
Community Approaches to Promote Appropriate Weight during Pregnancy and Postpartum

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Review of the Literature

- 1 Very little in the published research literature
 - » Several articles on “what women want to know” and important features of interventions;
 - » Two articles on outcomes of community or multi-level interventions.
- 1 In *JADA* (vol.104, no.7, 2004), Cartwright states, “The resolution of this issue [excessive postpartum weight retention] will likely require multilevel interventions” (p.1108).

What Women Want

- 1 Include physical activity and facilitate social interaction; cover diet with self-help type approaches; lack of childcare is barrier.
 - » Østbye et al., *Military Medicine* 168 (4):320, 2003.
- 1 Postpartum women want self-care (exercise, diet, and dealing with fatigue) and baby care (recognizing illnesses, schedule, crying) information.
 - » Moran et al., *Birth* 24 (1):27, 1997.

What Women Want

- 1 55% of women in WIC at action stage for weight loss but fewer (<30%) in action stage for weight management behaviors.
 - >> Krummel et al., *JADA* 104(7): 1102, 2004.

Important Features of Community Interventions

- 1 Sustained, intensive multiple-component and multi-level interventions
 - » Home visits by mentor targeting awareness, motivation, skill-building, building social support;
 - » Group classes to reinforce project messages, demonstrate skills, foster social interaction;
 - » Telephone counseling for motivation, reinforcement of goals, review of barriers, referral to community resources.
 - Peterson et al., *Health Education Research* 17(5): 531, 2002

Two Community Intervention Studies with Outcome Evaluations

- 1 Gray-Donald K et al. Intervening to reduce weight gain in pregnancy and gestational diabetes mellitus in Cree communities: an evaluation. *CMAJ* 163 (10):1247-1251, 2000.
- 1 Olson CM et al. Efficacy of an intervention to prevent excessive gestational weight gain. *Am J Obstet Gynecol* 191:530-536, 2004.

Intervening to reduce weight gain in pregnancy and gestational diabetes mellitus in Cree communities

- 1 Prospective cohort design with control period (July 1995-March 1996) followed by intervention period (April 1996-January 1997)
- 1 4 communities of Cree of James Bay, Quebec
- 1 107 control women and 112 intervention women
- 1 Intervention based on social learning theory

Gray-Donald et al., CMAJ 163 (10): 1247, 2000.

Components of the Intervention

People	Strategies	Activities
Nutritionists Cree health workers	Modelling Skill training Contracting Self-monitoring	Local radio broadcasts Pamphlets: food choices and breastfeeding Supermarket tours & cooking demonstrations Exercise/walking groups Individual counseling

Results

Variable	N	Control Group	N	Intervention Group
Wt Gain, kg/wk	96	0.53 (0.32)	104	0.53 (0.27)
BMI \leq 29	49	0.63 (0.32)	51	0.62 (0.27)
BMI $>$ 29	47	0.44 (0.30)	53	0.44 (0.24)
Plas. Glucose, mmol/L	87	7.21 (2.09)	97	7.43 (2.10)
Ppartum Wt, kg	75	88.1 (16.8)	62	86.4 (19.0)

No significant differences between control and intervention groups.

Gray-Donald et al., CMAJ 163 (10): 1247, 2000.

“Staying in the Range”

NIH Grant No. DK 57439

- 1 **To decrease weight retention at one year postpartum by promoting appropriate gestational weight gain**

Olson CM et al. Efficacy of an intervention to prevent excessive gestational weight gain. *Am J Obstet Gynecol* 191:530-536, 2004.

Evaluation Design

- 1 Two groups each from a prospective cohort study
 - » Intervention in pregnancy
 - » Historical control with usual care in pregnancy
- 1 Women followed from early pregnancy until one year postpartum
- 1 Intermediate outcome = Gestational weight gain (pregnancy weight gain)
- 1 Primary outcome = Weight retained at one year postpartum (1 yr wt – early preg wt)

Intervention

Goal

- 1 Decrease by 50% the proportion of normal (19.8-26.0) and high (26.1-29.0) BMI women who exceed the upper limit of the Institute of Medicine (IOM) gestational weight gain recommendations

Intervention Components

- 1 Health care providers monitored weight gain of pregnant women using adapted IOM gestational weight gain grids
- 1 Pregnant women received 5 motivational, action-promoting newsletters on pregnancy weight gain, diet and physical activity along with postcards in the US mail
- 1 Pregnant women received a health check book for goal setting and self-monitoring



Staying Healthy for Two

Newsletter of the Bassett Mothers Health Project, too!

