

**Nutrition in Pregnancy -
Achieving Healthy Weight Gain:
A Feasibility Study**

PROTOCOLS

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1. Key Facts

- Excess weight gain during pregnancy can lead to adverse outcomes for mother and/or baby.
- Many women are overweight or obese when they become pregnant. In 2012/13 almost one-third (30.2%) of NZ women aged 15 years and over were obese and a further 29.7% were overweight.¹ Among women of childbearing age, the prevalence of obesity was 17.9% in 15-24 year olds, 29.2% in 25-34 year olds and 33.1% in 35-44 year olds.¹
- Excess weight is also a risk factor for other conditions, for example, diabetes. Diabetes and prediabetes are both common in New Zealand. Prevalence data for prediabetes and diabetes from the 2008/09 Adult Nutrition Survey for different groups aged 15 years and over are shown in the table below.² The proportion of pregnant women with gestational diabetes (GDM) has increased from 1.3% in 2001 to 4.9% in 2012.³

	Diabetes*	Prediabetes
Men	8.3%	26.4%
Women	5.8%	24.8%
Maori	9.8%	30.4%
Pacific	15.4%	29.8%
NZ European and Other	6.1%	24.6%
Normal weight	2.5%	19.5%
Overweight	5.9%	26.9%
Obese	14.2%	32.2%
TOTAL POPULATION	7.0%	25.5%

* Diabetes includes self-reported diagnosed diabetes and undiagnosed diabetes

- **Although healthcare practitioners perceive nutrition education to be important, barriers to providing education to pregnant women include lack of time, lack of resources and lack of relevant training.⁴**

1. Ministry of Health. 2013/14 New Zealand Health Survey: Results for adults. Part 1: Health status, health behaviours and risk factors. Wellington: Ministry of Health; 2014.

2. Coppel K, Mann J, Williams S, Jo E, Drury P, Miller J, Parnell W. Prevalence of diagnosed and undiagnosed diabetes and pre-diabetes in New Zealand: findings from the 2008/09 Adult Nutrition Survey New Zealand Medical Journal. 2013;126(1370):1-20.

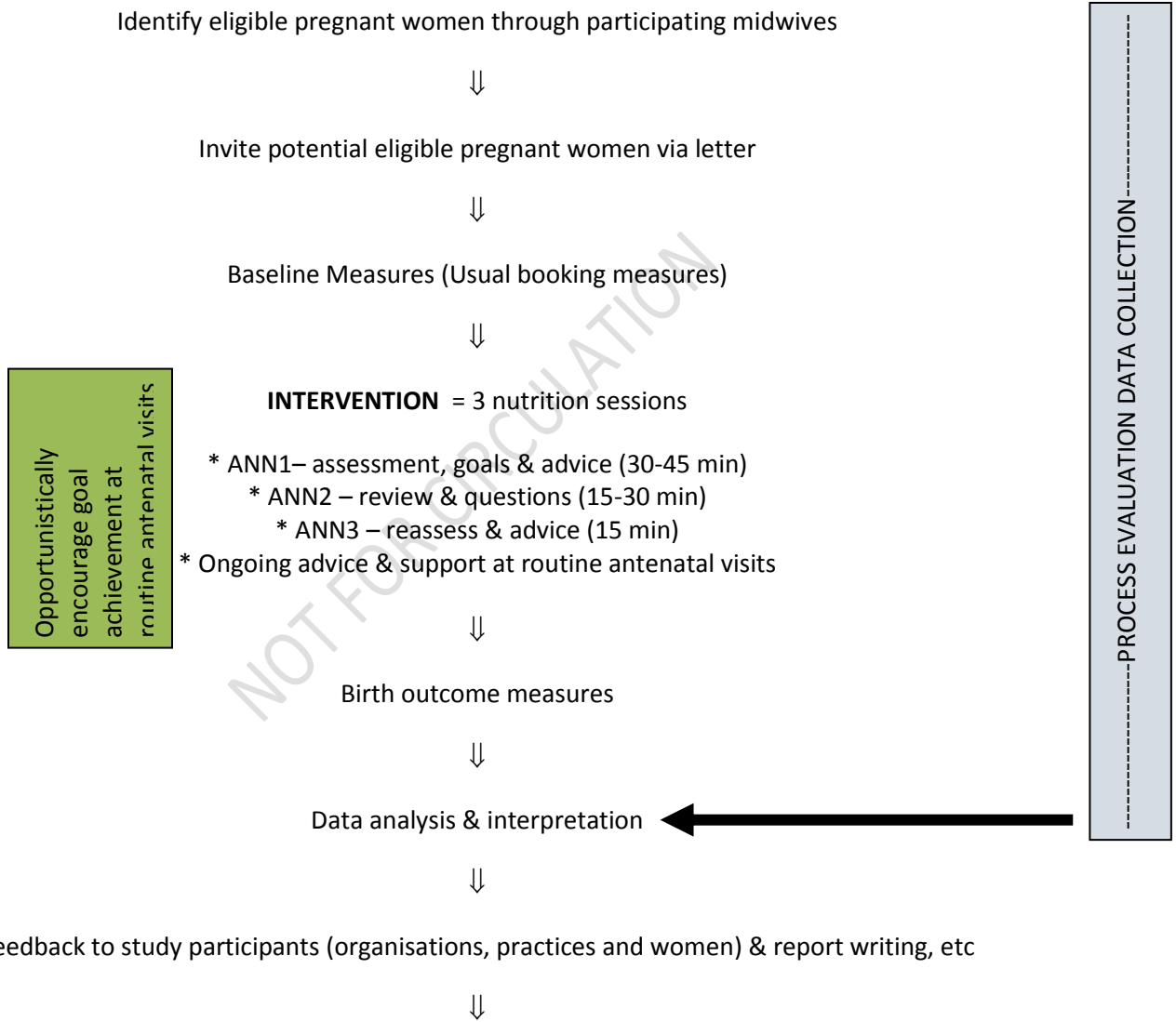
3. Ministry of Health. 2014. *Screening, Diagnosis and Management of Gestational Diabetes in New Zealand: A clinical practice guideline*. Wellington: Ministry of Health.

4. Lucas C, Charlton KE, Yeatman H. Nutrition advice during pregnancy: do women receive it and can health professionals provide it? *Matern Child Health J.* 2014 Dec;18(10):2465-78.

2. Study Overview

This study aims to determine the feasibility of implementing a structured weight management tool by Midwife Lead Maternity Carers (LMCs) as part of antenatal care to achieving healthy Weight Gain in Pregnancy to Maximize Maternal and Infant Health Outcomes Feasibility Study are:

The following is a schematic overview of the study for intervention practices:



If the feasibility study is successful, seek funding for a randomised trial.

The following provides a brief explanation for the schematic overview:

Recruitment of women through identifying eligible patients at both the first booking appointment at or before 15 weeks gestation.

