Diet and Weight Gain During Pregnancy

Or

How to Build a Healthy Baby

(without sacrificing your health)

in Just 280 Days

(More or Less)

Three premises

1st

Pregnancy is not a disease

2nd

Pregnancy (also)
is not an excuse
to either adopt
or continue
unhealthy habits

3rd

During your pregnancy
your baby consumes
a portion of
everything you consume

Food Safety

Alcohol- No Safe Amount

- A small amount does a little permanent damage to your baby

- A large amount does a lot

Foodborne Illnesses

Contaminated foods can cause

- Maternal disease
- Birth defects
- Premature labor
- Miscarriage
- Fetal death
- Permanent disabilities

Foodborne Infections of Concern

Toxoplasmosis

Brucellosis

Listeria Monocytogenes

Toxoplasmosis

- undercooked or cured meat
- soil-contaminated fruit or vegetables
- contaminated, unfiltered water

Brucellosis

- unpasteurized (raw) milk
- cheeses made from unpasteurized milk
- raw meat

Listeria monocytogenes

A common low-level contaminant of both processed and unprocessed foods

-both plant and animal origin

Hot cooked foods are not a vehicle of Listeria transmission

Listeria monocytogenes

Most commonly associated with

- processed/delicatessen meats
- hot dogs
- soft cheeses,
- smoked seafood
- meat spreads
- paté

FDA Guide

http://www.fda.gov/food/resourcesforyou/healthed

.

So

- Practice good personal hygiene

  -**frequent hand washing**

- Consume only meats, fish, and poultry, eggs that are **fully cooked**
- **Avoid unpasteurized** dairy products and

  fruit/vegetable juices
- **Thoroughly rinse** fresh fruits and vegetables under running water before eating
- **Avoid eating raw sprouts**

Avoid handling raw meat

Wash hands, food preparation surfaces, cutting boards, dishes, and utensils that come in contact with raw meat, poultry, or fish with hot, soapy water.

Countertops can be sanitized

- wipe with a solution of one teaspoon liquid chlorine bleach per quart of water
- leave to dry over 10 minutes

Weight Gain During Pregnancy

For women eating healthy diets and with healthy weights before pregnancy, more energy intake is needed during pregnancy

- 2nd trimester- 340 kcal/day more
- 3rd trimester- 452 kcal/day more

However

Recommended weight gain during pregnancy depends on your BMI before pregnancy?

BMI= weight/height/height

Metric BMI= Kilograms/meters/meters

English BMI= 703X(pounds/inches/inches)

http://www.bmicharts.org

Recommended Weight Gain During Pregnancy

(**assumes** 1 - 4 lb gain in 1st TM)

Prepregnancy BMI (kg/m2)		Total Weight Gain	2nd/3rd TM Gain Rate
Underweight	(< 18.5)	28-40 lb	1-1.3 lb/week
Normal	(18.4-24.9)	25-35	0.8-1
Overweight	(25-29.9)	15-25	0.5-0.7
Obese	(≥ 30.0)	11-20	0.4-0.6

Normal Pregnancy Weight Gain

Fetus	7-8 lbs
Fat stores	**6-8 lbs**
Increased blood volume	3-4 lbs
Increased fluid volume	2-3 lbs
Amniotic fluid	2 lbs
Breast enlargement	1-3 lbs
Uterine growth	2 lbs
Placenta	1.5 lbs

50% of American women gain either too much or too little weight during pregnancy

Risks of Inadequate Weight Gain

- Preterm birth
- Small birth weight

  -strong association with infant death
- Increased risk to child for

  - diabetes

  - high blood pressure

  - heart disease

Risks of Excessive Weight Gain

- C-section
- Large birth weight = risk of birth injury
- Increased risk to child of
  - diabetes
  - high blood pressure
  - heart disease
- Permanent obesity (mother and child)

Two important metabolic factors deserve discussion

- Insulin
- Simple vs complex carbohydrates

Insulin

- A chemical messenger secreted by your pancreas in response to a rise in the level of glucose (sugar) in your bloodstream

- The higher your blood glucose level, the greater the amount of insulin secreted

Insulin

- One important function of insulin is to move the glucose from your bloodstream into the cells of your body

- Primarily, glucose is moved into cells as fuel to run the cell's machinery

Insulin

- Most active cells in your body have very small storage tanks for glucose- this means that your body's cells are designed to run best on a near continuous supply of glucose being "piped into" them from your bloodstream
- By design, these cells are well supplied by "normal" blood glucose levels (60 – 120)

Insulin

- Levels of blood glucose higher than needed to supply fuel to your body's cells are moved rapidly from your bloodstream into storage
  - if they were not, you would be diabetic
- If rapid use storage areas (liver, muscles) are full which, in most current lifestyles they are, the glucose is converted to and stored as fat

