

HEALTH EQUITY 2020 TOOLKIT APPENDIX 3

Health Equity 2020 Action Database

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Introduction

As described in [Phase 3](#) on choosing actions, there are three main mechanisms that can be distinguished through which socioeconomic health inequalities can be reduced:

1. Reducing the inequalities in socioeconomic position itself, such as education, income, or wealth.
2. Reducing the negative effect of a low socioeconomic position on health by improving determinants of health that are more prevalent among lower compared to higher socioeconomic groups, including:
 - a. living and working conditions
 - b. health behaviours
 - c. accessibility to and quality of health care and preventive services
3. Reducing the negative social and economic effects of ill health, such as school drop-out, lost job opportunities and reduced income.

The Health Equity 2020 Action Database contains a range of policies, interventions and programmes that aim to reduce socioeconomic health inequalities. Both effective actions (evidence level A or B, see Box 15 in the Phase 3 tool) and good practices (evidence level C or D, see Box 15 in the Phase 3 tool) are included.

Methods

The database was created through extensive literature review. We considered a collection of umbrella reviews (review of reviews) that evaluated reviews of evidence on actions that could potentially tackle health inequalities. Additionally, we considered 'normal' literature reviews that evaluated evidence on important determinants of health by socioeconomic position. In some cases, when no literature review was available that considered socioeconomic differences, we did a literature review of original studies.

An overview of the umbrella reviews and 'normal' systematic reviews that were used to compile this report and the database can be found in the [appendix](#).

The information that is included for each of the actions that were included in the database is:

- General information
 - o Short name of the action
 - o A short description of the action
 - o References
- Details about the action
 - o What was the main mechanism? (e.g. improving working & living conditions)
 - o What approach was used? (e.g. targeted or population approach)
 - o What are the main determinants that were addressed? (e.g. smoking)
 - o What health outcomes were affected? (e.g. cardiovascular health)
 - o What was the target population? (e.g. low-income women)
 - o What type of action was it? (e.g. community intervention)
 - o Where was the original action carried out? (e.g. US)
 - o On what level can the action be implemented? (e.g. regional)

- Details on the evaluation of the action
 - o What was the general study design? (e.g. randomized controlled trial)
 - o A short summary of the main effects.
 - o What is the level of evidence? (referring to level A-D from Box 15)
- Other information
 - o Warnings that may need to be taken into account
 - o Notes

Results

The reviews conducted to prepare the database were very comprehensive but in no way complete. We also observed what we called the ‘inverse-evidence- law’; we see many evaluation studies that address those interventions of which we only expect minimal impact (e.g. individual-level cognitive health behaviour interventions) and few studies on interventions that we expect most impact from (e.g. multi-component, multilevel interventions and policies that address both individual and environmental factors).

Improving socioeconomic position

Little evidence was found for how interventions aimed at improving education or income impact socioeconomic inequalities in health. However, there is ample observational evidence that supports this idea (Huisman et al., 2004, Huisman et al., 2005, Link and Phelan, 1995, Mackenbach et al., 2008, Marmot, 2005, Martikainen et al., 2001, Berkman et al., 2014). For an overview, see Glymour et al. (2014) in *Social Epidemiology* by Berkman et al. (2014). The lack of evidence in effect evaluations does not mean that interventions aimed at these root causes of socioeconomic health inequalities are not effective. It is expected that increased education, increased income (e.g. via welfare), and employment will benefit health.

Improving determinants of health

Living and working conditions

Several studies (Bambra et al., 2010, Bambra et al., 2009, Cairns et al., 2014, Gibson et al., 2011, O’Dwyer et al., 2007, Thomson et al., 2006, Thomson et al., 2013) reviewed the available evidence of interventions aimed at improving living and working conditions, such as housing, neighbourhood environment, traffic conditions and work conditions, and whether they were successful in reducing socioeconomic health inequalities.

Neighbourhood

The literature extensively discusses the evidence on residential mobility programs in the US where low-income residents are enabled to move to a different, more affluent, area (Acevedo-Garcia et al., 2004, Anderson et al., 2003, Gibson et al., 2011, O’Dwyer et al., 2007). These reviews indicate that residential mobility programs have the potential to increase health and health behaviours for those who moved. For example, the Moving To Opportunity program used tenant-based rental assistance (e.g. vouchers) so that low-income families can choose where to live (move to more affluent neighbourhoods). However, a critical note with residential mobility programs is that it is unclear what mechanisms are

behind the health improvement of those who move and what happens to those residents that stay behind in the poor areas. (See [action 1](#)).

Another way to improve neighbourhood environment is not to move the residents to better areas but to improve the areas themselves via urban regeneration or so-called area-based initiatives. Several authors provided overviews of the available evidence (Bambra et al., 2010, Gibson et al., 2011, O'Dwyer et al., 2007) and concluded there is some evidence that these area-based interventions are able to reduce health inequalities. A program that was evaluated frequently was the Health Action Zones (HAZ) in the UK. HAZs were multi-agency partnerships located in 26 deprived areas of the UK that focussed on community-based activities to tackle health inequalities (Judge and Bauld, 2006). Although overall the health impact of the HAZs was very limited, the program did contribute to building partnerships and raising awareness regarding health inequalities. The review by O'Dwyer et al. (2007) does suggest that some of the individual initiatives developed within the HAZs were effective in improving health in these deprived areas of England. (See [action 2](#)).

Another example of urban renewal projects comes from Barcelona, Spain. Barcelona has a history of urban renewal (Mackenbach et al., 2003, Mehdipanah et al., 2013). The municipal health policy towards Ciutat Vella was already evaluated positively with improved outcomes for infant mortality and adherence to tuberculosis treatment (Diez et al., 1996, Diez et al., 1995). More recently, in 2004, the government of Catalonia introduced the Neighbourhood Law (Llei de Barris) that enables municipalities to fund urban renewal projects within disadvantaged neighbourhoods. Mehdipanah et al. (2013) compared the health of residents from urban renewal intervention neighbourhoods with residents from non-intervention comparison neighbourhoods. They found that the intervention neighbourhoods had improved self-rated health and that these improvements were particularly in the manual labourers resulting in decreased inequalities. (See [action 3](#)).

Housing

The review by Thomson et al. (2013) focussed on internal housing conditions and concluded that there is evidence that targeted housing investments aimed at warmth and energy efficiency can be beneficial to the health of the residents, especially for the most vulnerable groups such as those with inadequate warmth and those with existing health conditions. Although the interventions were hardly evaluated for different socioeconomic groups, the evaluated interventions were almost exclusively targeted towards low-income populations. (See [action 4](#)).

Traffic

The risk of road accidents is socioeconomically patterned and interventions aimed at reducing road accidents therefore have the potential to reduce health inequalities. The review by Cairns et al. (2014) indicates that interventions related to road traffic accidents, such as reductions of permissible alcohol when driving, area-wide traffic calming and speed cameras, are effective in reducing accidents and injuries. However, none of the interventions was evaluated according to socioeconomic position.

Work conditions

The evidence of interventions aimed at the psychosocial work environment was mainly discussed in an umbrella review by Bambra et al. (2009). They discussed evidence from

seven literature overviews and came to the conclusion that structural workplace interventions have the potential to reduce health inequalities.

Interventions aimed at increasing employee control, e.g. via participatory employee committees, seem to be beneficial for employee health (Egan et al., 2007, Bambra et al., 2009). There were indications that these effects were more pronounced amongst manual workers compared to higher level workers. (See [action 5](#)).

Interventions aimed at changes in the organization of work were also beneficial for health. Shift work interventions, such as switching from slow to fast rotation, changing from backward to forward shift rotation and self-scheduling of shift, and health and safety legislation benefited the employees while privatisation and the accompanying job insecurity and unemployment, was detrimental to the health of the employees. There was no evidence of differential effects of these interventions on different socioeconomic groups. However, many of these interventions could be targeted towards lower level employees and therefore contribute to reducing health inequalities. For example, a Dutch study showed that job rotation by dustmen reduced physical strain (Kuijer et al., 1999, Mackenbach et al., 2003). (See [action 6](#)).

