

Weight Gain in Pregnancy- How much is too much?



Webinar Presentation June 2012

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Objectives



1. Provide a brief overview of health outcomes associated with excess weight in pregnancy
2. Outline the scope of the issue with national and provincial data
3. Present our local survey data on gestational weight gain and modifiable risk factors among pregnant women in Simcoe-Muskoka
4. Consider what we can do with this knowledge:
 - Best practice in the office
 - Building a list of community resources for referral and/or support



Why are we concerned about the weight of pregnant women?

Obesity in pregnancy – maternal risks



Women with a BMI >30 are at greater risk of:

- early pregnancy loss (OR 1.2)
- recurrent early losses (OR 3.5)
- PIH (OR “dose dependent”, 2.4-3)
- gestational diabetes (OR 2.6-4.0)
- pre-gestational DM, HTN, and CVD ...

Obesity in pregnancy – maternal risks



Peripartum difficulties with a BMI >30:

- macrosomia (OR 1.7-2.0)
- less accurate fetal weight estimate
- fetal monitoring may be more difficult
- first stage of labour slower
- increased likelihood of caesarian section:
 - RR 1.4 for overweight, 3.1 for very obese
 - more complications (anesthetic & OB)
- reduced success for VBAC
- increased risk of thromboembolism

Obesity in pregnancy – maternal risks



Longer term risks to women with excess gestational weight gain (regardless of pre-pregnancy BMI):

- **Postpartum weight retention**, especially in the intermediate term of 3 to 36 months

Obesity in pregnancy – risks to the child



Perinatal outcomes associated with obesity:

- stillbirth (OR 2.79 for BMI>35)
- infants of diabetic mothers
- increased congenital anomalies
compounded by poorer u/s visualization
- **large for gestational age**



Obesity in pregnancy – risks to the child



Longer term outcomes for children:

- risk of being overweight by ages 9-14 yrs.
- impaired glucose tolerance?
- hypertension?

Gestational Weight Gain (GWG)



New Guidelines:

- In 2009 the Institute of Medicine issued new guidelines because of moderate to strong evidence for associations between GWG and:
 - caesarean section
 - pre-term birth
 - birth weights (both SGA and LGA)
 - **postpartum weight retention**
in the intermediate term (3-36 months)

Canada adopts IOM guidelines (2009):



Recommended weight gain rates and ranges by pre-pregnancy BMI

Pre-pregnancy BMI category	Mean rate of weight gain in the 2nd and 3rd trimester		Recommended range of total weight gain	
	kg/week	lb/week	kg	lbs
BMI < 18.5 Underweight	0.5 kg	1.0 lb	12.5–18 kg	28-40 lb
BMI 18.5 - 24.9 Normal weight	0.4 kg	1.0 lb	11.5–16 kg	25-35 lb
BMI 25.0 - 29.9 Overweight	0.3 kg	0.6 lb	7-11.5 kg	15-25 lb
BMI ≥ 30 Obese	0.2 kg	0.5 lb	5–9 kg	11-20 lb

(Health Canada, 2009)