This is why simple carbohydrates have a completely different impact on you and your baby's health than do complex carbohydrates

Simple vs Complex Carbohydrates

All carbohydrates are basically sugar molecules existing in foods as either

- Discrete molecules of sugar

  -examples: fruit, sugar beets

  and/or

- Starches- sugar molecules strung together

  -examples: potatoes, corn, beans, grains

Simple Carbohydrates

Foods classified as simple carbohydrates are typically man-made (refined, processed) foods

- That is, whole foods that have been stripped of their fiber, fats and nutrients leaving behind only the carbohydrate (sugar, starch)

Common Simple Carbohydrates

- Refined sugar (both white and brown)

  -sodas, fruit juice, sports drinks, sweet tea,

  candy, cake, ice cream, cookies, cake, etc
- White flour

  -bread (includes “whole grain” bread), pasta,

  biscuits, pancakes, waffles, donuts, etc
- White rice
- Refined corn meal

Simple Carbohydrates

Simple carbohydrates are rapidly absorbed from your digestive tract into your blood stream causing a large, rapid rise in blood glucose

- Rapid blood glucose rise = High glycemic index
  -

- **Simple Carbohydrate = High glycemic index**

Simple Carbohydrates

When you eat any processed food containing a simple carbohydrate, try visualizing the glucose in the food moving from your mouth to your gut then into your bloodstream like a mob of English soccer fans bursting through a fence

Simple Carb Entering Bloodstream

Simple Carbohydrates

Since the cells in your body can only burn a set amount of glucose at any one time, the majority of the glucose surging into your bloodstream, after you eat a simple carbohydrate, is rapidly converted into and stored as fat

-much like the soccer fans being rounded up and taken to jail

Foods to Make You (and your baby) Fat

- Foods with simple carbs (high glycemic index)
- Cookies
- Cakes
- White bread
- White pasta
- Sugar cereals
- **Fruit juice**
- Alcohol
- Chocolate
- Ice cream
- Donuts
- Soft drinks
- **Gatorade**
- Energy drinks
- Energy bars

12 oz coke = 140 kcal

or

1 cup orange juice = 112 kcal

or

1 cup white rice = 135 kcal

or

2 pieces white bread = 140 kcal

or

1 cup white pasta = 170 kcal

3500 kcal = 1 pound of fat

Complex Carbohydrates

In contrast to simple carbohydrates, think of the glucose contained within the complex structure of unprocessed, unrefined, whole foods as requiring prolonged processing by your digestive tract before it can be freed to enter your bloodstream

-like fans buying tickets then entering a turnstile

Glucose from complex carb entering your bloodstream

Complex Carbohydrates

This means that, instead of causing a rapid and large increase in your blood sugar, the glucose from a complex carbohydrate enters your bloodstream much more in sync with the rate that it is leaving your bloodstream and being burned as energy by your cells.

So,

Complex Carbohydrates

Complex Carb = Decreased Glycemic Index

The more complex the carbohydrate

- The lower the glycemic index
- The less your blood glucose rises
- The more of the carb that is burned as energy
- The less of the carb that is converted to fat

Whole Foods = Complex Carbs

- Moderate Glycemic Index
- Fruits
- White potatoes
- Sweet potatoes
- Carrots
- Beets
- Winter squash

- Low Glycemic Index
- Whole brown rice
- Quinoa
- Millet
- Nuts
- Other whole grains
- Milk

Complex Carbohydrates

Complex carbohydrates are what the machinery of our bodies was designed to run on

This design was an adaptation to the lifestyle and food supply available to humans living as hunter-gatherers tens of thousands years ago

-when simple carbs were extremely rare

Humans, for the most part, abandoned the hunter gatherer lifestyle around ten thousand years ago when they began domesticating animals and raising crops (mostly grains)

-before this, grains (starches) were only a small, seasonal part of the human diet

Human metabolism is still trying to adapt to this relatively new lifestyle and diet

-northern European, Asian and middle eastern races have partially adapted over the past ten thousand years and, therefore, have fewer, but continued, problems with it

Other races (Africans, Aborigines, Indigenous Americans) have had only a few hundred years to adapt, genetically, to this new lifestyle and do not, yet, do so well with it

- One reason why rates of obesity, diabetes, hypertension and heart disease are so much more prevalent in these groups

However, none of us have had more than one to two hundred years to adapt to refined foods containing simple carbohydrates

-unfortunately, these foods are now the most prevalent foods in our diets

-this is why we are facing an epidemic of obesity and diabetes and early heart disease

1st Bottom Line

No matter how much you exercise and no matter how much you restrict your caloric intake, eating foods with simple carbs (most refined and processed foods) is guaranteed to make both you and your baby fat

