

WEIGHT GAIN IN PREGNANCY



Inadequate,
Excessive
and
Just Right

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Newborn weight is proportional to maternal prenatal weight gain.

- Starvation restricts fetal growth.
- Excessive maternal weight gain is associated with large for gestational age newborns and macrosomia.
- Growth restricted newborns and macrosomic newborns are primed for future health complications including diabetes, hypertension and heart disease (Barker).



Composition of 25-35# Prenatal Weight Gain:

Fetus	7-8 pounds
Placenta & amniotic fluid	3-4 pounds
Tissue fluids	5-6 pounds
Maternal blood	3-4 pounds
Uterine enlargement	2-3 pounds
Maternal stores	<u>5-8 pounds</u>
	25-35 pounds

**Unnecessary if
BMI >30**

This gain is based on a normal BMI of 18.5-24.9

2009 US Institute of Medicine

Recommended Prenatal Weight Gains

<u>BMI Category</u>	<u>BMI Range</u>	<u>Recommended Weight Gain Category</u>	
		<u>kg</u>	<u>lb</u>
Underweight	(BMI <18.5)	12.5-18.0	28-40
Normal weight	(BMI 18.5-24.9)	11.4-15.9	25-35
Overweight	(BMI 25.0-29.9)	6.8-11.4	15-25
Obese	(BMI > 30.0)	5.0 - 9.0	11-20

BMI categories match World Health Organization definitions.
Recommended weight gain is substantially lowered since 1980s

Eating for 2 isn't eating twice as much.

EATING FOR TWO



EATING TWICE AS MUCH



Eating for 1.1, *not for 2*

A sandwich is about 300 calories

About 300 extra calories per day needed for those with normal weights-after 16 weeks