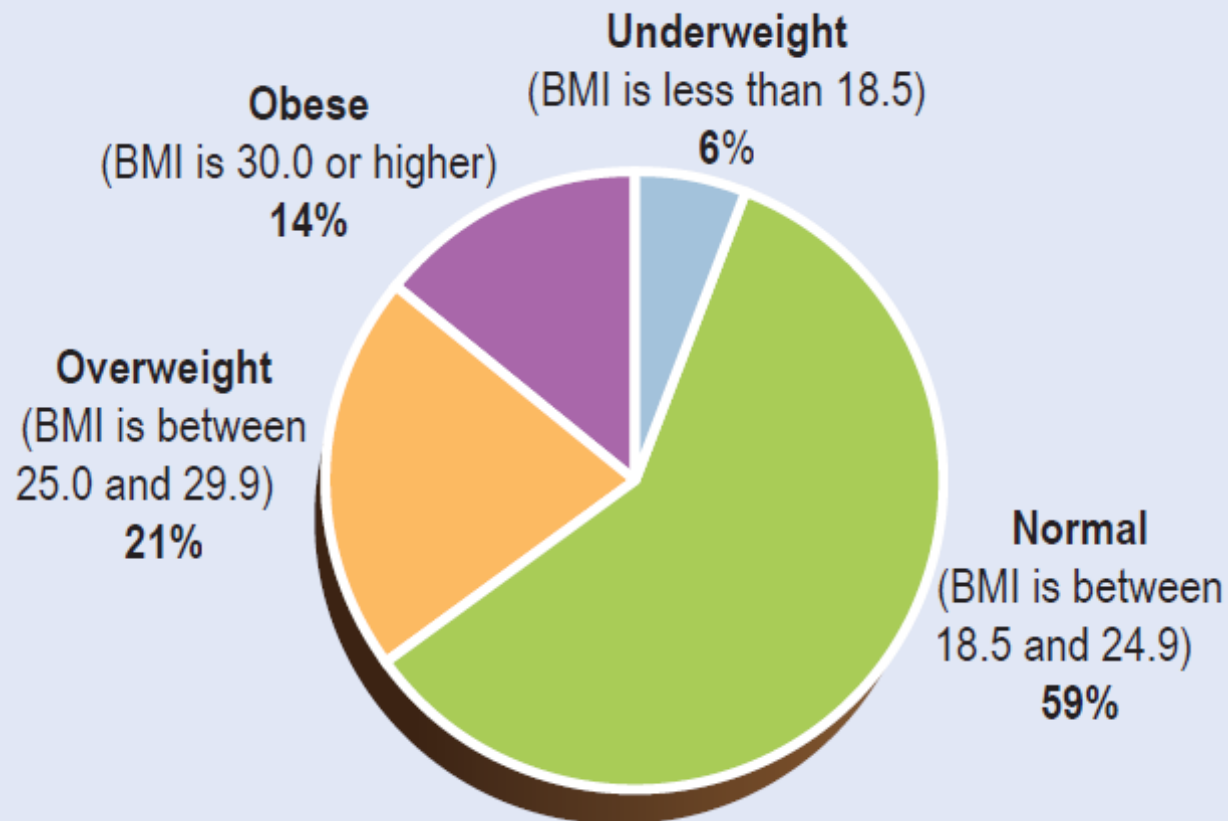


What is the scope of the problem?

Maternity Experiences Survey (Canada)



Percent of women in each BMI category before pregnancy



(PHAC, 2009)



Who is exceeding recommended GWG range?

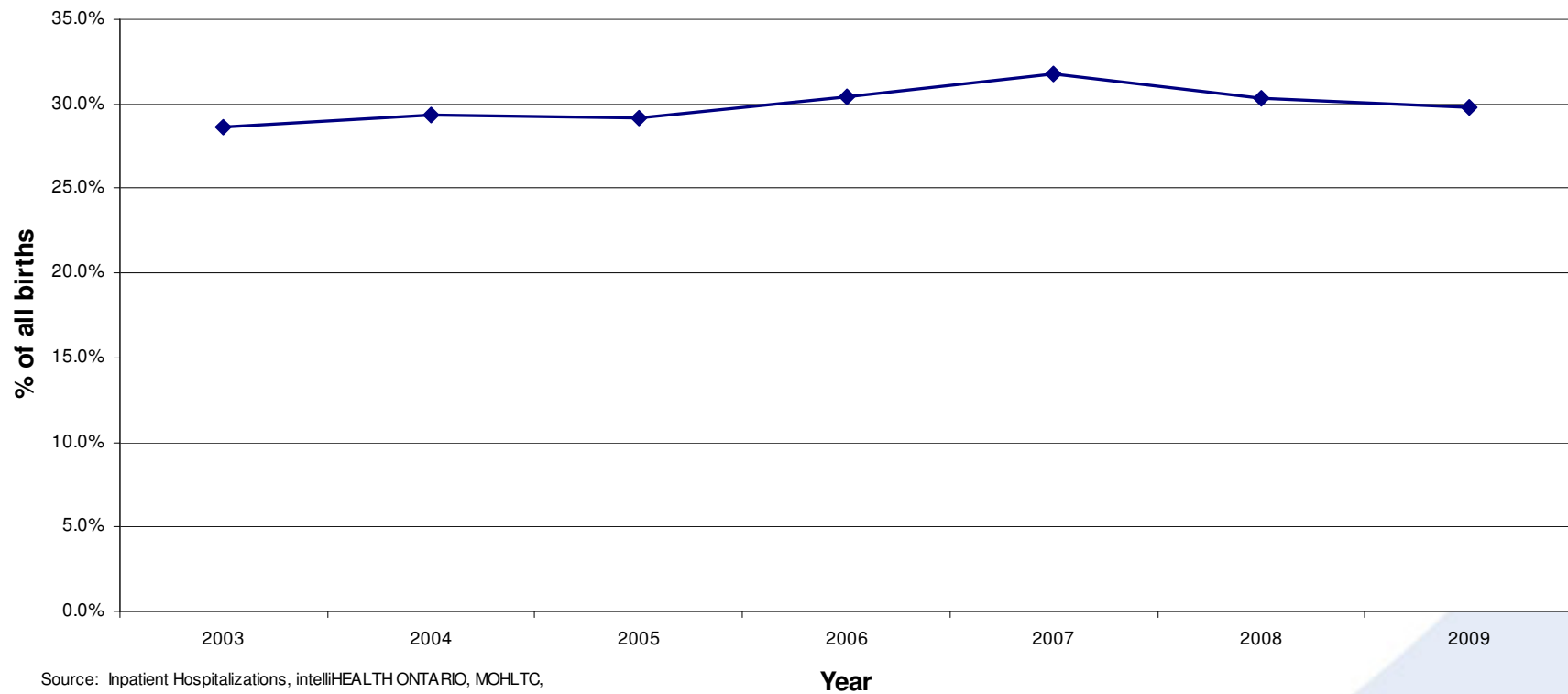
- normal weight women (pre-pregnancy BMI 18.5-24.9)
41% gain more than recommended
- overweight women (pre-pregnancy BMI 25-29.9)
68% gain more than recommended
- obese women (pre-pregnancy BMI ≥ 30)
60% gain more than recommended