2nd Bottom Line

Remember, complex carbs are still energy so even complex carbohydrates, if eaten in excess of the energy needed to run your body, will be converted to fat and increase your weight more than is necessary for a healthy pregnancy

-must still be careful about portions and seconds and excessive snacking between meals

Be Aware

Simple carbs move from your digestive tract to your blood and into fat storage rapidly

-this means your blood glucose level rises and falls rapidly

-this means that you become hungry much more quickly after eating a simple carb than you do after eating a complex carb

So

That bowl of ice cream you eat at bedtime will often lead to another snack at 2 AM

So,

A smarter choice for a bedtime snack would be an apple and a glass of milk (not chocolate)

Now

Another truth

Pregnancy is a Family Project

If you buy it for them

you will eat it

as well

and

What you feed your fetus will usually be what you will later feed your child

That is

Your child’s eating habits begin with

your diet during that child’s pregnancy

So

Healthy eating (for the whole family)

begins with what you put

in the grocery cart

If you don’t buy junk at the store,

you (and your family) will not

eat junk at home

Moving on

Lets talk about Caffeine

Safe Level of Daily Intake

200 mg

Coffees	Service size (oz)	Caffeine (mg)
Coffee, brewed	8	**133** (range: 102 to 200)
Coffee, generic instant	8	93 (range: 27 to 173)
Coffee, generic decaffeinated	8	5 (range: 3 to 12)
Espresso	1	**40** (range: 30 to 90)
Espresso decaffeinated	1	4

Teas	Service size (oz)	Caffeine (mg)
Tea, brewed	8	**53** (range: 40 to 120)
Starbucks Tazo Chai Tea Latte (Grande)	16	100
Snapple, Lemon, Peach, or Raspberry	16	42
Arizona Iced Tea, black	16	32
Nestea	12	26
Snapple, Just Plain Unsweetened	16	18
Arizona Iced Tea, green	16	15
Snapple, Kiwi Teawi	16	10

Soft drinks	**Service size (oz)**	**Caffeine (mg)**
FDA official limit for cola and pepper soft drinks	12	71
Jolt Cola	12	72
Mountain Dew MDX, regular or diet	12	71 (20 oz = 118)
Mountain Dew, regular or diet	12	**54** (20 oz = 90)
Pepsi, regular or diet	12	36 to 38
Mellow Yellow	12	53
Coke, regular or diet	12	**35 to 47**
TAB	12	46.5
Dr. Pepper, regular or diet	12	42 to 44
Barq's Diet Root Beer	12	0
Barq's Root Beer	12	22

Soft drinks	Service size (oz)	Caffeine (mg)
Fanta, all flavors	12	0
Fresca, all flavors	12	0
Mug Root Beer, regular or diet	12	0
Sierra Mist, regular or free	12	0
Sprite, regular or diet	12	0

Energy drinks	Service size (oz)	Caffeine (mg)
Spike Shooter	8.4	300
Cocaine	8.4	288
Monster Energy	16	160
Full Throttle	16	144
Rip It, all varieties	8	100
Enviga	12	100
Tab Energy	10.5	95
SoBe No Fear	8	83
Red Bull	8.3	80
Red Bull Sugarfree	8.3	80
Rockstar Energy Drink	8	80
SoBe Adrenaline Rush	8.3	79
Amp	8.4	74
Glaceau Vitamin Water Energy Citrus	20	50
SoBe Essential Energy, Berry or Orange	8	48

