The impact of regular, small-dosage red wine on foetal development

Dr. John Smith*
University of Sydney

Abstract

It is well-known that significant alcohol consumption can cause birth defects in newborns. To date, research has not established the relationship between regular consumption of softer alcohols like red wine, which have proven antioxidant benefits. The presented investigation aimed to discover the impact of regular red wine consumption on foetal development. Three pregnant women were instructed to consume three glasses of red wine per week from weeks 8 to week 16 of gestation. At birth, it was found that there was no significant difference between the birth weight of the newborns involved in the experiment compared to the Australian national average. Moreover, experienced doctors gave the newborns an average rating of 8 out of 10 on the healthiness scale. Combined, these results prove that if women consume red wine throughout their pregnancy, they will produce healthy newborns.

I. INTRODUCTION

There has been much controversy over the impact of alcoholic beverages on foetal development. While research has revealed that significant alcoholic consumption throughout pregnancy, and particularly in the first trimester, can lead to serious birth defects, research often fails to acknowledge the beneficial effects of 'softer' alcohols like red wine. Though alcoholic (often between 12-14%), red wine is a strong polyphenolic antioxidant, which means that it is capable of 'neutralising' harmful oxidising agents that, if not dealt with, can adduct to genetic material and cause significant birth defects themselves. In bridging the gap in the literature for this topic, the following investigation aims to determine the impact of regular consumption of red wine, from conception to birth, on foetal development.

II. HYPOTHESIS

Pregnant women who consume a glass of red wine three times a week throughout their pregnancy will give birth to healthy babies.

III. VARIABLES

Independent Variable – consumption of a glass of red wine, three times a week, throughout pregnancy.

Dependent Variable – healthiness

Controlled Variables – Baby number (all women having their first child), location, occupation of participants, relationship status, sex of baby.

IV. PARTICIPANTS

Consent was granted by three pregnant women in Perth, Australia, who were informed that the experiment has a small chance of causing birth defects in their child. All women were pregnant with their first child, were 17 years of age and

* Professor of Human Anatomy and Physiology at the University of Sydney [1998-]. Bachelor of Science (Anatomy and Biochemistry), 1981. Doctor of Medicine, 1989.

were brunette. Two of the women were of South African decent, and one was of Maori decent.

V. METHOD

From Week 8 to Week 16 of gestation, each of the women consumed a single glass of their favourite type of red wine on Monday, Wednesday and Friday evening. The wine had to be produced in Australia, and with an alcohol percentage of 13%.

The women reported to their gynaecologists once per fortnight for observation. Doctors completed routine health checks on the women, and ultrasound scans on the foetuses.

At birth, the three newborns were weighed and measured, and a blood test was conducted to determine if any of the newborns presented with serious birth defects.

Newborns were also measured using the specially devised 'Healthiness Scale', in which the doctors determined how healthy the newborns were compared to all of the newborns they had delivered over their careers. Results are presented below.

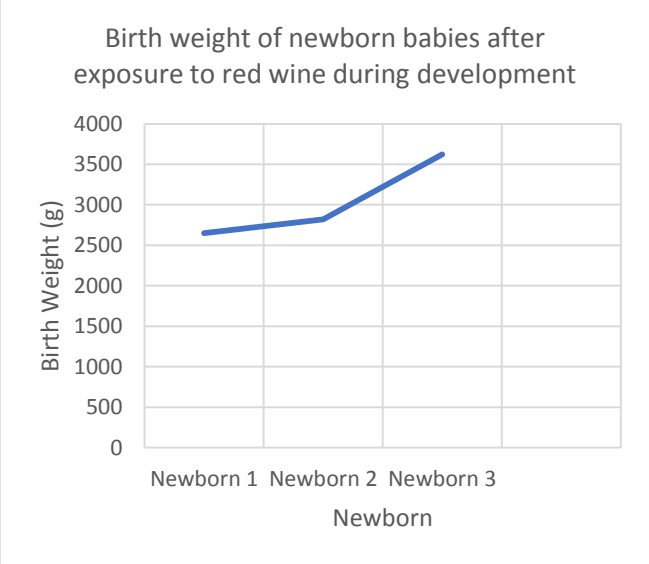
VI. RESULTS

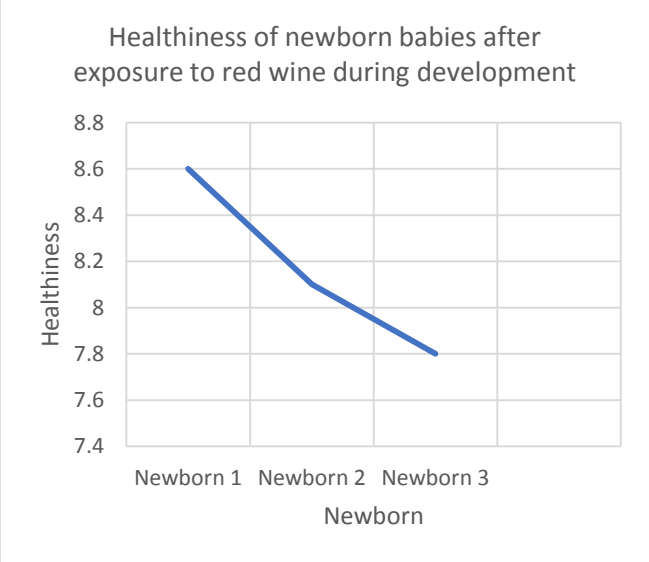
Results for birth weight and observed healthiness are presented below.

The three newborns weighed 2650g, 2821g and 3624g. When comparing this average weight to the national average, a significance value of $P>0.05$ was found, proving that there was no significant difference between the newborns exposed to red wine and the national average for birth weight.

Results from the blood tests revealed no significant genetic or other birth defects, though one child did present with heterochromia.

For the purpose of this research, a new scale for healthiness was devised. This scale is a qualitative measure of doctors professional opinions, based on their years of experience. Results for the newborns on the healthiness scale are also presented below.





VII. CONCLUSION

This experiment proves that pregnant women who consume a glass of red wine three times a week throughout their pregnancy will give birth to healthy babies. It can therefore be extrapolated from this research that there are no presented risks with regularly consuming red wine throughout the entire length of pregnancy.

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