a clear positive relationship between cycling and cardiorespiratory fitness in youths. Prospective observational studies demonstrated a strong inverse relationship between commuter cycling and all-cause mortality, cancer mortality, and cancer morbidity among middle-aged to elderly subjects. Intervention studies among working-age adults indicated consistent improvements in cardiovascular fitness and some improvements in cardiovascular risk factors due to commuting cycling. Six studies showed a consistent positive dose-response gradient

between the amount of cycling and the health benefits. Systematic assessment of the quality of the studies showed most of them to be of moderate to high quality. According to standard criteria used primarily for the assessment of clinical studies, the strength of this evidence was strong for fitness benefits, moderate for benefits in cardiovascular risk factors, and inconclusive for all-cause mortality, coronary heart disease morbidity and mortality, cancer risk, and overweight and obesity. While more intervention research is needed to build a solid knowledge base of the health benefits of cycling, the existing evidence reinforces the current efforts to promote cycling as an important contributor for better population health.





3



1

2



4



2. Bicycle crashes

Evolution du nombre d'accidents corporels impliquant un cycliste et du nombre de cyclistes victime de la route en Région de Bxl-Capitale, 2005-2013 (données pondérées)



	<i>Accidents corporels</i>	<i>Cyclistes blessés légers</i>	<i>Cyclistes blessés graves</i>	<i>Cyclistes décédés 30 jours</i>	<i>Total cyclistes victimes</i>
2005	207	201	8	0	209
2006	181	176	6	0	182
2007	216	206	10	0	216
2008	244	234	8	0	242
2009	265	251	11	1	263
2010	315	296	20	1	317
2011	372	348	15	3	366
2012	371	338	17	0	355
2013	388	365	10	1	376

Source : SPF Economie DG Statistique

Bicycle crashes - Exposure

Bicycle crashes:

- Incidence = # crashes
-

Incidence rate = $\frac{\text{Incidence}}{\text{Exposure}}$



Incidence: 10 crashes / year
Exposure: 1,000 trips / year
Incidence rate: 0.01 crashes / year

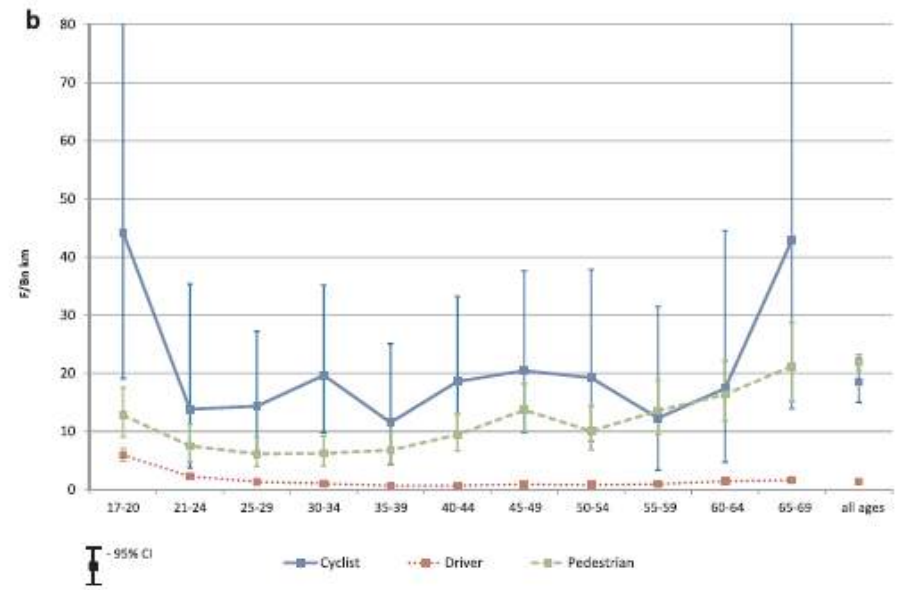
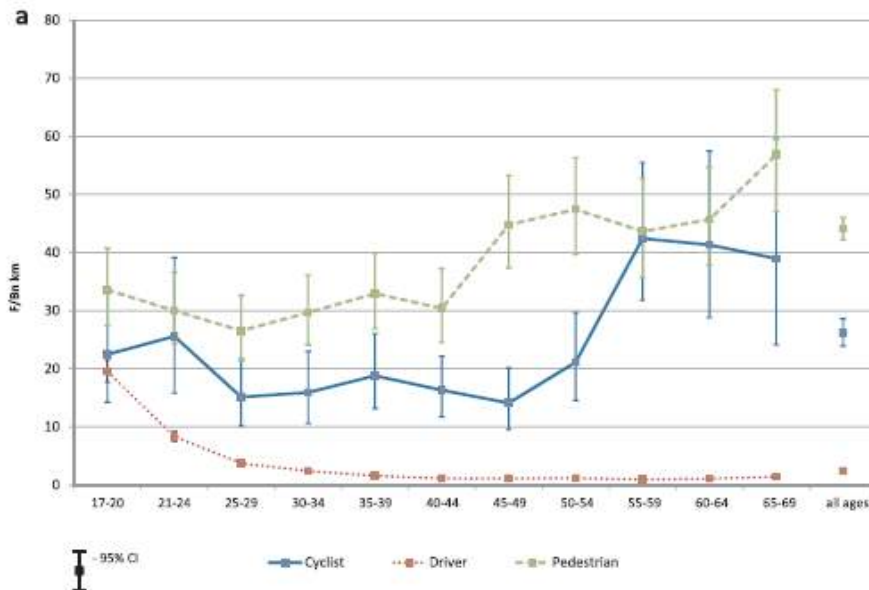


Incidence: 10 crashes / year
Exposure: 10,000 trips / year
Incidence rate: 0.001 crashes / year

Fatality rates - Exposure

Comparative fatality risk for different travel modes by age, sex, and deprivation

Robel Feleke^a, Shaun Scholes^b, Malcolm Wardlaw^c, Jennifer S. Mindell^{b,*}



Fatality rates by mode by distance travelled, 2007–12. a) Males < 70, b) females < 70,

Risques grave (MAIS3+) et mortel par type d'usager de la route en Belgique selon la DISTANCE et selon le TEMPS.

	<i>Risque d'être grièvement blessé ou tué</i>		<i>Risque d'être tué</i>	
	<i>Par million km</i>	<i>Par million min</i>	<i>Par million km</i>	<i>Par million min</i>
<i>Piéton</i>	<i>0,13</i>	<i>0,01</i>	<i>0,032</i>	<i>0,003</i>
<i>Cycliste</i>	<i>0,37</i>	<i>0,10</i>	<i>0,027</i>	<i>0,007</i>
<i>Motocycliste / cyclomotoriste</i>	<i>0,91</i>	<i>0,57</i>	<i>0,169</i>	<i>0,105</i>
<i>Automobiliste</i>	<i>0,02</i>	<i>0,01</i>	<i>0,006</i>	<i>0,005</i>
<i>Passager de voiture</i>	<i>0,02</i>	<i>0,01</i>	<i>0,005</i>	<i>0,004</i>
<i>Passager de bus ou de train</i>	<i>0,01</i>	<i>0,00</i>	<i>0,000</i>	<i>0,000</i>
<i>Tous les usagers</i>	<i>0,04</i>	<i>0,02</i>	<i>0,008</i>	<i>0,005</i>

Source : Vandemeulebroek, Focant, et Lequeux, 2017, d'après Martensen 2004

Incidence rate (risk) – minor bicycle crashes

Table 1

Incidence, exposure and incidence rate per region.