(Personal Communication, Sharon Bartholomew, PHAC, January 17, 2012)

Local data Caesarian section rates



**Hospital Live Births Delivered by C-Section
Simcoe Muskoka, 2003-2009**

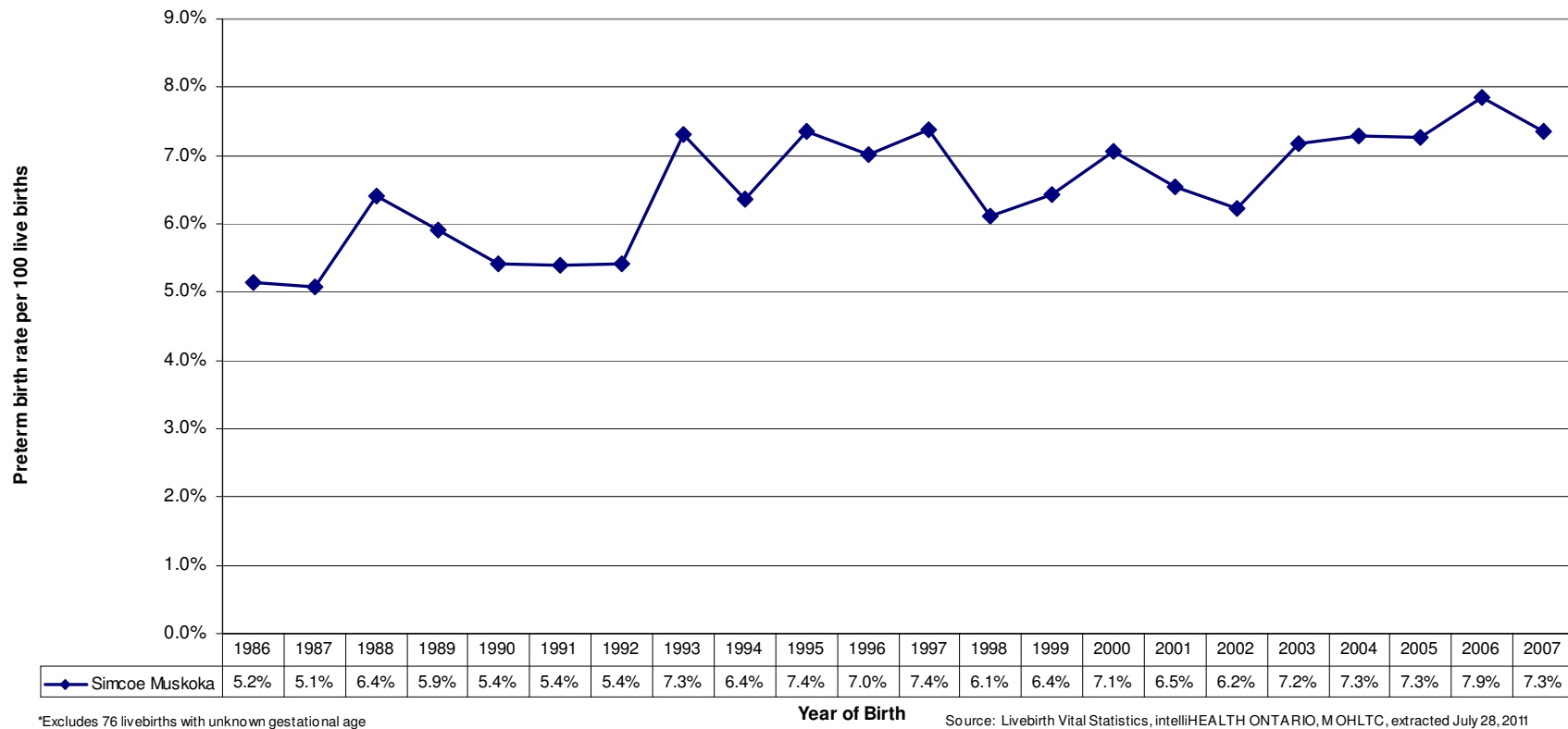