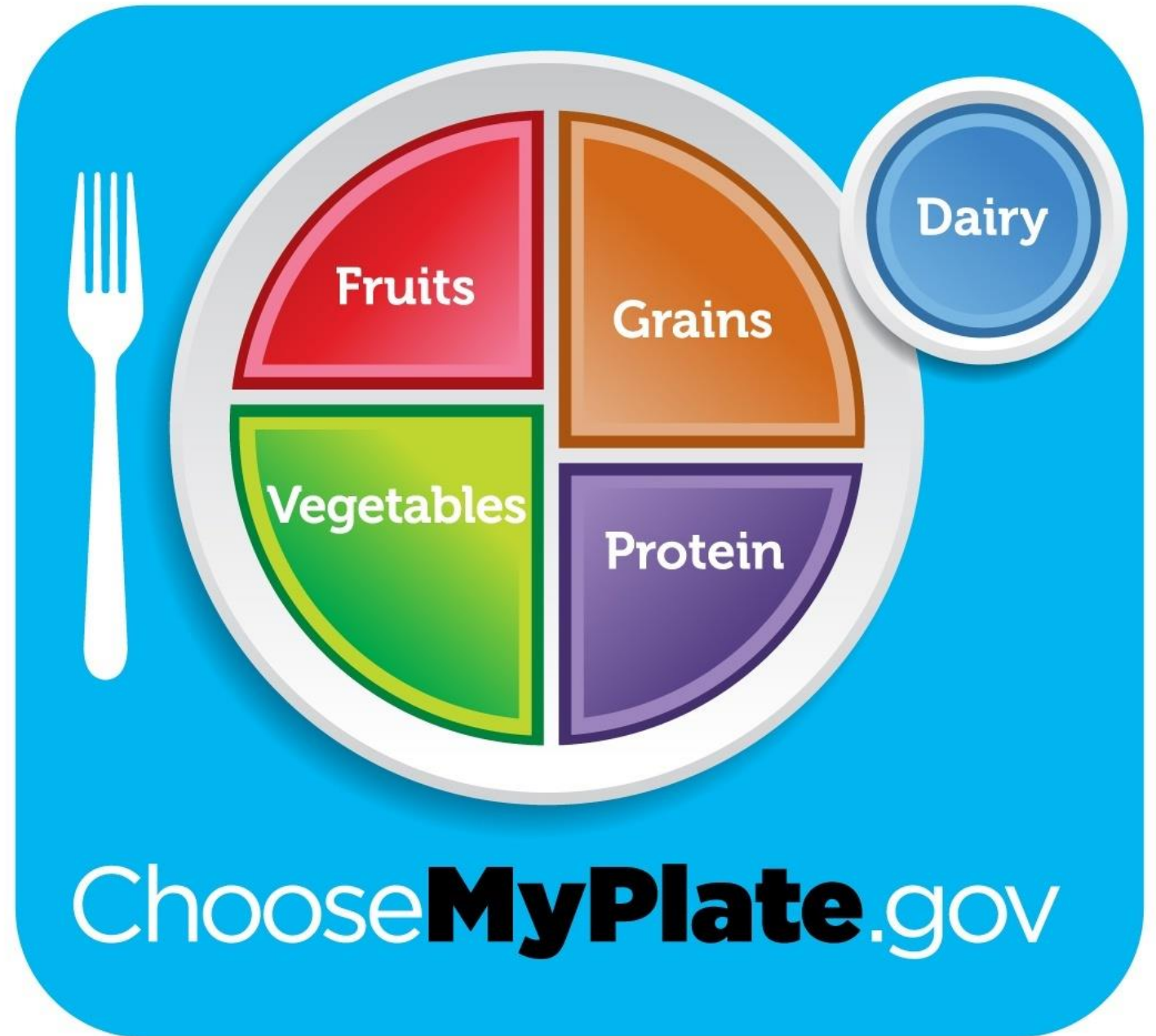
Total calories per day

- Average 2100
- More for teens
- Less for women > age 35 (could be as low as ~1500 calories/day)



1.1 portion

MyPlate is a low
glycemic diet



ASSESSING WEIGHT GAIN

SIGNS OF OPTIMAL WEIGHT GAIN

- Approximate weight gain by 20 weeks gestation
 - Underweight BMI range: 15 pounds
 - Normal BMI range: 10 pounds
 - Overweight or obese BMI range: 5-8 pounds
- Fundal height increases by about 1 cm per week after 20 weeks
- Approximate weight gain after 20 weeks
 - Underweight BMI range: 1 pound per week
 - Normal BMI range: .5 pounds per week
 - Overweight or obese BMI range: .5 pound every two weeks

SIGNS OF INADEQUATE WEIGHT GAIN

- Weight might be lost in first trimester
 - Nausea & vomiting
 - Appetite changes, food aversions
- Inadequate weight gain with
 - Fundal height less than dates (gestational age \pm 2 cm)
 - Fetus seems small on abdominal palpation after 20 weeks
 - Ultrasound evidence of fetal growth restriction

ADVANTAGES IN WEIGHT MANAGEMENT=HEALTHY PRENATAL EATING

Prepares own meals (instead of restaurant or fast foods)

Family eats meals together at least 4 times a week

Eats 5 servings of fruits or vegetables per day

Has followed a high fiber, low glycemic, low fat, high fruit and vegetable or My Plate diet

Avoids sodas or sugar sweetened drinks

Uses portion controlled, pre-packaged fresh or frozen meals

Keeps TV, computer and phones off while eating

Has counted calories or reduced portions to manage intake

Used a phone or computer app to track eating

Weighs self regularly at home or on a public scale

Sleeps 6-7 hours a night

Does some kind of physical activity for 30 minutes at least 5 days a week

Almost everyone has tried one or more at one time or another

Research demonstrates that these are used successfully by those who management weight

All are safe during pregnancy and breastfeeding

Ask which of these advantages women have used in the past. Encourage their use during pregnancy.

See Jevitt, C. (2016). Best practices in weight management counseling with pregnant women. In Anderson, B., Rooks, J., and Barroso, R. (Eds.), Best practices in midwifery: Using the evidence to implement change (2nd Ed.). NY, NY: Springer Publishing Company.

Aerobic Exercise in Pregnancy

Improves submaximal exercise capacity in overweight women (*Santos et al 2005*)

Reduces risk of preeclampsia & gestational diabetes (*Williams 2003, Schwartz et al. 2003*)