	Brussels-capital region	Flanders	Wallonia
<i>Incidence</i>			
Number of injuries (N)	28	34	8
<i>Exposure</i>			
Frequency (# of trips)	64,982	116,262	22,920
Time (h)	20,153	45,190	8540
Distance (km)	325,210	909,033	160,873
<i>Incidence rate (95% CI)</i>			
/1000 trips	0.431 (0.271–0.590)	0.292 (0.194–0.391)	0.349 (0.107–0.591)
/1000 h	1.389 (0.875–1.904)	0.752 (0.499–1.005)	0.937 (0.288–1.586)
/1000 km	0.086 (0.054–0.118)	0.037 (0.025–0.050)	0.050 (0.015–0.084)

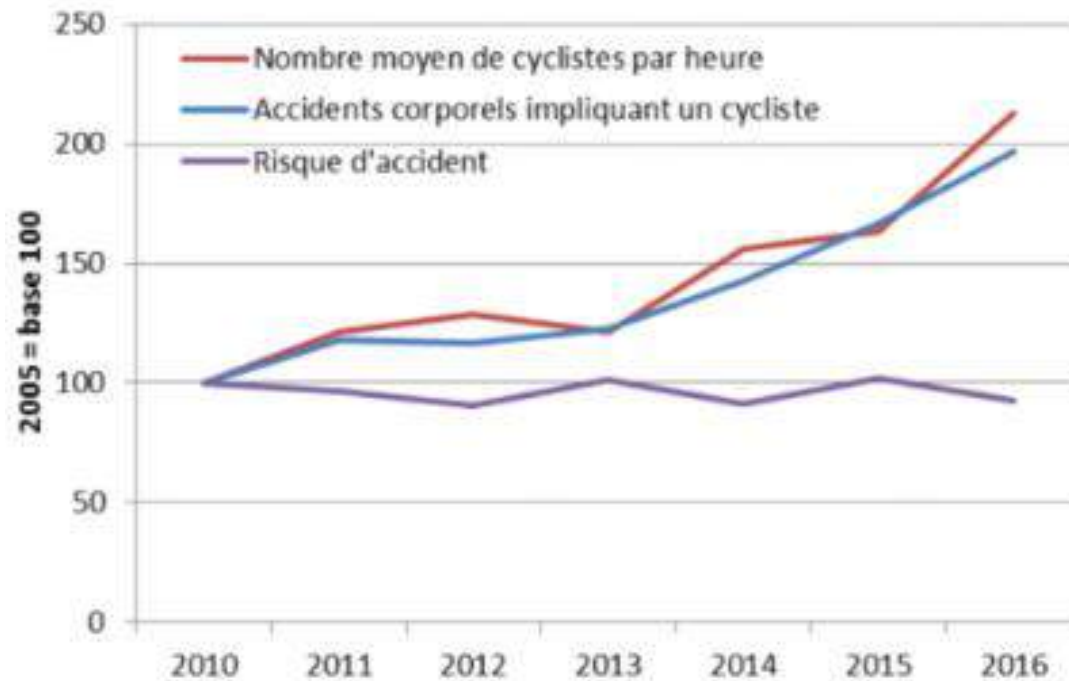
Values in Bold indicate a significant difference ($P < 0.05$).

Note: 511 (2.54%) travel diaries could not be attributed to a specific region.



de Geus et al., 2012

Safet-in-Numbers chez les cyclistes à Bxl



Source : Pro Vélo, StatBel, IBSR (Nuyttens 2017)

Lateral clearing distance

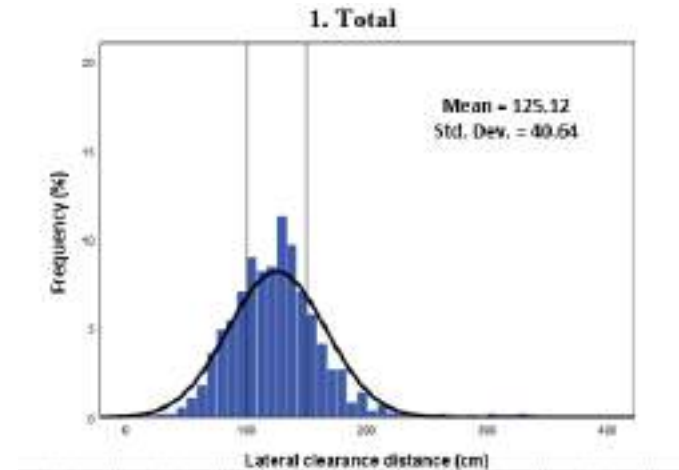
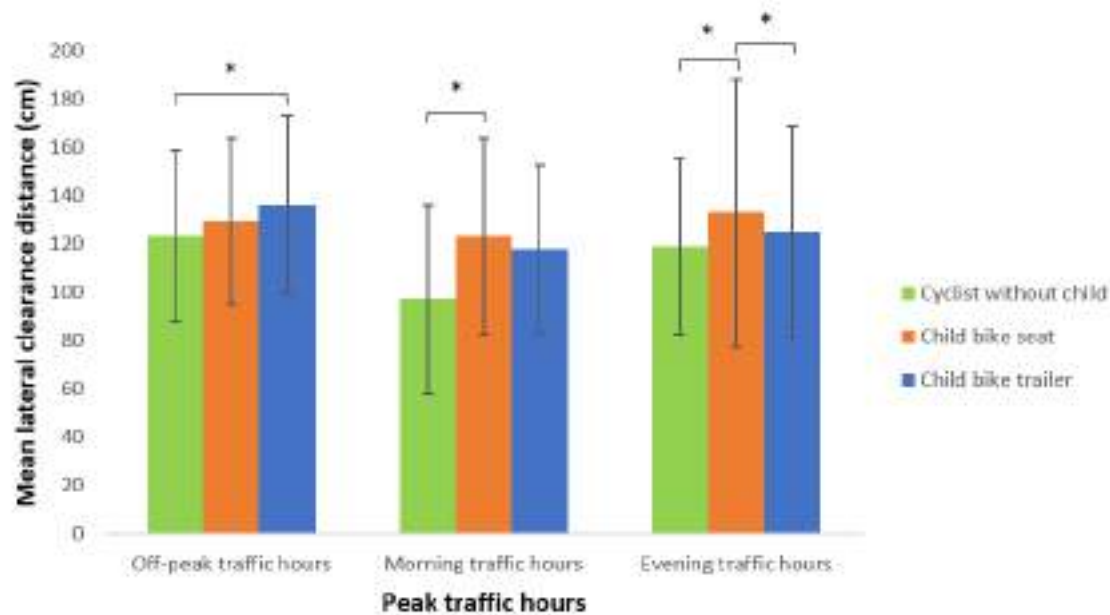


Fig. 9 Mean lateral clearance distance (cm) as a function of the combination of peak traffic hours and cycling condition. Bars indicate standard deviations of the mean, * = significant ($p < 0.05$)



Fig. 1 Child bike seat



Fig. 2 Child bike trailer



Fig. 3 The different cycling infrastructure types on the road used for the cycling trips



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3. Air Pollution & Cycling

Back-ground air pollution – Long-term

Sources: heating, **motorised traffic**, industry, neighbouring countries

The impact of exposure to air pollution on cognitive performance

Xin Zhang^{a,1}, Xi Chen^{b,c,1}, and Xiaobo Zhang^{d,e,2}

Cardiovascular Mortality and Long-Term Exposure to Particulate Air Pollution

Epidemiological Evidence of General Pathophysiological Pathways of Disease

C. Arden Pope III, PhD; Richard T. Burnett, PhD; George D. Thurston, ScD; Michael J. Thun, MD; Eugenia E. Calle, PhD; Daniel Krewski, PhD; John J. Godleski, MD



Back-ground air pollution – Vulnerability

Review Article

Adverse effects of outdoor pollution in the elderly

Marzia Simoni¹, Sandra Baldacci¹, Sara Maio¹, Sonia Cerrai¹, Giuseppe Sarno¹, Giovanni Viegi^{1,2}



RESEARCH ARTICLE

Association between Traffic-Related Air Pollution in Schools and Cognitive Development in Primary School Children: A Prospective Cohort Study

Conclusions

Children attending schools with higher traffic-related air pollution had a smaller improvement in cognitive development.



Back-ground TRAFFIC air pollution – Long-term

Long-Term Effects of Traffic-Related Air Pollution on Mortality in a Dutch Cohort (NLCS-AIR Study)

Rob Beelen,¹ Gerard Hoek,¹ Piet A. van den Brandt,² R. Alexandra Goldbohm,³ Paul Fischer,⁴ Leo J. Schouten,² Michael Jerrett,⁵ Edward Hughes,⁶ Ben Armstrong,⁷ and Bert Brunekreef^{1,8}

CONCLUSIONS: Traffic-related air pollution and several traffic exposure variables were associated with mortality in the full cohort. Relative risks were generally small. Associations between natural-cause and respiratory mortality were statistically significant for NO₂ and BS. These results add to the evidence that long-term exposure to ambient air pollution is associated with increased mortality.



Micro-environment traffic air pollution – Short-term



The Science of the Total Environment 279 (2001) 131–136

the Science of the
Total Environment

An International Journal of Environmental Science
and Technology

www.elsevier.com/locate/scitotenv

Differences in cyclists and car drivers exposure to air pollution from traffic in the city of Copenhagen

Jette Rank^{a,*}, Jens Folke^b, Per Homann Jespersen^a

5. Conclusion

On the basis of this study, we can conclude that cyclists in the city of Copenhagen are exposed to lower concentrations of traffic related pollutants than car drivers. Furthermore, we conclude that car drivers experience 3–4 times higher BTEX concentrations and approximately two times higher exposure of particles than bikers. The study also indicates that the air children breathe may be better on the back of a bicycle than inside a car.



