



Macronutrients: Carbohydrate Clinical Applications

Dr. Ritamarie Loscalzo

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How Does Cooking Affect Carbohydrates?

The Top 20 Foods By Average Acrylamide Intake In US

- ✓ French fries (made in restaurants)
- ✓ French fries (oven baked)
- ✓ Potato chips
- ✓ Breakfast cereals
- ✓ Cookies
- ✓ Brewed coffee
- ✓ Toast
- ✓ Pies and cakes
- ✓ Chile con carne
- ✓ Corn snacks
- ✓ Popcorn
- ✓ Pretzels
- ✓ Pizza
- ✓ Crackers
- ✓ Soft bread
- ✓ Coffee*
- ✓ Burrito / tostada
- ✓ Peanut butter
- ✓ Breaded chicken
- ✓ Bagels
- ✓ Soup mix

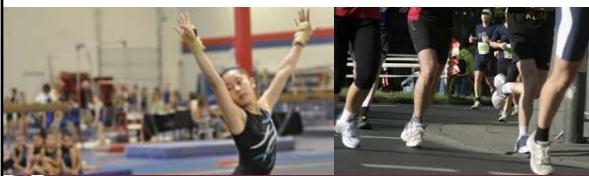


*<http://drbenkim.com/articles/acrylamide-food.htm>

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When Are Higher Carbs Needed?

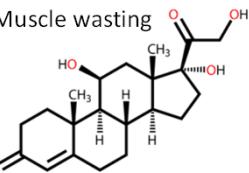
- ✓ Need to gain weight
- ✓ Competitive athletics
- ✓ High caloric need
- ✓ Growing children
- ✓ Pregnancy, unless insulin resistant



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Potential Impact of Too Low Carbohydrate Intake

- ✓ Increases cortisol
- ✓ Decreases testosterone
- ✓ Decreases T3
- ✓ Low Energy
- ✓ Muscle wasting  

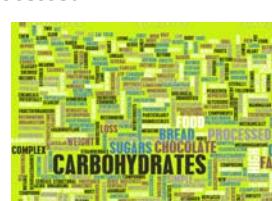


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Types of Carbs

- ✓ Grains – whole vs processed
- ✓ Legumes
- ✓ Fruits
- ✓ Vegetables
- ✓ Fiber –
soluble vs insoluble
- ✓ Sugar
- ✓ Sugar alcohols

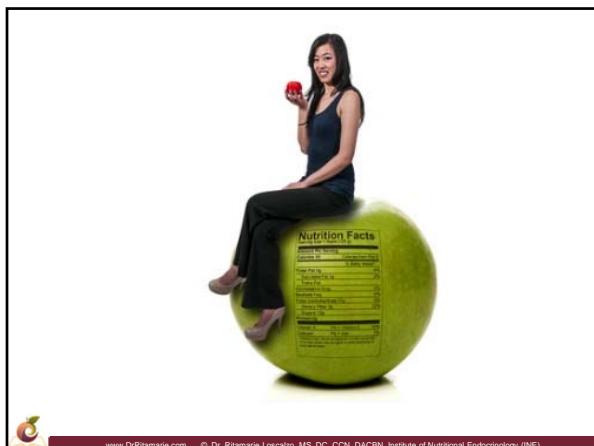


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Assessment of Carbohydrate Status and Tolerances

Nutrition Facts		
Serving Size: About (20g)		
Servings Per Container: 16		
	Amount Per Serving	% Daily Value*
Total Calories	60	
Calories From Fat	15	
Total Fat	2 g	3%
Saturated Fat	1 g	4%
Trans Fat	0 g	
Cholesterol	0 mg	0%
Sodium	45 mg	2%
Total Carbohydrates	15 g	5%
Dietary Fiber	4 g	17%
Sugars	4 g	
Sugar Alcohols (Polyols)	3 g	
Protein	2 g	
Vitamin A		0%
Vitamin C		0%
Calcium		2%
Iron		2%