The work environment can also be used to address health behaviours of the workers. A successful approach via the workplace setting was described by Lang et al. (1995, 2000, Mackenbach et al., 2003). In France, it is custom to have occupational health services offer (mandatory) annual check-ups and preventive interventions to all employees. This provides opportunities for preventive actions such as smoking cessation and hypertension control. Lang et al. (1995, 2000) described how these occupational health check-ups and related preventative actions positively influenced smoking cessation and blood pressure. Although there was no specific evaluation on socioeconomic health inequalities, this approach is promising since it is able to reach all socioeconomic groups, something that is not always the case with other health behaviour interventions. (See [action 7](#)).

A review by Cairns et al. (2014) on the effectiveness of workplace interventions to tackle socioeconomic inequalities in obesity concluded that workplace counselling or advice-based interventions were ineffective in reducing health inequalities. However, workplace interventions that included physical activity programmes did have the potential to reduce inequalities in obesity if they were targeted towards lower occupational groups.

Health behaviours

Overweight & obesity

There was an abundance of systematic reviews assessing the impact of interventions aimed at reducing overweight and obesity. We also included all interventions aimed at only diet or physical activity and discuss them simultaneously. Several of the included reviews specifically focused on how these interventions could potentially reduce socioeconomic health inequalities (Beauchamp et al., 2014, Hillier-Brown et al., 2014a, Hillier-Brown et al., 2014b). Many others considered the effect of interventions targeted towards disadvantaged populations.

Pregnancy may be an important time to intervene to prevent overweight and obesity in both mother and child. However, there was no clear evidence about interventions that could help to reduce inequalities in excessive weight gain in pregnant women from low socioeconomic position (Skouteris et al., 2010).

For the prevention of overweight in young children (pre-school), there is more evidence available (Beauchamp et al., 2014, Hesketh and Campbell, 2010, Hillier-Brown et al., 2014b, Jouret et al., 2009, Laws et al., 2014, Waters et al., 2011, Wolfenden et al., 2012). Although there is still limited evidence on how to reduce inequalities in overweight and obesity in young children, there are some promising interventions available. It seems important to timely screen and refer children with an increased risk of overweight (Jouret et al., 2009) (See [action 8](#)). Promising elements of successful interventions were repeated home visits by health professionals or experienced peers (Johnson et al., 1993, Watt et al., 2006, Wen et al., 2012) (See [action 9](#)) and making healthy foods more accessible (for example via food subsidy programs or by making meals at pre-schools more healthy) (Black et al., 2012, Williams et al., 2002, Williams et al., 2004) (See [action 10](#) and [action 11](#)). Preventative interventions within existing care practices were also promising (Davison et al., 2011, McGarvey et al., 2004, Taveras et al., 2011) (See [action 12](#) and [action 13](#)).

Amongst older children, most interventions seem to be in the school-setting. Although there are many interventions that show a positive effect on diet, physical activity or overweight and obesity, relatively few studies show indications that school interventions can reduce inequalities in overweight, obesity or in physical activity or nutrition (Beauchamp et al., 2014, De Sa and Lock, 2008, Hillier-Brown et al., 2014b). However, there is also no evidence that these interventions increase inequalities.

There are several school interventions, targeted towards deprived neighbourhoods, that were successful in reducing overweight or improving related health-behaviours. The most successful interventions were multi-component interventions that focussed on a multitude of factors (Beauchamp et al., 2014, De Sa and Lock, 2008, Hillier-Brown et al., 2014b) such as the provision of information (e.g. lessons on nutrition, water consumption, physical activity), improvement of the neighbourhood (e.g. healthy food in school canteens, placement of water fountains, active schoolyards), offering of activities (e.g. extra physical activity lessons, corporation with sports clubs) and the involvement of parents (Foster et al., 2008, Hollar et al., 2010, Jansen et al., 2011, Muckelbauer et al., 2009, van Sluijs et al., 2007, Wang et al., 2010). (See [action 14](#)).

Additionally, the provision of free fruit at schools seems to increase fruit consumption. A study in Norway gives an indication that this may also decrease socioeconomic inequalities in fruit consumption (Bere et al., 2005, Bere et al., 2007). (See [action 15](#)).

Both for children and for adults, there is evidence that integrated multi-sector community approaches could help to reduce inequalities in overweight and obesity. An Australian initiative (Be Active, Eat Well), that aimed to increase the capacity of people to develop initiatives to improve physical activity and diet in children (aged 4-12), was successful in preventing increases in body mass index (BMI) and waist circumference (Sanigorski et al., 2008). The increases in BMI and waist circumference were more pronounced in the lower

socioeconomic groups in the control areas while there were no differences between socioeconomic groups in the intervention area. (See [action 16](#)).

A Dutch integrated community approach (Hartslag Limburg), aimed at improving cardiovascular health, was implemented in disadvantaged areas in the Maastricht area in the Netherlands (Schuit et al., 2006). A multitude of activities was organized and the main strength of the approach was the close cooperation between municipality, health services, and other stakeholders in the area. The program was effective in reducing the BMI of the participants. (See [action 17](#)).

Smoking

An umbrella review carried out by Main et al. (2008) on reducing inequalities in smoking, revealed that the only intervention that was proven to be effective in reducing socioeconomic inequalities in smoking was price measures such as tax increases. However, a critical note with price increases is that the poorer people who do not quit due to the increased prices, will be disproportionately affected which could lead to a deterioration in their socioeconomic position (Tariq et al., 2009). (See [action 18](#)).

We also reviewed several literature overviews from after the publication of Main et al. (2008).

There are several interventions that are promising for smoking cessation in pregnant women such as intensive counselling, peer support and financial rewards (Bauld et al., 2010, Chamberlain et al., 2013, Ford et al., 2013). These interventions were generally equally effective across socioeconomic groups.

For youth, population measures such as price measures and age-restrictions are effective in reducing smoking in this target group (Brown et al., 2014b, Thomas et al., 2008). However, it is unclear whether they have the potential to reduce inequalities in smoking.

The effects of school interventions is even less uniform (Brown et al., 2014b, Tariq et al., 2009, Thomas et al., 2008). Many interventions are not effective at all or do not differentiate between socioeconomic groups. A promising intervention is the 'A Stop Smoking in Schools Trial' (ASSIST) (Campbell et al., 2008, Mercken et al., 2012). This intervention makes use of informal peer networks by training popular students in each class to spread anti-smoking messages through informal communication. This intervention worked better in the more deprived areas included in the study. (See [action 19](#)).

As was already concluded in the umbrella review by Main et al. (2008), price increases are the most effective strategy to reduce socioeconomic inequalities in smoking in adults. This was further confirmed by several (later) review studies (Bader et al., 2011, Brown et al., 2014c, Tariq et al., 2009, Thomas et al., 2008). Other price-related measures, such as the free provision of nicotine-replacement therapy, may also contribute to reducing socioeconomic inequalities in smoking (Murray et al., 2009, Tariq et al., 2009).

Smoking bans, although effective in reducing smoking in general, are not successful in reducing socioeconomic inequalities in smoking (Brown et al., 2014c, Main et al., 2008, Thomas et al., 2008). Nonetheless, theoretically they have the potential to take away

socioeconomic inequalities in second-hand smoke in the locations where there is a smoking ban.