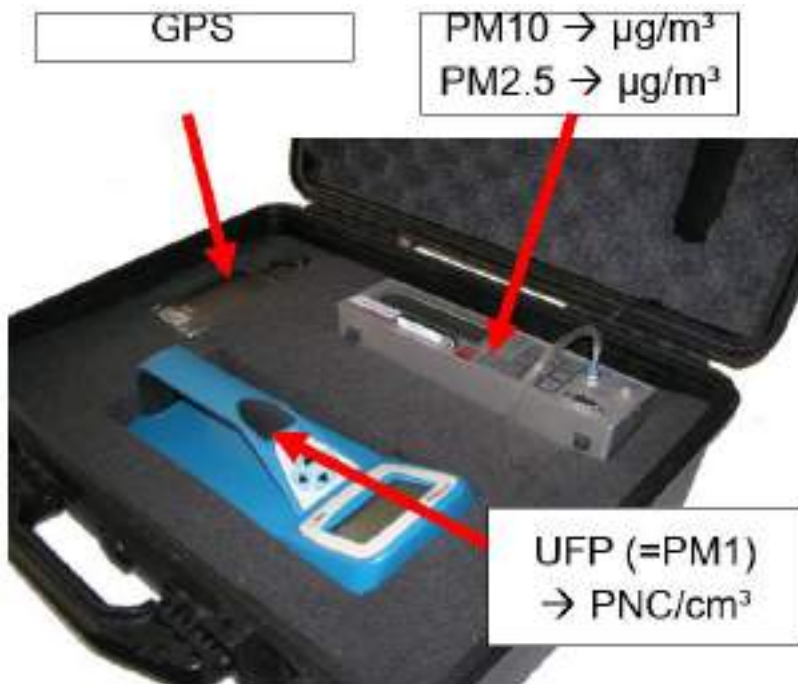
What is forgotten?



→ **Exposure** = ventilation x concentration x distance

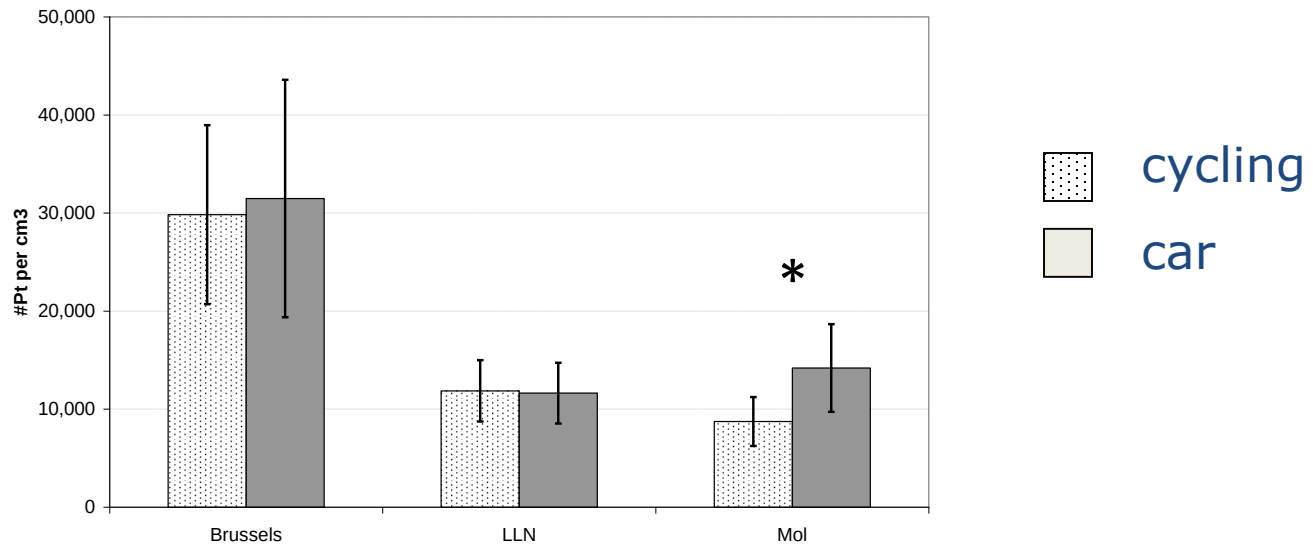
Materials & Methodes

➔ Exposure = ventilation per distance x concentration x distance



Results – Air pollution

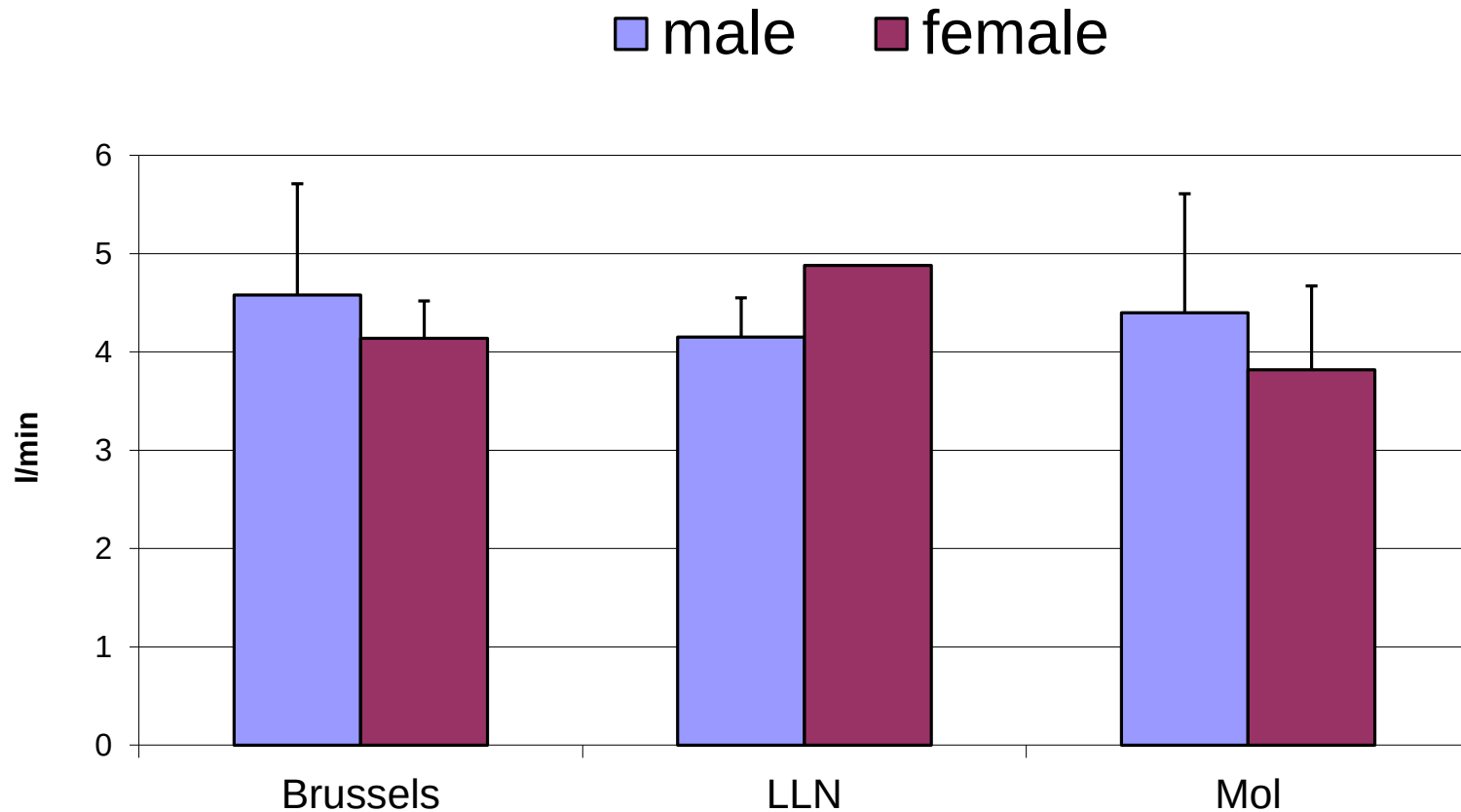
UFP (PNC/cm³)



Values are mean (SD)