Issue Number 1

Welcome to the Bassett Mothers Health Project, too!

We greatly appreciate your participation in this new project. We hope you and your growing baby will benefit from the information provided in this newsletter series.

The Bassett Mothers Health Project, too! is the second project between Bassett Healthcare and Cornell University. We look forward to helping you feel healthy during pregnancy.

This is the first of five newsletters that will be sent to you over the course of our pregnancy. We plan to cover themes such as:

- Weight gain during pregnancy
- Healthy eating and snacking during pregnancy
- Physical activity during pregnancy

We also hope to hear from you! With every newsletter you will receive a postcard where you can report on some health goals for pregnancy and ask us questions. We will try to address your questions in follow-up newsletters. Each postcard you return will include a ticket for a drawing to win a prize. The more postcards you return to us, the better your chances of winning!

Please remember to fill out the postcard included with this newsletter and send it in so you will be entered in the drawing.

Thank you again for participating in the Bassett Mothers Health Project, too!

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Keeping Your Health In Check

Please take a look at the health check book sent along with this newsletter. This handy booklet contains information about nutrition, exercise and weight gain during pregnancy.

The health check book also includes a weight record to keep track of changes in your weight during pregnancy. With the help of your midwife or doctor, you can record your weight gain at each prenatal visit and make health notes to yourself.



HEALTH HINTS!!:
Keep your health check book in your purse so you'll have it ready at every prenatal visit!!

Your Weight Gain During Pregnancy

As you discussed with your midwife or doctor, weight gain during pregnancy is vital for the health of your baby. If you are in your first trimester (first 12-14 weeks of pregnancy) you may have gained only 3 or 4 pounds. You might not be "showing" yet. Most of your weight gain should take place later, in the second and third trimesters.



How Much Weight Should You Gain During Pregnancy?

Well, the answer to that one is...it DEPENDS!! Your target weight gain range depends on your height and how much you weighed before pregnancy.

Using the BMI chart in your health check book, find your Body Mass Index (BMI) and BMI category. Your recommended weight gain range is based on your BMI category:

BMI Category	Pre-pregnancy BMI	Recommended Weight Gain Range
Normal	19.8-26.0	25-35 Pounds
High	26.1-29.0	15-25 Pounds



Staying in the Range Can Help You Stay Healthy

Adequate weight gain during pregnancy reduces the risk of having a low birth weight baby. Too much weight gain increases your risk of becoming overweight after birth. You should try to "STAY IN THE RANGE" of weight gain recommended for your BMI category.

Most of your weight gain should take place during the 2nd and 3rd trimesters. This weight goes mainly toward the growth of your baby. You should try for a *STEADY RATE OF GAIN*. If your BMI is in the normal category, you should gain around 1 pound per week in the 2nd and 3rd trimesters. If your BMI is in the high category, you should gain around 3/8 pound per week in the 2nd and 3rd trimesters.



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Results-Process Measures

- 1 84% of women returned at least one postcard and 65% returned three or more
- 1 Among women returning the first postcard, 78% set an appropriate weight gain goal
- 1 Evidence of use of grid in medical record for all but 2 women

Infant Results-Do No Harm

<u>Characteristic</u>	<u>Intervention (%)</u> N=179	<u>Control (%)</u> N=381
Infants' Birth Weights (g)		
Mean	3610	3621
% > 4000 g	17.9	21.8
% < 2500 g	1.1	0.8

Olson CM et al. *Am J Obstet Gynecol* 191:530-536, 2004.