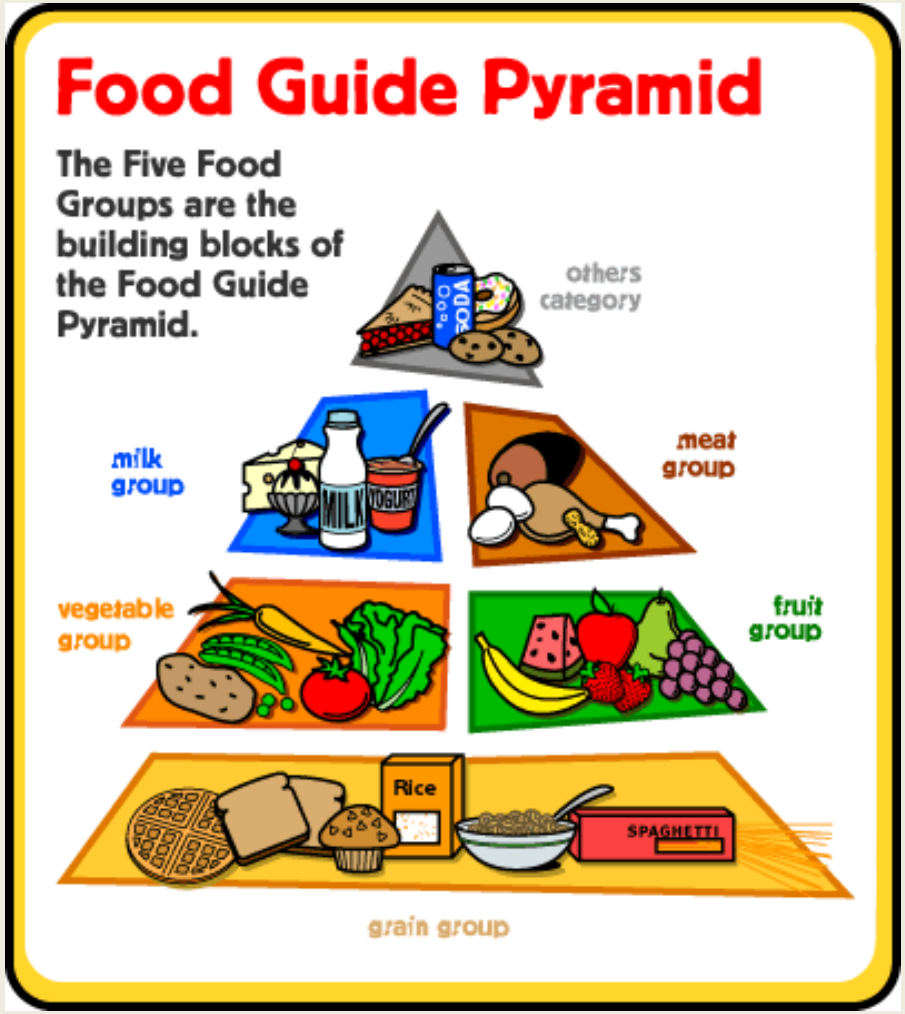
Frozen desserts	Service size (oz)	Caffeine (mg)
Ben & Jerry's Coffee Ice Cream	8	**68 to 84**
Haagen-Dazs Coffee Ice Cream or Yogurt	8	58
Starbucks Coffee Ice Cream	8	50 to 60

Chocolates/candies /other	Service size	Caffeine (mg)
Hershey's Special Dark Chocolate Bar	**1.45 oz**	**31**
Hershey's Chocolate Bar	1.55 oz	9
Hershey's Kisses	41 g (9 pieces)	9
Hot Cocoa	8 oz	3 to 13

So, what makes for a healthy diet?

That is, besides the energy needed to run your body's machinery, what is needed in your diet to build a healthy baby?

What does <u>not</u> (so much)



USDA Food Pyramid

Good for corporations making processed foods

Not so good for you and your baby's health

Reinforces the "Modern Western Diet"

-the primary reason so many are in such poor health

The Modern Western Diet

- Highly refined foods = stripped of nutrients
- Lots of sugar
- Lots of grains & legumes

  -wheat, corn, soy = base of processed foods
- Grain raised meat, dairy & eggs

What we know

Traditional cultures eating traditional diets have far fewer health problems than we do

Documented by early 20th century explorers such as Weston Price

-found few to none with our health problems despite wide variances in diet between groups

What They All Had in Common

- Large amounts and large variety of fruits and vegetables and nuts and seeds
- Varying, although many with large, amounts of lean, wild meats

  -vegetarians were the least healthy
- Small, seasonal use of whole (unrefined) grains and legumes
- No sugar, no white flour, no white rice

The simple way to duplicate what certainly appears to be healthier diets is to duplicate the diets of those living more than ten thousand years ago as hunter-gatherers

-a time when humans diets and lifestyles were those diets and lifestyles that had evolved over tens and hundreds of thousands of years to match the environment and available foods

Some have labeled this approach to healthy living as **“The Paleo Diet”**

-whatever you want to call it, the concept makes sense, is simple and is validated by observing the health of indigenous peoples, the rapid decline of their health when exposed to our diets and their return to health when returning to their traditional diets

Simple Rules for Healthy Diet

Rule # 1

If people 10,000 years ago did not eat it, maybe you should avoid or at least limit your intake

-use this thought as a filter before putting any processed food (food in bags, boxes or plastic) into your shopping cart

10,000 years ago

-shift from hunter-gatherer to farming

-increased calories from grains & legumes

-decreased variety and decreased quantity of vegetables, fruit, nuts and seeds

-domesticated (more grain fed) animal meat

100 to 200 years ago

- decreased cost of and massive increase in consumption of refined sugar & white flour
  -parallels rapid rise in heart disease
- increasing consumption of refined grains along with decreased variety of foods
  -parallels rise in nutritional diseases such as pellagra, scurvy and beriberi

Rule # 2

Avoid processed, refined and junk foods

-**sweet or white processed foods**

= poison = AVOID!!!!

