



DIET, VITAMINS, AND WEIGHT GAIN PREGNANCY

FLAME LECTURE: 46

LOVELL/BURNS 11.28.15

Learning Objectives



- ▶ Counsel patients regarding diet and nutrition
- ▶ Describe the nutritional needs of pregnant women
- ▶ Prerequisites:
 - ▶ None
- ▶ See also:
 - ▶ **FLAME LECTURE 19**: Exercise Counseling in Women's Health

Body Mass Index

To Calculate:

- ▶ Weight in kilograms / (Height in meters)²
- ▶ http://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm

BMI	CLASSIFICATION
< 18.5	Underweight
18.5 – 24.9	Normal Weight
25.0 – 29.9	Overweight
> 30.0	Obesity
30.0 – 34.9	Obesity Class I
35.0 – 39.9	Obesity Class II
≥ 40.0	Obesity Class III - Surgical classification: severe
40.0 – 44.9	- Surgical classification: morbid obese
≥ 45	- Surgical classification: super obese

Fitness

- ▶ Goals include:
 - ▶ Maintaining an appropriate weight
 - ▶ Consuming a healthy diet
 - ▶ Participating in regular physical activities
- ▶ Fitness goals for pregnancy:
 - ▶ Underweight prior to pregnancy: gain ~28-40lbs
 - ▶ Normal starting weight: gain ~25-35lbs
 - ▶ Overweight women: gain ~15-25lbs
 - ▶ Obese women: gain ~11-20lbs
- ▶ Exercise should be maintained during pregnancy but limited to non-contact, low risk sports:
 - ▶ Aerobic exercise good (swimming, walking, running, non-hot yoga)
 - ▶ Unsafe activities: contact sports, high fall risk (ex. skiing, snowboarding), scuba diving, hot yoga

Contraindications to exercise during pregnancy:

- Amniotic fluid leak
- Cervical incompetence
- Placenta abruption/previa
- Premature labor
- Preeclampsia/gHTN
- Severe heart/lung disease
- Multiple gestation



Nutrition

Estimated Daily Caloric Needs for NON-PREGNANT Women by Level of Physical Activity

Age	Sedentary Activity	Moderate Activity	Active
14-18	1800	2000	2400*
19-30	1800-2000	2000-2200	2400*
31-50	1800	2000	2200*
51+	1600	1800	2000-2200

*Add +300 calories/
day during 2nd/3rd
trimesters of
pregnancy

Dietary Recommendations in Non-pregnant vs. Pregnant Women

	Non-pregnant	Pregnant
Protein	0.8 g/kg/day	1.1 g/kg/day
Carbohydrates	130 g/day	175 g/day
Iron	18 mg/day	27 mg/day
Calcium	1000-1300mg/day	1000-1300 mg/day
Vitamin D	600 IU/day	600 IU/day
Folate	0.4-0.8mg/day	0.4-0.8mg/day

How much is too much?

- **Vitamin A**: >5000 IU is teratogenic. Animal liver is high in vitamin A
- **Iodine**: excessive iodine can lead to fetal goiter. Seaweed is high in iodine
- **Vitamin D**: >4000 IU daily may be unsafe

Dietary Fiber



- ▶ The non-digestible form of carbohydrates and lignin
- ▶ Naturally occurs in plants
- ▶ Important in promoting bowel regularity
- ▶ Foods that contain fiber are digested slowly
 - ▶ Help provide greater feeling of fullness
 - ▶ Help maintain a healthy weight
 - ▶ Control blood glucose levels
- ▶ The IOM recommends 14g of fiber per 1,000 calories consumed
- ▶ Sources of fiber:
 - ▶ Navy beans, split peas, lentils, pinto beans, and black beans
 - ▶ Additional sources of dietary fiber: vegetables, fruits, whole grains, and nuts

Folic Acid

- ▶ DAILY intake of 0.4 mg/d of folic acid recommended for ALL women capable of becoming pregnant
 - ▶ Preconception ingestion of folic acid reduces the risk of neural tube defects
 - ▶ Daily supplementation with a multivitamin is recommended for all women capable of becoming pregnant:
 - ▶ Most are unable to attain this level of folic acid through dietary sources alone
 - ▶ Approximately 50% of pregnancies are unplanned
 - ▶ Folic acid most effective for neural protection if taken *before* pregnancy because by first prenatal visit, patient often already deficient
- ▶ Higher intake of 4 mg/d recommended for women:
 - ▶ Who take anticonvulsant medication
 - ▶ Have a history of neural tube defects
 - ▶ Have already given birth to a child affected by a neural tube defect