There is mixed evidence that mass media campaigns can have an effect on smoking prevalence and the evidence with respect to their potential to reduce socioeconomic inequalities in smoking is also unclear (Bala Malgorzata et al., 2013, Brown et al., 2014c, Durkin et al., 2009, Farrelly et al., 2012, Guillaumier et al., 2012, Niederdeppe et al., 2008, Vallone et al., 2011a, Vallone et al., 2011b). Possibly, more personal or emotional messages in ads appeal more to lower socioeconomic groups (Vallone et al., 2011a, Vallone et al., 2011b). On the other hand, there is also evidence that mass-media campaigns may increase inequalities in smoking (Lorenc et al., 2013, Niederdeppe et al., 2008).

Although the effect of health warnings on tobacco products on actual quit rates is limited, there are some subtle indications that lower socioeconomic groups are impacted more (Hitchman et al., 2012).

Individual-level interventions, such as behavioural and pharmacological interventions, are in general more effective in higher socioeconomic groups compared to lower socioeconomic groups (Bauld et al., 2010, Brown et al., 2014a). Therefore, they have the potential to increase inequalities in smoking. However, the approach adopted by the UK National Health Service (NHS) stop-smoking services showed an overall positive equity effect. The lower quit rates in the lower socioeconomic groups were compensated by a strong targeted approach to increase uptake of the services among the lower socioeconomic groups (Bauld et al., 2010, Brown et al., 2014a). (See [action 20](#)).

Although individual level interventions are often more effective in higher socioeconomic groups, they could be effective in reducing health inequalities when specifically targeted towards the more disadvantaged population. Some effective interventions that were targeted specifically to deprived populations were for example:

- the 'Quit for Life' programme implemented in a deprived neighbourhood in London was effective in reducing smoking in those who participated in the program (Sykes and Marks, 2001) (See [action 21](#)).
- a US intervention, implemented via 'planned-parenthood clinics' and aimed at low-income women, was effective in reducing smoking in this group (Glasgow et al., 2000) (See [action 22](#)).
- a US intervention, implemented via public dental clinics in deprived areas, was also effective in reducing smoking (Gordon et al., 2010) (See [action 23](#)).

Two of these interventions reached the target group via existing health care facilities. Torchalla et al. (2012) also stress that implementing smoking cessation interventions via routine care facilities, such as general practitioners, may be a good strategy to reach the low-income groups.

Alcohol

Alcohol interventions can already start before and during pregnancy. Just as in obesity prevention, we see that young deprived mothers (to be) and their offspring benefit from regular home visits from nurses during and after pregnancy. In the Nurse-Family Partnership

(Kitzman et al., 2010, Olds et al., 2010), the alcohol and drug use of children at the age of 12 was reduced for those whose mothers were visited during pregnancy and infancy. Mothers themselves experienced less role restrictions due to alcohol or drug use 10 years after the end of the program. (See [action 24](#))

Targeted brief interventions, such as the ones based on motivational interviewing, can be effective in reducing alcohol consumption as well, both in pregnant women as in other people from low socioeconomic status (Beckham, 2007, Marais et al., 2011, Mertens et al., 2014). (See [action 25](#)). It is important that these brief interventions are delivered face-to-face, e.g. via a general practitioner or midwife, and not via internet since there is evidence that online brief interventions are capable of increasing inequalities in alcohol consumption.

School interventions were in general not very effective in reducing alcohol consumption or did not show a differential effect for different socioeconomic groups. However, there were several promising school interventions. An important element of these interventions, compared to most of the other interventions, seem to be the parent involvement (Koning et al., 2009, Verdurmen et al., 2014, Caria et al., 2011, Vigna-Taglianti et al., 2014). (See [action 26](#)).

Inter-sector (targeted) neighbourhood interventions have the potential to decrease alcohol consumption in the neighbourhood and reduce problems affiliated with excessive drinking. These neighbourhood interventions should be backed up by police enforcement and licence inspectors (Anderson et al., 2009). An example of such an intervention, implemented in a deprived neighbourhood in the US, is the Sacramento Neighbourhood Alcohol Prevention Project (SNAPP). This project included interventions aimed at five areas: 'a mobilization component to support the overall project, a community awareness component, a responsible beverage-service component, an underage-access law enforcement component, and an intoxicated-patron law enforcement component.' (Treno et al., 2007). The intervention was successful in reducing problems caused by excessive alcohol consumption such as assaults and motor vehicle accidents. (See [action 27](#))

Measures that address the accessibility or availability of alcohol are effective in reducing alcohol consumption. Moreover, they are promising in reducing inequalities in alcohol consumption. Increasing the age limit has a stronger effect on the lower socioeconomic groups and therefore has the potential to decrease inequalities in alcohol consumption (Plunk et al., 2013). (See [action 28](#)). Evidence also shows that the price elasticity of alcohol products is larger in lower socioeconomic groups (Ayyagari et al., 2013, Helakorpi et al., 2010, Herttua et al., 2015, Holmes et al., 2014). Therefore, increasing prices for alcohol, such as minimum unit pricing, has the potential to decrease inequalities in alcohol consumption. (See [action 29](#))

Accessibility to and quality of health and preventive care

Only few reviews paid attention to the differential effects of interventions aimed at health care and preventive services.

With respect to inequalities in accessibility to health care and preventive services, it is possible to distinguish between problems due to geographical access, economic access, and cultural access. Geographical access may be improved by (rural) outreach programmes

(Bambra et al., 2010, Gruen et al., 2006). (See [action 30](#)). There was inconclusive evidence of the effectiveness of interventions aimed at cultural access (Bambra et al., 2010). Evidence from low- and middle income countries suggest that interventions aimed at removing the economic restrictions to accessing health care (e.g. health insurance programs and conditional cash transfers) are effective in reducing inequalities (Yuan et al., 2014). However, no evidence could be identified within high-income countries (Bambra et al., 2010). One review on the use of folic acid supplements does suggest that the provision of free folic acid supplements could improve the use of this vital supplement, especially in low-income and young women (Robbins et al., 2005, Stockley and Lund, 2008, Watkins et al., 2004) (See [action 31](#)). Only providing information or education on folic acid use may actually increase inequalities.

Mackenbach et al. (2003) identified a promising intervention that was based on the introduction of nurse practitioners in general practice offices in deprived (mostly rural) areas. The nurse practitioners specifically targeted (low income) patients with chronic obstructive pulmonary disease and asthma and they provided extra attention and counselling to improve treatment compliance and, as a result, health of the patients (Sorgdrager et al., 2001). (See [action 32](#))

Reducing the negative effects of ill health

The last mechanism through which socioeconomic health inequalities can be reduced, was only touched upon briefly within the series of literature reviews. One successful policy was the protection and active promotion of labour market participation of chronically ill workers in Sweden. Burstrom et al. (2000) compared data from Sweden and the UK and concluded that the employment rates were higher and the rates of unemployment and economic inactivity were lower in Sweden than in Britain, and the differences in these rates across socioeconomic groups and between those with and without chronic illness were smaller in Sweden (See [action 33](#)).

Interventions that can increase inequalities

Although reducing socioeconomic inequalities in health may sometimes be difficult, we should be careful not to increase health inequalities by choosing the ‘wrong’ interventions and actions. Lorenc et al. (2013) reviewed what interventions could potentially increase inequalities. They concluded that especially media campaigns had the risk of increasing socioeconomic inequalities in health. Also some other interventions, such as workplace smoking bans, printed communication materials to promote folic acid intake and some school-based interventions aimed at physical activity and/or healthy eating had the potential to increase inequalities.