Rule # 3

Eat a large variety of whole foods

-the more **local** and the more fresh and the more **variety** the more better

Rule # 4a & 4b

You cannot eat too many green & colorful vegetables

Eat fruit (not juice), nuts and seeds for deserts and snacks

Rule # 5

Eat some meat each day

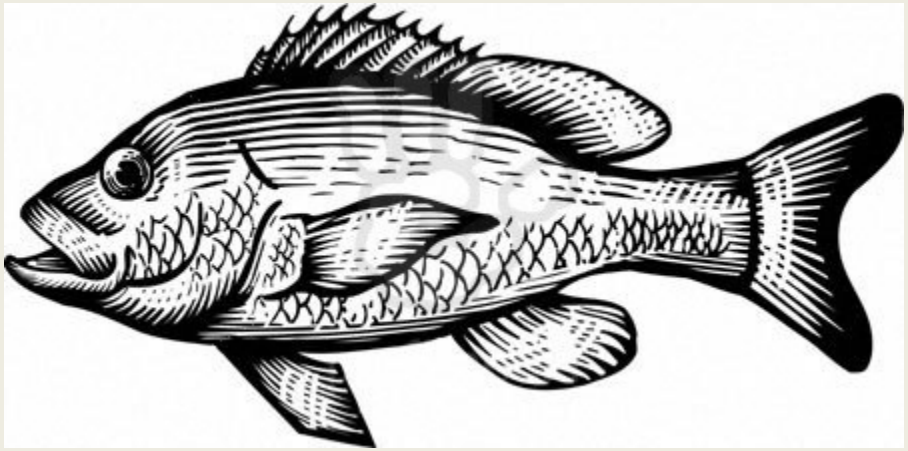
- increase by 20% when pregnant
- wild or grass fed preferred over standard grain fed meat

Rules # 6 & 7

Don’t make grains and legumes your base

Limit your fluids to water and milk

What about fish?



Two Issues

Essential Fatty Acids

Toxins

Essential Fatty Acids

- Your body cannot make them
- Critical components of
  - -cell structure
  - -communication within your body
- Two groups
  - -omega-3 fatty acids
  - -omega-6 fatty acids

Our bodies were designed, by adaptation, to run best with dietary intakes of equal amounts of omega-3 and omega-6

omega-3/omega-6 = 1/1

With our “Modern Western Diet”

Omega-6 to Omega-3

7 to 1

(That is- we consume far too much omega-6 and far too little omega-3)

Result of

- high grain/low green vegetable/low nuts diet
- eggs, milk, chicken and beef raised on grain
- decreased fish intake

Diseases Linked to Increased Ratio

- Learning disabilities, ADHD, aggression
- Heart Attack & stroke
- Mortality from all causes
- Cancer
- Asthma
- Allergies
- Inflammatory diseases

Trials of Maternal Fish Consumption

- Most offspring(but not all) showed

  -improved mental function

  -less ADHD

  -improved coordination

- Benefits were modest
- Benefits persisted as children aged

Fish and Omega-3

- Begins with algae and the small fish that feed on algae

- Omega-3 is concentrated as fish move up the food chain

Unfortunately, so are toxins

Toxins in Fish

Large fish have more toxins per serving than do small fish

- -Methyl-mercury
- -Pesticides
- -Carcinogens

Farm Raised Salmon

- Much less expensive than wild salmon
- More omega-3 (diets of fish supplemented)
- However, also more omega-6 (grain fed)
- More heavy metals, pesticides, carcinogens

Toxins vary with location of farm

- Eat no more than 3X/year

  -Scotland, Norway, Eastern Canada

- 3-6X/year

  -Maine, Western Canada, Washington State

- No more than 6X/year

  -Chile

Wild Salmon- Safe Level of Consumption

- Wild Chum Salmon- 1X/week
- Pink, Sockeye, Coho- 2x/month
- Chinook- 1X/month

Fish to Avoid

- Shark
- King mackerel
- Swordfish
- Tilefish

Bigger Fish = More mercury/serving

Safer Fish Options

12 ounces (two servings)/week

-shrimp, canned light tuna, pollock, catfish

(note- some recent concern about canned tuna posted by the FDA)

or

6 ounces/week

-albacore tuna

Websites

www.fda.gov/Food/FoodSafety/Product-SpecificInfo

www.epa.gov/waterscience/fish/

Freshwater fish safety varies with location

1-888-SAFEFOOD

www.epa.gov/waterscience/fishadvice/advice.html

“If I limit fish, to limit exposure of my fetus to toxins, are there other sources of omega-3?”

Recommended intake of omega-3

7-11 grams/week

Trials of Prenatal DHA(omega-3) Supplements

- Mixed results in offspring
- Most (but not all) showed improved

  -hand-eye coordination

  -tests of mental function

  -behavior
- Benefits were modest
- Benefits tended to vanish as children aged

So, are there other food sources of Omega-3?

Yes- but you must incorporate more variety of whole foods into your diet.