Source: Inpatient Hospitalizations, IntelliHEALTH ONTARIO, MOHLTC, extracted September 28, 2011

Local data Preterm birth rates



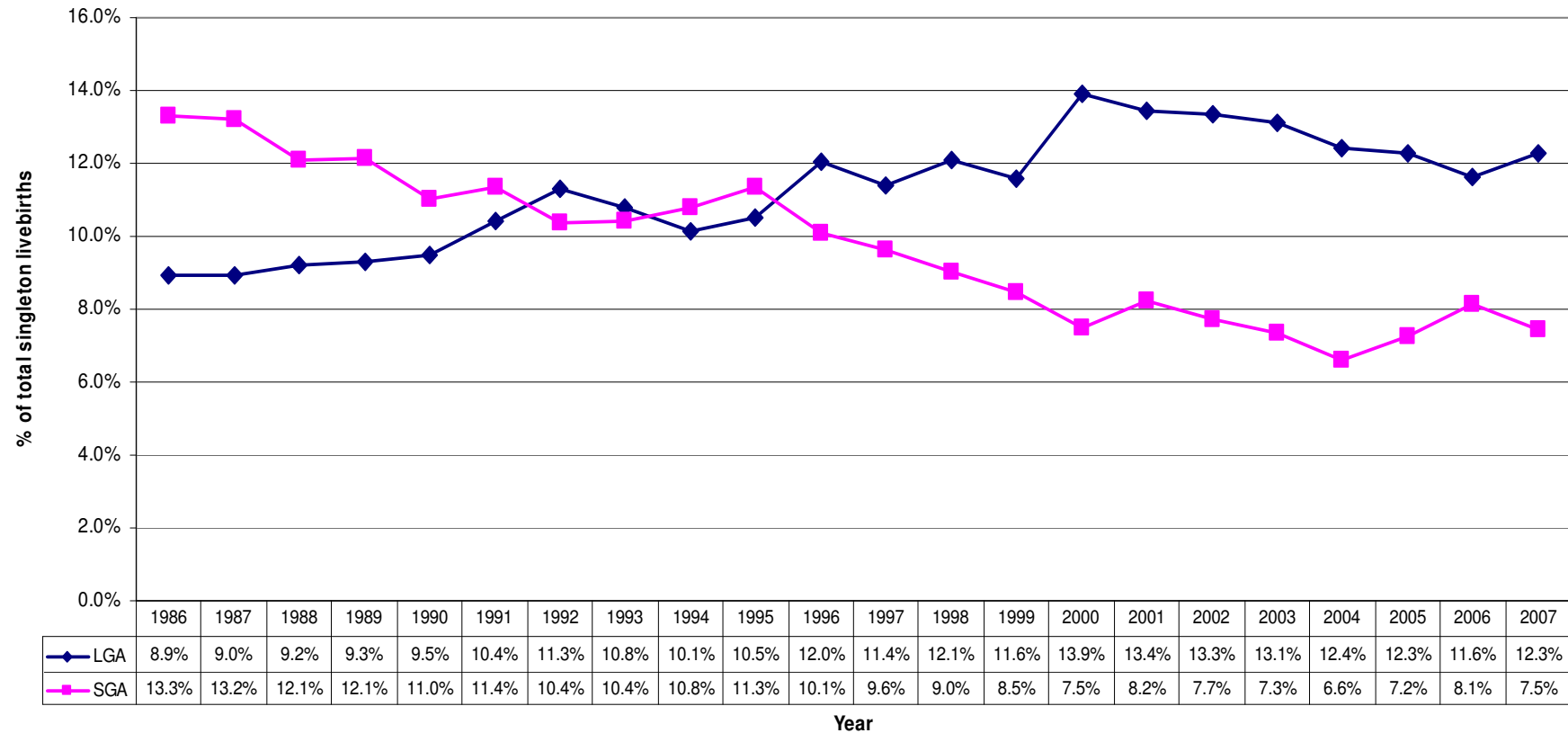
**Preterm Birth Rate
Simcoe Muskoka, 1986-2007**



