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|  | Participant Information Sheet — study details |

**Does supplementation with a prebiotic affect the gut microbiome and behaviour in children with Autism?**

**QUT Ethics Approval Number 1800000774**

# 1 Would your child like to take part in this clinical trial?

We would like to invite your child to take part in our study. This is because your child has autistic spectrum disorder.

This document tells you about the trial and describes what will happen if you decide you want your child to take part. If there is anything you don’t understand or want to know more about, please ask us. We will be happy to provide more information.

You might also want to talk to a relative, a friend or your General Practitioner before you make up your mind. If you decide you want your child to take part, we will ask you to sign the consent form attached. We will give you a copy of the complete signed document to keep.

# 2 Why are we doing this research?

We are looking at whether prebiotics (which are indigestible dietary fibres) can influence social behaviour and anxiety levels in children aged 4 to 10 years old with autism spectrum disorder.

Prebiotics are found in foods such as fruit, vegetables and wholegrain cereals, foods that are high in resistant starch but often lacking in the diet of very selective eaters. Prebiotics feed the gut bacteria which have a large role to play in many regulatory processes. The gut bacteria in children with autism have a different profile to children without autism which may contribute to gastrointestinal pain, less social responsiveness and higher anxiety levels.

We would like to investigate whether by using a prebiotic supplement we can selectively stimulate beneficial bacteria and help to reduce symptoms of anxiety and improve social responsiveness and health related behaviours in children with autism.

* The prebiotic we will use is called Galactooligosaccharides (GOS).
* It is classed as a functional food, not a drug. It is already commercially available as a supplement both in Australia and overseas. If not used by the gut bacteria, it is excreted. It does not remain in the body. It occurs in foods such as pulses, legumes, onion, garlic, wheat and rye.
* It is used to stimulate the beneficial gut bacteria such as bifidobacteria.
* Your child will either receive the GOS supplement or a “placebo” product (maltodextrin). The placebo helps us to make important comparisons.

# 3 Does my child have to take part?

No. It’s your choice. If you don’t want your child to take part, you don’t have to agree. If you decide your child can take part and later change your mind, you are free to withdraw your child at any stage.

If you choose not to take part, or if you choose to take part and then later withdraw, your child will still be able to access their usual medical care. Your choice will not affect your relations with those treating your child, or with this institution. If you do withdraw your consent during the study, the research team will stop collecting personal information from your child. You can also choose to opt out of the wrist band data collection on physical activity and sleep, without having to pull out of the other components of this study. But we will keep the personal information we have collected up to that point. There is a good reason for this. Sometimes, the law requires it. It is also retained for accurate measurement, the study results must include all the data actually collected.

Just to be clear on this point. We must keep any information about your child we collect, up to the time of withdrawal. The institution conducting the study (QUT), has access to this information so we can check it is correct. If you do not agree with this then we cannot allow your child to join the study.

# 4 What are the main steps in the study?

**Here are some of the screening steps listed below to make sure that the study is right for you**.

For this trial we are recruiting children aged 4-10 years old who have a confirmed diagnosis of autism. We expect to recruit 50 children from Brisbane and the surrounding area.

We will require a stool sample and saliva samples from your child on 2 occasions (at the start and at the end of the study). These can be collected in your home (we will provide suitable equipment to collect and store these samples for a short time until you see us again at the clinic). We will also provide you with training on how to do this. You will be shown a video and be given written instructions to take home and follow.

Your child will also need to be able to take up to 1/2 a teaspoon of prebiotic powder or a “placebo” comparison powder per day (which equates to 2.4 grams per day). The placebo powder is maltodextrin which does not affect your child in any way, but allows us to make important comparisons.

**A placebo is a substance that does not contain an active ingredient**. This looks like the real thing, but has no clinical effect. The placebo used here is a form of sugar. Using a placebo in one group helps us to be confident that effects we measure in the other groups really are due to the prebiotic (GOS).

To ensure a fair test of our research assumptions we will assign your child to either the prebiotic or placebo group on a random 'chance' basis: like flipping a coin’*.* **This is known as randomisation**.

Your child will have an equal (50%) chance of being given one of the following:

* 2.4g per day of GOS (prebiotic) and specialized dietary behavioural therapy

**OR**

* 2.4g per day of maltodextrin (placebo) and specialized dietary behavioural therapy

To avoid accidentally influencing the tests, neither you nor the researchers will know whether your child receives the placebo or the prebiotic supplement.

