

Go Nuts!



*Does providing written dietary advice improve the ingestion of non-allergic nuts in children with existing nut allergies?
A Randomised Controlled Trial."*

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Background

- **Food allergies up to 10% of children**
- **Peanut and/or tree nut allergy in 0.2-1.7%**
- **Nut allergies more likely to persist**

Eat or Avoid?

- **Previously - Nut free diet “safer”**
 - Visual identification
 - “hidden” ingredients
 - Cross contamination
- **Current estimated annual rate reaction 3-12%**
- **Will selective introduction cause more reactions?**

Tolerance

- Child is able to eat food with no clinical reaction-
 - Primary – always able to eat, no reaction
 - Secondary – once allergic, now able to eat
- Some children are “sensitised” (positive SPT but have never eaten food) –
 - Unclear whether they are tolerant or allergic
- **Could tolerance be induced to other nuts?**

Quality of Life

- Children with food allergy have reduced QOL
- Similar severity to those with chronic disease
- Worse with more foods avoided
- **Does selective introduction improve QOL?**

Nut Introduction

- **Difficulties in selective nut introduction**
 - Child didn't like the taste
 - Didn't find the time
 - Worry about a reaction
- **How can we increase the ingestion of non-allergic nuts?**

Study Design



Primary Aim

To determine whether the provision of **written dietary advice** in the form of a **recipe booklet** and **reminder text messages** leads to increased **ingestion of non-allergic nuts** by **children with nut allergy** when compared to current practice.

Secondary Aims

Which **factors facilitate or prevent** successful inclusion of non-allergic nuts in the diet

Effects of non-allergic nut inclusion on **quality of life**

Monitor **sensitisation** in those who include non-allergic nuts compared to those who don't

Monitor **adverse events** occurring when non-allergic nut introduction is advised

Recruitment

- Children 6mths to 18yrs
- Allergic or Sensitised to at least one nut –
 - Symptoms IgE reaction on challenge and/or positive skin prick test >3
 - Advised to avoid
- Asked to introduce at least one nut-
 - Hospital challenge
 - Home challenge (negative SPT <3)

Data Collection

- **Baseline demographics**
- **Nut allergy information-**
 - **Previous reactions**
 - **Current nut intake**
 - **What told to avoid and introduce**
- **Previous SPT**
- **Baseline QOL survey (FAQL-PB)**

FAQL-PB

- Validated, food allergy specific
- 17 questions
- Degree of limitation from parental perspective
- 7 point Likert scale
- Higher score indicates worse QOL

Baseline Advice

- All children advised to introduce **nuts at one serve weekly**

| Age (years) | Weight (grams) | Volume Whole Nuts (cups) | Volume Nut Paste (tablespoons) |
|----------------|-------------------|-----------------------------|-----------------------------------|
| 1-6 | 10g | 1/8 cup | 1/2 Tbs |
| 7-12 | 20g | 1/4 cup | 1 Tbs |
| 13-18 | 30g | 1/3 cup | 1 1/2 Tbs |

Intervention

- Randomised with random number generator
- Intervention-
 - Go Nuts! Booklet
 - Automated text messages for 6 months
 - Go Nuts! Remember to include NON-ALLERGIC nuts in your child's diet (dietician contact details)
- Control-
 - No further contact until follow up

Go Nuts! Booklet

- Serving size table
- Tick box for which nuts to include
- List commercial foods containing specific nuts
- 26 recipes-
 - General
 - Nut specific

Go Nuts!

Ideas on how to incorporate nuts in to your child's diet

Women's & Children's Hospital

DO NOT USE ANY NUTS YOUR CHILD IS ALLERGIC TO!