Local data Birth weights



LGA and SGA Rates* among Singleton Live Births
Simcoe Muskoka, 1986-2007



*Excludes livebirths with unknown gestational age and birthweights, livebirths with gestational age <22 weeks or >43 weeks and multiple births

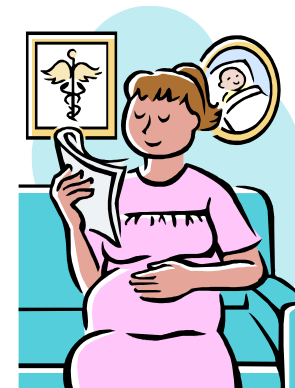
—◆— LGA —■— SGA

Source: Livebirth Vital Statistics, IntelliHEALTH ONTARIO, MOHLTC, extracted July 28, 2011



Food and Exercise in Pregnancy Survey, 2011

Simcoe Muskoka District Health Unit



Food and Exercise in Pregnancy Survey (SMDHU, 2011)



Eligibility criteria

Pregnant women who were:

- being cared for by a family doctor, Ob/Gyn, or midwife in the SMDHU catchment area;
- 18 years old or more;
- 14 weeks gestation or more; and
- able to speak English

Food and Exercise in Pregnancy Survey (SMDHU, 2011)



<u>Demographics</u>	Participants <i>N=457</i>	SMDHU Population data
Residence Simcoe County District of Muskoka	91% 9%	90% 10%
Health Care Provider Family physician Obstetrician Midwife	51% 27% 21%	55% 69% 10%
Mean age nulliparous (52%) multiparous (48%) Range	28 years 30 years 18-41 years	27 years 31 years 14-46 years
Trimester second third	41% 59%	(n/a)



Food and Exercise in Pregnancy Survey (SMDHU, 2011)



Results for BMI and GWG	
Pre-pregnancy BMI:	
< 18.5 (underweight)	5%
18.5-24.9 (normal range)	54%
≥ 25 (overweight or obese)	41%
Gestational Weight Gain <u>Rate</u>	
Below recommended	14%
Within recommended	28%
Exceeding recommended	58%
Gestational Weight Gain <u>Range</u>	
<i>Below recommended</i>	<i>(53%)</i>
Within recommended	24%
Exceeding recommended	23%





What is the scope of the solution?

Women of reproductive age - nutrition



- rising prevalence of obesity and increased energy consumption
- low vegetable and fruit (V&F) consumption associated with obesity
- intakes of pregnant women are similar to non-pregnant women



Vegetables and Fruit (7-9 servings):

- mean reported intake 8 servings/day
 - mean fruit: 4.5
 - mean juice: 2
 - 25% drank ≥ 3 servings



- 62% report unchanged intake compared with before pregnancy
- **meeting V&F recommendation is associated with meeting GWG recommendation**





Milk and Alternatives (2-3 servings):

- mean intake 3.5 servings, but range 0.5-10!
 - mean cheese intake represents almost half of this
- 53.5% report consuming more milk products since pregnancy began
 - reflects outdated advice that ↑ consumption of milk and alternatives is needed during pregnancy?

Survey Results: Nutrition



Eating Pattern	Result
Eating breakfast	27% “less than daily”
Sweetened Beverages	27% more than four times a week
Fast Food	58% at least once a week

- **fast food consumption at least once a week was associated with exceeding recommended GWG rate**

Survey Results: Nutrition



Contributing Factors:

- important to eat healthy foods for healthy baby (98.9%)
- know how to cook healthy food (95%)
- knowledge of Canada's Food Guide (75%)
 - **confidence in following CFG (52%)**
 - told by health care provider to follow CFG (55%)
 - health care provider explained how (37%)
- reported barriers to healthy eating included:
 - cravings (47%)
 - preference for quick foods (51%)
 - fatigue (29%)
 - *lack of money to buy healthy food (9%)*

Women of reproductive age - activity

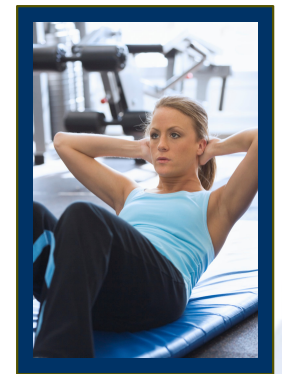


- 14% women achieve recommended amount/intensity of physical activity (PA)
- when *preconception* PA levels meet guidelines the odds of excess weight gain are reduced
- most women decrease strenuous, moderate, and mild PA during pregnancy