Visit Antenatal Nutrition (ANN1) @ baseline (first appointment after booking appointment, ideally at 10/40, but before 15/40)

- explain study and obtain consent
- clinical measures (BP, weight, height)
- check first antenatal blood tests done
- dietary assessment and goal setting using STC: Diet tool + give dietary advice and appropriate nutrition pamphlet(s)
- give National Women's Health 'Exercise Guidelines' pamphlet

Visit Antenatal Nutrition (ANN2) @ 3-4 weeks later (ideally at 14/40)

- measure and record weight
- review nutrition goals, reinforce dietary advice and answer questions

Visit Antenatal Nutrition (ANN3) @ 3-4 weeks later (ideally at 18/40)

- measure and record weight
- reassess diet and review nutrition goals using STC: Diet + give dietary advice and appropriate nutrition pamphlet(s)

Ongoing Routine Antenatal Visits

- measure and record weight at each visit
- continue to provide *brief* nutritional guidance and lifestyle change support, as appropriate at each visit

NOT FOR CIRCULATION

- arrange all the usual routine antenatal blood tests, including *testing for gestational diabetes mellitus (GDM) at 24 to 28 weeks gestation*.

Women with a booking HbA1c of 41-49 mmol/mol should be offered a 75g, two-hour oral glucose tolerance test (OGTT).

Women with a booking HbA1c of ≤ 40 mmol/mol should be offered a 50g, one-hour oral glucose challenge test (polycose test).

Throughout study -

- Dietitian will provide dietetic support to midwives – monthly case reviews and answer phone or email queries as required

SUMMARY

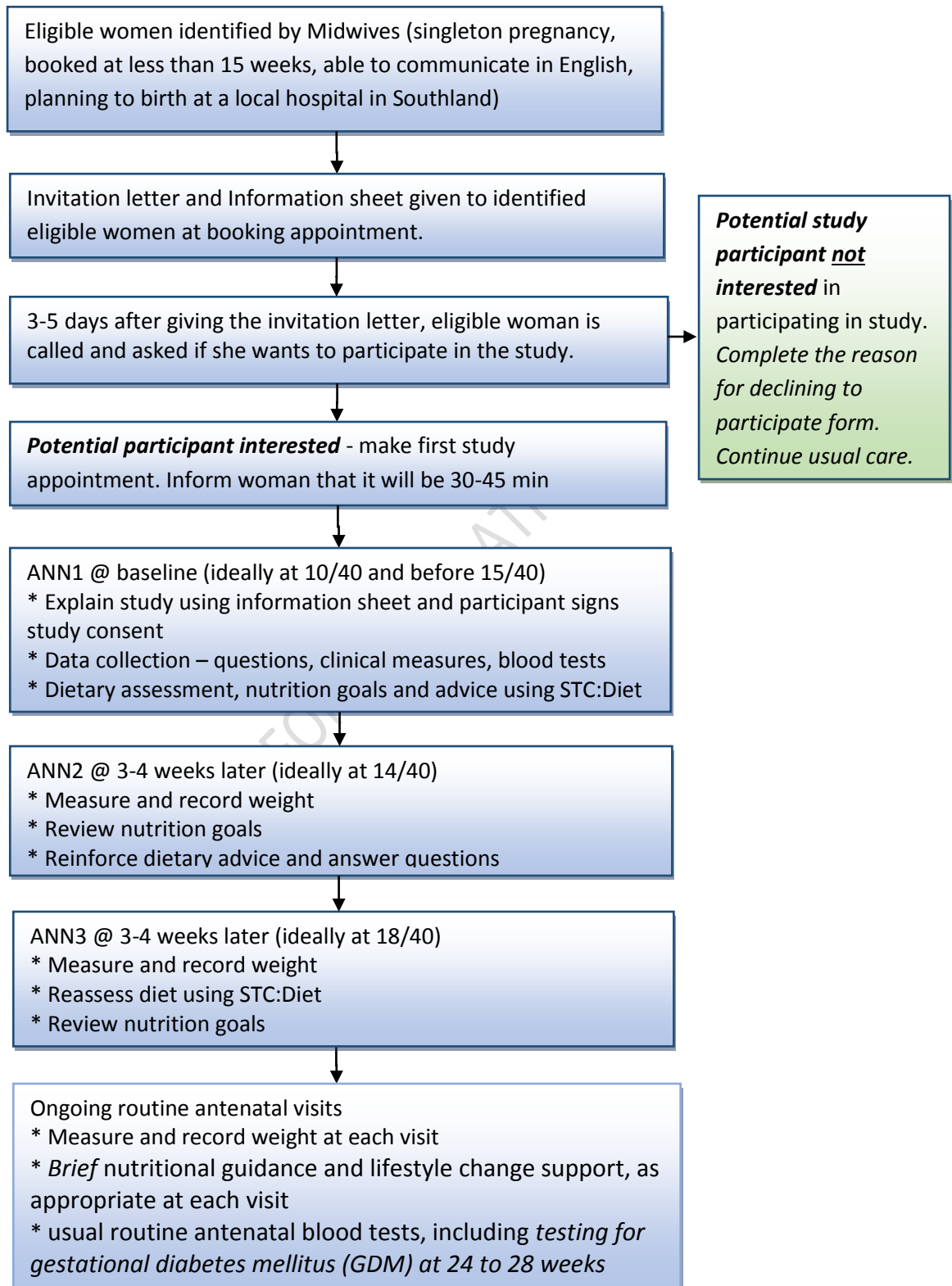
Visit ANN1 @ baseline (first appointment after booking appointment, ideally at 10/40, but before 15/40) – dietary assessment, individualised dietary advice, nutrition in pregnancy pamphlet, ‘National Women’s Health Exercise Guidelines’ pamphlet

Visit ANN2 @ 3-4 weeks after ANN1 (ideally at 14/40) - measure and record weight, review nutrition goals, reinforce dietary advice and answer questions

Visit ANN3 @ 3-4 weeks after ANN2 (ideally at 18/40) - measure and record weight, reassess diet and review nutrition goals using STC: Diet + give dietary advice and appropriate nutrition pamphlet(s)

Ongoing routine antenatal visits - measure and record weight at each visit, continue to provide *brief* nutritional guidance and lifestyle change support, as appropriate at each visit, arrange all the usual routine antenatal blood tests, including *testing for gestational diabetes mellitus (GDM) at 24 to 28 weeks gestation*.

Flow of participants through the feasibility study



3. Protocols

3a. Potential eligible study participants

The following study inclusion and exclusion criteria will be used:

Inclusion

- Pregnant
- Singleton pregnancy
- Antenatal booking at less than 15 weeks, ideally within the first trimester
- Able to communicate in English
- Planning to stay in the area for the duration of the pregnancy and birth at a local birthing unit
- Aged 18 years and over

Exclusion

- Pre-existing health condition requiring antenatal obstetric specialist care at booking as defined in the 2012 national guidelines*
- Diabetes (any type)
- Health condition requiring specialist dietetic care eg coeliac disease

* Ministry of Health. 2012. *Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines)*. Wellington: Ministry of Health.

3b. Identifying and inviting eligible study participants

- Eligible participants will be identified by Lead Maternity Carer (LMC) midwives at the time of the booking (first) appointment.

Identified Eligible Participants

These are pregnant women who have booked to see a Lead Maternity Carer midwife for their antenatal care.

1. Check potential eligible pregnant woman meets the study criteria (see 3a).
2. Check the potential eligible woman's gestational age is less than 15 weeks.
3. Invite eligible women to participate in the study. Give an invitation letter (see Appendix 1) and information sheet (see Appendix 2) to eligible women. This can be done at the first booking appointment, or posted or emailed to potentially eligible women.
4. Book the first study Antenatal Nutrition (ANN1) appointment. ***The ANN1 appointment is to be completed before 15/40 gestation.***
5. If possible, contact the woman (phone or txt) the day before first study appointment to remind her of her appointment.

Women who decline to participate

Some women may decline to participate in this feasibility study. The number and proportion of women who decline to participate will inform the full study.