Other resources

Within other related projects, good and best practices have been collected. Other sources of policies and good or best practices are:

- Policy database compiled and reviewed by EuroHealthNet: http://www.health-inequalities.eu/HEALTHQUITY/EN/policies/policy_database/

- EUREGIO III case study material: <http://www.healthequity2020.eu/pages/existing-knowledge-learning-using-sf-health-investments/learning-resources/eiii-practical-knowledge-database/eiii-case-study-material/>
- Local action on health inequalities: evidence papers by Public Health England: <https://www.gov.uk/government/publications/local-action-on-health-inequalities-evidence-papers>
- Several policy guidance documents in inequities developed by the WHO: <http://www.euro.who.int/en/publications/abstracts/equity-action-spectrum-taking-a-comprehensive-approach-the.-guidance-for-addressing-inequities-in-health-2014>

For more extensive information on concepts and principles related to addressing health inequalities, see the report 'A discussion paper on concepts and principles for tackling social inequities in health: Levelling up Part 1 (Whitehead and Dahlgren, 2006) (http://www.who.int/social_determinants/resources/leveling_up_part1.pdf)

Dahlgren and Whitehead also thoroughly described the link between social determinants and health and the accompanying policy options for reducing socioeconomic health inequalities in their report 'European Strategies for tackling social inequities in health: Levelling up Part 2 (Dahlgren and Whitehead, 2006) (http://www.who.int/social_determinants/resources/leveling_up_part2.pdf).

Conclusion

There are relatively few interventions that have proven to reduce socioeconomic inequalities in health. However, there is an increase in attention to develop and evaluate interventions for different population groups. This increase in attention will hopefully increase the evidence in the future which makes it easier to inform policy and practice.

As was said at the start of the result section, there seems to be an “inverse evidence law”; we see many evaluation studies that address those interventions of which we only expect minimal impact (e.g. individual cognitive behaviour interventions) and little studies on interventions that we expect most impact from (e.g. large policies, multi-component, multilevel interventions that address both individual and environmental factors).

The literature review conducted to prepare the database was very comprehensive but cannot be complete. Additionally, the interventions, policies and programs mentioned above and included in the database are a reflection of the available evidence. There may be many more, very promising, interventions available in the field that just never have been evaluated or never have been evaluated with respect to different socioeconomic groups.

A conclusion that can be drawn is that a single measure is not expected to decrease health inequalities significantly. A package of multiple measures is needed to achieve this. Promising elements of interventions are price measures, multi-layer and multi-component interventions that also consider physical and social environmental measures and involve multiple family members (e.g. parent and children), involvement of (existing) health services, and attention to underlying skills (e.g. health literacy). Brief interventions targeted towards lower socioeconomic groups may also be effective in improving health behaviours in this

group. In addition, it seems to be very important to pay ample attention to cooperation and capacity needed to develop and implement the action and to reach the appropriate (disadvantaged) target group.



Actions

| General information | | #1 |
|----------------------------|---|----|
| Action | Rental assistance | |
| Description | Tenant-based rental assistance (e.g. vouchers) so that (very) low-income families can choose where to live (move to more affluent neighbourhoods). | |
| References | Acevedo-Garcia et al. (2004), Anderson et al. (2003), Gibson et al. (2011), O'Dwyer et al. (2007) | |
| Details action | | |
| Mechanism used | Improving working and living conditions | |
| Used approach | Targeted approach | |
| Main determinants | Neighbourhood factors such as safety and social disorder, housing conditions. | |
| Affected health outcomes | Mental and physical health | |
| Target population | Low-income families | |
| Type of action | Policy | |
| Location | US | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trials (Moving to Opportunity) Controlled and uncontrolled prospective studies | |
| Short summary of effects | Residential mobility programmes have the potential to improve health. E.g. the Moving to Opportunity studies in New York and Boston reported a increase in good or excellent self-rated health of 11% and 12% respectively. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | The remaining residents in the deprived areas are left with the existing problems. | |
| Notes | US initiative. Not evaluated in Europe. Info on Moving to Opportunity for Fair Housing (MTO): http://portal.hud.gov/hudportal/HUD?src=/programdescription/mto | |

| | | |
|----------------------------|--|-----------|
| General information | | #2 |
| Action | Health Action Zones | |
| Description | Health Action Zones (HAZ) were multi-agency partnerships located in 26 areas of England. These areas were expected to develop local community-based programs and activities to improve health and reduce inequalities during a 7-year lifespan. | |
| References | Bambra et al. (2010), Gibson et al. (2011), Judge and Bauld (2006), O'Dwyer et al. (2007) | |
| Details action | | |
| Mechanism used | Improving working and living conditions | |
| Used approach | Targeted approach | |
| Main determinants | Multiple | |
| Affected health outcomes | Both physical and mental health | |
| Target population | Disadvantaged areas | |
| Type of action | Multi-sector, multilevel community-based approach | |
| Location | UK | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Monitoring changes | |
| Short summary of effects | "The national evaluation of HAZs focused on monitoring activity in all 26 zones as well as examining three specific themes within different samples of HAZs: (i) building capacity for collaboration both amongst statutory agencies and with the community; (ii) developing the capacity for whole systems change; and (iii) tackling health inequalities. One of the main findings was that, although HAZs made little impact in terms of measurable improvement in health outcomes during their short lifespan, they did make a valuable contribution to building partnerships and raising awareness regarding inequalities in health." | |
| Level of evidence | C | |
| Other information | | |
| Warnings | The HAZs were only partly best practices since they only had partial successes. However, valuable lessons can be learned from the approach. We recommend further readings on the evaluation of the HAZs to extract the valuable lessons and successes. | |
| Notes | | |

| | | |
|----------------------------|--|-----------|
| General information | | #3 |
| Action | Llei de Barris (Neighbourhood Law) | |
| Description | The government of Catalonia presented the Neighbourhood Law (Llei de Barris) that enabled municipalities to fund urban renewal projects within disadvantaged neighbourhoods. | |
| References | Mackenbach et al. (2003), Mehdipanah et al. (2013) | |
| Details action | | |
| Mechanism used | Improving living and working conditions | |
| Used approach | Targeted approach | |
| Main determinants | Multiple | |
| Affected health outcomes | Both physical and mental health | |
| Target population | Disadvantaged neighbourhoods | |
| Type of action | Multi-sector, multilevel approach | |
| Location | Barcelona, Spain | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Comparison between intervention neighbourhoods and control neighbourhoods | |
| Short summary of effects | The intervention neighbourhoods had improved self-rated health and these improvements were particularly in the manual social class resulting in decreased inequalities. | |
| Level of evidence | C | |
| Other information | | |
| Warnings | | |
| Notes | | |

| | | |
|----------------------------|---|-----------|
| General information | | #4 |
| Action | Improve thermal comfort and reduce fuel poverty in houses | |
| Description | Improvements in warmth and energy efficiency such as insulation (roof or cavity wall or both), installation or upgrade of central heating system, or replacement or improvement of heat source. | |
| References | Gibson et al. (2011), Thomson et al. (2013) | |
| Details action | | |
| Mechanism used | Improving living and working conditions | |
| Used approach | Targeted approach | |
| Main determinants | Housing conditions | |
| Affected health outcomes | General health, respiratory health, mental health | |
| Target population | Disadvantaged households | |
| Type of action | Policy | |
| Location | - | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trials, several non-experimental studies and qualitative studies. | |
| Short summary of effects | <p>“Improvements in warmth and affordable warmth may be an important reason for improved health. Improved health may also lead to reduced absences from school or work. Improvements in energy efficiency and provision of affordable warmth may allow householders to heat more rooms in the house and increase the amount of usable space in the home. Greater usable living space may lead to more use of the home, allow increased levels of privacy, and help with relationships within the home. An overview of the best available research evidence suggests that housing which promotes good health needs to be an appropriate size to meet household needs, and be affordable to maintain a comfortable indoor temperature.”</p> | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | Although the interventions were hardly evaluated for different socioeconomic groups, the evaluated interventions were almost exclusively targeted towards low-income populations. | |