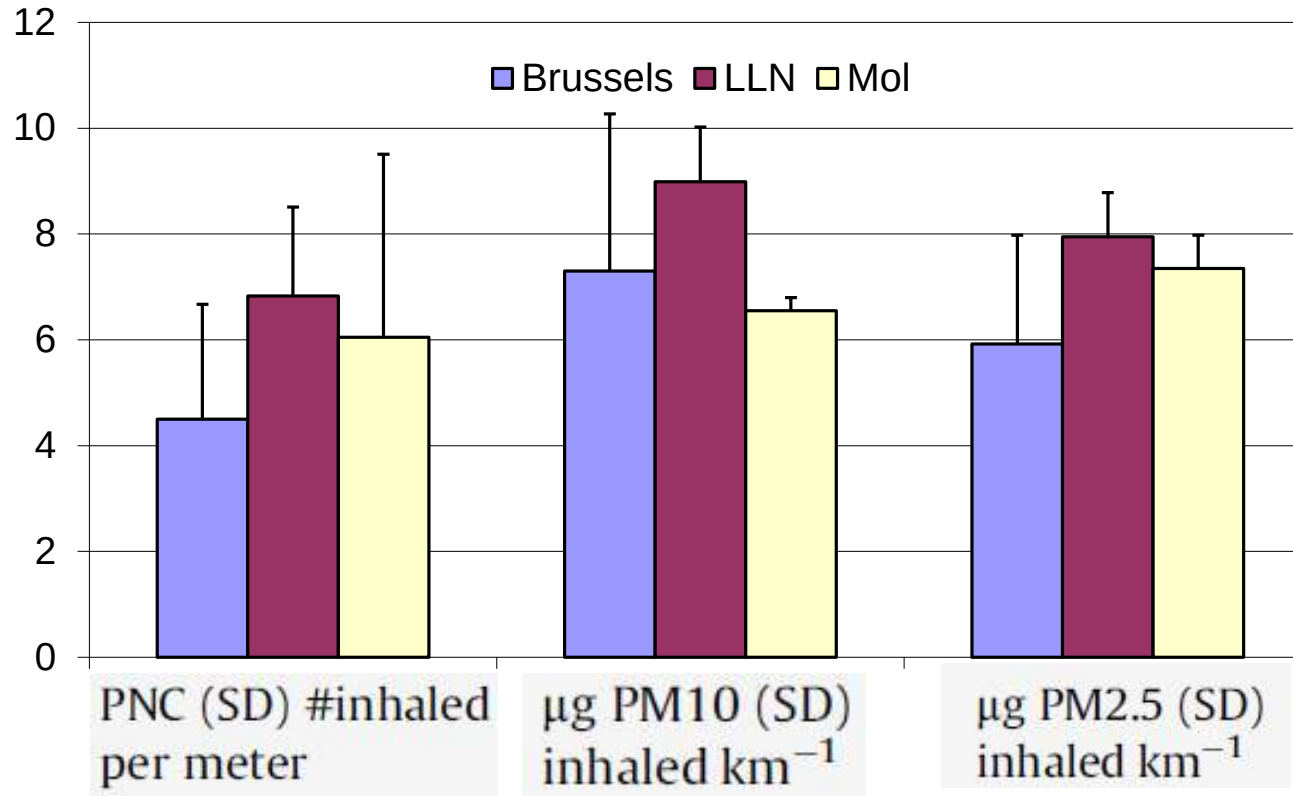
* Sign diff car vs bicycle

Results: Minute Ventilation (VE): Bike/car ratio



Values are mean (SD)

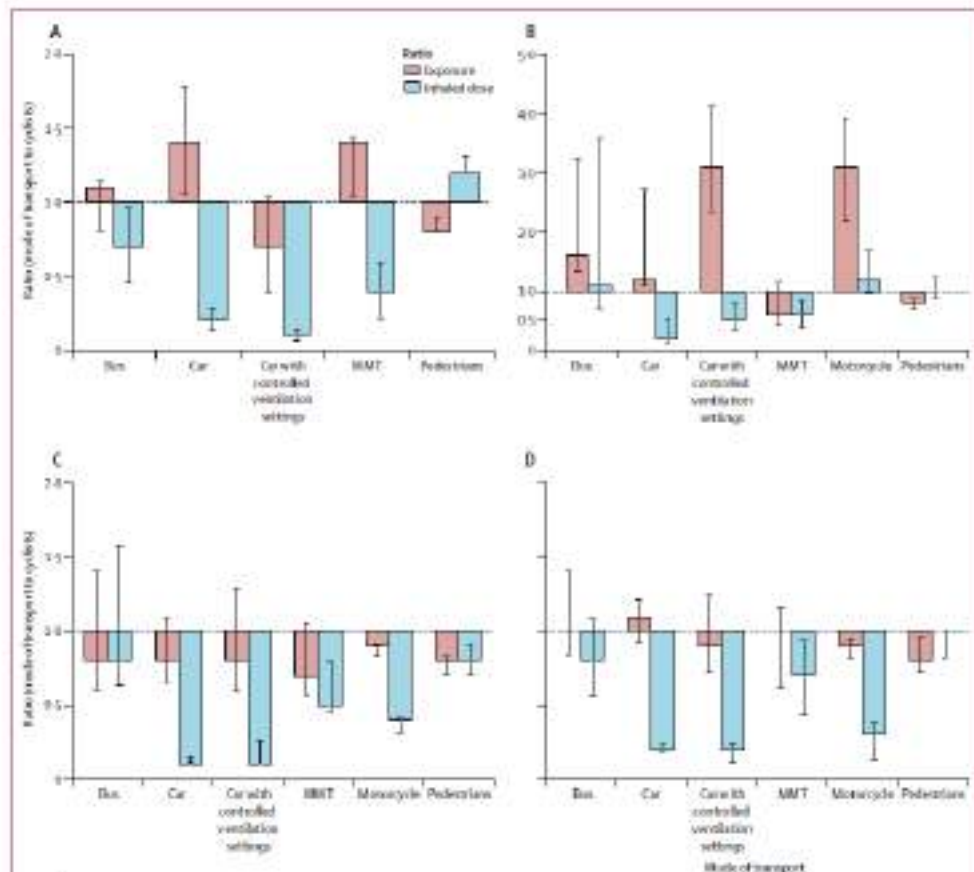
Results: inhaled quantities: bike/car ratio



Review Inhaled dose of Air Pollution

Levels of ambient air pollution according to mode of transport: a systematic review

Magda Cepeda, Josje Schoufour, Rosanne Freak-Poli, Chantal M Koolhaas, Klodian Dhana, Wichor M Bramer, Oscar H Franco





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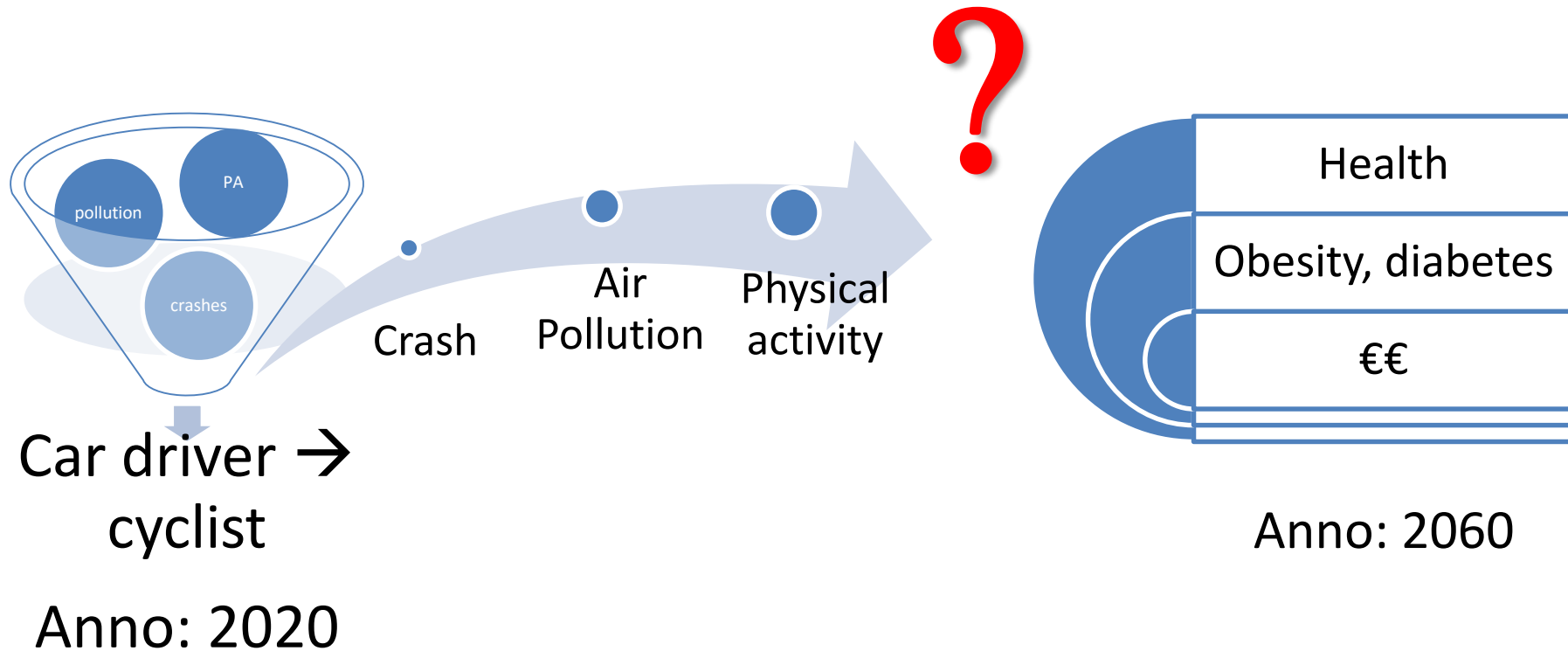