Food	Serving size	Grams of Omega-3
Salmon (wild)	4 oz	1.7
Canned Tuna	4 oz	0.3
Scallops	4 oz	0.5
Walnuts	1 oz	2.6
Flax seeds	1 oz	1.8
Pecans	1 oz	0.3
Spinach	1/2 cup	0.1
Kale	1/2 cup	0.1
Collard greens	1/2 cup	0.1

Nuts and Seeds	Portion	Total n-3 FA (g)
Almonds, dry roasted	1 oz.	0
Walnuts	1 oz.	**2.6**
Flax seeds	1 oz.	**1.8**
Pecans, dry roasted	1 oz.	0.3
Pistachios, roasted	1 oz.	0.1
Poppy seeds	1 oz.	0.1
Pumpkin seeds, shelled	1 oz.	0.1
Sesame seeds	1 oz.	0.1

Fish	Portion	Total n-3 FA (g)
Salmon, cold water, fresh and frozen, cooked	4 oz.	**1.7**
Sardines, canned in oil, drained	4 oz.	1.8
Tuna, canned in water, drained	4 oz.	**0.3**
Tuna, canned in oil, drained	4 oz.	0.2
Cod, fresh and frozen, cooked	4 oz.	0.6
Mackerel, canned, drained	4 oz.	**2.2**
Swordfish, fresh and frozen, cooked	4 oz.	1.7
Crab, soft shell, cooked	4 oz	0.6
Lobster, cooked	4 oz.	0.1
Bluefish, fresh and frozen, cooked	4 oz.	1.7
Salmon, canned, drained	4 oz.	2.2
Smelt, rainbow	4 oz	0.5
Scallops, Maine, fresh and frozen, cooked	4 oz.	0.5

Oils	Portion	Total n-3 FA (g)
Walnut oil	1 Tbsp.	1.4
Soybean oil, unhydrogenated	1 Tbsp.	0.9
Flax seed oil	1 Tbsp.	**6.9**
Canola oil	1 Tbsp.	1.3
Cod liver oil	1 Tbsp.	**2.8**
Olive oil	1 Tbsp.	0.1
Sardine oil	1 Tbsp.	3.7

Grains and Beans	Portion	Total n-3 FA (g)
Soybeans, dried, cooked	½ cup	0.5
Tofu, regular	4 oz.	0.3

Greens	Portion	Total n-3 FA (g)
Spinach, fresh, cooked	½ cup	**0.1**
Green leaf lettuce, fresh, raw	1 cup	Trace
Red leaf lettuce, fresh, raw	1 cup	Trace
Boston or Bibb lettuce, fresh, raw	1 cup	Trace
Chard, cooked	½ cup	0
Turnip greens, cooked	½ cup	Trace
Dandelion greens, cooked	½ cup	0.1
Kale, cooked	½ cup	**0.1**
Beet greens, cooked	½ cup	Trace
Collard greens, cooked	½ cup	**0.1**
Mustard greens, fresh, cooked	½ cup	Trace

Got Balance?

Remember

The balance, or ratio, of omega-3 to omega-6 in your diet is more important than the amount of omega-3 consumed

Still, most diets have lots of omega-6 & very little omega-3

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Fish oil (avg)	1.5	0.9	9.9	12.8
Flaxseed oil	15	56		
Corn oil	57	0.8		
Soybean oil	53	7		
Walnut oil	62	4		
Egg yolks (conventional)	2.6	0.5		
Egg yolk-flax Seed in diet	4.2	2.1		
Butter-grain fed	**2.73**	**0.32**		
Butter-grass fed	**1.8**	**1.2**		

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Fish oil (avg)	**1.5**	**0.9**	**9.9**	**12.8**
Fish liver oil-cod	1.5	0.9	8	14.3
Shellfish oil-oyster	1.2	1.6	21.5	20.2
Cashew oil	16	0.4		
Peanut oil	29	1.1		
Pumpkin seed oil	51	0		
Sesame seed oil	42	0.5		
Sunflower oil	53	0		
Coconut oil	3	0		
Flaxseed oil	**15**	**56**		
Olive oil	**9**	**0.7**		

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Avocado oil	12.5	1		
Macadamia nut oil	1.5	1.5		
Corn oil	**57**	**0.8**		
Cottonseed oil	48	0.4		
Canola oil	22	11		
Soybean oil	**53**	**7**		
Walnut oil	**62**	**4**		
Wheat germ oil	54	7		

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Beef tallow (grain fed)	4	0.7		
Chicken fat	17	1.1		
Lard	10	1.4		
Mutton fat	5	2.9		
Cheddar cheese	0.5	0.4		
Cream cheese	0.8	0.5		
Gruyere cheese	0.8	0.5		
American cheese	0.6	0.3		