Regular physical activity lowers risk for cesarean birth

Aerobic Exercise in Pregnancy

Relative contraindications

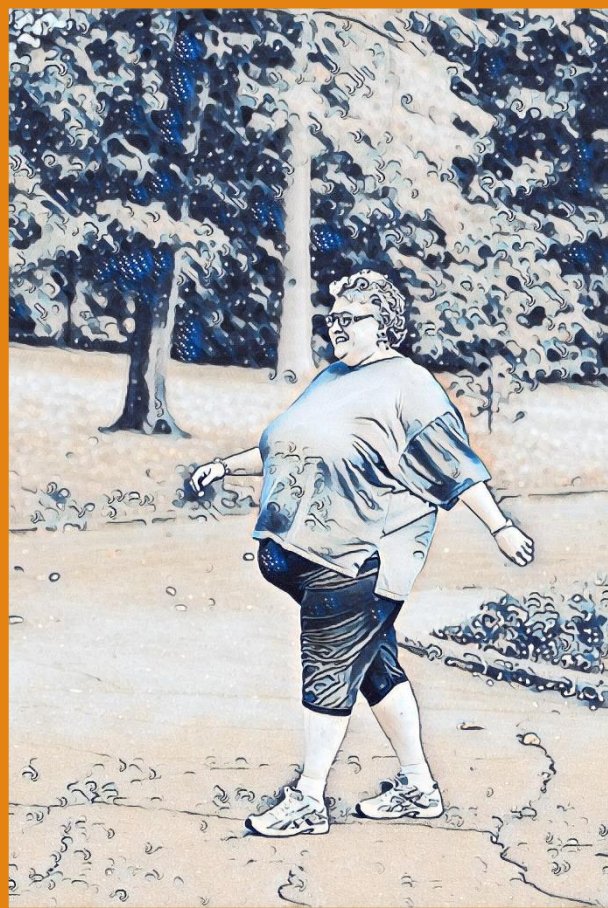
- Obesity class III
- History of extremely sedentary lifestyle
- Pre-existing joint damage, heart disease, pulmonary disease

Avoid:

- Trauma to mother or fetus (soccer, basketball)
- Risk of falling (horseback riding, skiing)
- Scuba diving

TIP: Call it activity not exercise

TAKE THE BABY FOR A WALK: 30 minutes a day, 5 days a week
can be 2-15 minute intervals or 3-10 minute intervals
can be done by pacing inside



SLEEP IS ACTIVITY

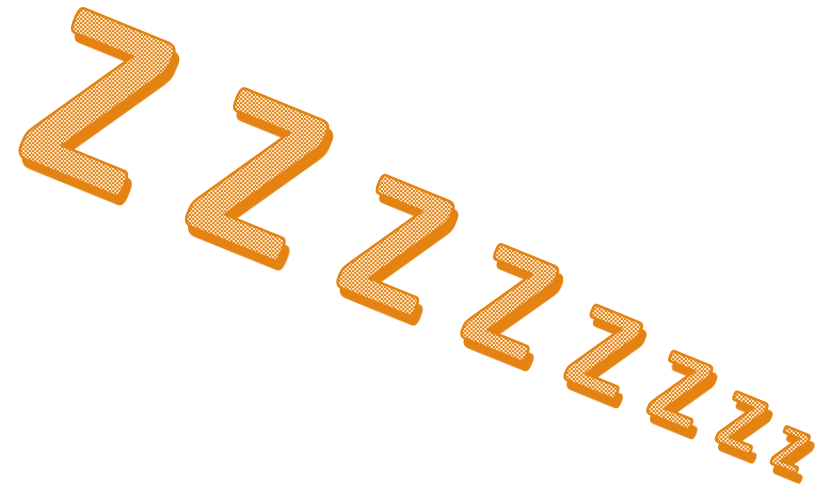
6-7 hours a night needed

Sleep deprivation causes insulin resistance

Night shift workers at for risk-disturbed hormonal circadian patterns

Appetite is stimulated to give brain a glucose boost when tired

Counsel women on adequate sleep



Inadequate weight gain

- Associate with low birth weight
- Further assessment needed
 - Double check fundal assessment and measurement
 - Is eating sufficient?
 - Signs of eating disorder?
 - Is grief or trauma reducing appetite? Severe emotional trauma?
 - Consider ultrasound to measure fetal growth
- To increase weight gain
 - See Montreal Diet Dispensary: <https://www.dispensaire.ca/en/about-us/mission/>
 - Consider vitamin and mineral supplements needed
 - Add in 300 calories per day: milk, eggs, nut butter, cheese, nuts, pasta, rice, potatoes
 - May need to decrease activity if excessive



Excessive Weight Gain

- Weight gain that exceeds Institute of Medicine 2009 guidelines
- Excessive gestational weight gain imposes the same risks on pregnancy and birth as prepregnancy obesity. Risks increase for:
 - Gestational diabetes
 - Hypertensive disorders of pregnancy
 - Large for gestational age newborn
 - Prolonged pregnancy
 - Induction of labor
 - Prolonged labor
 - Cesarean birth
- See video on management of obesity during pregnancy for methods of assisting women with excessive gestational weight gain



Optimal weight gain sustains health for both mother
and newborn.

*Maternity providers have an important role in providing women health information about
weight gain in pregnancy.*