4



4. Cost-benefit analysis / Health Impact Assessment

Predictive models – population level



Net health benefit: 7 months

→ 500,000 car drivers make a transition from car to bicycle for short trips (7.5-15 km) on a daily basis in the Netherlands

Stressor	Relative risk	Gain in life years ^a	Gain in life days/ months per person ^a
Air pollution	1.001 to 1.053	-1,106 to -55,163 (-28,135)	-0.8 to -40 days (-21 days)
Traffic accidents	0.996 to 1.010 ^b 0.993 to 1.020 ^b	-6,422 to -12,856 (-9,639)	-5 to -9 days (-7 days)
Physical activity	0.500 to 0.900	564,764 to 111,027 (337,896)	14 to 3 months (8 months)

CONCLUSIONS: On average, the estimated health benefits of cycling were substantially larger than the risks relative to car driving for individuals shifting their mode of transport.

de Hartog et al. (2010)

Economic cost: health

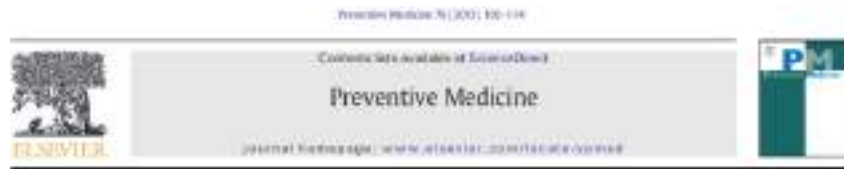


Total benefits, external costs and cost:benefit analysis over 20 years for Antwerp–Mechelen bicycle highway (scenario 1^a)

Impact factor	euro
Physical activity (reduced mortality)	1.2×10^7
Physical activity (reduced morbidity)	2.3×10^6
Reduced air pollution society (mortality)	7.4×10^4
Air pollution active mobility	-8.9×10^5
Crash risk	-1.4×10^6
Total	$+1.2 \times 10^7$
Infrastructure construction costs	-6.0×10^6
Benefit:cost ratio	2.0

(Buekers et al, 2018)

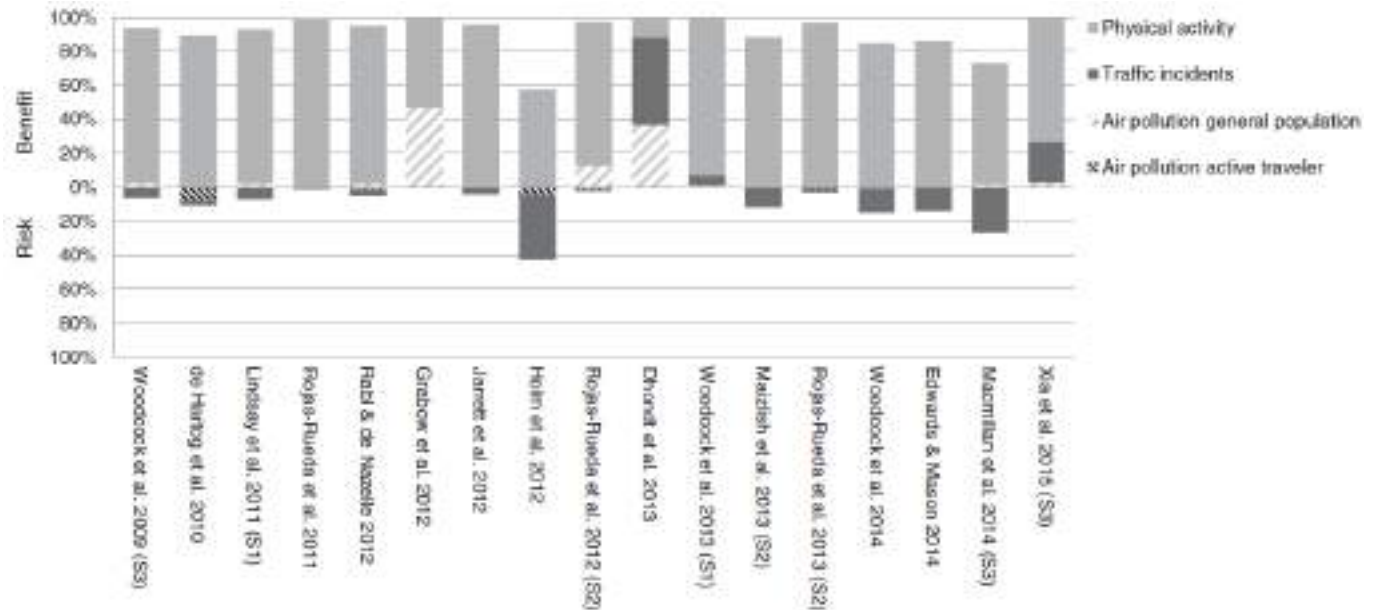
Health impact assessment of active transportation: A systematic review



Review

Health impact assessment of active transportation: A systematic review

Natalie Mueller^{A, B, C}, David Rojas-Rueda^{A, B, C}, Tom Cole-Hunter^{A, B, C}, Audrey de Nazelle^{A, B}, Eve Dons^{A, B, C}, Regine Genk^A, Thomas Götschi^A, Luc Int Paris^{A, D}, Sonja Kahlmeier^A, Mark Nieuwenhuijsen^{A, B, C}



Mueller et al. (2015)

London bicycle sharing system: health impact modelling

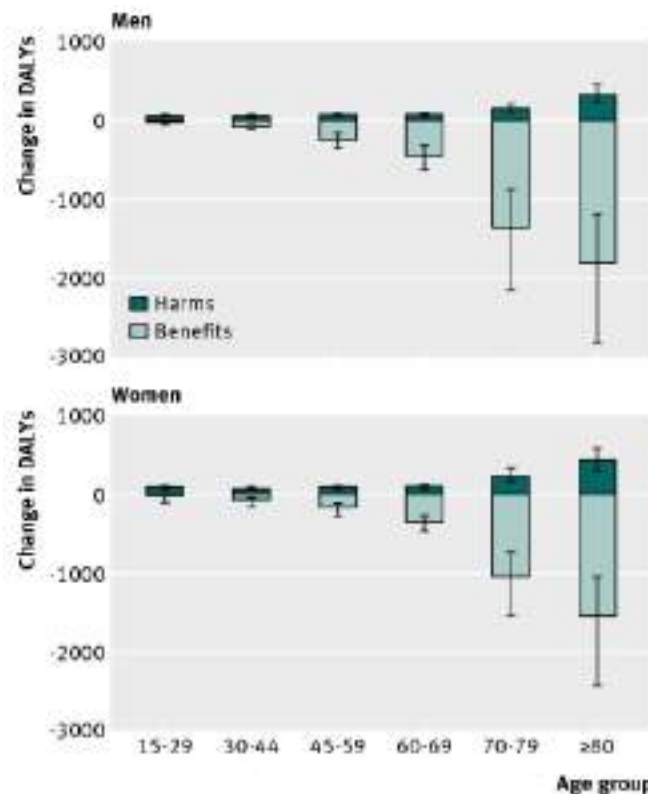


Fig 2 Trade-off of benefits to harms for cycling in central London: effects by age and sex, per million population (although few older people used cycle hire). Benefits come through impacts on diseases related to physical activity, harms come from exposure to road traffic injuries (see table 28 in appendix 4). Results use background injury rates and so should be interpreted as the trade-off for cycling in general in the cycle hire zone and not for specifically using cycle hire bicycles (which may carry lower risks of injury)

Woodcock et al. (2014)



3



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THANK YOU FOR YOUR ATTENTION



prof dr Bas de Geus

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What to do next?