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| General information | | #5 |
| Action | Increase employee control and participation | |
| Description | Increasing employee participation and control through workplace reorganisation | |
| References | Bambra et al. (2010), Egan et al. (2007) | |
| Details action | | |
| Mechanism used | Improving living and working conditions | |
| Used approach | Population approach (can also be implemented as targeted approach) | |
| Main determinants | Social working conditions (demand-control imbalance) | |
| Affected health outcomes | Mental health | |
| Target population | Working population | |
| Type of action | Worksite intervention | |
| Location | - | |
| Implementation level | Organizational | |
| Details evaluation | | |
| Study design | Uncontrolled and controlled studies | |
| Short summary of effects | There is some evidence that organisational-level participation interventions that improved employee control may benefit health, especially mental health, including reduction in anxiety and depression. consistently). Only limited evidence (one uncontrolled study) indicating more health improvements among lower-level employees. | |
| Level of evidence | C | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #6 |
| Action | Job rotation among physical strenuous work | |
| Description | Job rotation among employees of a waste collection company. The employees who first did one out of three jobs: waste collecting, street sweeping or truck driving, were allowed to alternate two of these three jobs each day. | |
| References | Kuijjer et al. (1999) via Mackenbach et al. (2003) | |
| Details action | | |
| Mechanism used | Improving living and working conditions | |
| Used approach | Targeted approach | |
| Main determinants | Physical working conditions (physical strain) | |
| Affected health outcomes | General health (absence of sickness) | |
| Target population | Employees working at a waste collecting department | |
| Type of action | Worksite intervention | |
| Location | Netherlands | |
| Implementation level | Organizational | |
| Details evaluation | | |
| Study design | Controlled study | |
| Short summary of effects | "The total amount of work performed by means of job rotation resulted in an overall reduced physical workload of the employees of the waste collecting department." | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #7 |
| Action | Occupational health check-ups | |
| Description | In France, it is custom to have occupational health services offering (mandatory) annual check-ups and preventive interventions to all employees which provides opportunities for preventive actions such as smoking cessation and hypertension control. | |
| References | Lang et al. (1995), Lang et al. (2000) via Mackenbach et al. (2003) | |
| Details action | | |
| Mechanism used | Improving living and working conditions | |
| Used approach | Population approach (may be implemented as a targeted approach) | |
| Main determinants | Multiple, including smoking and hypertension | |
| Affected health outcomes | Physical health | |
| Target population | Working population | |
| Type of action | Worksite intervention | |
| Location | Organizational | |
| Implementation level | | |
| Details evaluation | | |
| Study design | Randomized controlled trials | |
| Short summary of effects | The interventions offered after the occupational health check-ups significantly reduced smoking and (systolic) blood pressure among employees. | |
| Level of evidence | B (strong design, but no clear evidence for reducing health inequalities) | |
| Other information | | |
| Warnings | | |
| Notes | Although there was no specific evaluation on socioeconomic health inequalities, this approach is promising since it is able to reach all socioeconomic groups, something that is not always the case with other health behaviour interventions. | |

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| General information | | #8 |
| Action | Screening and monitoring of children | |
| Description | The 'Epidémiologie et prévention de l'obésité infantile' (EPIPOI) intervention consisted of information dissemination to parents and teachers, as well as screening for overweight at baseline and follow-up care by family practitioners for overweight, if identified. The reinforced strategy also contained a education program. | |
| References | Jouret et al. (2009) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Physical activity and nutrition | |
| Affected health outcomes | Overweight and obesity | |
| Target population | Children (3-4 years old) with an increased risk of overweight | |
| Type of action | School-based approach (pre-schools) | |
| Location | Switzerland | |
| Implementation level | School-level | |
| Details evaluation | | |
| Study design | Randomized Controlled Trial | |
| Short summary of effects | The results were stratified by school area (deprived and non-deprived). The prevalence of overweight and the BMI scores (z-scores) in the intervention groups were significantly lower than that in the control group in the deprived areas. No differences were observed between the two intervention conditions (basic and reinforced including education). For the non-deprived areas, there was only a significant difference in BMI scores for the reinforced intervention compared with the control. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #9 |
| Action | Repeated home visits by health professionals or experienced peers | |
| Description | Home visits from experienced mothers (Johnson et al., 1993), trained volunteers (Watt et al., 2006) or community nurses (Wen et al., 2012) to mothers during infancy of their child (varying from prenatal up to two years after birth). | |
| References | Johnson et al. (1993), Watt et al. (2006), Wen et al. (2012) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Nutrition | |
| Affected health outcomes | Overweight and obesity | |
| Target population | Disadvantaged families or families in disadvantaged areas | |
| Type of action | Home-based intervention | |
| Location | Ireland, UK, Australia | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized Controlled Trials | |
| Short summary of effects | Home visits by experienced mothers (Johnson et al., 1993) improved nutritional intake in both mothers and their infants. Home visits by trained volunteers (Watt et al., 2006) improved nutritional intake of the infants. Home visits by community nurses (Wen et al., 2012) significantly improved body mass index. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #10 |
| Action | Food subsidy programs | |
| Description | Food subsidy programmes such as the 'Special Supplementary Nutrition Program for Women, Infants and Children (WIC)' in the US are targeted towards low income families. The WIC program (overview in Black et al, 2012) offers food vouchers (for specific (healthy) foods), nutrition education and healthcare referrals. In some studies, this package was extended. | |
| References | Black et al. (2012) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Nutrition | |
| Affected health outcomes | General health | |
| Target population | Low income women and their children | |
| Type of action | Subsidy program | |
| Location | US | |
| Implementation level | Regional or national | |
| Details evaluation | | |
| Study design | Mixed, including randomized controlled trials | |
| Short summary of effects | There are measurable improvements in nutrition in women and children participating in food subsidy programs. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #11 |
| Action | Healthy Start: improving preschool menus | |
| Description | The US 'Healthy-Start' intervention aimed to improve the food services (meals) in preschools. The main activity was a training for cooks on menu planning, recipe development, food purchasing and food preparation. After this training, the cooks developed objectives together with the team that they gradually implemented. | |
| References | Williams et al. (2002), Williams et al. (2004) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Nutrition | |
| Affected health outcomes | General health | |
| Target population | Children (preschool) in deprived areas | |
| Type of action | School program | |
| Location | US | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Quasi-experimental pre/post-test research design | |
| Short summary of effects | The Healthy Start intervention decreased the saturated fat content of preschool menus by 36% at the end of Year 2 of the intervention, while control schools decreased saturated fat content by 4%. Additionally, there was a significant decrease in total serum cholesterol among preschool children in the food service intervention groups. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #12 |
| Action | High Five For Kids | |
| Description | An intervention for children with overweight (2-7 years old) set within paediatric clinics in the US. The intervention was based on the Theory of Planned Behaviour and adopting the techniques from motivational interviewing. The intervention tried to stimulate healthy nutrition and physical activity and it aimed to reduce fast food consumption and sedentary behaviour (sitting). | |
| References | Taveras et al. (2011) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Nutrition and physical activity | |
| Affected health outcomes | Overweight and obesity | |
| Target population | Children with overweight in the ages 2 to 7 years | |
| Type of action | Primary care intervention | |
| Location | US | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Cluster Randomized Controlled Trial | |
| Short summary of effects | The intervention group had significantly better outcomes with respect to television viewing compared to the control group. They also had greater decreases in body mass index, fast food consumption and sugar-sweetened beverage consumption. The decrease in body mass index was only observed among the children from lower-income households. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #13 |
| Action | Prevention activities within WIC centres | |
| Description | Several preventative interventions implemented within the 'Special Supplementary Nutrition Program for Women, Infants and Children (WIC)'. The WIC is a national program in the US specially aimed at low-income families. In the first intervention (McGarvey et al., 2004), parents received tailored messages about overweight prevention. In the second intervention (Davison et al., 2011), parents received a community resource guide in one of the visits that provided information on all the opportunities for physical activity and play within the neighbourhood (e.g. parks, playgrounds). | |
| References | Davison et al. (2011), McGarvey et al. (2004) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Nutrition and physical activity | |
| Affected health outcomes | Overweight and obesity | |
| Target population | Children of low-income women | |
| Type of action | Primary care intervention | |
| Location | US | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Nonrandomized, controlled prospective study (McGarvey et al., 2004) Pre/ post-test with non-equivalent comparison group (Davison et al., 2011) | |
| Short summary of effects | Both interventions resulted in increased physical activity and active play of the children in the intervention group. The first intervention (McGarvey et al., 2004) also increased the frequency water was offered to a child. The second intervention also reduced sedentary behaviour (Davison et al., 2011). | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #14 |
| Action | Multi-component school interventions | |
| Description | School interventions implemented in deprived areas that focussed on a multitude of factors such as the provision of information (e.g. lessons on nutrition, water consumption, physical activity), improvement of the neighbourhood (e.g. placement of water fountains, healthy food in school cantinas, active schoolyards), offering of activities (e.g. extra physical activity lessons, corporation with sports clubs) and the involvement of parents. | |
| References | Foster et al. (2008), Hollar et al. (2010), Jansen et al. (2011), Muckelbauer et al. (2009), van Sluijs et al. (2007), Wang et al. (2010) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Mostly targeted approach | |
| Main determinants | Nutrition and physical activity | |
| Affected health outcomes | Overweight and obesity | |
| Target population | School students (in deprived areas) | |
| Type of action | School program | |
| Location | Us, Germany | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Mixed, including cluster randomized controlled trials | |
| Short summary of effects | All school interventions resulted in improved health behaviours among the students in the intervention groups (e.g. less overweight (Foster et al., 2008, Jansen et al., 2011), more drinking of water (Muckelbauer et al., 2009), more fruit and vegetable consumption (Wang et al., 2010) and improved weight, blood pressure and academic performance (Hollar et al., 2010)). One intervention found differential effects that indicate that these interventions may reduce socioeconomic inequalities (Hollar et al., 2010). | |
| Level of evidence | B | |
| Other information | | |
| Warnings | Most of the interventions were carried out in relatively deprived neighbourhoods. It is unclear whether the interventions will be just as effective or more (increasing inequalities) or less effective (decreasing inequalities) if implemented in more advantaged areas. | |
| Notes | | |

