



RACP Foundation Research Awards

PROGRESS REPORT

Project / Program Title	Smell and taste to improve body composition in very preterm infants: a randomized controlled trial	
Name	Dr Friederike Beker	
Award Received	2017 Queensland State Committee Research Development Grant	
Report Date	13 February 2018	
Chief Investigator / Supervisor	Dr Friederike Beker	
Administering Institution	University of Queensland	
Funding Period	Start Date:	1 March 2017
	Finish Date:	1 March 2019

PROJECT SUMMARY

Around 6500 babies are born before their due date and admitted to a neonatal intensive care unit across Australia and New Zealand each year. Premature babies need much more calories than term babies due to their developing organs, fast growth and critical brain growth in combination with often being very sick. Providing enough calories is a significant challenge for the clinician and despite extensive research and focus on the nutrition given, the most vulnerable babies are often undernourished. The rapidly growing brain is particularly affected and generalized growth failure is known to impair later development.

Our pilot trial exposed very preterm babies to the smell and taste of their milk with every tube feed compared to standard management (no exposure to smell and taste with tube feeding) to see if babies in the smell and taste group have a better weight at discharge and tolerate their milk better.

This result is in line with the idea that nutrition is not only about the calories and nutrients supplied, but also how the body reacts to the food that enters the digestive system. Pavlov is well known for training his dogs to salivate when hearing a bell, but he also demonstrated over hundred years ago that bread placed through a tube in a dogs stomach without the dogs knowledge remained undigested for up to an hour (a setup very similar to tube feeding preterm infants).

With this RACP funding, two studies are supported:

The TASTE study:

Population: 330 very premature babies (<29 weeks gestation) born at the Mater Mothers' Hospital in Brisbane or at the Royal Women's Hospital in Melbourne.

Intervention: Smell and taste of milk with tube feeding

Control: Routine care (no smell and taste of milk with tube feeding, only suck feeding as able {breast and bottle}).

Outcome: Weight (z-scores at discharge).

ANZCTR Nr: ACTRN12617000583347

Progress: HREC and governance approval completed, currently recruiting (>90 infants so far).

The TASTE plus study:

This is a add on pilot trial investigating the effects of smell and taste in very preterm born babies on early nutritional learning. In particular:

- Saliva composition in babies exposed to smell and taste versus control
- Eating behaviour in babies exposed to smell and taste versus control before discharge from hospital and at 2 years of corrected age, assessed by the BEBO and GEBO.
- Coordination of suck and swallow in babies exposed to smell and taste versus control around 36 weeks' gestation assessed by the PROFAS.
- Body composition in babies exposed to smell and taste versus control around 36 weeks' gestation, measured with PeaPod.
- Brain tissue oxygenation in the frontal lobe in babies exposed to smell and taste versus control as a response to the smell of milk around 36 weeks' gestation.

Progress: HREC approval completed, recruitment commenced this week.

PROJECT AIMS / OBJECTIVES

SIGNIFICANCE AND OUTCOMES

PUBLICATIONS / PRESENTATIONS

This manuscript has been published in relation to the here supported project:

Early Hum Dev. 2017 Nov;114:31-34. Smell and taste in the preterm infant. Bloomfield FH, Alexander T, Muelbert M, Beker F