Survey Results: Physical Activity



- **Recommendation is 'moderate' exercise 15-30 minutes 3-4 times/week:**
 - 32% meeting or exceeding this
 - 41% only managing 1-2 times/week
- 28% report rarely or never engaging in moderate exercise
- 57% report they are engaging in less 'moderate' physical activity since pregnancy began



Survey Results: Physical Activity



Contributing Factors:

- important to exercise during this pregnancy (90%)
- physical activity supported by others (80%)
- aware of parks, trails, sidewalks (83%)
- **HCP advised exercise (52%); HCP explained how (45%)**
- reported barriers to being active included:
 - too tired (47%)
 - too busy (32%)
 - Income-related issues (14%)

Survey Results: Sources of Information



Information Sources	Actual (%)	Preferred (%)
One to One Discussion (HCP)	78	77
Websites	20	41
Book by Health Experts	32	41
Prenatal Class (in person)	29	40
Pamphlets or handouts	64	36
Magazines	22	27
Email Reminders	3	9.5
Online Prenatal Classes	1.5	10
CD or DVD	4	6.5
Social Networking Sites	7	3.5
Blog	7	1.5
Other		0.5



So what now?

To review the issue:



- excess GWG is associated with postpartum weight retention, which may shift women into a higher BMI category entering the next pregnancy
 - pre-pregnancy obesity carries significant risks to mother and child both during and after pregnancy
 - two thirds of overweight or obese pregnant women gain in excess of their recommended GWG ranges
 - almost half of women of reproductive age locally are already overweight or obese
- excess GWG is also associated with LGA babies, which in turn are associated with
 - higher rates of caesarean sections
 - increased risk of childhood obesity?

To review local survey results:



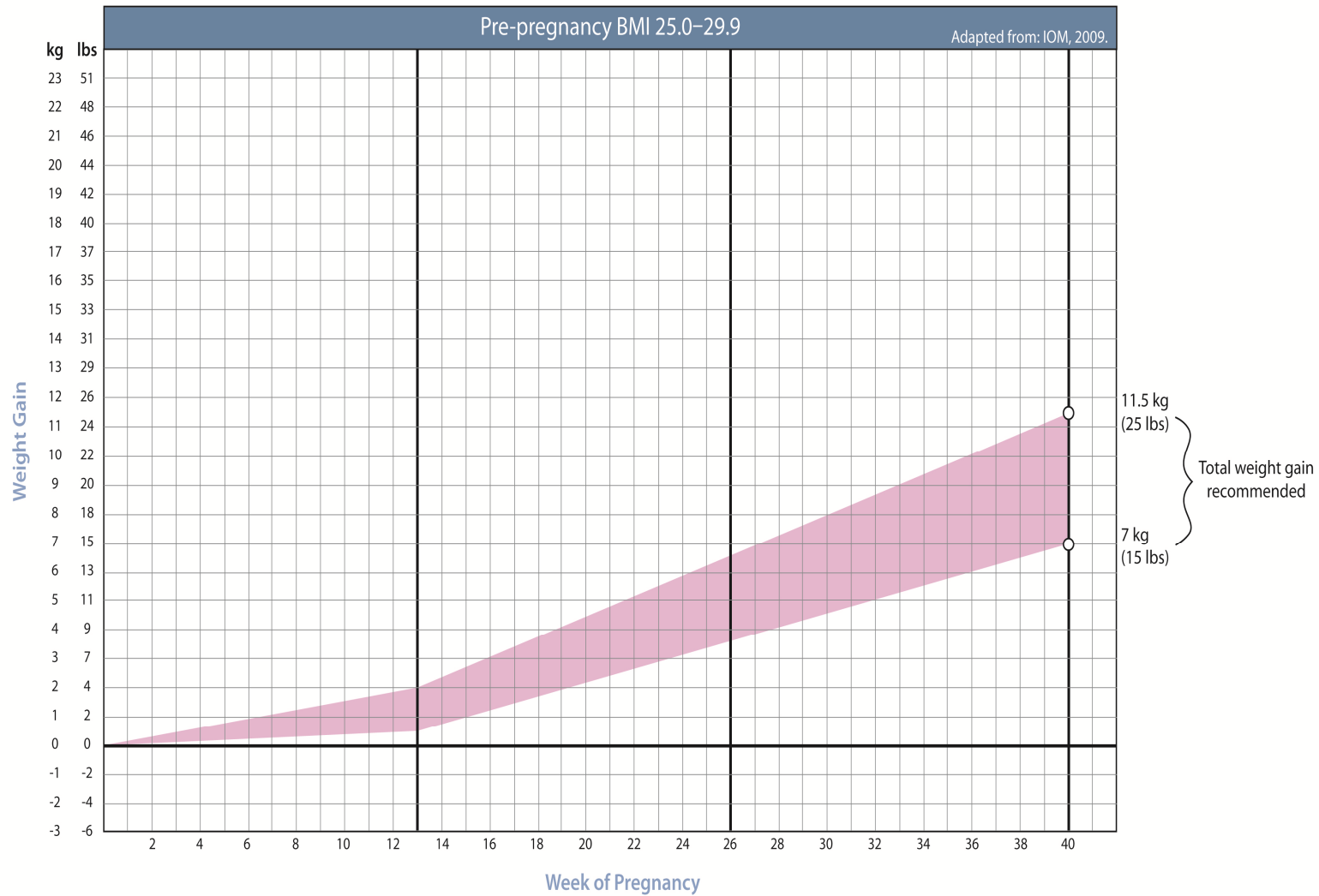
- 58% of pregnant women surveyed were gaining weight more quickly than recommended; they were more likely to gain weight too fast if:
 - they did not eat 7-9 servings of vegetables and fruits
 - they ate fast food at least once a week
- 36% did not eat enough vegetables and fruits
- 47% consumed too many servings of milk products
 - 55% had increased consumption in pregnancy
- 32% meeting physical activity recommendations
 - 57% had decreased activity in pregnancy