Review of Important Nutrients

For Women Capable of Becoming Pregnant

IRON

- **18 mg/d** for women
- Best source: Iron from animal meat
- Absorption of non-heme iron (ie, from plant sources) can be enhanced by combining intake with vitamin C-rich foods

FOLATE

- Consume **0.4 mg of folate per day**
- From synthetic folic acid (from fortified foods, supplements, or both)
- Folate rich foods: lentils, spinach, asparagus, other dark leafy greens

For Women Pregnant or Breastfeeding

SEAFOOD (IODINE, DHA)

- Consume **8–12 oz of seafood per week** from a variety of seafood types
- Due to methyl mercury content:
 - Limit white (albacore) tuna to 6 oz per week
 - Do not eat tilefish, shark, swordfish, and king mackerel

IRON

- If pregnant, take an iron supplement
- Continue to eat animal meat PRN

Foods to DECREASE

Non-pregnant Woman

- ▶ Sodium:
 - ▶ Less than 2,300 mg, if:
 - ▶ <50, no risk factors
 - ▶ Less than 1,500 mg, if:
 - ▶ 51 years and older
 - ▶ ANY age who are:
 - ▶ African American
 - ▶ Hypertension
 - ▶ Diabetes
 - ▶ Chronic kidney disease
- ▶ Saturated Fat: < 10% of calories should come from saturated fats
 - ▶ Replace with monounsaturated and polyunsaturated fatty acids
- ▶ Cholesterol: < 300mg per day

Pregnant Woman

- ▶ Processed/deli meats, soft cheeses, paté (can cause Listeria infection)
- ▶ Seafood:
 - ▶ To avoid mercury toxicity:
 - ▶ Avoid eating any shark, swordfish, king mackerel, or tilefish
 - ▶ Eat only 12oz of fish/week and eat a variety (<6 oz of albacore tuna/wk)
 - ▶ To avoid infection: freezing fish eliminates infection from raw fish ("sushi-grade" fish ok)
- ▶ Limit caffeine < 200-300 mg/day

Foods to keep to a MINIMUM

Non-pregnant Woman

- ▶ Trans-fatty acid consumption – as low as possible
 - ▶ Limit foods with synthetic sources of trans-fats and other solid fats
- ▶ Reduce intake of calories from solid fats and added sugars
- ▶ Limit the consumption of refined grains
 - ▶ Especially refined grain foods that contain solid fats, added sugars, and sodium
- ▶ Alcohol: if consumed, in moderation
 - ▶ Up to one drink per day for women
 - ▶ Only by adults of legal drinking age

Pregnant Woman

- ▶ Raw meat/eggs
- ▶ Unpasteurized dairy products, fruit/vegetable juices
- ▶ Raw sprouts (alfalfa, radishes, mung bean)
- ▶ Alcohol
 - ▶ Previously believed that a half glass in the 3rd trimester was safe but most recent recommendations from American Academy of Pediatrics say to avoid all alcohol during pregnancy

Special Diets – in Pregnancy

Vegetarian/Vegan

- ▶ Not harmful as long as still receiving adequate essential amino acids and not consuming excessive soy products (can lead to hypospadias in male babies)

Gluten Free

- ▶ Should be maintained if woman has celiac disease
- ▶ However gluten-free diet does not reduce risk of baby getting celiac disease
- ▶ Not eating certain foods (peanuts, milk, eggs) to avoid atopic disease in baby has not been found effective and is not recommended

Lactose Intolerance

- ▶ Some women may experience better tolerance of lactose during late pregnancy
- ▶ As long as they are still getting adequate supply of calcium via diet or supplement, lactose-free diet is safe during pregnancy

IMPORTANT LINKS & REFERENCES

- ▶ <http://www.acog.org/Resources-And-Publications/Guidelines-for-Womens-Health-Care>
- ▶ <http://health.gov/dietaryguidelines/dga2010/DietaryGuidelines2010.pdf>
- ▶ <http://www.acog.org/Patients/FAQs/Nutrition-During-Pregnancy>
- ▶ UpToDate.com