NIH Grant Number DK 57439

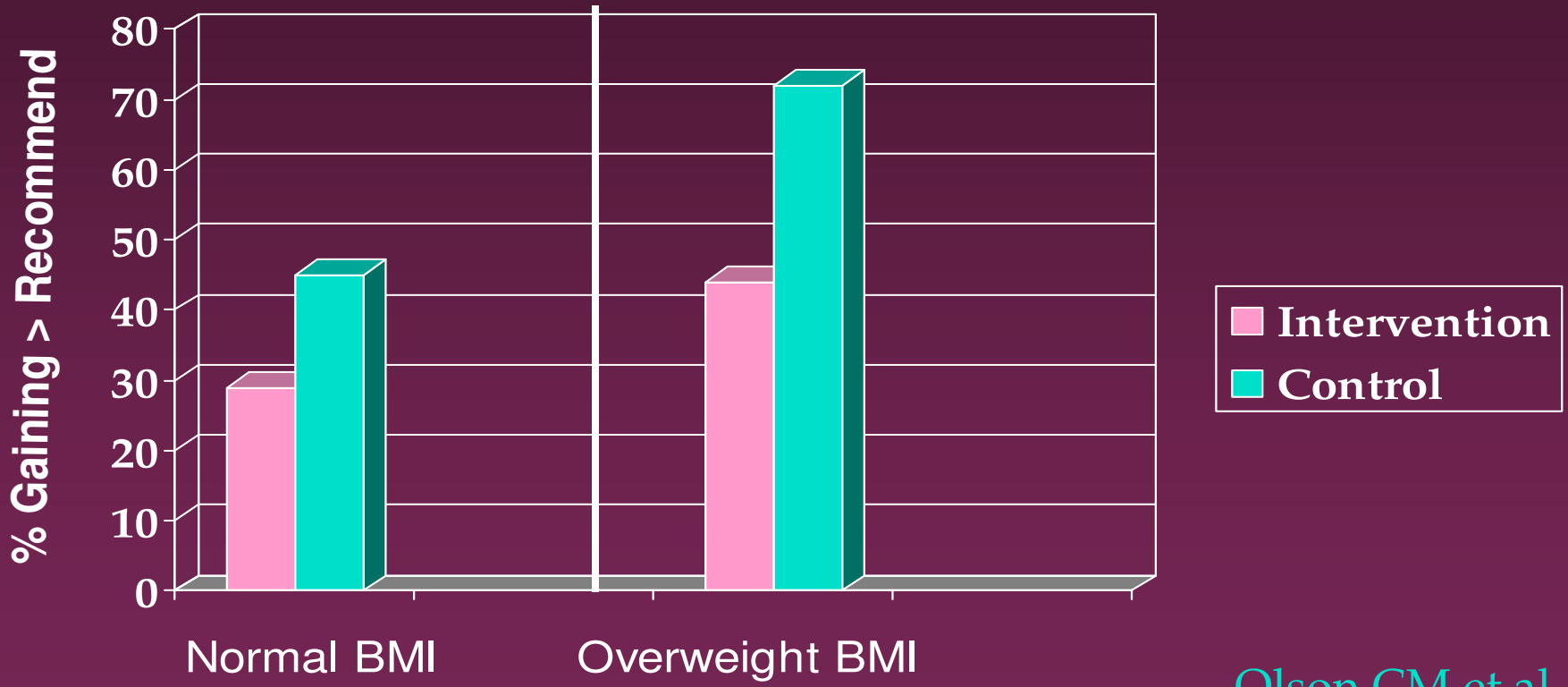
Results – Adjusted Odds (95% CI) for Intervention Effect on GWG

Sub-Group	Odds Ratio	95% CI
Income-Treatment Interaction	0.35	0.15, 0.83
Low Income	0.41	0.20, 0.81
High Income	1.15	0.69, 1.93

Model adjusts for early pregnancy BMI, age, parity, smoking, alcohol consumption, significant weight loss in early pregnancy and timing of weight measurements. Max re-scaled $R^2 = 25.5\%$

Olson CM et al. *Am J Obstet Gynecol* 191:530-536, 2004.

% Low Income Women Gaining More than IOM Recommendations by Treatment Group and BMI



Olson CM et al. *Am J Obstet Gynecol* 191:530-536, 2004.