For the women who choose not to participate

1. Continue to provide antenatal care as you usually do.
2. Record the date, date of birth of the woman and the main reason why the woman chose not to participate on the Decline to participate form.

	Date (dd/mm/yyyy)	Date of birth (dd/mm/yyyy)	Main Reason
1.			
2.			
3.			
4.			

Achieving Healthy Weight Gain in Pregnancy Feasibility Study – Identifying and inviting eligible participants. 24 Aug 2016.

3c. Practice environment

A nutritionally friendly practice environment will help to reinforce the healthy nutrition messages given to patients during a consultation. Consistent messages are important.

It is also important to create an environment which does not further stigmatise overweight and obesity.

The following are suggestions to aid with establishing a healthy nutrition environment, and to minimise stigmatising overweight and obesity.

Waiting rooms

- Posters promoting sensible healthy messages. Check out www.vegetables.co.nz/resources
- Avoid women's magazines which often promote conflicting nutrition advice and unrealistic role models.
- Better magazines which promote healthy lifestyle messages include the Healthy Food Guide, Good Health, Hunting & Fishing, Fishing NZ
- The practice will be sent back issues of the Healthy Food Guide (one month outdated) complimentary of the Healthy Life Media Limited
- Offer chairs *without restrictive arms*

Staff practises

- Provide a nutritionally friendly work environment – good for both staff and patients
- Consistent health messages across staff and women
- Where there are staff rooms, make sure these areas convey healthy messages eg fruit bowls
- Avoid rewarding with food. Flowers whether homegrown or bought is a good alternative, or fruit and vegetable swaps when excess homegrown produce

Equipment

- Appropriate sized blood pressure cuffs
- Weighing scales that reach 180kg
- Stadiometer that measures to 2 metres

3d. Study code

A study code will be allocated to each participating woman. Study codes will be pre-determined, and will be based on the name of the participating midwifery practice and sequential numbering for each participating woman in order of enrolment into the study at each practice.

For example, if the Timbuktu Maternity Centre was a study site, then study codes will be determined using the centre abbreviation, TMC followed by numbering beginning at 1001. The first code would read TMC1001, then subsequent codes TMC1002, TMC1003, etc.

NOT FOR CIRCULATION

3e. First antenatal nutrition (ANN1) study appointment

The purpose of the first appointment is:

1. *to explain the study to the patient*
2. *to obtain written study consent**
3. *to complete questionnaire*
4. *to complete clinical measures (weight and height)*
5. *to check first antenatal blood tests completed*
6. *to undertake a dietary assessment, establish nutrition and weight goals and provide dietary advice using Starting The Conversation: Diet tool*
7. *to provide National Women's Health 'Exercise Guidelines' pamphlet*

*If a woman chooses not to participate in the study, complete the reason for declining to participate form and continue delivering antenatal care, as you usually would.

BEFORE APPOINTMENT

1. Check first antenatal blood test results completed.
2. Contact participating woman (phone or txt) the day before first study appointment to remind her of her appointment.

DURING MIDWIFE APPOINTMENT

Length of appointment: 30-45 minutes

1. Welcome patient and her family/whānau.
2. Go through the study information sheet (see Appendix 2), answer any questions, go through the written consent form (see Appendix 3), and ***if the woman wants to participate in the study, she signs the consent form.*** If the woman chooses not to participate in the study, continue delivering antenatal care, as you usually would.
3. The ***midwife also signs the consent form*** indicating they have explained the study and answered any of the patient's questions.

For those choosing to participate in the Prevent Excess Weight Gain in Pregnancy study

4. Briefly explain to the woman what will be covered in this first appointment (additional questions about lifestyle, goal setting - nutrition and weight management, and lifestyle advice).
5. Complete the Starting The Conversation: Diet questionnaire (see Appendix 5), with the woman.
6. Measure the woman's **blood pressure** according to the "CLINICAL MEASURES" protocol (see Appendix 4). Record on Study Data Form (page 15).
7. Measure the woman's **height** according to the "CLINICAL MEASURES" protocol (see Appendix 4). Record on Study Data Form (page 15).

Achieving Healthy Weight Gain in Pregnancy Feasibility Study – First Antenatal Nutrition (ANN1) study appointment. 24 Aug 2016.

8. Measure the woman's **weight** according to the "CLINICAL MEASURES" protocol (see Appendix 4). Record on Study Data Form (page 15).
9. Complete additional lifestyle questions with the woman (see pages 16-17).
10. Review STC: Diet questionnaire that the participating woman completed.
11. Use the Detailed Dietary Assessment guide to investigate his/her diet further by asking additional questions (see Appendix 6). Begin by choosing the food groups with ticks in the **red** column first. Then use food groups in the **yellow** column. *It is important to ask all the additional questions within a food group before setting nutritional goals.* The additional questions are in the middle column of the Detailed Dietary Assessment guide table.
If there are more than 3 red column ticks, ask participant to choose which three food groups he/she would prefer to begin with.
12. Insert brief notes as appropriate into clinical notes.
13. **Establish three nutritional goals** relating to positive behaviour change moving the patient closer to the desired behaviour in the blue boxes with the participant. Goal prompts are listed in the right hand column of Detailed Dietary Assessment guide.
14. Check that each nutritional goal is simple and S.M.A.R.T (Specific, Measurable, Achievable, Realistic and Time-bound. Each goal is to be realistically achievable before the follow up appointment.
15. Record the three agreed nutritional goals on the Study Data Form.
16. **Establish recommended total weight gain, and average rate of weight gain** during using the Institute of Medicine (IOM) guidelines (see Table).

Table 1: Recommendations for total and average rate of weight gain during pregnancy, by pre-pregnancy BMI

Pre-pregnancy BMI (kg/m ²)	Total weight gain range (kg)	Rates of weight gain 2nd and 3rd trimester (mean range in kg/week) ¹
Underweight (< 18.5)	12.5–18	0.51 (0.44–0.58)
Healthy weight (18.5–24.9)	11.5–16	0.42 (0.35–0.50)
Overweight (25.0–29.9)	7–11.5	0.28 (0.23–0.33)
Obese (≥ 30.0)	5–9	0.22 (0.17–0.27)

¹ Calculations assume a 0.5–2 kg weight gain in the first trimester (based on Siega-Riz et al 1994; Abrams et al 1995; Carmichael et al 1997).

Source: IOM and NRC 2009.

Source: Ministry of Health. 2014. *Guidance for Healthy Weight Gain in Pregnancy*. Wellington: Ministry of Health.

17. Record the recommended total weight gain goal on the Study Data Form and check that it is recorded on the woman's Healthy Weight Gain in Pregnancy record card.
18. Write the woman's three nutritional goals on a card, and give it to her.
19. Give the Diabetes NZ pamphlet titled 'Healthy food and lifestyle choices in pregnancy' to the woman. *Emphasise that the nutritional information and principles applies to everybody not just pregnant women EXCEPT the pregnancy specific food safety advice.* Give other appropriate resources that support goal achievement to the woman.
20. Give National Women's Health 'Exercise Guidelines' pamphlet.
21. Ask the woman if she has any questions. For questions where the answer is not known or there is uncertainty, state they will be contacted later after discussing the issue with the study dietitian with an answer.
22. Make a follow-up antenatal nutrition appointment (ANN2) in 2-3 weeks.
23. **Consider** and discuss need for follow-up support phone calls or txts.
24. Give a copy of the study information sheet and (duplicate) signed consent form to the woman.