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| General information | | #15 |
| Action | School fruit programme | |
| Description | Providing free fruit at schools | |
| References | Bere et al. (2005), Bere et al. (2007) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Fruit consumption | |
| Affected health outcomes | General health | |
| Target population | School students (in study: 11-12 years old) | |
| Type of action | School program | |
| Location | Norway | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Controlled Trial | |
| Short summary of effects | Providing free fruit resulted in higher fruit consumption than offering fruit for pay or not offering any fruit. The difference in fruit consumption was smaller in schools where fruit was provided free of costs compared to schools where fruit needed to be bought. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #16 |
| Action | Be Active, Eat Well | |
| Description | Be Active, Eat Well was a multifaceted community capacity-building program promoting healthy eating and physical activity for children (aged 4–12 years). The program was designed to build the community's capacity to create its own solutions to promoting healthy eating, physical activity and healthy weight in children aged 4–12 years and their families. The intervention program was designed, planned and implemented by the key organizations in the intervention area. | |
| References | Sanigorski et al. (2008) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Nutrition and physical activity | |
| Affected health outcomes | Overweight and obesity | |
| Target population | Community around children (aged 4-12) | |
| Type of action | Community intervention | |
| Location | Australia | |
| Implementation level | Local, regional | |
| Details evaluation | | |
| Study design | Quasi-experimental, longitudinal design | |
| Short summary of effects | Children in the intervention area had significantly lower increases in body weight, waist to height ratio, and body mass index z-scores than children in the comparison areas. In the intervention area, the anthropometric changes were not related to socioeconomic status, whereas in the comparison group the anthropometric values of children from lower socioeconomic position developed worse over time. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #17 |
| Action | Hartslag Limburg | |
| Description | Hartslag Limburg was a community-based intervention that aimed to decrease the prevalence of cardiovascular disease in the general population by encouraging the inhabitants to become more active, reduce their fat intake, and stop smoking. It was a population-wide strategy aimed at all inhabitants and specifically at low socioeconomic status groups. In addition, a subgroup strategy focused on individuals at risk. There was intense collaboration between stakeholders in the area. This was achieved through local health committees. During the intervention period (1999-2003), a total number of 790 interventions have been implemented, of which almost 50% took place in low-income areas. | |
| References | Schuit et al. (2006) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population / targeted approach | |
| Main determinants | Nutrition and physical activity | |
| Affected health outcomes | Cardiovascular health, overweight and obesity | |
| Target population | (Older) adults in disadvantaged areas | |
| Type of action | Community intervention | |
| Location | The Netherlands | |
| Implementation level | Local, regional | |
| Details evaluation | | |
| Study design | Controlled study | |
| Short summary of effects | Men and women in the intervention region had a favourable change in body mass index, waist circumference, and blood compared with the reference region. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #18 |
| Action | Increasing the price of tobacco | |
| Description | Increasing the price of tobacco products, for example via taxes | |
| References | Main et al. (2008), Thomas et al. (2008), Townsend et al. (1994) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | Whole population | |
| Type of action | Tax or price policy | |
| Location | | |
| Implementation level | Most likely national, but could be regional | |
| Details evaluation | | |
| Study design | Time series analyses | |
| Short summary of effects | Price elasticity of demand for cigarettes (percentage change in cigarette consumption for a 1% change in price) were significant and were highest in the lowest socioeconomic group and lowest in the highest socioeconomic groups. The gradient in price elasticity by socioeconomic group was significant for men and for women. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | By increasing the price of tobacco, the people who keep on smoking will have even less budget for other issues such as health care and healthy foods. Poor income people are penalised stronger by price increases than high income people because a disproportionate large amount of income is spend on tobacco compared with higher income groups. Price strategies should ideally be supported by smoking cessation strategies (targeted at disadvantaged populations). Additionally, price increases may stimulate smuggling of tobacco products. | |
| Notes | | |

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| General information | | #19 |
| Action | A Stop Smoking In Schools Trial (ASSIST) | |
| Description | The ASSIST intervention makes use of informal peer networks by training popular students in each class to spread anti-smoking messages through informal communication. | |
| References | Campbell et al. (2008), Mercken et al. (2012) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | Students (aged 12-13) | |
| Type of action | School program | |
| Location | UK | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Cluster randomized controlled trial | |
| Short summary of effects | The ASSIST training programme was effective in achievement of a sustained reduction in uptake of regular smoking in adolescents for 2 years after its delivery. The effect of the intervention was substantially greater in the more deprived areas (Welsh Valleys). This could be due to the more close-knit community in these areas. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #20 |
| Action | National Health Service (NHS) smoking cessation services | |
| Description | The UK NHS offers smoking cessation services to the whole population. These smoking cessation services are state-reimbursed. The services offered are a combination of behavioural and pharmacological interventions. The NHS services were initially established in the most disadvantaged areas and then rolled out across the UK. | |
| References | Bauld et al. (2010), Brown et al. (2014a) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population / targeted approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | General population | |
| Type of action | Individual level intervention | |
| Location | UK | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Mixed including controlled trials | |
| Short summary of effects | The evidence suggests that the NHS smoking cessation services were effective in reducing smoking. The group level interventions were more effective but the individual level interventions were more preferred by the user. The quit rates were higher among higher socioeconomic groups. However, because smokers of lower socioeconomic position were more likely to access the service (higher reach and uptake), this approach was still able to reduce socioeconomic inequalities in smoking. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | The individual interventions were <i>less effective</i> in the lower socioeconomic groups. These type of individual level interventions should only be implemented when the reach among the lower socioeconomic groups is high (and higher than in the higher socioeconomic groups) when the goal is to decrease inequalities. | |
| Notes | | |

