

# A Randomised Controlled Trial: Effect of probiotics on gut microbiome in newborns with antibiotic-induced dysbiosis (ADAPTS: Antibiotic Dysbiosis and Probiotics Trail in InfantS)

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## Introduction

Supplementation with probiotic bacteria has been shown to assist in the development of healthy microbiota.

Exposure to antibiotics in the neonatal period causes disruption in the development of healthy gut microbial often referred to as dysbiosis.

Dysbiosis has been shown to be a factor in the development of chronic conditions such as allergy, eczema in infancy.

## Objectives:

**Objectives:Primary:** To understand; 1) correlation between antibiotic exposure in early life to subsequent imbalances to the gut flora and examine the length of dysbiosis, 2) if probiotic administration has a positive effect on this dysbiosis.

**•Secondary** 1. Study the effect on symptoms of gastrointestinal colic in infancy. 2. understand if probiotic administration results in improved immunoreactivity was routine vaccinations

## Methods

Methods: A written, informed consent from parents obtained.

Ethics approval from Joondalup Health Campus.

Subjects: Newborn infants born at 35+0 week onwards, under the age of 3 days, who were prescribed antibiotics for the treatment of suspected sepsis were enrolled in the study.

Subjects were randomised to receive once daily probiotic drops (Labinic; a product containing *Lactobacillus acidophilus*, *Bifidobacterium Infantis* and *Bifidobacterium bifidum*) or placebo for 28 days after the completion of antibiotic course.

The supplement was continued upto 28 days post discharge from the neonatal unit.

Specimen collection – stool specimen was collected after the completion of antibiotics prior to the start of probiotic supplementation, at 4 to 6 weeks of age, at 6-8 months and at 12 months of age. Gastrointestinal questionnaire and cry chart were completed by the parents to understand the episodes of colic in the first six weeks of life. Blood tests to understand the immunological response to routine vaccination was carried out.

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## Results

N=61 (32 received probiotics vs 29 placebo)

Baseline stool available n= 45

Gastrointestinal questionnaires n=38.

6-week stool specimen n=29.

Uptake for 8 months blood test was low. Currently rest of the data is being collated.

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