SUMMARY OF INFORMATION TO BE GIVEN TO PARTICIPANT

1. Copies of the study information sheet and signed consent form.
2. Completed Healthy Weight Gain in Pregnancy Record Card.
3. Copy of the woman's Nutritional Goals.
4. Diabetes NZ pamphlet titled 'Healthy food and lifestyle choices in pregnancy'.
5. National Women's Health 'Exercise Guidelines' pamphlet.
6. Supplementary written nutrition information, as appropriate to support goal achievement.
7. Date and time of next appointment.

POST APPOINTMENT

1. Check all required data are entered into Study Data Form.
2. **OPTIONAL** – Phone or txt woman for brief follow-up support, as appropriate.

3e. First antenatal nutrition (ANN1) study appointment - data to be collected and recorded

CHECK individual woman's study code (see 3d, page 11) is entered on her antenatal notes and additional data collection sheet.

CHECK ALL usual routine booking antenatal information, including weight has been recorded

CHECK ALL booking antenatal blood tests have been completed and results are recorded

Additional data to be collected are:

1. Self-reported pre-pregnancy weight
2. Nutrition intervention information, including height, weight and derived recommended pregnancy weight gain (see below)

A study data form will be provided to record the following information

STUDY CODE: _____

DATE: _____

EDD: _____

1. Self-reported pre-pregnancy weight

Do you know what your weight was pre-pregnancy (in kilograms)?

- Yes; _____ (kg)
- No
- Not sure

2. Nutrition Intervention information, including key clinical measures (HbA1c, height, weight and derived recommended pregnancy weight gain)

HbA1c result _____ mmol/mol

Date of test _____

	Clothing worn	Measure 1	Measure 2
Weight (kg) (1 layer light clothing; No shoes)			
Height (mm) (No shoes)	No shoes		
BMI (kg/m ²) = Weight (kg)/Height (m) x Height (m)	N/A		
Recommended pregnancy total weight gain (kg)			

Achieving Healthy Weight Gain in Pregnancy Feasibility Study – ANN1 First nutrition appointment data. 24 Aug 2016.

3. Lifestyle

A) Special Diet or food allergies (tick if applicable):

- Vegetarian
- Vegan
- Pescatarian (vegetarian + fish)
- Nut free
- Dairy free
- Fish free
- Egg free
- Gluten free
- Soy free

B) What physical activities do you do each week? (Include incidental activities like housework) _____

C) Please indicate who you live with?

- Spouse/partner
- Child – How many: _____
- Father
- Mother
- Other adults – How many: _____
- Other children – How many: _____

D) Who mostly buys food in your house?

- Myself
- Spouse/partner
- Parent
- Other

E) Who mostly cooks food in your house?

- Myself
- Spouse/partner
- Parent
- Other

F) Is your budget for food limited? Yes No

G) On a scale of 1 – 10, how ready are you to make food changes (1 – not ready at all; 10 – really motivated)? _____

4. Weight History

A) Has your weight tended to go up and down? Yes No

B) How long have you been your current weight? _____ months

5. Diet Assessment

A) Starting The Conversation (STC): Diet – See Appendix 5

B) Detailed Dietary Assessment Guide – See Appendix 6

6. Nutritional Goals

1. _____

2. _____

3. _____

7. Resources given

Required

- Healthy food & lifestyle choices in pregnancy
- Being active during pregnancy

Optional

- NHF Cheap Eats
- NHF Affordable Eats
- Pasifika flavours
- NHF Vegetarian
- NHF Kids in the kitchen

8. Actual length and data of THIS appointment

_____ minutes _____ date

9. Date and time of NEXT appointment: _____

3f. Second Antenatal Nutrition (ANN2) study appointment

The purpose of this second appointment is:

1. *to repeat weight measure*
2. *to review the nutrition goals, reinforce dietary advice and answer questions*

BEFORE APPOINTMENT

1. Midwife contacts participating woman (phone or txt) the day before second antenatal nutrition study appointment to remind the woman of her appointment.
2. Review the woman's recommended weight gain goal and nutritional goals set at the last appointment.

DURING MIDWIFE APPOINTMENT

Length of appointment: 15-30 minutes

1. Greet the woman and her family/whānau.
2. Review and update any change in health and medications. Record, as appropriate, on the Study Data Form (page 20).
3. Enquire about the achievement of nutritional goals set at the first appointment using the following prompt questions. Make and record clinical notes, as appropriate, for each goal on the Study Data Form (see 2B, page 19).
 - a. How are you going with achieving your goal(s)?
 - b. Have you achieved any goals? Why or why not?
 - c. What were some difficulties/ challenges?
 - d. What made it easier?
 - e. What are some benefits you have found?
 - f. Was the goal too easy or too hard or just right for you?
4. Measure the woman's **weight** according to the "CLINICAL MEASURES" protocol (see Appendix 4). Record on the Study Data Form (page 20) and the woman's Healthy Weight Gain in Pregnancy record card.
5. **If any of, or all the goals have been achieved ->**
 - a. Complete the Starting the Conversation (STC): Diet questionnaire with the participant.
 - b. Investigate two to three food groups further by asking the prompt questions. Choose the food groups with ticks in the **red** column hand column first. Then use food groups in the **yellow** column.
 - c. When all the prompt questions have been investigated, set a new nutritional goal(s) relating to positive behaviour change if appropriate. Goal prompts are listed in the right hand column to help you if

needed. The goals should move the participant closer to the ideal behaviour specified in the blue-shaded box in the left hand column.

6. **If the goals have not been achieved or only partially achieved ->**
 - a. Keep the goal, if partially achieved
The goal may still be appropriate – provide encouragement, **OR**
 - b. Keep the goal, if still appropriate but not achieved
The goal may be appropriate but the participant has not been able to achieve it. If so, discuss possible different strategies that could be tried to increase the likelihood of success, **OR**
 - c. Inappropriate goal
If the goal was inappropriate, change or partially change the goal to something more suitable.
7. Check that any new nutritional goal(s) is/are simple and S.M.A.R.T (Specific, Measurable, Achievable, Realistic, and Time-bound (achievable before their ANN3 follow-up appointment)).
8. Enter the Nutritional Goals into the Study Data Form.
9. Remind the woman of her Recommended Pregnancy Weight Gain. Positively enforce progress. Encourage the woman if there hasn't been progress.
10. *If the woman's nutritional goals have changed, give her a written copy of her revised nutritional goals.*
11. Give the woman further written resources, as required, to support the achievement of their goals.
12. Ask the woman if she has any questions and answer these.
13. Make a follow-up antenatal nutrition appointment (ANN3) in 3-4 weeks.
14. **Consider** and discuss need for follow-up support phone calls or txts.

SUMMARY OF INFORMATION TO BE GIVEN TO WOMAN

1. Updated Healthy Weight Gain in Pregnancy Record Card.
2. Copy of Nutritional Goals, *if the nutritional goals have changed.*
3. Supplementary written nutrition information, as appropriate to support goal achievement.
4. Date and time of next appointment.

POST APPOINTMENT

1. **OPTIONAL** – Phone or txt woman for brief follow-up support, as appropriate.