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| General information | | #21 |
| Action | Quit For Life | |
| Description | The Quit For Life programme is an eclectic combination of 30 cognitive behavioural therapies (CBT) and other relevant methods in a self-help package consisting of a handbook, reduction cards, a progress chart and other necessary materials. QFL aims at a gradual reduction of cigarette consumption over a period of 7–10 days. The reduction stage is followed by a relapse prevention stage. | |
| References | Sykes and Marks (2001) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | People living in deprived neighbourhoods | |
| Type of action | Cognitive behavioural therapy | |
| Location | UK | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trial (health education advice as control) | |
| Short summary of effects | The study found that approximately one in four smokers in the CBT group were fully abstinent or significantly reduced at 6 months follow-up. CBT was found to be five times more efficacious than health education advice. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | Only 25% of eligible smokers participated in the study (before randomization). This may have overestimated the effect of the intervention. | |
| Notes | | |

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| General information | | #22 |
| Action | Brief smoking intervention via planned parenthood clinics | |
| Description | The brief intervention was based on motivational interviewing and barrier-based counselling. It consisted of a short video (9 minutes) and a short discussion (12-15 minutes) after the video (addressing readiness to quit and barriers and developing personalized strategies). All participants were given materials tailored to their stage of change and were offered supportive telephone calls in the following month. | |
| References | Glasgow et al. (2000) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | Low-income women | |
| Type of action | Individual level intervention | |
| Location | US | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trial | |
| Short summary of effects | Results revealed a clear, short-term intervention effect at the 6-week follow-up and a non-significant effect at 6 months. However, the follow-up telephone calls were implemented poorly (only 43% of participants was called at all and only 11% was called more than once). | |
| Level of evidence | A | |
| Other information | | |
| Warnings | Effect possibly not sustainable. | |
| Notes | | |

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| General information | | #23 |
| Action | Brief smoking intervention via public health dental clinics | |
| Description | The intervention offered advice and counselling via public health dental clinics based on the 5 A's: Ask, Advise, Assess, Assist, and Arrange. The intervention included nicotine replacement therapy and setting a quit-date. | |
| References | Gordon et al. (2010) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Smoking | |
| Affected health outcomes | General health | |
| Target population | Low-income adult smokers | |
| Type of action | Individual level intervention | |
| Location | US | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trial | |
| Short summary of effects | Participants in the intervention group reported significantly higher abstinence rates at the 7.5-month follow-up than did those in the usual care group. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #24 |
| Action | Nurse-Family Partnership | |
| Description | The intervention consisted of prenatal and infancy home visits by trained nurses until the infant was two years of age. The nurses tried to: 1) improve the outcomes of pregnancy by promoting women's prenatal health behaviours; 2) improve the health and development of the child by promoting parents' competent care of their children; and 3) enhance parents' life-course development by encouraging parents to plan subsequent pregnancies, complete their education, and find work. | |
| References | Kitzman et al. (2010), Olds et al. (2010) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Alcohol consumption and other substance use | |
| Affected health outcomes | General health and well-being | |
| Target population | Pregnant women / young mothers of low socioeconomic position | |
| Type of action | Home-based intervention | |
| Location | US | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trial | |
| Short summary of effects | The nurse-visited children were less likely to have used tobacco, alcohol, or marijuana when they were 12-years old. They also used fewer of these substances and used them for fewer days. In addition they reported fewer internalizing disorders and increased academic-achievement. Mothers also had better outcomes (e.g. used less food-stamps and welfare, reported less role impairment due to alcohol or other drug use, had longer partner relationships, and had a greater sense of mastery). | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | More information can be found at: http://www.nursefamilypartnership.org/ | |

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| General information | | #25 |
| Action | Brief alcohol intervention | |
| Description | Brief interventions based on motivational interviewing, often delivered within a health care setting, aimed at drinkers from low socioeconomic position. | |
| References | Beckham (2007), Marais et al. (2011), Mertens et al. (2014) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Alcohol consumption | |
| Affected health outcomes | General health and well-being | |
| Target population | Drinkers of low socioeconomic position | |
| Type of action | Individual level intervention | |
| Location | US and South-Africa | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trials | |
| Short summary of effects | The interventions showed reduced levels of (hazardous) alcohol consumption after the intervention. | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #26 |
| Action | School alcohol intervention with parent involvement | |
| Description | Two school-based alcohol prevention programs: Prevention Alcohol use Students (PAS) (Koning et al., 2009, Verdurmen et al., 2014) and Unplugged (Caria et al., 2011, Vigna-Taglianti et al., 2014). Both school programs offered a student intervention (classes on the risks of alcohol consumption) and was backed up with parent involvement. The parent involvement in the PAS intervention was most intensive and consisted of two parent meetings (one at the beginning of the first two years of high school) in which information was offered. In addition, the parents of each class were stimulated to discuss rules and to reach a consensus on a set of shared rules. | |
| References | Koning et al. (2009), Verdurmen et al. (2014), Caria et al. (2011), Vigna-Taglianti et al. (2014) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Alcohol consumption and other substance use | |
| Affected health outcomes | General health and well-being | |
| Target population | Children and parents of school students (12-14 years) | |
| Type of action | School program | |
| Location | EU | |
| Implementation level | Organizational, local, regional, national | |
| Details evaluation | | |
| Study design | Randomized controlled trials | |
| Short summary of effects | <p>PAS effectively delayed the onset of weekly drinking in the general population of adolescents, and was particularly effective in delaying the onset of heavy weekly drinking in a higher-risk subsample of adolescents (i.e. those attending lower levels of education and reporting higher levels of externalizing behaviour) (Koning et al., 2009, Verdurmen et al., 2014).</p> <p>Unplugged was effective in reducing cigarette smoking, episodes of drunkenness, and the use of cannabis at short term. This association, however, was confined to boys. Beneficial effects associated with the program persisted at fifteen-month follow-up for drunkenness, alcohol-related problems, and cannabis use, and were stronger among adolescents in schools of average low socioeconomic level (Caria et al., 2011, Vigna-Taglianti et al., 2014).</p> | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #27 |
| Action | Sacramento Neighbourhood Alcohol Prevention Project (SNAPP) | |
| Description | This project included interventions aimed at five areas: 'a mobilization component to support the overall project, a community awareness component, a responsible beverage-service component, an underage-access law enforcement component, and an intoxicated-patron law enforcement component. | |
| References | Treno et al. (2007) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Targeted approach | |
| Main determinants | Alcohol consumption | |
| Affected health outcomes | General health and well-being | |
| Target population | Young population (15-29 years old) in disadvantaged areas | |
| Type of action | Intersectoral community approach | |
| Location | US | |
| Implementation level | Local, regional | |
| Details evaluation | | |
| Study design | Quasi-experimental design | |
| Short summary of effects | The intervention resulted in significant reductions in assaults as reported by police, aggregate emergency medical services (EMS) outcomes, EMS assaults, and EMS motor vehicle accidents. Reductions in sales to apparent minors were also reported. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
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| General information | | #28 |
| Action | Increasing the minimum legal drinking age | |
| Description | Increasing the minimum legal drinking age | |
| References | Plunk et al. (2013) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Alcohol consumption | |
| Affected health outcomes | General health | |
| Target population | Whole population | |
| Type of action | Policy | |
| Location | US | |
| Implementation level | Most likely national, but could be regional | |
| Details evaluation | | |
| Study design | Natural experiment | |
| Short summary of effects | Lower legal drinking ages were not associated with overall drinking frequency but it was associated with certain types of problematic drinking behaviours that persist into later adulthood: more frequent binge episodes and less frequent non-heavy drinking. These results were largely driven by men and those who did not attend college. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #29 |
| Action | Increasing the unit price of alcohol | |
| Description | Increasing the unit price of alcohol, for example via taxes | |
| References | Ayyagari et al. (2013), Helakorpi et al. (2010), Herttua et al. (2015), Holmes et al. (2014) | |
| Details action | | |
| Mechanism used | Improving health behaviours | |
| Used approach | Population approach | |
| Main determinants | Alcohol consumption | |
| Affected health outcomes | General health | |
| Target population | Whole population | |
| Type of action | Tax or price policy | |
| Location | | |
| Implementation level | Most likely national, but could be regional | |
| Details evaluation | | |
| Study design | Mixed including modelling and longitudinal (time-series) designs | |
| Short summary of effects | The price elasticity of alcohol products is larger in lower socioeconomic groups. Increasing prices for alcohol such as minimum unit pricing, therefore also has the potential to decreasing inequalities in alcohol consumption. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | By increasing the price of alcohol, the highly addicted people who keep on drinking will have even less budget for other issues such as health care and healthy foods. Poor income people are penalised stronger by price increases than high income people because a disproportionate large amount of income is spend on alcohol compared with higher income groups. Additional price increases may stimulate smuggling or self-brewing of alcohol products. | |
| Notes | | |