Society: Reduce the number of cars

Reduce number of cars

- Law enforcement
- Mentality change



Society: Bicycle infrastructure

Bicycle infrastructure:

- Attracts people to cycle
- Reduces Crash Risk
- Reduces Exposure to Air Pollution



Individual: Rout choice

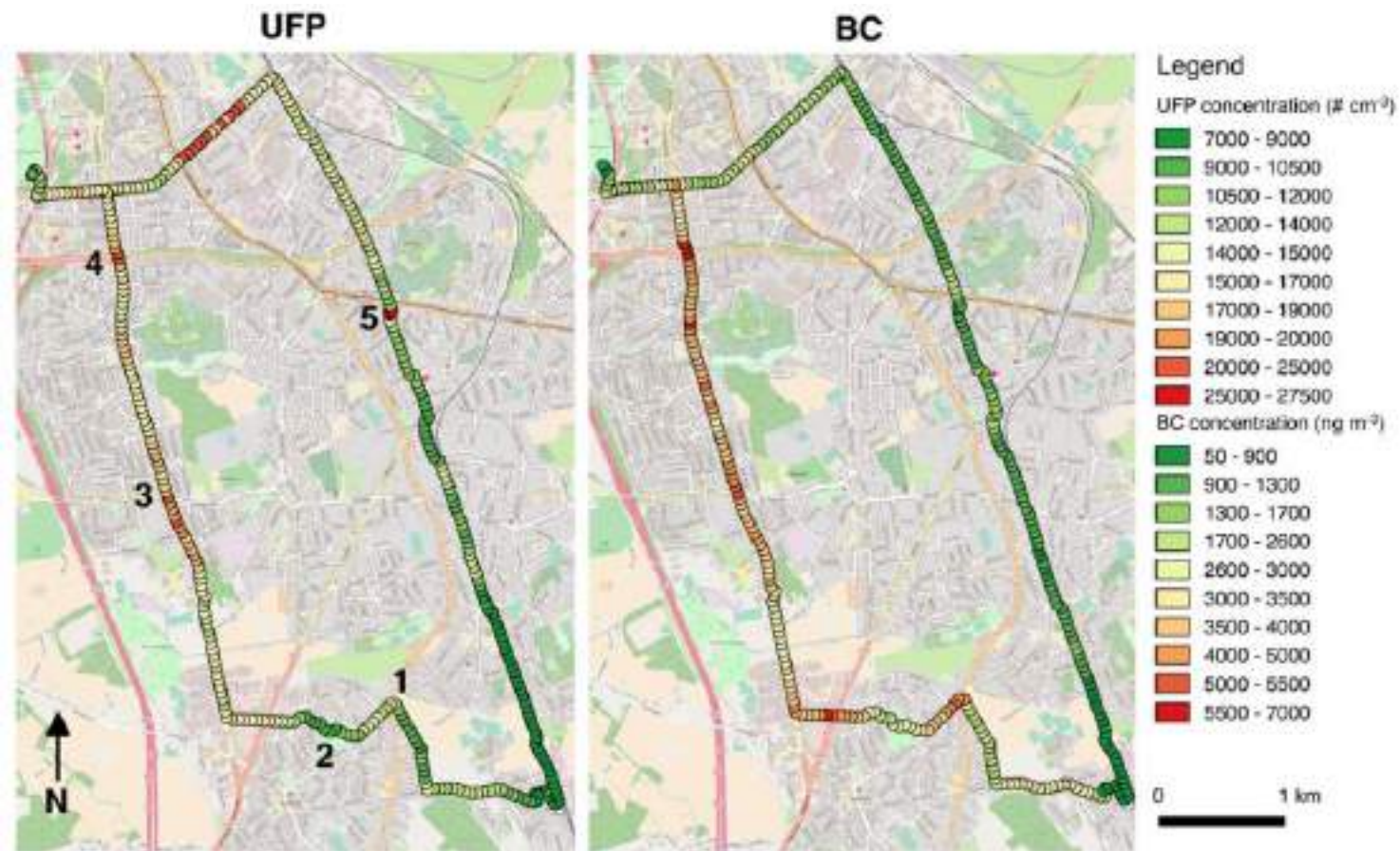
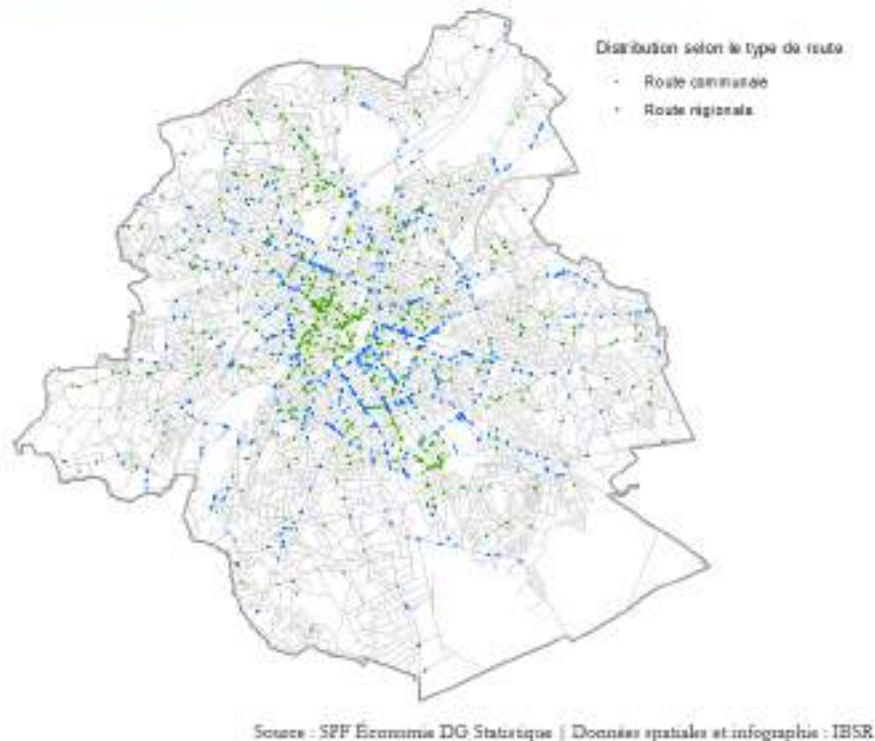


Fig. 2. Buffer-averaged UFP ($\# \text{ cm}^{-3}$) and BC (ng m^{-3}) concentrations at 50 m intervals (represented by each dot) along the considered commuting routes with heavy-trafficked intersections (1, 3 and 4), a small urban park (2) and a market location (5; only on Wednesdays).

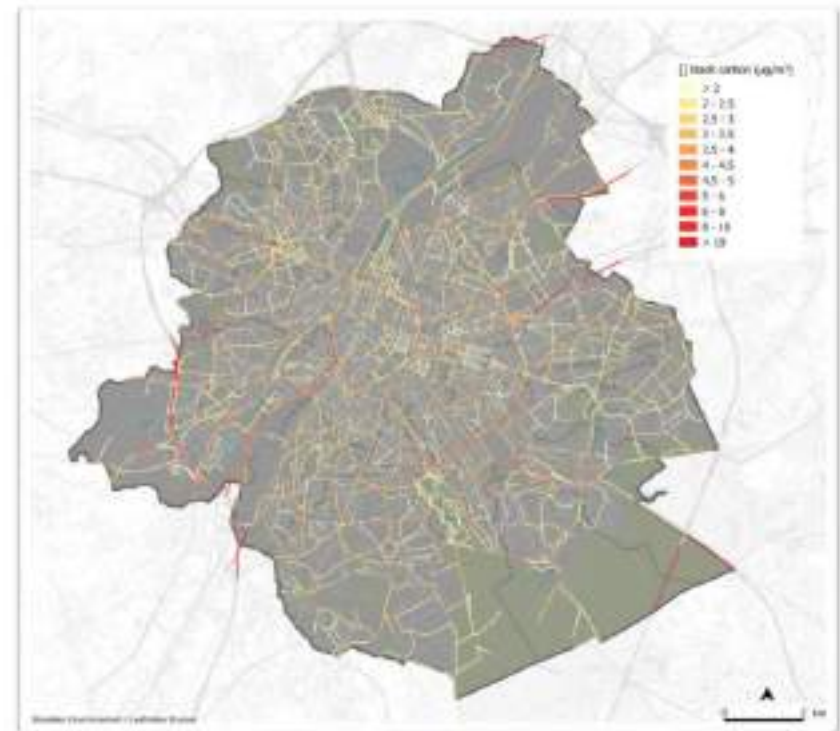
Individual: Rout choice

Chose the safest and less polluted trajectory (less motorized traffic as possible)

