# Lifestyle factors and poor health outcomes

\n[toc title="Table of Contents"]\n

\n \t



\n[/toc]\n \n

This essay will focus on the relationship between lifestyle factors and poor health outcomes, and will examine how effective interventions are in improving public health. In the 21st century it is possible for individuals to avoid a large burden of ill-health, and a third of all deaths are recorded as premature, meaning that lifestyle changes undertaken earlier in life could have prevented them (van der Brandt, 2011). These premature deaths equate to 44 years of lost life per 1000 people, and the main causes are smoking, lack of physical activity, obesity, and poor nutrition (Behrens et al, 2013). There is also considerable economic impact from preventable illness and premature death (Behrens et al, 2013). The evidence highlighting the importance of a healthy lifestyle is significant, with several studies demonstrating that lifestyle changes in diet, levels of physical activity, cessation of smoking, and better nutrition improve the health of entire communities (Doubeni, 2012, Li, 2014). However, one of the greatest challenges in implementing lifestyle interventions can be ensuring that the interventions are enacted in an effective way in the areas of greatest need, which are often areas of deprivation (Doubeni, 2012).

## Smoking

Smoking is the current single largest cause of preventable illness and early death in the UK, although it seems likely that this will soon be superseded by obesity (Peterson, 2015). Smokers aged between 45 and 64 are three times more likely to have early deaths compared to non-smokers, and double for those aged between 65 and 84 (Peterson, 2015). There were 106, 000 deaths in the UK (86, 500 in England alone) in 2010 which were primarily linked to smoking (Oza, 2011). The main causes of death were chronic obstructive pulmonary disease, cancers (in particular lung cancer, but also cancers of the oesophagus, pharynx, larynx, bladder, pancreas, and mouth), and circulatory disease, in particular peripheral vascular disease (Oza, 2011). In addition to this, there is a 60% increase in the levels of mortality in smokers from circulatory disease, which rises to 85% in those classed as heavy smokers (Carter, 2015). Overall, 1 in 5 premature deaths are directly attributable to circulatory disease caused by smoking (Carter, 2015). Those exposed to second-hand smoke on a regular basis have a 25% increased risk of circulatory disease (Carter, 2015). Complete smoking cessation will reduce overall morbidity and mortality, but any reduction will reduce the risk of developing aforementioned diseases (Jha, 2013).

Current guidance states that all smokers should be advised to stop smoking and should be offered evidence-based interventions (Cahill, 2013). Examples of interventions include school-based interventions which aim to prevent the uptake of smoking by informing pupils about the health effects of tobacco use in addition to social and economic aspects of smoking (Cahill. 2013) and community-based interventions such as cessation support groups. In

addition to this, research has demonstrated that all healthcare professionals can have a positive effect on a person's decision to stop smoking and so all should be aware of how to direct those who wish to stop to local stop smoking service providers (Cahill, 2013, Jha, 2013). Reviews have demonstrated that the most effective of these interventions are community-based, such as cessation support groups; however this is a problematic conclusion as many support groups were only run for the duration of the study with no longer term follow-up, meaning that longevity of smoking cessation in participants could not be established (Cahill, 2013, Jha, 2013). In addition to this, the sheer diversity of many of the school-based interventions makes generalisation of results difficult, particularly when tailoring interventions which target high-risk groups, including low income communities (Cahill, 2013, Jha, 2013).

## Weight management

Behaviour and lifestyle choices are also fundamental factors in a person's weight, and are key factors in the development of obesity (Cahill, 2013). A combination of an unhealthy diet and little or no physical activity are major risk factors for becoming overweight or obese, in addition to a number of other chronic health conditions, such as cardiovascular disease, diabetes, hypertension, and some forms of cancer (Cahill, 2013, Jha, 2013). Physical activity is a key factor in determining energy utilisation, which is key in both weight loss and control, (Cahill, 2013). Current recommendations from the Department of Health (DoH, 2011) stipulate that adults spend at least 150 minutes a week performing aerobic activity of at least moderate intensity, and children over the age of 5 should spend at least 60 minutes doing

physical activity each day (Doh, 2011). However, recent research has demonstrated that even those who exercise at the recommended levels are still at higher risk of poor health outcomes if they are still otherwise sedentary for a large amount of time (Nicholas et al, 2015). It is important that physical activity is incorporated into regular daily life, as research has shown that this is at least as effective, if not more effective, than weight loss through a supervised exercise programme, either in schools or in a community setting (Plasqui, 2013). Further research has also shown that regular aerobic exercise is the most effective form of exercise when reducing the risk of cardiovascular disease and can also be used as an effective treatment for peripheral vascular disease (Plasqui, 2013).

