5. Conclusion

The aim of this study was to assess, by the process of a systematic review, whether physical activity reduced obesity and other modifiable coronary heart disease risk factors in children. This was broken down into three specific research questions which were;

- In studies where PA levels were measured at baseline were children meeting the suggested PA levels as outlined by the HEA (1998)?
- Does physical activity consistently bring about positive, short-term, alterations to the modifiable risk factors of obesity, lipid profile, and blood pressure in children?
- Are the beneficial effects of PA in relation to modifiable CHD risk factors more pronounced in younger or older children, and, in males or females?

In relation to question one the findings suggest that levels of PA among young people appear to vary greatly, with some children having seemingly high levels of daily activity while in others it appears to be much lower and below the HEA (1998) recommended guidelines. However, much of this variation may be attributed to different methodological approaches and the researcher's understanding of the term 'physical activity'.

The second question looked at the effect of PA on obesity, lipid profile, and blood pressure in children. Many of the studies reported that PA was related to a significant decrease in measures of obesity in young people. However, it was suggested that the

intensity level of this activity is crucial for producing short-term benefits (in relation to CHD risk profile), with activity of a vigorous intensity being more important than moderate intensity activity. Findings concerning blood pressure and lipid profile also suggest that PA can reduce these risk factors in children, but these results were not universal to all the studies. Thus, although some of the studies included in this review report significant beneficial short-term associations between PA and modifiable CHD risk factors in children, this finding was not consistent.

The small number of studies in this review related to age related differences in PA response, suggest that the beneficial effects of PA are more pronounced in older children than in younger children. This may be due to qualitative changes in PA or the level of reliability and validity of questionnaires for younger children. It was a common finding that PA produced significantly more beneficial effects in males than in females. This was widely attributed to the differences in overall levels of PA between the sexes which were consistently higher in males than females.

Therefore, it could be concluded that PA has been shown to reduce obesity and other modifiable risk factors in young people, but as these findings were not extended to all of the studies this prompts the need for further research in this area, with particular consideration to the PA recommended guidelines for children. It may be more important, in terms of health and CHD risk, to identify and promote PA that will lead to life-long PA behaviours rather than focusing solely on the short-term benefits. Either way, it would seem that childhood is the most appropriate place to focus attempts to reduce the

prevalence of CHD in the U.K and other countries. Behaviours established during childhood are likely to continue into adulthood, as are risk factors for CHD such as obesity, blood pressure, and lipid profile. Importantly, it seems that physical activity in young people is an essential component, independent of diet, needed to produce a decrease in the occurrence of coronary heart disease in later life.

5.1 Recommendations

Due to the somewhat inconclusive evidence presented in this review, it would be misleading to propose precise recommendations with concern to young people and physical activity in relation to CHD risk factors. However, the benefits of physical activity on physical, psychological, and social well being are widely acknowledged. Therefore, it would seem logical to promote and encourage physical activity among children, but further research is required to determine the optimum duration, type, and intensity of this activity in terms of promoting life-long health and participation.

5.2 Future research

This systematic review has brought to light the need for further research to be conducted in the area of PA and CHD risk factors in young people. Three specific areas have been identified within the scope of this study. Firstly, further investigation is required to establish the relationship between the intensity level of PA and obesity in children. Secondly, research should be conducted to identify the type, volume, and intensity of PA

in childhood which will bring about lifelong participation in exercise and physical activity. This however is a particularly problematic research area as it requires studies that are longitudinal in design. Thirdly, it may be beneficial to develop a set of age specific guidelines for PA within the child and adolescent population. It has been highlighted within this study the possibility of an age difference response of CHD risk factors to PA even within a population of young people. Therefore, an intervention study could be used to investigate the response of CHD risk factors to different types, intensities, and duration of PA in younger and older children with the aim of producing an optimum PA recommendation for each age group. The goal of such a study would be to improve short term health while concurrently promoting long term health.