Firstly, your child will receive a one-off random sample of the prebiotic or placebo to ensure that they are able to consume the dose throughout the trial. Following this and upon acceptance to the trial, you will be asked to fill in a number of questionnaires concerning your child’s diet, gastrointestinal symptoms (if any), sleep time, and social behaviours.

We will then ask for a single stool sample and four saliva samples (10 and 30 minutes after waking, at around 4pm and before bed) taken by you in your home on the day preceding the first dietetic consultation. Your child will begin taking the supplement from this point. For the first week, a lower dose of 1.2g will be given (0.6g twice a day) which will increase to the full dose of 2.4g (4 capsules) per day from the second week. If your child experiences discomfort with bloating, we will revise the dose. Your child will continue to take this dose until the end of the 6-week study. The capsules should be opened and the powder mixed into 100mls of a drink or fluid (eg yoghurt) acceptable to your child. This should occur under your supervision. Depending on tolerance and convenience, the dose can be distributed evenly across meals (3 to 4 times per day) or in the morning and afternoon.

You will be asked to attend dietetic consultations at QUT Kelvin Grove on two occasions, at the beginning and at the end of the 6-week study. This will be a for a 1 hour long consultation with a paediatric dietitian, free of charge. She will discuss ways to create positive mealtime experiences which focus on strategies to help improve dietary intake. She is a qualified in the SOS feeding therapy which is aimed to help children that are very fussy eaters.

At the end of the 6-week study period, we will ask for another stool sample and a further 4 saliva samples, again taken at 10 and 30 minutes after waking, at around 4pm and before bed on the day before your child’s final dietetic consultation. These samples will allow us to measure the change in the gastrointestinal environment and changes in levels of stress and anxiety.

You will also be asked to fill in some of the same questionnaires as at the beginning of the study. This will measure changes in intake, symptoms and behaviour.

If your child is willing, we ask that they wear a wristband, a little like a ‘fitbit’ for the first and last week of the trial. This will measure their sleep and activity and will help us to assess whether these measures may have changed during the study period.

Before and during the 6 week study, your child must not take other prebiotic supplements. They should also not commence using probiotics during this period. If your child needs to take antibiotics or new medications during the trial period, we ask you to let us know because these may interfere with study results. We will summarise the findings of this study for you, and will tell you whether your child was receiving the prebiotic supplement or the maltodextrin placebo after you have completed all study components. You are completely free to purchase and use prebiotic supplements after you have completed the study.

# 5 Who is conducting and paying for this research?

This research is part of the Doctorate degree of Ms Jacqueline Palmer who is a registered dietitian (APD). She is specialised in and has a lot of experience working with children in particular children with autism.

The trial will be conducted on the Kelvin Grove Campus of QUT, with stool and saliva sample collection being done by yourself in your home for your child’s comfort. This study is funded by QUT.

# 6 What if something new comes up during the study? Could the researchers stop the trial early?

We will tell you about it. This is only a very short study (6 weeks) and it is very unlikely that our insights about the prebiotic (which is a type of dietary fibre) would change. However, if there was any reason that raised concern about your child’s health we would contact you immediately and would stop the study.

# 7 What will happen to information about my child?

We will keep any data and information that we collect completely confidential and securely stored. We will use and retain information that we collect about your child only for this study. We will not disclose your child’s information without your permission, except in compliance with the law.

All of the collected data will be de-identified for the research analyses and an anonymous participant code will be used. No personal information about your child, such as their name and address will be shared with anyone outside the core team of researchers. In all study documents your child will be identified with a code number (5 digits and the first three letters of their surname) only.

All of your child’s collected information will be kept indefinitely in safe password protected data storage facilities as per Queensland Archives directive. . The re-identifiable/coded (it is possible to use the code to re-identify your child) information held by QUT will not be destroyed.

Australian and Queensland privacy laws give you the right to request access to your child’s information that the researchers have collected and stored. The law also gives you the right to request corrections to any information about your child that you disagree with. Please contact the study team (contacts on page 7 of this document) if you would like to access your child’s information. After completion of the 6-week study period you will be told whether your child was receiving the prebiotic or placebo supplement.

# 8 What are my child’s responsibilities during the trial?

If you agree to your child’s participation in this study, you agree to be responsible for ensuring your child takes/uses the prebiotic (GOS) according to our instructions. We ask that your child wears a wristband for the first and last week of the study if they agree. Your child will need to accept that we collect stool and saliva samples although you as their parent will collect these. We also ask you to comply with the general conditions in this document.

