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Upon completing her first year studying PGdip in Nutrition and Dietetics, Bethany has a particular interest in working in paediatrics. However, she is looking forward to future placements to gain more experience in other clinical settings.

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THE GOVERNMENT 5-A-DAY CAMPAIGN



The UK government officially adopted the '5-a-day' campaign in 2003. The World Health Organisation specifically defined the campaign as a recommendation of five portions of fruit and vegetables to be consumed every day, with one portion consisting of approximately 80g, amounting to 400g in total per day.

For children, portion sizes vary, but are often described as the amount which would fit into the palm of their hand; despite this, there is currently no specific guidance on the exact amount one child's portion should be.²

The '5-a-day' campaign and the associated recommendations were based on evidence was first observed in 1990. This evidence proved that fruit and vegetables provide protective properties, in particular against cardiovascular disease and different cancers even from a young age.⁶ Evidence also supports that consuming the recommended amount of fruit and vegetables is associated with decreased risk of obesity and the comorbidities associated with this.³ With the rates of obesity steadily increasing, and even more so amongst children, healthy eating campaigns are of upmost importance.³

EVIDENCE OF HEALTH BENEFITS

There is continuous research on this area to determine the associations between consuming fruit and vegetables and the positive impact on health. A large prospective cohort study carried out in Europe observed that amongst the participants consuming a minimum of eight portions of fruit and vegetables per day, they had a 22% reduced risk of developing ischaemic heart disease (IHD) in comparison with those participants consuming less than three portions a day [relative risk (RR)=0.78, 95% confidence interval (CI): 0.65-0.95].⁴

It was also identified that for every extra portion of fruit and vegetable consumed in a day, there was a 4% reduction in risk of IHD (RR=0.96, 95% CI: 0.92-1.00, *P* for trend = 0.033)⁴ Analysis of the health survey for England revealed that there is a significant association with those people who consume seven portions of fruit and vegetables per day and a decrease in all-cause cancer (HR=0.75, 95% CI 0.59-0.96) and cardiovascular (HR=0.69, 95% CI 0.53-0.88) mortality.¹⁰ It is important to note a limitation of such data in that it involved people who were perhaps more likely to be conscious of their health based on where they were recruited (i.e. health screening, vegetarian societies etc).

Increased amounts of fruit and vegetable consumption is also associated with effective weight management due to the fact that fruit and veg are high in both fibre and water and, therefore, can reduce overall energy intake in the diet and increase satiety.¹² Based on these studies, it is evident that fruit and vegetables play a key role in reducing serious conditions such as heart disease and different cancers. However, the key improvements are seen in those individuals consuming more than seven portions of fruit and vegetables per day.

SUCCESS OF CAMPAIGN

Despite the fact that there is a great deal of evidence supporting the health benefits of fruit and vegetables, the important question is whether or not people are achieving their recommended daily



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amounts. Over the past years, the government has spent approximately £3.3 million on the 5-a-day campaign and £75 million on the NHS Change 4 Life campaign, which also supports 5-a-day, showing that huge efforts are being spent on supporting the health campaign.¹⁰ Despite this, the UK currently has the lowest average intake of fruit and vegetables in Europe,¹ with only 30% meeting the recommendation of five portions everyday.⁶ Amongst children, these figures are even lower: in some areas, as few as 10% are achieving the recommendation, especially in those areas of a lower socioeconomic class.¹¹ A study in Liverpool found that approximately 26% of the children aged 5-11 and 23% of the children aged 12-18 had not consumed any fruit or vegetables the day prior to being questioned.⁵ Based on these statistics, it is evident that although the government is focusing attention on the 5-a-day campaign, a change needs to be introduced in order to increase the amount consumed on a daily basis, perhaps with a specific focus on children in order to improve the consumption of fruit and vegetables in the general population in the long term.

5-A-DAY AND CHILDREN

Evidence suggests that emphasis on teaching children and families about healthy eating is believed to be the way forward for the future

and to observe the long-term health benefits in the population.

Poor eating and drinking habits are often developed during childhood and are continued into adulthood, leading to overweight and related morbidities.⁹ Pathogenic data has revealed that conditions such as atherosclerosis begin as early as childhood, but by something as simple as increasing fruit and vegetables intake, it can reduce the risk of this condition developing as adults.¹³

A large study in London, involving 2,383 children from 52 primary schools, focused on fruit and vegetable consumption amongst primary school children.³ The results showed that, on average, these children consumed 293g (approximately 3.6 portions) of fruit and vegetables a day (95% CI 287 to 303). An interesting observation revealed that those children who ate their dinner with their family at the dinner table consumed, on average, 125g more fruit and vegetables per day than those who didn't eat a meal together ((95% CI 92 to 157; $p < 0.001$).³ One main limitation of this study was that it was only carried out in London, so not necessarily representative of the wider nation. Nevertheless, this still shows important patterns on healthy eating being reliant on the home environment.



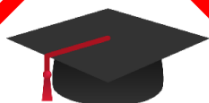
Current statistics reveal that the general population in the UK, in particular amongst children, are not meeting the recommended five portions of fruit and vegetables per day.

The School Fruit and Vegetable Scheme (SFVS) is a programme providing one free piece of fruit or veg to children in government-run schools in England for the first three years. A study carried out in 2012 analysing the effectiveness of this programme, collected data from 128 different schools participating in the SFVS.⁷ The results showed that those children participating in the scheme on average consumed more fruit and vegetables (5.4 portions - 95% CI 5.3, 5.5) than those who didn't (4.7 portions - 95 % CI 4.6, 4.8). The results also showed that the uptake to the scheme increased as the economic class decreased ($r=0.855$; $P=0.002$), but, despite being on the scheme, those in deprived areas still consumed on average fewer portions of fruit than those living in more affluent areas ($r=0.860$, $P=0.001$).⁷ The limitations in this study include the possibility of food recalls being misreported by the parents. Nevertheless, the study shows first hand that in order to teach children effectively and successfully about the benefits of eating healthily and consuming fruit and vegetables on a daily basis, the environment in which they are brought up in is the main contributing factor as to whether or not children achieve this.⁹

CONCLUSION

Overall, results and evidence from the literature shows that with each extra portion of fruit and vegetables eaten every day, there can be a 4% reduction in risk of developing certain conditions and diseases.⁴ Current statistics reveal that the general population in the UK, in particular amongst children, are not meeting the recommended five portions of fruit and vegetables per day.¹¹ Therefore, it is unlikely that the majority of the population is consuming enough fruit and vegetables to see noticeable improvements in health. The main area of focus, in order to see improvements in the national average of fruit and vegetable consumption, should be on children living in more deprived areas as these areas have the lowest consumption rates.

Past studies have shown strong associations between the child's environment and a healthy diet, with this including both home and school environment.⁹ Therefore, more government efforts and interventions should be seen in both schools and communities to improve both the awareness and access to healthy food in these areas. By introducing healthy eating into the curriculum and encouraging both children and parents to eat healthier in general, noticeable improvements in overall wellbeing may be seen in the future generations.



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