3f. Second Antenatal Nutrition (ANN2) study appointment - data to be collected and recorded

STUDY CODE: _____

DATE: _____

EDD: _____

1. Recommended pregnancy total weight gain (kg) _____

2. Clinical Notes

A) Any change in health or medications:

B) Progress towards achieving nutritional goals:

3. Clinical Measures – Weight

	Clothing worn	Measure 1	Measure 2
Weight (kg) (1 layer light clothing; No shoes)			

4. Diet Review

A) Starting The Conversation: Diet

B) Nutritional Goals – Revised, if any nutritional goals achieved

1. _____

2. _____

3. _____

5. Actual length and date of **THIS** appointment _____ minutes
 _____ date

Note: If this appointment is combined with a routine antenatal visit, record ONLY the time for the additional nutrition intervention component

6. Date and time of **NEXT** appointment: _____

3g. Third Antenatal Nutrition (ANN3) study appointment

The purpose of this third appointment is:

1. *to repeat weight measure*
2. *to reassess diet, review goals and dietary advice using STC:Diet*

BEFORE APPOINTMENT

1. Midwife contacts participating woman (phone or txt) the day before third antenatal nutrition study appointment to remind the woman of her appointment.
2. Review the woman's recommended weight gain goal and nutritional goals set at the last appointment.

DURING MIDWIFE APPOINTMENT

Length of appointment: 15 minutes

1. Greet the woman and his/her family/whānau
2. Review and update any change in health and medications.
3. Measure the woman's **weight** according to the "CLINICAL MEASURES" protocol. Record on Study Data Form (page 23)
4. Enquire about the achievement of nutritional goals since last appointment using the following prompt questions. Make and record clinical notes as appropriate for each goal.
 - a. How are you going with achieving your goal(s)?
 - b. Have you achieved any goals? Why or why not?
 - c. What were some difficulties/ challenges?
 - d. What made it easier?
 - e. What are some benefits you have found?
 - f. Was the goal too easy or too hard or just right for you?
5. Complete the Starting the Conversation (STC): Diet questionnaire with the participant, and enter answers into the Study Data Form.
6. Investigate two to three food groups further by asking the prompt questions. Choose the food groups with ticks in the **red** column hand column first. Then use food groups in the **yellow** column.
7. Review and set new nutritional goal(s) as appropriate. Goal prompts are listed in the right hand column of the Detailed Dietary Assessment Guide. The goals should move the participant closer to the ideal behaviour specified in the blue-shaded box in the left hand column.

For each goal, if the goal has not been achieved or only partially achieved ->

- a. Keep the goal, if partially achieved

The goal may still be appropriate – provide encouragement

OR

- b. Keep the goal, if still appropriate but not achieved

The goal may be appropriate but the participant has not been able to achieve it. If so, discuss possible different strategies that could be tried to increase the likelihood of success.

OR

- c. Change or partially change the goal, if it was inappropriate

If the goal was inappropriate, change or partially change the goal to something more suitable.

8. Check that any new nutritional goal(s) is simple and S.M.A.R.T (Specific, Measurable, Achievable, Realistic, and Time-bound (achievable before their next antenatal appointment)).
9. Record the three Nutritional Goals.
10. Remind the woman of her Recommended Pregnancy Weight Gain. Positively enforce progress. Encourage the woman if there hasn't been progress.
11. Give the woman a copy of her nutritional goals.
12. If appropriate give the woman further resources to support the achievement of their goals.
13. Ask the woman if she has any questions and answer these.
14. Inform the woman of her next routine antenatal appointment.
15. **Consider** and discuss need for follow-up support phone calls.

SUMMARY OF INFORMATION TO BE GIVEN TO WOMAN

1. Updated Healthy Weight Gain in Pregnancy Record Card.
2. Copy of Nutritional Goals, *if the nutritional goals have changed*.
3. Supplementary written nutrition information, as appropriate to support goal achievement.
4. Date of next routine antenatal appointment.

POST APPOINTMENT

1. Check all required data are entered into Study Data Form (page 23)
2. **OPTIONAL** – Phone participant for brief follow-up support, as appropriate.

3g. Third Antenatal Nutrition (ANN3) study appointment - data to be collected and recorded

STUDY CODE _____

DATE: _____ EDD: _____

1. Recommended pregnancy total weight gain (kg) _____

2. Clinical Notes

A) Any change in health or medications:

B) Progress towards achieving nutritional goals:

3. Clinical Measures – Weight

	Clothing worn	Measure 1	Measure 2
Weight (kg) (1 layer light clothing; No shoes)			

4. Diet Review

A) Starting The Conversation: Diet

B) Nutritional Goals – Revised, if any nutritional goals achieved

1. _____

2. _____

3. _____

5. Actual length and date of **THIS** appointment _____ minutes
_____ date

Note: If this appointment is combined with a routine antenatal visit, record **ONLY** the time for the additional nutrition intervention component.

3h. Ongoing routine antenatal care and nutrition advice

The purpose of the subsequent routine antenatal appointments are:

- 1. to weigh woman and record her weight at each antenatal appointment*
- 2. and as time permits, to provide ongoing support and guidance, and reinforce dietary goals and advice*

BEFORE EACH ROUTINE ANTENATAL APPOINTMENT

1. Review the woman's nutritional goals, weight gain and pregnancy weight gain target.

DURING ROUTINE ANTENATAL APPOINTMENTS

1. Measure the participant's **weight** according to the "CLINICAL MEASURES" protocol (see Appendix 4). Record in Antenatal Notes and Healthy Weight Gain in Pregnancy Record Card.
2. Provide opportunistic support and advice as necessary, using the previously established nutrition goals as a guide

3i. Postnatal care and nutrition advice

The purpose of the subsequent routine antenatal appointments are:

1. *to provide ongoing support and guidance, and reinforce dietary goals and advice*

DURING POSTNATAL APPOINTMENTS

1. If appropriate, *give* woman further resources to support the achievement of their nutrition goals.
2. For women who develop gestational diabetes, advise to see her general practitioner for an HbA1c at 3 months postpartum and annually thereafter.

3. Thank the woman for participating in and completing the study.
4. Inform her that the results of the whole study are expected in the latter half of 2017. A presentation will be given to study participants, and a written copy of the study results will be sent.
5. Check participant contact details so that study information can be sent to the correct address.

SUMMARY OF INFORMATION TO BE GIVEN TO WOMAN

1. Updated Healthy Weight Gain in Pregnancy Record Card.
2. Supplementary written nutrition information, as appropriate to support goal achievement.

POST APPOINTMENT

1. Check all required data, including birthing summary are entered into Study Data Form.

3j. Antenatal visits and birthing summary study data

Following the birth, an anonymous photocopy of the antenatal notes and birthing summary will be obtained. All identifying information will be deleted by each woman's LMC and replaced with the woman's individual study code.

1. Antenatal Visits

Copy of antenatal visit notes (without name, address and contact phone numbers).

2. Birthing Summary

Copy of birthing summary (without name, address and contact phone numbers) including:

- A. Customised birth weight of the baby
- B. Weight of woman at time of labour, *if possible*.

[Note, women are weighed in labour prior to administration of anaesthetics.]

Data to be recorded on study sheet:

STUDY CODE _____

Date of delivery _____

Weight of woman at time of labour, *if possible* _____ kg

Customised birth weight of the baby _____

3k. Women who exit from the study

Some women may exit from the study. This may be for one of a variety of reasons, for example, unexpectedly moving from the region, loss of the baby, choosing to no longer participate.

Record *the date* that the woman decides to no longer participate in, or exit from, the study, as well as the *main reason for leaving the study* on the woman's study data sheet.