Despite a number of interventions such as Strength and Flex, Forever Fit, and increased funding for classes such as yoga which particularly target older adults there is still a clear disparity between the targets and the actual levels of physical activity (Sallis, 2012). Reviews of the literature suggest that this may be in part due to level of importance ascribed to exercise within the community, and also in part due to concerns around participating and therefore increasing the risk of falls or injury in the elderly (Sallis, 2012). Plasqui (2013) demonstrated that if these concerns are addressed before the programme is commenced, there will be a statistically significant increase in the levels of satisfaction reported, and an increase in the amount of time spent participating in exercise; however, there was no attempt to increase the level of importance ascribed to exercise within the participants. There is also a variation of physical activity according to social class and ethnic background, with black Caribbean men and women being the most likely to

be physically active, and those from south Asia the least likely to achieve recommended levels (Sallis, 2012), although no clear cause for this has been established (Sallis, 2012). It is important to note that within this study, there was no robust method for validating the levels of activity reported; therefore, the levels of activity reported may not accurately reflect reality.

Levels of decreased physical activity can lead to obesity, which occurs when the intake of energy from food and drinks is greater than the total energy expended by the body through maintenance of normal homeostasis, the body's metabolism, and overall physical activity (Carlsson, 2015). Current industrialised nations can be described as obesity-causing, meaning that it can be difficult for the population to maintain a healthy weight (Carlsson, 2015). This is usually because there is an abundance of highly calorific foods and drinks available and an increase in sedentary lifestyles due to an over-reliance on motorised transport and a decrease in physical activity (Plasqui, 2013). There is also strong evidence to suggest that eating habits which are established in childhood through cultural and familial traits are often upheld into adulthood (Carlsson, 2015). Research into obesity and obesity interventions generally lack specific details about effective approaches or individual programmes, and guidance extrapolated from this research is quite vague (Ding, 2012). An overall review of the literature shows a great variation in study design and other parameters, such as standardised service settings, long-term follow ups and their intervals, cost-effectiveness data, and intervention groups which included minority or those deemed to be more vulnerable (Ding, 2012). There is clear research evidence which states that obesity interventions should be focused on both diet and physical

activity together rather than attempting to modify either in isolation, as research data demonstrates that a combined approach is more effective for weight outcomes (Ding, 2012). As obesity interventions should be multi-faceted, it is important to recognise the role of behaviour change and to develop strategies which encourage increased levels of physical activity and improve eating behaviours, as well as the quality of the food selected (Wadden, 2012). In addition, many interventions can also be delivered to families as well as individuals (Wadden, 2012).

## Nutrition

Nutrition is not just a key component in tackling obesity, but is in itself a key area of interest when considering public health outcomes. It is estimated that up to a third of deaths from cancer may be attributable to unhealthy diets (Lang, 2012). In addition to this, the World Health Organisation accredit almost 5% of the overall disease burden in industrialised nations to poor nutrition, specifically to a low intake of fruit and vegetables, and achieving an intake of 5 fruit and vegetables portions per day is viewed as second only to a reduction in smoking when preventing cancer (Lang, 2012). It is also well documented that an intake of 5 fruit and vegetable portions will reduce the risk of stroke by 6% and the risk of heart disease by 4%, will contribute to other nutritional goals such as weight loss or maintaining a healthy weight, and will contribute significantly to controlling diabetes and lowering blood pressure (Popkin, 2012). Research in this area has shown that when experimental groups increased their vitamin and mineral intake by either increasing their dietary intake of fruit and vegetables or by taking dietary supplements which contained isolated vitamins and minerals, the isolated

dietary supplements did not show the same beneficial effects as an increased level of fruit and vegetable intake (Popkin, 2012), although this was a short-term study and therefore this data does not indicate the long-term impact that additional dietary supplements may have.

There are a number of factors which may present difficulties in increasing the average fruit and vegetable consumption from the current levels of less than 3 a day, which is lower still among those on low incomes and among children (Yang, 2012). The first of these factors addresses access and availability and is concerned with environmental variables, such as location, range of produce available, and costs (Yang, 2012). The second of these is focused on the individual, and addresses more personal motivations such as beliefs and knowledge, habits, and taste (Popkin, 2012). Programmes aiming to improve nutrition and address obesity are addressing these issues by working with the food industry to change food labelling, establish goals for reducing the levels of fat and sugar in food and improving the ease of access to healthy foods (Popkin, 2012). As these changes would be relatively simple to implement, it is concerning to see that research shows that figures for children’s consumption of fruit and vegetables remain low (Yang, 2012). The average consumption is around 15% of the daily recommended intake, with poorer areas reporting lower averages of less than 10% (Yang, 2012). Perhaps the most important factor in this will be the knowledge and motivations of the care provider and it is important that programmes which aim to improve children’s consumption of fruit and vegetables also includes the wider family (Popkin, 2012).