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| General information | | #30 |
| Action | Specialist (rural) outreach programmes | |
| Description | Improving geographic access such as specialist outreach clinics in primary care or rural hospital settings. | |
| References | Bambra et al. (2010), Gruen et al. (2006) | |
| Details action | | |
| Mechanism used | Improving access to health and preventive care | |
| Used approach | Targeted approach | |
| Main determinants | Geographical access | |
| Affected health outcomes | General health | |
| Target population | People with inadequate access to health and preventive services | |
| Type of action | Health care policy | |
| Location | | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Mixed, including randomized controlled trials | |
| Short summary of effects | Specialist outreach can improve access, outcomes and service use, especially when delivered as part of a multifaceted intervention. Urban non-disadvantaged populations, when compared with rural or disadvantaged populations, have relatively little to gain from specialist outreach in terms of improving access to specialists and hospital services. | |
| Level of evidence | B (due to limited evidence for disadvantaged groups) | |
| Other information | | |
| Warnings | | |
| Notes | Only very few studies were included in the review that addressed urban disadvantaged populations of rural (disadvantaged) populations. | |

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| General information | | #31 |
| Action | Free folic acid supplements | |
| Description | Providing free folic acid supplements to women of childbearing age, for example during routine gynaecological visits (Robbins et al., 2005) or in family planning clinics (Watkins et al., 2004). | |
| References | Robbins et al. (2005), Stockley and Lund (2008), Watkins et al. (2004) | |
| Details action | | |
| Mechanism used | Improving access to health and preventive care | |
| Used approach | Population approach | |
| Main determinants | Financial access | |
| Affected health outcomes | Neural tube defects | |
| Target population | Women of childbearing age | |
| Type of action | Health care policy | |
| Location | US | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | (Randomized) controlled trials | |
| Short summary of effects | Folic acid intake increased in the intervention groups. Those who were most influenced by the intervention were black and lower income and not planning pregnancies (Robbins et al., 2005). | |
| Level of evidence | A | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #32 |
| Action | Nurse practitioners in deprived areas | |
| Description | The introduction of practice nurse (nurse practitioners) in general practice. The nurse practitioners lend support to general practitioners working in deprived (mostly rural) areas. The nurse practitioners specifically targeted (low income) chronic obstructive pulmonary disease (COPD) and asthma patients and they provided extra attention and counselling to improve treatment compliance and, as a result, health of the patients. | |
| References | Sorgdrager et al. (2001) via Mackenbach et al. (2003) | |
| Details action | | |
| Mechanism used | Improving access to health and preventive care | |
| Used approach | Targeted approach | |
| Main determinants | Treatment compliance | |
| Affected health outcomes | COPD and asthma | |
| Target population | People from deprived areas | |
| Type of action | Health care policy | |
| Location | Netherlands | |
| Implementation level | Local, regional, national | |
| Details evaluation | | |
| Study design | Quasi-experimental design with pre- and post-test | |
| Short summary of effects | The introduction of the nurse practitioners resulted in better adherence to treatment and fewer exacerbations in the COPD and asthma patients. | |
| Level of evidence | B | |
| Other information | | |
| Warnings | | |
| Notes | | |

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| General information | | #33 |
| Action | Protection and active promotion of labour market participation of chronically ill workers | |
| Description | Sweden has a very regulated labour market with strong employment protection and active labour market policies for chronically ill citizens. | |
| References | Burstrom et al. (2000) via Mackenbach et al. (2003) | |
| Details action | | |
| Mechanism used | Reducing negative effects of ill health | |
| Used approach | Population approach | |
| Main determinants | Employment and economic inactivity | |
| Affected health outcomes | General health | |
| Target population | Population of working age, in particular chronically ill workers. | |
| Type of action | Labour policy | |
| Location | Sweden | |
| Implementation level | Most likely national, but could be regional | |
| Details evaluation | | |
| Study design | Longitudinal analysis comparing Sweden with the UK | |
| Short summary of effects | Employment rates were higher and rates of unemployment and economic inactivity were lower in Sweden than in the UK, and the differences in these rates across socioeconomic groups and between those with and without chronic illness were smaller in Sweden. | |
| Level of evidence | C | |
| Other information | | |
| Warnings | | |
| Notes | | |

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Appendix: Overview of review studies

The following umbrella reviews (**bold**) and 'normal' systematic reviews were studied:

Multiple determinants including the wider social determinants of health

- **Bambra C, Gibson M, Sowden A, et al. *Tackling the wider social determinants of health and health inequalities: evidence from systematic reviews*. Journal of Epidemiology and Community Health 2010; 64:284-91**
- **Lorenc T, Petticrew M, Welch V, Tugwell P. *What types of interventions generate inequalities? Evidence from systematic reviews*. Journal of Epidemiology and Community Health 2012. doi:10.1136/jech-2012-201257.**
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Overweight and obesity (including physical activity and nutrition)

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- Black AP, Brimblecombe J, Eyles H, et al. *Food subsidy programs and the health and nutritional status of disadvantaged families in high income countries: a systematic review*. BMC public health 2012;12:1099.
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- Kristjansson EA, Robinson V, Petticrew M, et al. *School feeding for improving the physical and psychosocial health of disadvantaged elementary school children Review*. Cochrane Database Syst Rev 2007(1):CD004676.
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Smoking

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Alcohol

No existing systematic review specifically addressed socioeconomic differences in alcohol consumption. Therefore, a systematic review of original studies was carried out. This review is planned to be published in the future (Beenackers et al, in preparation). The relevant actions derived from this review were also included in the database.

Housing and neighbourhood environment

- **Gibson M, Petticrew M, Bamba C, et al. *Housing and health inequalities: A synthesis of systematic reviews of interventions aimed at different pathways linking housing and health*. *Heath & Place* 2011; 17(1): 175-184**
- Thomson H, Atkinson R, Petticrew M, et al. *Do urban regeneration programs improve public health and reduce health inequalities? A synthesis of the evidence from UK policy and practice (1980–2004)*. *J Epidemiol Community Health* 2006;60:108–15.
- Thomson H, Thomas S, Sellstrom E, Petticrew M. *Housing improvements for health and associated socioeconomic outcomes (Review)*. *Cochrane Database of Systematic Reviews* 2013(3).
- O'Dwyer LA, Baum F, Kavanagh A, Macdougall C. *Do area-based interventions to reduce health inequalities work? A systematic review of evidence*. *Critical Public Health* 2007; 17(4): 317-335.

Traffic conditions

- **Cairns J, Warren J, Garthwaite K, et al. *Go slow: an umbrella review of the effects of 20 mph zones and limits on health and health inequalities*. *Journal of Public Health*. Advance Access published September 28, 2014. Doi:10.1093/pubmed/fdu067.**

Work environment

- **Bambra C, Gibson M, Sowden AJ, et al. *Working for health? Evidence from systematic reviews on the effects on health and health inequalities of organisational changes to the psychosocial work environment*. *Preventive Medicine* 2009; 48:454-61.**

Health and social care services

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