Clinical practice guidelines re: BMI



- Association of Ontario Midwives (AOM) & Society of Obstetricians & Gynaecologists of Canada (SOGC) have clinical practice guidelines related to **obesity in pregnancy**
- IOM 2009 **GWG guidelines** recommend:
 - regular weight monitoring & plotting
 - referral for nutrition and physical activity counseling
 - pre-conception, prenatally and postpartum

Pre-pregnancy BMI 25.0 – 29.9

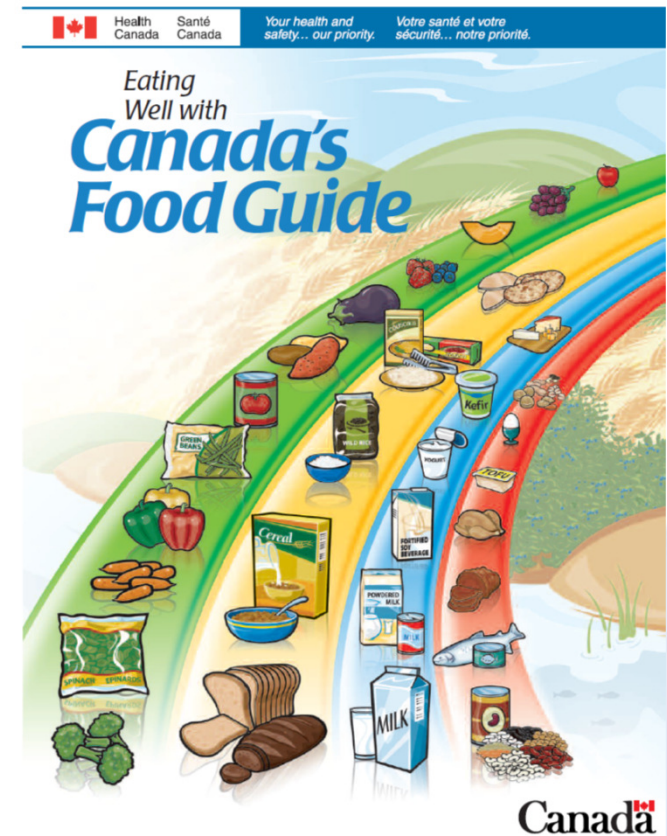


Clinical Practice Guidelines re. Nutrition



Key Messages for Prenatal Nutrition:

- follow the healthy eating pattern described in Canada's Food Guide
- let women know they need 'just a little more food' in 2nd and 3rd trimesters
- **“eat twice as healthy, not twice as much”**
- refer nutritionally at-risk women to services/programs





SOGC/CSEP Clinical Practice Guidelines (2003)

- “all women without contraindications should be encouraged to participate in aerobic & strength-conditioning exercises”