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Heavy cream (grain fed)	0.9	0.6		
Light cream (grain fed)	0.5	0.3		
Sour cream	0.4	0.3		
Whole milk	0.1	0.1		
Yogurt- whole	0.1	0.1		
Egg yolks (conventional)	2.6	0.5		
Egg yolk-flax Seed in diet	4.2	2.1		
Butter-conven	**2.73**	**0.32**		
Butter- grass fed	**1.8**	**1.2**		

grams of fatty acid/100 grams of food				
Food	LA(omega-6)	ALA(omega-3)	EPA(omega-3)	DHA(omega-3)
Elk	0.343	0.056		
Bison	0.156	0.026		
Beef- grass fed	**0.139**	**0.052**		
Beef- grain fed	**0.275**	**0.016**		
Venison	**0.13**	**0.06**		

The point is

If you eat a variety of whole foods, you don’t need to worry about taking omega-3 supplements

How to Improve Ratio With Diet

- Decrease grains and legumes in diet
- Increase intake of green vegetables & nuts
- Grass fed cows and free range chickens
- Add nonfarm fish to diet

Omega-3 Content of Foods

http://nutritiondata.self.com/foods-000140000000

Lets talk about Iron & anemia

Definition of anemia changes with pregnancy

-hgb < 11.0 in 1st and 3rd trimesters

-hgb< 10.4 in second trimester

Your body makes more red blood cells when you are pregnant in addition to the red blood cells that are made by the fetus

-dietary iron is needed for both

For Iron Deficiency Anemia

- Need 150-250 mg/day of elemental iron
- Side effects are function of Iron dose only
- Preparations (mg elemental iron/tablet)

  -Ferrous fumarate- 106 mg

  -Ferrous sulfate- 65 mg

  -Ferrous gluconate- 28-36 mg

  -Ferrous sulfate elixir- 44 mg/teaspoon

Iron Tablets

- **Enteric coated** tablets are **not well absorbed**
- Do not take with meals
- Vitamin C (oranges) improves absorption
- Do not take within two hours of antacids

For non-anemic women 15 mg/day of elemental iron is needed

-met by taking prenatal vitamins

Or

You can eat foods that are high in iron

Heme Iron

- The iron found in meat
- Best absorbed form of iron
- Liver has highest content
- Calcium, with meals, reduces absorption

Food	Serving Size	Iron Content (mg)
Beef liver	3 oz	5.8
Lean sirloin	3 oz	2.9
Lean ground beef	3 oz	1.9
Chicken breast- dark	3 oz	1.1
Chicken breast- white	3 oz	0.9
Lean pork	3 oz	0.9
Salmon-canned with bone	3 oz	0.7

Food	Serving Size	Iron Content (mg)
Pumpkin seeds	1 oz	4.2
Blackstrap molasses	1 tbsp	3.5
Soybean nuts	½ cup	3.5
Bran	½ cup	3.0
Spinach, boiled	½ cup	3.2
Red kidney beans	½ cup	2.6
Prune juice	½ cup	2.3
Lima beans	½ cup	2.2
Tofu	½ cup	2.0

Let’s talk about Calcium

Calcium- added to fetal skeleton in 3rd Trimester

- Mother provides 25-30 gm of calcium to fetus
- “pumped” across placenta- mother to fetus

During pregnancy,

Maternal bone density declines by only 2%

Calcium Dietary Recommendations

National Academy of Sciences 2010

- Girls 9 – 18 : 1300 mg/day

- Women 19 – 51: 1000 mg/day

No change for pregnancy and lactation

However, these guidelines are met by only

- 13% of girls 9 – 18 years old
- 20% of women 19 – 50 years old

Food	Amount	Calcium (mg)
Milk	1 cup	300
Yogurt	1 cup	450
Swiss cheese	1 oz	270
Broccoli, cooked	1 cup	180
Spinach, cooked	1 cup	240
Dried figs	1 cup	300
Almonds	1 oz	80
Sesame seeds	1 oz	130
Sardines	3 oz	370

Dairy and Soy	Amount	Calcium (mg)
Milk (skim, low fat, whole)	**1 cup**	**300**
Buttermilk	1 cup	300
Cottage Cheese	.5 cup	65
Ice Cream or Ice Milk	.5 cup	100
Sour Cream, cultured	1 cup	250
Soy Milk, calcium fortified	1 cup	200 to 400
Yogurt	**1 cup**	**450**
Yogurt drink	12 oz	300
Carnation Instant Breakfast	1 packet	250
Hot Cocoa, calcium fortified	1 packet	320
Nonfat dry milk powder	5 Tbsp	300
Brie Cheese	1 oz	50
Hard Cheese (cheddar, jack)	**1 oz**	**200**
Mozzarella	1 oz	200
Parmesan Cheese	1 Tbsp	70
Swiss or Gruyere	1 oz	270