NOT FOR CIRCULATION

Appendix 1: Study invitation letter

Sample Invite Letter to Women

Date

Address

Dear

Invitation to participate in the Prevent Excess Weight Gain in Pregnancy Feasibility Study

Our practice is participating in this study and we would like to invite you to take part.

Nutrition in pregnancy is important. I invite you to participate in a study looking at ways to provide good nutrition information to pregnant women to achieve a healthy weight gain during pregnancy.

The programme involves up to THREE extra appointments over the next 3 months. During these appointments your weight will be measured and you will be offered nutrition and lifestyle support to help you achieve a healthy weight gain during your pregnancy.

At the end of the programme we will be asked if the programme was worthwhile.

The programme has approval from the Ethics Committee and is a collaboration with researchers at the University of Otago.

I hope that the extra nutrition appointments will be of benefit to you and your growing baby.

If you would like to participate in this programme, please phone me to make an appointment. Family/whānau members are very welcome to come along to the appointment to support you.

Further information about this programme is available from:

Pauline Dawson, Research Midwife (027 230 1522), or

Jo Norton, Research Nurse (027 609 9056).

Yours sincerely

Lead Maternity Carer Midwife



Appendix 2: Participant information sheet

Participant Information Sheet

Study title: *Nutrition in Pregnancy – Achieving Healthy Weight Gain: A Feasibility Study*

Locality: **Southland**

Ethics committee ref.:

Lead investigator: **Dr Kirsten Coppel**

Contact phone number:

03 470 9074

You are invited to take part in a study on achieving healthy weight gain in pregnancy. Whether or not you take part is your choice. If you don't want to take part, you don't have to give a reason, and it won't affect the care you receive. If you do want to take part now, but change your mind later, you can pull out of the study at any time.

This Participant Information Sheet will help you decide if you'd like to take part. It sets out why we are doing the study, what your participation would involve, what the benefits and risks to you might be, and what would happen after the study ends. We will go through this information with you and answer any questions you may have. You do not have to decide today whether or not you will participate in this study. Before you decide you may want to talk about the study with other people, such as family, whānau, friends, or healthcare providers. Feel free to do this.

If you agree to take part in this study, you will be asked to sign the Consent Form on the last page of this document. You will be given a copy of both the Participant Information Sheet and the Consent Form to keep.

This document is 7 pages long, including the Consent Form. Please make sure you have read and understood all the pages.

WHAT IS THE PURPOSE OF THE STUDY?

Gaining the right amount of weight during pregnancy is one of the most important things you can do for your health and the health of your baby. It is normal to gain some weight during pregnancy due to growing baby. However, it is important not to gain too much weight or too little weight.

How we best deliver dietary advice to pregnant women as part of normal pregnancy care with a midwife is not known. This study seeks to answer this question by seeing whether a new way of giving dietary advice to pregnant women is possible as part of normal pregnancy care with a midwife.

This study is funded by a University of Otago Research Grant, and is being undertaken by the University of Otago. The research team is Dr Kirsten Coppel, Dr Helen Paterson, Ms Pauline Dawson, Mrs Joanna Norton, Miss Emma Jeffs, Associate Professor Jean Hay-Smith, Associate Professor Bev Lawton and Dr Sue Crengle.

If you have any questions about the study, please do not hesitate to contact us.

In the first instance please contact:

Mrs Jo Norton
Research Nurse
Department of Medicine
University of Otago
Phone: 027 609 9056
Email: joanna.norton@otago.ac.nz

OR

Ms Pauline Dawson
Research Midwife
Department of Women's and Children's Health
University of Otago
Phone: 027 230 1522
Email: pauline.dawson@otago.ac.nz

STUDY STATUS

This study has been approved by the Health and Disability Ethics Committee.

WHAT WILL MY PARTICIPATION IN THE STUDY INVOLVE?

You have been invited to participate in this study because you are pregnant, you have chosen a midwife for your Lead Maternity Carer (LMC), and you do not require any specialist obstetric care.

All pregnant women should be given lifestyle advice during their pregnancy.

In this study we will be looking at whether it is possible to provide a new way of giving nutritional advice to pregnant women. To see if it is possible to provide nutritional advice in the new way, you will be required to see your midwife for at least one extra appointment. There will be two further nutrition appointments, which will be either extra separate appointments or part of your usual routine pregnancy care appointments. This will be decided by you and your midwife.

During the study you will continue to see your midwife for your usual antenatal care. We will not be taking any extra tests beyond what your midwife would normally do as part of good pregnancy care. As part of each appointment your weight will be measured and recorded at each visit, which is normal recommended practice.

Following the delivery of your baby, the researchers will receive a copy of your pregnancy and delivery health records. Your name will not be included. The researchers will not see any other health information and will not be able to identify who you are.

WHAT ARE THE POSSIBLE BENEFITS AND RISKS OF THIS STUDY?

There are no foreseeable risks associated with participating in this study.

The new way of giving dietary advice in pregnancy may increase your chances of achieving a healthy weight gain in pregnancy, and if so, this may benefit you and other pregnant women.

Throughout the study you will continue to receive your usual antenatal care.

WHO PAYS FOR THE STUDY?

There will be no cost for seeing your midwife for the additional nutrition appointments as part in this nutrition in pregnancy study, if you chose to participate.

WHAT IF SOMETHING GOES WRONG?

If you were injured in this study, which is unlikely, you would be eligible for compensation from ACC just as you would be if you were injured in an accident at work or at home. You will have to lodge a claim with ACC, which may take some time

to assess. If your claim is accepted, you will receive funding to assist in your recovery.

If you have private health or life insurance, you may wish to check with your insurer that taking part in this study won't affect your cover.

WHAT ARE MY RIGHTS?

Participation in this study is voluntary (your choice). You do not have to take part, or you can leave the study at any time without any disadvantage.

All participants have the right to access information about them collected as part of this study.

All participants will be told of any new information about adverse or beneficial effects related to this study that becomes available during the study that may have an impact on their health.

The privacy and confidentiality of all participants will be respected and maintained throughout the study.

We will not be able to provide interpreters as part of this study.

WHAT HAPPENS AFTER THE STUDY OR IF I CHANGE MY MIND?

At the end of the study, the data will be analysed by researchers at the University of Otago. Drs Kirsten Coppell and Helen Paterson will be responsible for the secure storage of the data. The data will be stored in a locked room on a password protected computer until the end of the study. At the end of the study, all study data held at the University of Otago will be deleted.

At the end of this part of the study (in the second half of 2017), a written copy of the study findings will be sent to all participating women.

If I change my mind during the study, and chose to no longer participate, this will not affect your pregnancy care. You will continue to receive your pregnancy care from your midwife as you normally would.

WHO DO I CONTACT FOR MORE INFORMATION OR IF I HAVE CONCERNS?