Figure 15 Localisation des accidents corporels impliquant un cycliste (2010-2013) selon que l'accident s'est produit sur route communale ou sur route régionale (n=1340)



Map 1 - Block Carbon mean concentration (averaging period: 2014-2016) (source: (Bruxelles Environnement, 2017)



Individual: Bicycle safety measurements

Protect yourself and make yourself visible in traffic, especially when the light conditions are poor



Individual: Bicycle safety measurements

Safety Science 108 (2018) 209–217

Contents lists available at ScienceDirect

Safety Science

journal homepage: www.elsevier.com/locate/safety



The effect of a yellow bicycle jacket on cyclist accidents

Harry Lahrmann^{a,*}, Tanja Kidholm Osmann Madsen^a, Anne Vingaard Olesen^a,
Jens Chr. Overgaard Madsen^b, Tove Hels^c

A B S T R A C T

This study is the first randomised controlled trial (RCT) of the safety effect of high-visibility bicycle clothing. The hypothesis was that the number of cyclist accidents can be reduced by increasing the visibility of the cyclists. The study design was an RCT with 6793 volunteer cyclists – 3402 test cyclists (with a yellow jacket) and 3391 control cyclists (without the jacket). The safety effect of the jacket was analysed by comparing the number of self-reported accidents for the two groups. The accident rate (AR) (accidents per person month) for personal injury accidents (PIAs) for the test group was 47% lower than that of the control group. For accidents involving cyclists and motor vehicles, it was 55% lower. The study was non-blinded, and the number of reported single accidents was significantly lower in the test group than in the control group. This is likely a result of a response bias, since the bicycle jacket was not expected to affect the number of single accidents. To compensate for this bias, a separate analysis was carried out. This analysis reduced the effect of the jacket from 47% to 38%.

Face masks - Cycling

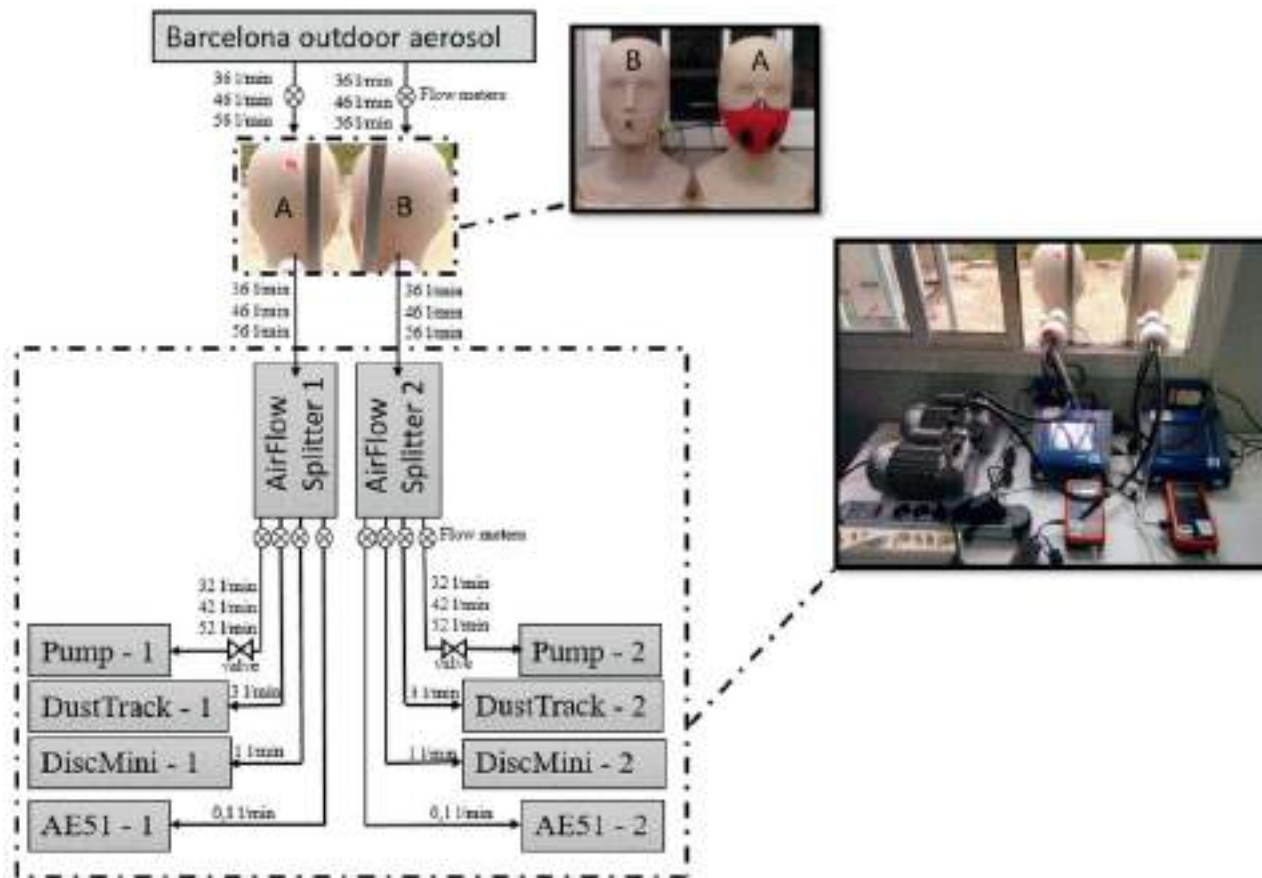
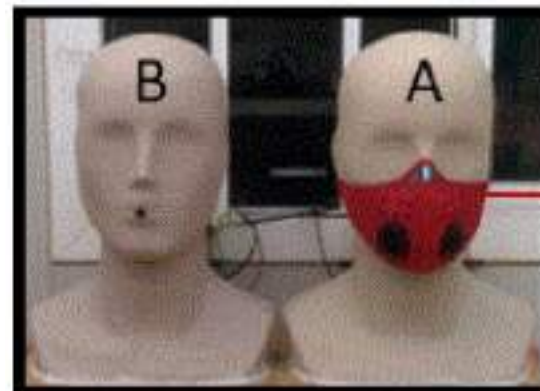
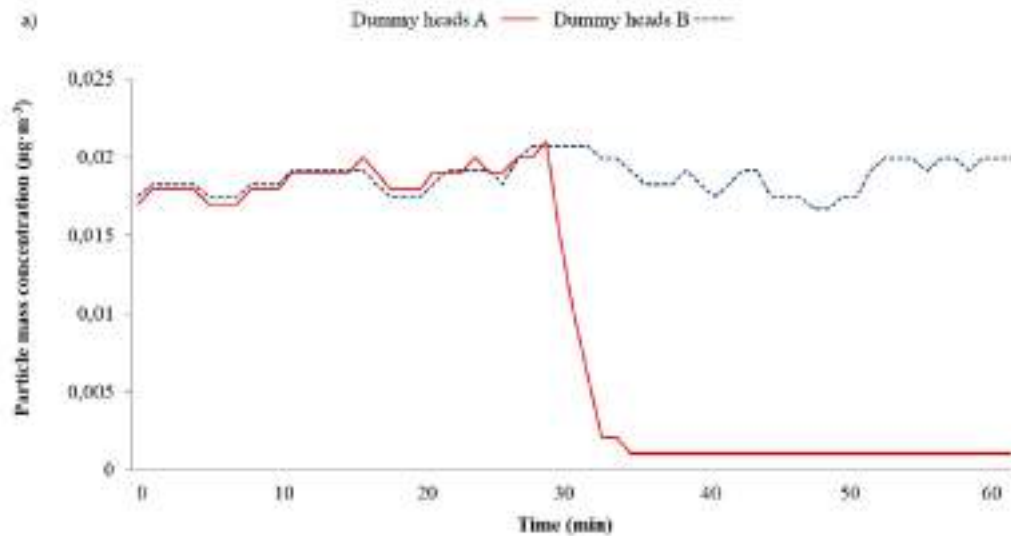


Fig. 1. Scheme of measurement set-up.