In conclusion, there is strong evidence that lifestyle interventions can be effectively employed to improve public health in the short-term where there is funding to do so and where there are clear examples of effective strategies and follow-ups within research. However it is important to note that users of these services will often require input from more than one intervention service, and that consideration of integration of some key services such as smoking cessation and weight management should be considered. There is a clear need for longer follow-ups within all intervention research and it is important to recognise that many of these interventions will have numerous strands, targeting both individuals and their wider social groups. It can thereby be seen that lifestyle factors and poor health outcomes are clearly irrevocably linked, and that any intervention put in place to prevent poor health outcomes should involve both the individual and the wider community in which they are involved. This may act as a source of support and encouragement, and may be instrumental in motivating individuals. Although a large number of these interventions require individual motivation, it is also important to note that in order for these interventions to be successful, individuals and communities must be able to take effective steps to achieve their aims. For example, in the case of childhood nutrition, unless there is ready access to healthy and nutritious food, any educational programmes aimed to increase awareness will only be partially successful. Lifestyle factors and public health can therefore be seen to be the responsibility of not only the individual, but those providing the intervention and the community as a whole.

# References

Behrens, G., Fischer, B., Kohler, S., Park, Y., Hollenbeck, A., and Leitzmann, M. (2013). Health lifestyles behaviours and decreased risk of mortality in a large prospective study of U. S men and women, European Journal of Epidemiology, 28(5), pp. 361-372.

Cahill, L. (2013). Pharmacological interventions for smoking cessation: an overview and network meta-analysis, British Medical Journal, 1521(23), pp. 264-270.

Carlsson, A. (2015). Physical activity, obesity, and risk of cardiovascular disease in middle-aged men during a median of 30 years follow up, European Journal of Preventative Cardiology, 101(2), pp. 246-249.

Carter, B. (2015). Smoking and mortality – beyond established causes, New England Journal of Medicine, 372(4), pp. 631-640.

Department of Health, (2011). Making the case for UK physical activity. Elsevier: London.

Ding, D. (2012). Built environment, physical activity, and obesity: what have we learned from reviewing the literature? Health and Place, 18(1), pp. 100-105.

Doubeni, C. (2012). Health status, neighbourhood socioeconomic context, and premature mortality in the United States: the National Institutes of Health – AARP Diet and Health Study, American Journal of Public Health, 102(4), pp. 98-107.

Jha, J. (2013). 21st century hazards of smoking and benefits of cessation in the United States, New England Journal of Medicine, 368(2), pp. 341-350.

Lang, J. (2012). Paediataric allergy, immunology, and pulmonology, Allergy, 25(2), pp. 64-75.

Li, K. (2014). Lifestyle risk factors and residual life expectancy at age 40: a German cohort study, BMC Medicine, 12(59), pp. 1186-1189.

Nicholas, J., Lo, G., Lynch, B., Friedenreich, C., and Csizmadi, L. (2015). Leisure-time physical activity does not attenuate the association between occupational sedentary behaviour and obesity, Journal of Physical Activity and Health, 1123 (4), pp. 692-698.

Oza, S. (2011). How many deaths are attributable to smoking in the United States? Comparison of methods for estimating smoking-attributable mortality when smoking prevalence changes, Preventative Medicine, 52(6), pp. 428-433.

Peterson, M. (2015). The combined impact of adherence to five lifestyle factors on all-cause cancer, and cardiovascular mortality: a prospective cohort study among Danish men and women, British Journal of Nutrition, 113(5), pp. 849-858.

Plasqui, G. (2013). Daily physical activity assessment with accelerometers: new insights and validation studies, Obesity Reviews, 14(6), pp. 451-462.

Popkin, N. (2012). Global nutrition transition and the pandemic of obesity in developing countries, Nutrition Reviews, 70(1), pp. 3-21.

Sallis, J. (2012). Role of built environments in physical activity, obesity, and cardiovascular disease, Circulation, 125(2), pp. 729-737.

van der Brandt, P. (2011). The impact of a Mediterranean diet and healthy lifestyle on premature mortality in men and women, The American Journal of Clinical Nutrition, 94(3), pp. 169-174.

Wadden, T. (2012). Lifestyle modification for obesity: new developments in diet, physical activity, and behaviour therapy, Circulation, 125(11), pp. 1157-1170.

Yang, Z. (2012). Nutrition in pregnancy and early childhood and associations with obesity in developing countries, Maternal and Child Nutrition, 9(1), pp. 105-109.