	1 cup	90
Acorn squash, cooked		
Arugula, raw	1 cup	125
Bok Choy, raw	1 cup	40
Broccoli, cooked	**1 cup**	**180**
Chard or Okra, cooked	1 cup	100
Chicory (curly endive), raw	1 cup	40
Collard greens	1 cup	50
Corn, brine packed	1 cup	10
Dandelion greens, raw	1 cup	80
Kale, raw	1 cup	55
Kelp or Kombe	1 cup	60
Mustard greens	1 cup	40
Spinach, cooked	**1 cup**	**240**
Turnip greens, raw	1 cup	80

Figs, dried, uncooked	**1 cup**	**300**
Kiwi, raw	1 cup	50
Orange juice, calcium fortified	8 oz	300
Orange juice, from concentrate	1 cup	20

Garbanzo Beans, cooked	1 cup	80
Legumes, general, cooked	.5 cup	15 to 50
Pinto Beans, cooked	1 cup	75
Soybeans, boiled	.5 cup	100
Temphe	.5 cup	75
Tofu, firm, calcium set	4 oz	250 to 750
Tofu, soft regular	4 oz	120 to 390
White Beans, cooked	.5 cup	70

Cereals (calcium fortified)	.5 to 1 cup	250 to 1000
Amaranth, cooked	.5 cup	135
Bread, calcium fortified	1 slice	150 to 200
Brown rice, long grain, raw	1 cup	50
Oatmeal, instant	1 package	100 to 150
Tortillas, corn	2	85

Almonds, toasted unblanched	1 oz	80
Sesame seeds, whole roasted	1 oz	280
Sesame tahini	1 oz (2 Tbsp)	130
Sunflower seeds, dried	1 oz	50

Mackerel, canned	3 oz	250
Salmon, canned, with bones	3 oz	170 to 210
Sardines	3 oz	370

Let’s talk about Vitamin D

Vitamin D is needed for absorption of dietary calcium from intestines into bloodstream

The placenta produces vitamin D

- increases mother's absorption of calcium from intestine

- significant increase during 2nd & 3rd TM's

Vitamin D

- Optimum blood level 30 – 50 ng/ml
- Recommended daily intake with normal blood level- 600 IU/day
- Necessary intake with deficiency- 4000 IU/day

We know that vitamin D is critical to good health since dark skinned Africans evolved white skin, to more efficiently make vitamin D from the less intense sunlight, as they both

- migrated onto the European continent &
- abandoned food sources of Vitamin D

  -wild meat, seafood

Vitamin D

Deficiency is common in women

- 42% of African Americans
- 4% of white Americans

Vitamin D

Deficiency caused by

- Obesity
- **Increased skin pigmentation**
- **Decreased sun exposure**
- Decreased intake

  -fortified milk

  -fish

Vitamin D

Possible impacts of deficiency on pregnancy

- Preeclampsia
- Gestational diabetes
- Small birth weight
- Decreased childhood bone density

Sources of Vitamin D

- Fish
- Supplemented foods (dairy)
- Mushrooms
- Eggs
- Beef
- **SUNLIGHT!!! (free)**

Grains may interfere with vitamin D absorption

Let’s talk about Folic Acid

Folic Acid Recommended Supplement

- 0.4 – 0.8 mg/day one month before and for first three months of pregnancy

- 0.6 mg/day for remainder of pregnancy

- 4 gm/day for those at risk of neural tube defect and cleft palate

Foods high in Folic Acid

Processed grains (fortified since 1995)

Fruits

Vegetables (especially green leafy)

http://www.folicacidnow.net/foodChart.html

Let’s talk about vitamin toxicities

Vitamin Toxicities

Vitamin A

- Deficiency common in undeveloped countries
- Supplementation over 10,000 IU/day is associated with birth defects
- **No toxicity from food sources**

Selenium- beware of supplements

Vitamin Toxicities

Iodine

- Excessive intake causes fetal goiter
- Limit supplementation to 150 mcg/day

Vitamins E & K- avoid supplements

Soooooooooo…

In Conclusion

Remember your roots

http://chetday.com/cordaininterview.htm

Whole Foods – Variety

Avoid processed, refined and junk foods

- **sweet or white = poison = DON’T EAT**

Try not to think like a nutritionist

Healthy diet is far more complicated than carbs, protein, fats + vitamin supplements

We really know little about the thousands of necessary chemicals in whole, unrefined foods

Eat a large variety of whole foods

-the more local and the more variety

the more better

Eat some meat each day

- increase by 20% when pregnant
- wild or grass fed preferred

Don’t make grains and legumes your base

Include a variety of nuts in your diet

Limit your fluids to water and milk

Pregnancy is a family project

Make an awesome baby
by being awesome yourself

Back to Acacia Ob/Gyn Website