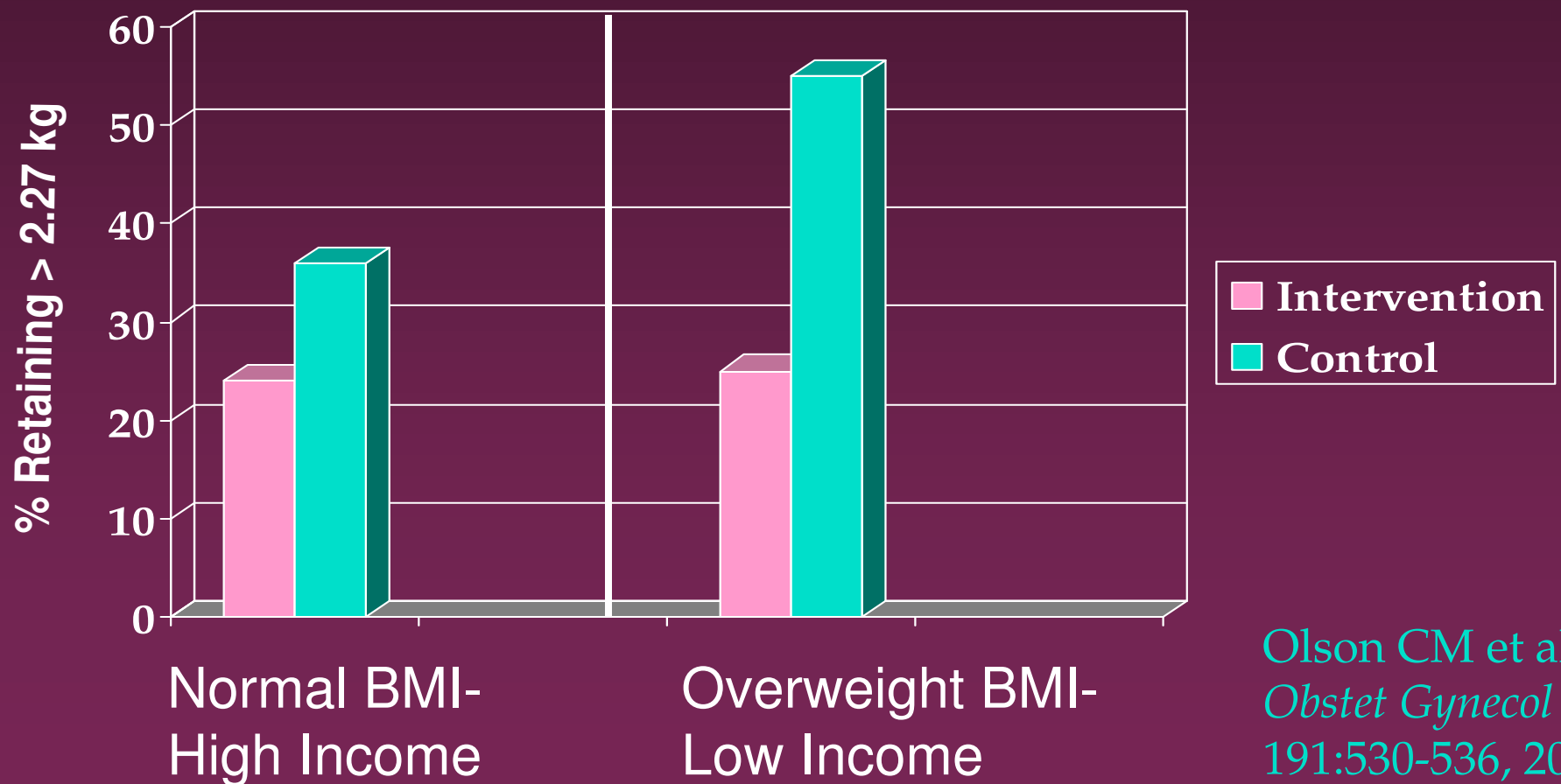
Results – Adjusted Odds (95% CI) for Intervention Effect on PPWR

Sub-Group	Odds Ratio	95% CI
Income-Treatment-BMI Interaction	0.07	0.10, 0.51
Overweight & Low Income	0.24	0.07, 0.89
Normal BMI & High Income	0.52	0.28, 0.99

Model adjusts for mother's age at delivery and months postpartum that weight was taken. Max re-scaled $R^2 = 5.9\%$

Olson CM et al. Am J Obstet Gynecol 191:530-536, 2004.

Proportion of Women Retaining ≥ 2.27 kg at One Year Postpartum by Treatment, Income, and BMI



Olson CM et al. *Am J Obstet Gynecol* 191:530-536, 2004.

Conclusions

- 1 The intervention had a significant effect on excessive gestational weight gain in the low income women only.
- 1 This effect carried over to reduced weight retention at one year postpartum in the overweight, low income women.
- 1 The Institute of Medicine (IOM) gestational weight gain guidelines are appropriate for not only promoting healthy birth outcomes, but also for promoting healthy body weights for childbearing women.

Additional Thoughts

1 Historical control group

» Bias

- Treatment groups were similar
- Controlled for confounding in analysis
- Secular trend would yield greater gain in intervention group

1 Intervention approach is:

- » Upstream—changed the medical chart
- » Efficient in the use of health care providers' time

“Staying in the Range” NIH Grant No. DK 57439