# 9 What possible benefits might my child get by taking part?

**We cannot promise personal benefits for your child from this study**, however potential benefits include reduced levels of anxiety, improved dietary intake, reduced levels of gastrointestinal symptoms and a better balance of ‘good and bad’ bacteria in the gut. We are also looking at improved sleep and physical activity. As part of the research, you along with your child will receive two dietetic (nutrition) consultations from and experienced senior registered dietitian free of charge.

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# 10 What risks does my child run by taking part?

If your child experiences and discomforts or health symptoms that you think may be related to this study, or you are worried about them, please make sure you talk with the research team. Tell the research team immediately about any new or unusual symptoms that your child gets.

The prebiotic used in this study is a type of dietary fibre. Known side effects of increased consumption of fibre in the diet are bloating, increased gas production (flatus), and in extreme cases and very unlikely- diarrhoea, which can lead to gastrointestinal discomfort. By increasing the dose gradually over the first two weeks, we aim to minimise any side effects.

We acknowledge that any change in circumstances may cause distress in your child therefore we have aimed to minimise disruption to their usual routine. The prebiotic and placebo are soluble with only a slightly sweet taste but they may alter the taste and smell of a food (less so than table sugar). The wearing of the wristband accelerometer may not be comfortable for your child, and the collection methods for saliva and the stool, although non invasive may also cause distress.

# 11 How will you use any tissues or samples you take from my child?

If you agree to your child’s participation in this study, we will collect stool and saliva samples as biomarkers, which are essential components of this study. We will store these samples at QIMR (Queensland Institute of Medical Research) while awaiting batch analysis where the research team working on this project will have access. The samples will be destroyed after the initial analysis.

**12 Will you be doing any genetic tests?**

**We will not test your child’s genes or DNA.**

We will be testing saliva for levels of cortisol, which is a hormone that indicates levels of stress. We will also test the stool samples to determine the microbiota (bacteria) present in your child’s gut. This involves gene sequencing of the bacteria only and analysis of the products they produce. This does not test your child’s genes or DNA.

Neither of these tests are invasive. Saliva will be collected by dribbling into a small container, and the stool sample in a sterile plastic container. This information will tell us about your child’s gut health and baseline stress levels.

# 14 Will you pay my child to participate in this trial?

There is no payment for this trial, however all treatment costs will be covered along with postage and parking.

# 15 Can my child have other procedures during this clinical trial?

If your child needs a medical procedure during this trial they can do so, however, please tell us about any procedures or medicines your child may be taking. This is in their interest as well as important for the trial. Please tell us about any over-the-counter medications, vitamins or herbal remedies your child is taking because they may interact or interfere with the product. Please tell us about any changes to these while your child is participating in the clinical trial.

# 16 What happens when the trial ends?

You will be provided with a summary of results and you will be free to continue using the prebiotic which is available over the counter, if you feel that your child showed benefits from the intervention.

# 17 Will the results of the trial be published?

To protect your child’s privacy, no information will be published that could identify them as a participant in this trial. The trial will be listed with www.clinicaltrials.gov where you will be able to access further information about this study.

# 18 What if I have a question?

We have included 2 contacts for you below. Who you contact depends on what information you need.

For all study enquiries or if you want to talk to the study team:

* A business-hours contact for the study team is **Jacqui Palmer**, Principal researcher.

Telephone **0470 317 447** or email **j.palmer@hdr.qut.edu.au**

In the unlikely event that your child experiences any side-effects or complications as a result of this study, you should contact the study team as soon as possible. They will arrange appropriate medical help.

If you wish to discuss the study with someone not directly involved, particularly in relation to matters concerning policies, information or complaints about the conduct of the study or your child’s rights as a participant, you may contact:

* QUT Human Research Ethics Committee has granted approval. Please contact the QUT Research Ethics Advisory Team on 07 3138 5123 or email humanethics@qut.edu.au.

# 19 The consent form

Sign the consent form only after you have made up your mind to allow your child to take part in this clinical trial. You will be provided with a signed and dated copy of the participant information and consent form for your personal record. At the time of consent, we will need to sight a copy of the letter of your child’s diagnosis of Autism / ASD.

After you have signed the consent form and provided evidence of diagnosis, your child will be enrolled.