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**The effect of prenatal exposure to methamphetamine on children's executive  
functioning at age 4**

A thesis presented in partial fulfilment of the requirements for a degree of  
Master of Educational Psychology  
At Massey University, Albany, Auckland,  
New Zealand.

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2011

## **Declaration**

I certify that the thesis entitled “The effect of prenatal exposure to methamphetamine on children’s executive functioning at age 4” and submitted as part of the degree of Master of Educational Psychology is the result of my own work, except where otherwise acknowledged, and that this research paper (or part of the same) has not been submitted for any other degree to any other university or institution.

Signed \_\_\_\_\_

Date \_\_\_\_\_

## Abstract

The use of methamphetamine, a highly addictive stimulant drug, during pregnancy is an increasing problem in New Zealand. However, at present, little is known about the effect of methamphetamine in utero on child development. The aim of this study was to assess the effect of prenatal methamphetamine exposure on preschool measures of executive function among 4-year-olds. To address this aim, 25 children who had been prenatally exposed to methamphetamine, and 25 control children who were matched for all other environmental and drug exposure-related variables, were assessed on three performance tests of executive function; the *Day/Night* task, the *Bear/Dragon* task and the *Gift Delay (wrap)* task. In addition, mothers or caregivers of these children completed the *BRIEF-P* measure of child executive functioning. Children who were exposed to methamphetamine in utero were rated as exhibiting significantly more executive functioning difficulties on the *BRIEF-P* scale than controls and also demonstrated a trend towards poorer performance on the *Day/Night* task. However, the methamphetamine-exposed children performed better than controls on the *Gift Delay (wrap)* task and no differences were found for the *Bear/Dragon* task with performance close to ceiling for both groups. The results of the study indicate that prenatal exposure to methamphetamine in the context of a range of environmental risk factors may influence certain aspects of executive function development in preschool-aged children and suggest that additional studies with larger sample sizes are warranted.

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