Information for parents and caregivers

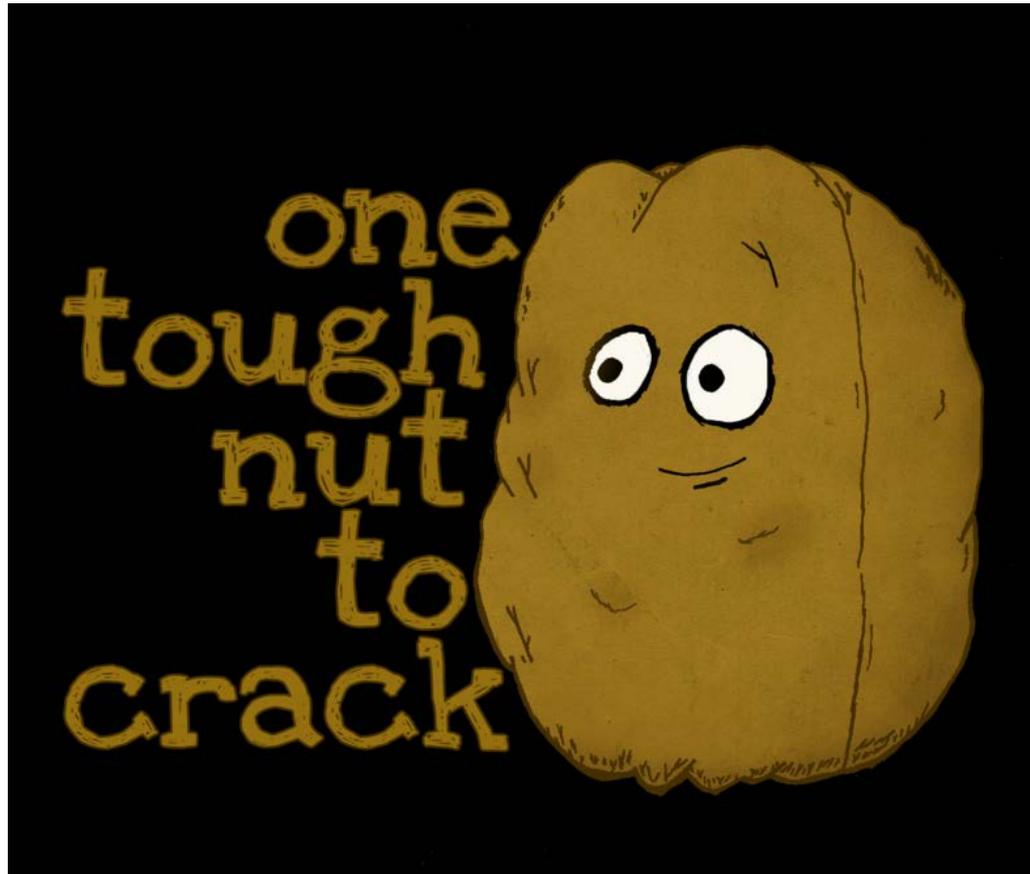
Follow Up

- Online survey about nut ingestion:
 - **As recommended** – one serve weekly
 - **In the diet** – any amount monthly or more frequently (includes as recommended)
 - **Eaten infrequently** – not in the last month, >1 since introduction
 - **Not introduced** – once or not at all

Follow Up

- Repeat FAQL-PB
- Attend hospital for SPT
- Questioned about adverse events
- Analysed as intention to treat
- Drop outs contacted to record adverse reactions

Results



Baseline

- **75 Children**
 - **36 – Intervention**
 - **39 – Control**
- **Age 2-16, mean 8.5**
- **Asked to introduce 1-6 nuts, mean 2.6**

Efficacy of Intervention

| Ingestion of Non-Allergic Nuts | Total n=65 (%) | Control n=33 (%) | Intervention n=32 (%) | P value |
|---------------------------------------|---------------------------|-----------------------------|----------------------------------|----------------|
| As recommended † | 9 (14) | 3 (9) | 6 (19) | p>0.2 |
| In the diet ‡ | 49 (75) | 24 (73) | 25 (78) | p>1 |
| Only eaten infrequently § | 2 (3) | 1 (3) | 1 (3) | p>1 |
| All nuts not introduced ¶ | 14 (22) | 8 (24) | 6 (19) | p>1 |

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Reasons for Not Introducing nuts

- **Child did not like the taste (32)**
- **Child worried about reaction (18)**
- Hard to think of ideas (8)
- Concern about nut confusion (8)
- Parent worried about reaction (6)
- Didn't have time to do home challenges (4)
- Nuts not in the family diet (2)
- Family member with a nut allergy (2)

Booklet Feedback

| n=32 | Yes | No | N/A |
|-------------------------------------|------------|-----------|------------|
| Has been helpful in providing ideas | 16 | 0 | 16 |
| Information was easy to understand | 22 | 1 | 10 |
| Information was clearly laid out | 21 | 1 | 11 |
| My child liked the recipes I tried | 7 | 1 | 24 |
| Recipes were easy to make | 12 | 0 | 20 |
| There were enough different options | 15 | 2 | 15 |

Factors Affecting Introduction

| | Nuts In the Diet (>/=1 nut) n=49 (%) | Nuts Not introduced or Eaten Infrequently n= 16 (%) | P Value |
|---|--|--|----------------|
| Hospital challenge | 44 (90) | 8 (50) | p<0.01* |
| Home challenge | 5 (10) | 8 (50) | p<0.01* |
| Child worried about reaction | 9 (18) | 9 (56) | p<0.01* |

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Reaction History

| | Nuts In the Diet (≥ 1 nut) n=49 (%) | Nuts Not introduced or Eaten Infrequently n= 16 (%) | P Value |
|--|--|---|----------------|
| Previous anaphylaxis to any nut | 19 (39) | 7 (44) | p>0.2 |
| Previous reaction to any nut | 36 (73) | 14 (88) | p>1 |
| No nut reaction | 13 (27) | 2 (13) | p>0.2 |

Quality of Life

- Did having less nuts to avoid improve QOL?
- Compared **nut free diet prior to nuts in the diet**
- QOL the same overall
- Worse for question 3 with nuts in the diet –
 - **limitation in participating in social activities involving food**

Sensitisation

- Did children lose sensitisation (possibly become tolerant) or become sensitised?
- 5 negative to positive (mean 4.2mm)
- 9 positive (mean 6.6mm) to negative
 - No association with whether nuts in the diet or not

Adverse Events

- 1 anaphylaxis – accidental exposure to known allergic nut, told to avoid
- 4 mild reactions to “non-allergic” nuts, told to introduce
 - 2 single episode vomit (non-specific)
 - 2 lip swelling

Summary

- Written **dietary advice did not improve ingestion**
- **Hospital challenge** most important factor in successful introduction
- Parental report of **child anxiety** most significant barrier to introduction
 - Independent of reaction history

Summary

- **QOL not improved** by introduction of nuts
 - Worse for social activities involving food
- Nuts in the diet **did not change sensitisation**
- Few adverse events

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