If you have any questions, concerns or complaints about the study at any stage, in the first instance please contact:

Mrs Jo Norton
Research Nurse
Edgar Diabetes and Obesity Research

Ms Pauline Dawson
Research Midwife
Department of Women's and Children's
Health

University of Otago
Ph: 027 6099056
Email: joanna.norton@otago.ac.nz

University of Otago
Ph: 027 2301522
Email: pauline.dawson@otago.ac.nz

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If you want to talk to someone who isn't involved with the study, you can contact an independent health and disability advocate on:

Phone: 0800 555 050
Fax: 0800 2 SUPPORT (0800 2787 7678)
Email: advocacy@hdc.org.nz

For Maori health support please contact :

Name: Sue Crengle
Telephone:
Email: sue.crengle@southlinkgp.co.nz

You can also contact the health and disability ethics committee (HDEC) that approved this study on:

Phone: 0800 4 ETHICS
Email: hdecs@moh.govt.nz

NOT FOR CIRCULATION

Appendix 3: Consent form

Consent Form



Please tick to indicate you consent to the following

I have read and I understand the Participant Information Sheet.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I have been given sufficient time to consider whether or not to participate in this study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I have had the opportunity to use a legal representative, whānau/ family support or a friend to help me ask questions and understand the study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I am satisfied with the answers I have been given regarding the study and I have a copy of this consent form and information sheet.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time without this affecting my medical care.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I consent to the research staff collecting and processing my information, including information about my health.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
If I decide to withdraw from the study, I agree that the information collected about me up to the point when I withdraw may continue to be processed.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I consent to my GP or current provider being informed about my participation in the study and of any significant abnormal results obtained during the study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I agree to an approved auditor appointed by the New Zealand Health and Disability Ethic Committees, or any relevant regulatory authority or their approved representative reviewing my relevant medical records for the sole purpose of checking the accuracy of the information recorded for the study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I understand that my participation in this study is confidential and that no material, which could identify me personally, will be used in any reports on this study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

I understand the compensation provisions in case of injury during the study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I know who to contact if I have any questions about the study in general.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I understand my responsibilities as a study participant.	Yes <input type="checkbox"/>	No <input type="checkbox"/>
I wish to receive a summary of the results from the study.	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Declaration by participant:

I hereby consent to take part in this study.

Participant's name:

Signature:

Date:

Declaration by member of research team:

I have given a verbal explanation of the research project to the participant, and have answered the participant's questions about it.

I believe that the participant understands the study and has given informed consent to participate.

Researcher/Lead Maternity Carer Midwife's name:

Signature:

Date:

Appendix 4. Clinical measurements protocol

The clinical measures to be taken as part of the Prevent Excess Weight Gain in Pregnancy Feasibility Study are blood pressure, height and weight.

A. BLOOD PRESSURE

Two separate blood pressure measurements are to be taken and recorded.

Equipment

- Calibrated sphygmomanometer.

Participant preparation

- Women are to be rested for five minutes in a seated position.
- Ask the woman to remove any clothing from the dominant arm to improve accuracy of the reading.

Measurement method

- Blood pressure is to be measured using a calibrated sphygmomanometer.
- Apply blood pressure cuff firmly to dominant arm with artery indicator in the correct position.
- *Make sure that the appropriate cuff size is used. (Large Adult 11 25-34 cm OR Adult 12 32-43cm).*

For automated sphygmomanometer

- Push 'ON' button, and wait for screen to appear.
- Press inflate button.
- The systolic and diastolic measurements will be shown on the screen.
- Record systolic and diastolic pressures in the clinical notes.

For manual sphygmomanometer

- Tighten cuff knob.
- Place stethoscope over the brachial artery in the antecubital space.
- Pump cuff up until pressure reaches 220-230mmHg. (For those with high blood pressure you may have to pump higher).
- Release pressure slowly by loosening the knob.
- Listen for systolic and diastolic sounds.
- The systolic and diastolic measurements are taken to the nearest 2mmHg.
- Fully release knob.
- Record systolic and diastolic pressures in the clinical notes.

B. HEIGHT

Duplicate height measurements are to be taken and recorded.

Equipment

- Stadiometer positioned so that woman is standing on firm flooring.

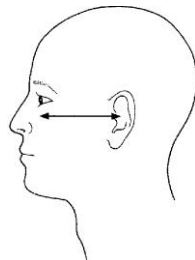
Participant preparation:

- Ask the woman to remove her footwear.
- If the hair is done up on top of the head ask the person to undo it.

Measurement method:

- Position the participant, without footwear, with her heels, buttocks and upper part of the back touching the stadiometer pole with body weight evenly distributed and both feet flat on the platform.
- Gently position the head so that it is aligned in the **Frankfort horizontal plane**. The head is in the Frankfort plane when the horizontal line from the ear canal to the lower border of the orbit of the eye is parallel to the floor and perpendicular to the vertical backboard.
- Ask the participant to stand tall and take a deep breath and hold this position.
- Lower the measuring block firmly on the head, crushing hair if necessary.
- Measurement is taken at the end of the deep inward breath.
- The measurement is taken to the nearest whole millimetre (0.1cm).
- Ask the participant to step away from the stadiometer.
- Record the height measurement on the Study Data Form.
- Repeat measurement 5-10 minutes later and record on the Study Data Form.

The Frankfort Plane



C. WEIGHT

Duplicate weight measurements are to be taken and recorded.

Equipment

- Calibrated weighting scales.
- Scales must be on firm flooring.
- ***Use the same set of scales each time that an individual woman is weighed.***

Participant preparation

- Ask the woman to remove her footwear, any bulky jackets or jerseys and any heavy items from pockets eg key chains, cell-phones, wallets, etc.
- It is preferable that women wears only one layer of light clothing.
- Make a note of the type of clothing the woman is wearing and instruct her to try to wear similar clothing for future weight measurements.

Measurement method

- Weight is to be measured using a set of calibrated scales.
- Use the same set of scales for all weight measurements.
- Turn scales on by tapping the front bar and wait for them to zero.
- Ask the woman to step onto the scales and ensure they are evenly balanced.
- The measurement is to be taken to the nearest 0.1 kilogram.
- Ask the participant to stand off the scale.
- Record the weight measurement on the Study Data Form.
- Repeat measurement 5-10 minutes later and record on the Study Data Form.

Appendix 5. Starting The Conversation: Diet Questionnaire

Starting The Conversation: Diet

Edited and used with permission from the University of North Carolina

Over the past few months:

1. How many times a week did you eat fast food meals or snacks?	Less than 1 Time <input type="checkbox"/>	1-3 Times <input type="checkbox"/>	4 or More Times <input type="checkbox"/>
2. How many servings of fruit did you eat each day?	2 <input type="checkbox"/>	3-4 <input type="checkbox"/>	1 or None 5 or More <input type="checkbox"/>
3. How many servings of vegetables did you eat each day?	5 or More <input type="checkbox"/>	3-4 <input type="checkbox"/>	2 or Less <input type="checkbox"/>
4. How many soft drinks or glasses of sweetened beverages did you drink each day?	Less than 1 <input type="checkbox"/>	1-2 <input type="checkbox"/>	3 or More <input type="checkbox"/>
5. How many times a week did you eat beans (like kidney beans or chick peas), chicken, or fish?	3 or More Times <input type="checkbox"/>	1-2 Times <input type="checkbox"/>	Less than 1 Time <input type="checkbox"/>
6. How many times a week did you eat regular snack chips or crackers (not low-fat)?	1 Time or Less <input type="checkbox"/>	2-3 Times <input type="checkbox"/>	4 or More Times <input type="checkbox"/>
7. How many times a week did you eat desserts and other sweets (not the low-fat kind)?	1 Time or Less <input type="checkbox"/>	2-3 Times <input type="checkbox"/>	4 or More Times <input type="checkbox"/>
8. How much margarine, butter, or meat fat do you use to season vegetables or put on potatoes, bread, or corn?	Very Little <input type="checkbox"/>	Some <input type="checkbox"/>	A Lot <input type="checkbox"/>