TABLE I CONTRAINDICATIONS TO EXERCISE IN PREGNANCY	
Absolute Contraindications	Relative Contraindications
<ul style="list-style-type: none">• Ruptured membranes• Preterm labour• Hypertensive disorders of pregnancy• Incompetent cervix• Growth restricted fetus• High order multiple gestation (\geq triplets)• Placenta previa after 28th week• Persistent 2nd or 3rd trimester bleeding• Uncontrolled type I diabetes, thyroid disease, or other serious cardiovascular, respiratory, or systemic disorder	<ul style="list-style-type: none">• Previous spontaneous abortion• Previous preterm birth• Mild/moderate cardiovascular disorder• Mild/moderate respiratory disorder• Anemia (Hb $<$100 g/L)• Malnutrition or eating disorder• Twin pregnancy after 28th week• Other significant medical conditions

Reprinted and modified with permission from the Canadian Society for Exercise Physiology.²³

- Goal: “to maintain good fitness throughout pregnancy”

Local Assessment/Referral Tool



Addressing Healthy Weight Gain During Pregnancy A guide for health care professionals

1 Determine pre-pregnancy BMI

Use your preferred BMI tool or
BMI = pre-pregnancy weight* in kilograms
 (height in metres)²
 * If pre-pregnancy weight unknown use weight at earliest prenatal appointment

To access gestational weight gain plotting tools go to www.hc-sc.gc.ca/fn-an/nutrition/prenatal/index-eng.php click on Gestational Weight Gain under heading Prenatal Nutrition Guidelines for Health Professionals

2 Inform woman of their recommended rate and range goal

Canadian Gestational Weight Gain Recommendations

Pre-pregnancy BMI category	Mean ^(A) rate of weight gain in the 2nd and 3rd trimester		Recommended ^(B) range of total weight gain	
	kg/week	lb/week	kg	lbs
BMI < 18.5 (Underweight)	0.5	1.0	12.5 - 18	28 - 40
BMI 18.5 - 24.9 (Normal weight)	0.4	1.0	11.5 - 16	25 - 35
BMI 25.0 - 29.9 (Overweight)	0.3	0.6	7 - 11.5	15 - 25
BMI ≥ 30 ^(C) (Obese)	0.2	0.5	5 - 9	11 - 20

(A) Rounded values.

(B) Calculations assume a total of 0.5 - 2 kg (1.1 - 4.4 lbs) weight gain in the first trimester.

(C) A narrower range of weight gain may be advised for women with a pre-pregnancy BMI of 35 or greater. Individualized advice is recommended for these women.

3 Explore risks for gaining outside recommended rate and range for current pregnancy.

- What do you think about the weight rate and range we discussed today?
- Are you eating according to Canada's Food Guide?
- Are you getting 15-30 minutes of physical activity 3-4 times a week? (PARmed-x for pregnancy www.csep.ca/english/view.asp?x=668)
- Do you have any questions?
- Would you like any support with this?

- Risk factors for gaining too much weight during pregnancy include:
- having a BMI >25
 - being primigravida
 - being Aboriginal
 - having a lower education
 - being a younger woman

4 Refer women in need of information and/or support

SUPPORTS

Clinical Referrals

- Healthy Eating**
- Registered Dietitian from Family Health Team or Community Health Centre
 - www.dietitians.ca/Find-A-Dietitian
 - Simcoe County Eating Disorders service s: 18 years (705)728-5050 ext 47250
- Physical Activity**
- Certified Personal Trainer or certified Exercise Physiologist www.csedmembers.ca/english/search.asp
- Mental Health**
- Mental Health Services from Family Health Team or Community Health Centre
 - Centre for Addiction and Mental Health www.camh.net
 - Workplace Employee Assistance Program
- Additional support**
- Healthy Babies Healthy Children Program (referral made with client consent) 1-877-721-7520
 - Dial 211 or got to www.communityconnection.ca to search for community agencies and private practitioner that support healthy pregnancies.



Simcoe Muskoka District Health Unit Your Health Connection 1-877-721-7520

A public health nurse will provide information, support and referrals to support a healthy pregnancy.

Patient Resources

- Healthy Eating**
- Eat Right Ontario (talk with a Registered Dietitian) 1-877-510-5102
 - Canada's Food Guide
 - Canada Prenatal Nutrition Program -MotherCare in Simcoe County 705-739-8645 -Great Beginnings in Muskoka 705-645-3155
- Physical Activity**
- Exercise in Pregnancy Helpline 1-866-937-7678
 - e-PARmed-X Online for Pregnancy www.parmedx.appsport.com
- Mental Health**
- Mental Health Crisis Line 1-888-893-8333
- Additional Support**
- Dial 211 or or got to www.communityconnection.ca for local programs and services including food banks, Good Food Box, YMCA, Parks and Recreation



Local Assessment/Referral Tool



4

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Thank-you!



Questions or comments?

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