Pacitto et al., 2019

Face masks - Cycling



PM2.5 (-48%) ↓
 LDSA (-22%) ↓
 BC (-19%) ↓
 UFP (-19%) ↓

Pacitto et al., 2019

Face masks - Walking

Parameter	Walk	
	Mask	No mask
Systolic blood pressure (mmHg)	126.9 ± 15.9	128.1 ± 16.5
Diastolic blood pressure (mmHg)	78.0 ± 9.3	79.5 ± 8.6
Mean arterial pressure (mmHg)	93.3 ± 9.7*	95.7 ± 10.0
Heart rate (bpm)	81.5 ± 8.7	81.5 ± 10.1
LF power (msec ²)	133 (68–97)	136 (52–227)
HF power (msec ²)	54 (27–108)*	40 (20–69)
LFn (msec)	58.4 (45.6–69.1)*	62.9 (51.1–75.5)
HFn (msec)	23.5 (18.0–32.4)*	20.5 (13.5–27.9)
HF:LF ratio	0.418 (0.258–0.712)	0.328 (0.207–0.573)
pNN50 (%)	1.2 (0.2–2.8)	0.7 (0.0–2.3)
RMSSD (msec)	16.7 (13.2–22.5)*	14.8 (10.9–19.6)
SDNN (msec)	59.8 (46.4–79.1)	60.1 (41.0–79.3)
Ischemic burden (mV-sec)		
Inferior (II) territory	–66 (–118 to –26)	–52 (–149 to –21)
Anterior (V2) territory	–66 (–142 to –16)	–50 (–124 to –13)
Lateral (V5) territory	–37 (–104 to –8)	–43 (–85 to –18)
Sum (II + V2 + V5)	–189 (–332 to –90)	–188 (–340 to –112)

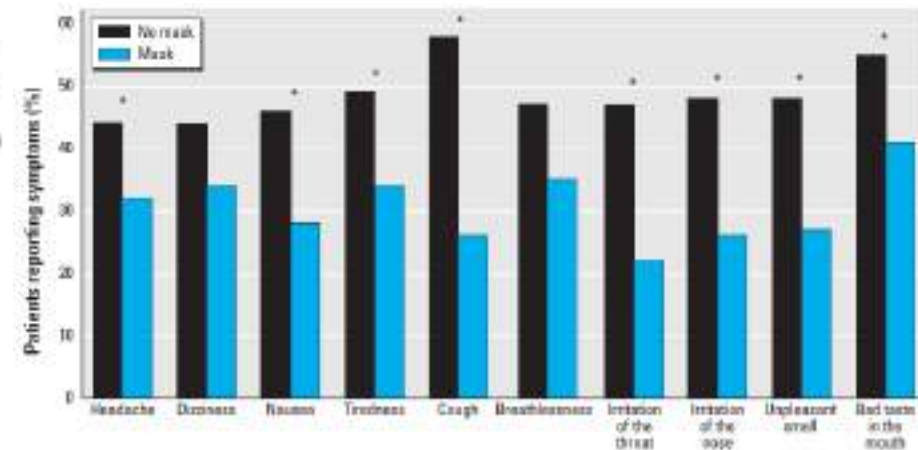
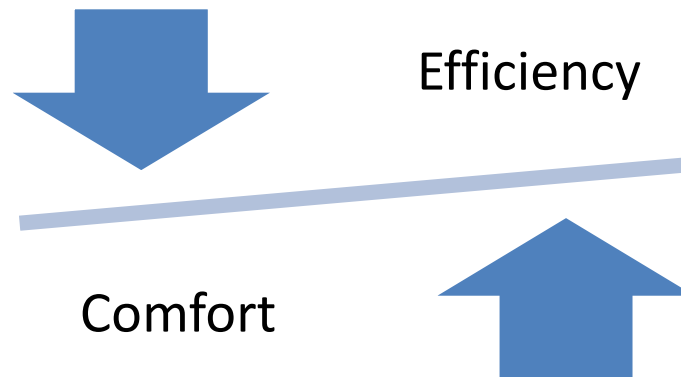


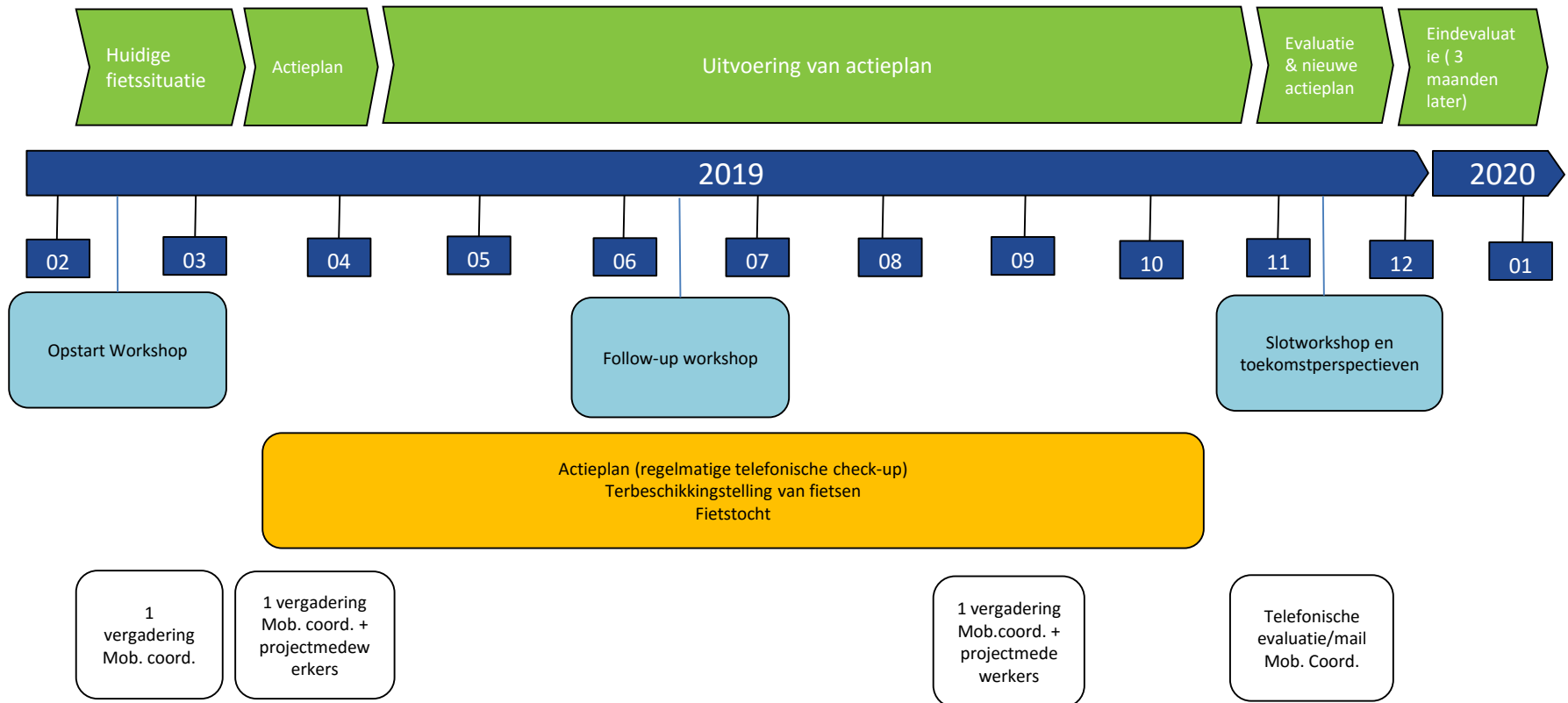
Figure 1. Self-reported symptoms of well-being in the presence or absence of the face mask.
*p < 0.05.

Face masks



Webinair WORKSHOP 2 The Bike Project 09/06/2020		
9:00	Introduction - Inleiding	Pro Velo
9:15	Fiscalité vélo - De fiets fiscaliteit	Pro Velo
9:45	Marketing social - Sociale marketing	Xavier Van Roy
10:30	Présentation par chaque organisation - Presentatie van elke organisatie	
11:00	Pause - Pauze	
11:15	Le vélo et la santé - Fiets en gezondheid	Bas de Geus
12:00	Fin - Einde	

What's next ?



What's next ?

- Opvolging actieplan
- Laatste fietstesten
- Fietstochten
- Afsluitings Workshop – **24 november**
- Afsuitingsvergadering
- 3 maanden later – stavaza

> Evaluatie workshop

Bedankt – Merci!

