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**Follow-up Study of the Dietary Intake, Anthropometric  
Measurements, and Blood Pressure in Children Born  
to Women in the Manawatu Pregnancy Study.**

**A Thesis Presented in Partial Fulfillment of the Requirements  
for the Degree of Master of Science in Nutritional Science at  
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## GENERAL INTRODUCTION

When the proposal of the pilot study presented in this thesis was finally formulated, one of the first and important requirements was to obtain approval from accredited ethics committees. This proved to be a long and demanding process, but at the same time an interesting and useful experience. It was also somehow different from what was previously experienced in Kuwait, the researcher's home country. That was how the idea of presenting this thesis in two parts came into being.

In the first part, the development of ethics codes and ethics committees was reviewed, a comparison of the process to obtain an ethical approval in New Zealand and in Kuwait was made, and the proposals presented to Massey University Human Ethics Committee (MUHEC) and to Manawatu-Whanganui Committee (MVEC) were outlined.

Bioethics is a young discipline; the term "medical ethics" was first used at the beginning of the 19<sup>th</sup> century. However, codes of ethics of human research were only introduced towards the end of the first half of the 20<sup>th</sup> century. Hectic debates over these codes took place during the second half of the 20<sup>th</sup> century. On one side, there were growing concerns for the rights and safety of research participants, physically, psychologically and culturally, and on the other there were fears that scientific merits and benefits might be eroded by the limitations that research bioethics may enforce. These debates have



resulted in amendments and changes in ethics codes, changes that probably will continue to develop during the 21<sup>st</sup> century.

One of the difficult issues raised was research with children and other vulnerable groups. Biomedical research is an important and sociably desirable undertaking; most of the research that involves children cannot be performed on adults, yet research with children must proceed only when the rights and welfare of the participants are carefully observed, including their participation in the decision to take part when they are able to.

In the Pilot Study, which comprises the second part of this thesis, thirty mothers and their children were investigated. All participants were residents of Palmerston North City. The mothers participating in this Pilot Study had earlier been participants in a study that took place in the Manawatu area in the early nineties and which was completed in 1996. The children were those with whom the mothers were pregnant at the time of the earlier study. The Pilot Study was considered to be a follow-up upon that earlier study.

The Pilot Study aimed at investigating the relationship of atopic diseases, particularly bronchial asthma and early childhood diet and growth. The prevalence and severity of asthma has been increasing over the past few decades, particularly in urban industrialized areas. This increase is thought to be due to changing environmental factors. Smoking, particularly maternal smoking, and pollution are thought to be major contributing factors. Nutritional and dietary factors have lately received greater attention. Certain foods may

provoke asthma due to their “allergenic” properties; however, dietary deficiency of certain nutrients, specifically antioxidants, is thought to play an important role in the pathogenesis of asthma. This hypothesis was investigated in the Pilot Study.

The factors that may influence blood pressure in children were also investigated. Although the prevalence of hypertension is far lower in children than in adults, essential hypertension appears to have its onset during the first two decades of life. The identification of an at-risk-population before they develop hypertension may have profound benefits, since even small decrements in blood pressure may have substantial effects on hypertension-related morbidity and mortality. Birth weight has been linked to the development of hypertension; defining both systolic and diastolic blood pressure of the participant children and relating them to birthweight was an important part of the study.

Familial factors are recognized to influence not only the development of hypertension but also the level of blood pressure in an individual; maternal blood pressure in particular is thought to be closely related to that of her offspring. This relationship between maternal blood pressure and that of her child was also investigated.

The importance of defining these relationships is to identify children who are at risk for developing hypertension in their early life and thus planning intervention and follow-up strategies before the onset of the disease.