Appendix 6. Detailed dietary assessment guide – Nutrition in pregnancy – achieving healthy weight gain feasibility study

FOOD GROUP	ADDITIONAL QUESTIONS	GOAL PROMPTS
<p>1. Fast Food</p> <p>Choose healthy fast food options that include some vegetables</p> <p>Appropriate portion sizes</p> <p>Accompany with healthy sides and drinks</p>	<p>What type of fast food meals do you eat?</p> <p>What size do you order?</p> <p>Do you have drinks when you eat out? What type? How much?</p>	<ul style="list-style-type: none"> • Decrease the number of times you eat fast food • Eat more home prepared food • Downsize your combo • Swap soft drinks for diet soft drinks, water, milk (<i>not</i> milkshakes or flavoured milk) • Limit extras: cookies, muffins, fries, etc
<p>2. Fruit</p> <p>Limit fruit to 2 pieces per day</p> <p>Choose fresh fruit. Frozen fruit or tinned fruit in unsweetened juice are good choices</p>	<p>What type of fruits do you eat?</p> <p>What is your serving size?</p> <p>NOTE: a serving of banana is half a large banana or one small 'bobby' banana.</p>	<ul style="list-style-type: none"> • Increase servings of fruit e.g. add 1 serving per day • Aim to include a piece of fruit with breakfast • Swap to healthier versions e.g. tinned fruit in syrup to tinned fruit in juice
<p>3. Vegetables</p> <p>Eat at least 4 portions of vegetables each day</p> <p>Eat lots of non-starchy vegetables (Unlimited)</p> <p>Eat a rainbow of colours</p> <p>Choose fresh vegetables. Frozen or tinned are good choices too</p>	<p>What type of vegetables do you eat?</p> <p>What is your serving size?</p>	<ul style="list-style-type: none"> • Increase servings of vegetables e.g. add 1 serving per day • Aim to include vegetables with lunch and dinner meals, making up 50% of the meal (plate model) • Swap starchy vegetables for non-starchy vegetables e.g. potatoes for pumpkin • Swap to healthier versions e.g. potato chips for baked potatoes
<p>4. Fluids</p> <p>Drink at least 9 glasses of fluid each day</p> <p>Water is the best choice, but can include low fat or calcium-fortified milk, coffee, tea and diet soft drinks</p> <p>Limit intake of soft drinks, fruit juice, energy drinks and sports drinks</p> <p>AVOID ALCOHOL</p>	<p>What soft drink or sweetened beverages do you drink? How much?</p> <p>What other fluids do you drink over the day? How much?</p> <p>Do you drink water? How much?</p> <p>Do you drink hot drinks? Do you add sugar? How much?</p> <p>What type of milk do you drink?</p> <p>How often do you drink alcohol?</p> <p>How many standard drinks per occasion? (One standard drink is: 330ml can beer, 100ml wine, 30ml spirits)</p>	<ul style="list-style-type: none"> • 9 glasses of water per day (or healthy fluids) • Decrease the number of unhealthy drinks or eliminate • Swap unhealthy drinks for healthier drinks e.g. water, trim or calcium-fortified milk, flavoured water, tea, coffee, diet fizzy • Avoid all alcohol • Swap blue milk for trim or calcium-fortified milk

<p>5. Protein</p> <p>At least 2 servings of protein food per day</p> <p>Choose lean meats</p> <p>Eat a variety of sources of protein including: fish, seafood, legumes, soy products, skinned chicken, lean meats, nuts, eggs and dairy products</p>	<p>What types of meats and fish do you currently eat? How often? How much?</p> <p>Do you eat peas and beans, tofu, nuts, eggs, dairy products or other meat alternatives? How often? How much?</p> <p>Do you trim the fat and skin off meat?</p> <p>What cooking methods do you use to cook meat?</p>	<ul style="list-style-type: none"> • Eat lean meat • Adjust to appropriate portion sizes (size and thickness of your palm) • Swap meat for beans, tofu, nuts or eggs one night of the week • Add a portion of fish • Add a portion of oily fish (red flesh fish) • Trim fat and skin from meat • Use low fat cooking methods - steam, microwave, grill, stir fry, boil, bake
<p>6. Snack foods & bread</p> <p>Choose healthy snacks foods (see list in resource folder)</p> <p>Choose wholegrain or wholemeal bread</p> <p>Appropriate portion sizes</p>	<p>What type of snack chips or crackers do you eat?</p> <p>What other foods do you snack on?</p> <p>What is your portion size? How much would you eat?</p> <p>Do you eat bread? How often? How much? What type?</p>	<ul style="list-style-type: none"> • Decrease portion size/ amount • Swap for healthy snack alternatives • Switch to low fat varieties (check for sugar) • Switch to wholegrain or wholemeal varieties
<p>7. Sugar</p> <p>Limit high sugar foods</p> <p>Choose sweet foods with some nutritional benefits e.g. fruit, low fat yoghurt</p> <p>OR Eat small portions of sweet foods</p>	<p>What types of desserts and sweets do you eat? How much?</p> <p>Do you use jam and honey as spreads? How much?</p>	<ul style="list-style-type: none"> • Decrease frequency • Decrease portion size • Swap for healthy alternatives • Save special foods to enjoy on special occasions
<p>8. Fat</p> <p>Eat foods low in fat</p> <p>Eat foods low in saturated fat (animal based) and trans-fats</p> <p>Choose polyunsaturated and monounsaturated fats (plant based)</p> <p>Include nuts, seeds and nut butters up to 1 dessert spoon per day</p>	<p>What type of fat do you use in cooking?</p> <p>Demonstrate a portion size</p> <p>What type of fat do you use as a spread? How much?</p> <p>Do you eat nuts or nut butters? How often? How much?</p>	<ul style="list-style-type: none"> • Decrease portion size • Swap saturated fat (animal fats) for monounsaturated or polyunsaturated fat (plant fats) e.g. canola or olive oil • Use low fat cooking methods • Use low fat varieties (watch for sugar) • Use other seasonings instead of fat: stock, herbs, spices, lemon • Include small amounts of nuts and seeds regularly, up to 1 dessert spoon per day

Appendix 8. List of Key Contacts

The following is a list of key contacts for the Achieving Healthy Weight Gain in Pregnancy Feasibility study. Joanna Norton is the project co-ordinator and Emma Jeffs is the clinical dietitian who will provide dietetic support as required, and will make contact for a case review session (initially monthly).

Please note that not everyone is available every day, but we will endeavour to respond promptly.

	Phone	Email
PRINCIPAL INVESTIGATORS		
Kirsten Coppell	(03) 470 9074	kirsten.coppell@otago.ac.nz
Helen Paterson	(03) 474 0999 ext 58933	helen.paterson@otago.ac.nz
PROJECT CO-ORDINATOR		
Joanna Norton, Research Nurse	(03) 474 0999 ext 58035 027 609 9056	joanna.norton@otago.ac.nz
CO-INVESTIGATORS		
Pauline Dawson, Research Midwife	027 2301522	pauline.dawson@otago.ac.nz
Jean Hay-Smith	-	jean.hay-smith@otago.ac.nz
Beverley Lawton	-	bev.lawton@otago.ac.nz
Sue Crengle	-	sue.crengle@southlinkgp.co.nz
STUDY DIETITIAN		
Emma Jeffs, Research Dietitian	027 331 7076	emmahooker@postgrad.otago.ac.nz