**Supplementary online material**

CONSORT 2010 checklist of information to include when reporting a randomised trial

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| --- | --- | --- | --- |
| Section/Topic | Item No | Checklist item | Reported on page No |
| Title and abstract | | | |
|  | 1a | Identification as a randomised trial in the title | 1 |
| 1b | Structured summary of trial design, methods, results, and conclusions (for specific guidance see CONSORT for abstracts) | 1 |
| Introduction | | | |
| Background and objectives | 2a | Scientific background and explanation of rationale | 3 |
| 2b | Specific objectives or hypotheses | 3 |
| Methods | | | |
| Trial design | 3a | Description of trial design (such as parallel, factorial) including allocation ratio | 3 |
| 3b | Important changes to methods after trial commencement (such as eligibility criteria), with reasons | NA |
| Participants | 4a | Eligibility criteria for participants | 4 |
| 4b | Settings and locations where the data were collected | 3-4 |
| Interventions | 5 | The interventions for each group with sufficient details to allow replication, including how and when they were actually administered | 4-5 |
| Outcomes | 6a | Completely defined pre-specified primary and secondary outcome measures, including how and when they were assessed | 6 |
| 6b | Any changes to trial outcomes after the trial commenced, with reasons | NA |
| Sample size | 7a | How sample size was determined | 7 |
| 7b | When applicable, explanation of any interim analyses and stopping guidelines | NA |
| Randomisation: |  |  |  |
| Sequence generation | 8a | Method used to generate the random allocation sequence | 4 |
| 8b | Type of randomisation; details of any restriction (such as blocking and block size) | 4 |
| Allocation concealment mechanism | 9 | Mechanism used to implement the random allocation sequence (such as sequentially numbered containers), describing any steps taken to conceal the sequence until interventions were assigned | 4 |
| Implementation | 10 | Who generated the random allocation sequence, who enrolled participants, and who assigned participants to interventions | 12 – author roles |
| Blinding | 11a | If done, who was blinded after assignment to interventions (for example, participants, care providers, those assessing outcomes) and how | 3 |
| 11b | If relevant, description of the similarity of interventions | 4-5 |
| Statistical methods | 12a | Statistical methods used to compare groups for primary and secondary outcomes | 7 |
| 12b | Methods for additional analyses, such as subgroup analyses and adjusted analyses | NA |
| Results | | | |
| Participant flow (a diagram is strongly recommended) | 13a | For each group, the numbers of participants who were randomly assigned, received intended treatment, and were analysed for the primary outcome | 18 - Fig 1 |
| 13b | For each group, losses and exclusions after randomisation, together with reasons | 18 – Fig 1 |
| Recruitment | 14a | Dates defining the periods of recruitment and follow-up | 3 |
| 14b | Why the trial ended or was stopped | 3 |
| Baseline data | 15 | A table showing baseline demographic and clinical characteristics for each group | 7 – in text |
| Numbers analysed | 16 | For each group, number of participants (denominator) included in each analysis and whether the analysis was by original assigned groups | 7 |
| Outcomes and estimation | 17a | For each primary and secondary outcome, results for each group, and the estimated effect size and its precision (such as 95% confidence interval) | 15-16 tables 1 & 2 |
| 17b | For binary outcomes, presentation of both absolute and relative effect sizes is recommended | NA |
| Ancillary analyses | 18 | Results of any other analyses performed, including subgroup analyses and adjusted analyses, distinguishing pre-specified from exploratory | NA |
| Harms | 19 | All important harms or unintended effects in each group (for specific guidance see CONSORT for harms) | NA |
| Discussion | | | |
| Limitations | 20 | Trial limitations, addressing sources of potential bias, imprecision, and, if relevant, multiplicity of analyses | 11-12 |
| Generalisability | 21 | Generalisability (external validity, applicability) of the trial findings | 9-10 |
| Interpretation | 22 | Interpretation consistent with results, balancing benefits and harms, and considering other relevant evidence | 11-12 |
| Other information | | |  |
| Registration | 23 | Registration number and name of trial registry | 4 |
| Protocol | 24 | Where the full trial protocol can be accessed, if available | 4 |
| Funding | 25 | Sources of funding and other support (such as supply of drugs), role of funders | 12 |

**Supplementary table 1: Percentage (%) retention on sieves of wholegrain particles.**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sieve size (**μm) | **Less processed wholegrain intervention**: Traditional oats | **Finely milled wholegrain intervention:** Instant oats | **Less processed wholegrain intervention**: Brown rice | **Finely milled wholegrain intervention:** Brown rice pasta\* | **Less processed wholegrain intervention**: Grain in bread | **Finely milled intervention:** Grain in bread |
| 5600 | 21 | 0 | 0 | 0 | 1 | 0 |
| 2800 | 72 | 40 | 0 | 0 | 22 | 0 |
| 1400 | 7 | 46 | 100 | 0 | 36 | 0 |
| 1000 | 0 | 6 | 0 | 0 | 3 | 0 |
| 710 | 0 | 1 | 0 | 0 | 4 | 2 |
| 500 | 0 | 3 | 0 | 0 | 3 | 6 |
| 355 | 0 | 0 | 0 | 0 | 3 | 11 |
| 250 | 0 | 0 | 0 | 0 | 3 | 26 |
| 180 | 0 | 0 | 0 | 6 | 3 | 14 |
| 125 | 0 | 0 | 0 | 43 | 4 | 11 |
| 90 | 0 | 0 | 0 | 29 | 6 | 18 |
| 63 | 0 | 1 | 0 | 11 | 11 | 13 |
| <63 | 0 | 0 | 0 | 11 | 2 | 0 |

\* This measurement was performed on brown rice flour as the only listed ingredient in brown rice pasta.

Supplementary table 2: Baseline data of participants before their first intervention (n=31)

|  |  |
| --- | --- |
| Characteristics | Values |
| Number of women (%) | 14 (45) |
| **Ethnicity** |  |
| European (%) | 27 (87) |
| Māori (%) | 3 (10) |
| Asian (%) | 1 (3) |
| Age (years) | 63.2 ± 12.7 |
| Duration of diabetes (years) | 11.4 ± 9.1 |
| HbA1c (mmol/mol) | 59.2 ± 13.9 |
| Body weight (kg) | 92.67 ± 20.9 |
| BMI (kg/m2) | 32.48 ± 6.8 |
| Fat mass percentage | 36.19 ± 10.8 |
| Systolic blood pressure (mmHg) | 130 ± 17 |
| Insulin (pg/ml) | 484.6 ± 545.1 |
| Total cholesterol (mmol/L) | 4.35 ± 1.34 |
| LDL-cholesterol (mmol/L) | 2.16 ± 0.86 |
| HDL-cholesterol (mmol/L) | 1.31 ± 0.41 |
| Triglycerides (mmol/L) | 1.63 ± 0.89 |
| CRP(mg/L) | 3.17 ± 3.01 |
| AGP(g/L) | 0.68 ± 0.25 |
| Alkylresorcinols\* (nmol/L) | 47.66 ± 39.21 |
| **Diabetes treatment** |  |
| Lifestyle (%) | 3 (10) |
| Oral hypoglycaemic agents (%) | 19 (61) |
| Oral hypoglycaemic agents and insulin (%) | 9 (29) |

Values are ± SD or show as the percentage of all participants.