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Carbohydrates in Foods

✓ See 3 PDF documents included on website

NDN_No	Description	Weight(g)	Measure	Carbohydrate, or sugars, total (g) difference(s) Per Measure	Per Measure	Sugars, total(g) Per Measure
11556	Potato, russet, baked and sliced	299.0	1.0 portion (large (7-1/2 oz)) 6.1" x 4" dia	66.11	6.9	9.2
11447	Sweet potato, canned, syrup pack, dried whole	194.0	1.0 cup	48.71	5.9	11.2
11550	White potato, baked, dehydrated, flakes without salt, dry form	96.0	1.0 cup	26.00	2.7	5.8
11210	Oats, oat	134.0	1.0 cup	44.00	3.9	1.3
11559	Lima beans, immature seeds, Brown, baby, steamed	164.0	1.0 cup	41.23	8.9	—
11176	Corn, coarse, yellow, canned, vacuum pack, regular pack	219.0	1.0 cup	40.82	4.2	7.4
11190	Corn, coarse (dried), immature seeds, Brown, cooked, boiled, drained, without salt	179.0	1.0 cup	40.39	18.9	7.3
11512	Lima beans, immature seeds, cooked, boiled, drained, without salt	176.0	1.0 cup	40.19	9.0	2.7
11191	Corn, coarse (dried), immature seeds, Brown, regular pack, whole kernel liquid	258.0	1.0 cup	31.48	4.4	7.5
11540	Lima beans, immature seeds, Brown, baby, cooked, boiled, drained, without salt	180.0	1.0 cup	31.01	10.8	2.4
11553	Potato, baked, dehydrated, prepared from potatoes with salt, whole and mashed, whole	298.0	1.0 cup	63.87	2.7	3.6
11197	Corn, coarse (dried), immature seeds, cooked, boiled, drained, without salt	167.0	1.0 cup	33.15	8.7	3.3
11554	Potato, russet, baked and sliced	232.0	1.0 cup	62.53	—	—
11179	Corn, coarse, yellow, Brown, baked or off-cob, boiled, drained, without salt	161.0	1.0 cup	31.84	4.0	5.0
11197	Lima beans, immature seeds, Brown, boiled, steamed	180.0	1.0 cup	31.73	8.8	2.2
11548	Brown, pearl, immature seeds, Brown, steamed	94.0	0.333 package (10 oz)	30.11	5.4	—
11181	Potato, baked, dehydrated, prepared from potatoes without salt, whole and mashed, whole	258.0	1.0 cup	30.18	4.8	—
11259	Mashed yams, brown, cooked, steamed, without salt	147.0	1.0 cup cubes	29.00	—	—
11450	Soybeans, green, raw	256.0	1.0 cup	38.39	10.8	—

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Daily Food Log Example

NAME	AMOUNT	UNIT	CALS	FAT(G)	CARBS(G)	PROT(G)	
Seeds, chia seeds, dried	1	oz	138	8.7	11.9	4.7	<input checked="" type="checkbox"/>
Nuts, coconut cream, raw (liquid expressed from grated meat)	1	oz	94	9.8	1.9	1.0	<input checked="" type="checkbox"/>
Broccoli, cooked	1	lb	225	9.8	31.5	10.4	<input checked="" type="checkbox"/>
Kale, raw	4	cup, chopped	131	2.5	23.4	11.5	<input checked="" type="checkbox"/>
Avocado, raw	1	cup, sliced	234	21.4	12.5	2.9	<input checked="" type="checkbox"/>
Lettuce, arugula, raw	4	cup	20	0.5	2.9	2.1	<input checked="" type="checkbox"/>
Cauliflower, cooked	2	cup	143	8.7	14.3	6.3	<input checked="" type="checkbox"/>
Cucumber, raw	1	cup, sliced	14	0.2	2.6	0.7	<input checked="" type="checkbox"/>
Cabbage, green, cooked	2	cup	120	5.9	16.5	3.8	<input checked="" type="checkbox"/>
Oil, flaxseed, contains added sliced flaxseed	1	tablespoon	120	13.6	0.1	0.1	<input checked="" type="checkbox"/>
Celery, raw	3	medium stalk (7-1/2")	19	0.2	3.6	0.8	<input checked="" type="checkbox"/>
Peppers, sweet, yellow, raw	1	pepper, large (3-1/2")	50	0.4	11.8	1.9	<input checked="" type="checkbox"/>
Lettuce, raw	4	cup, shredded or	31	0.3	6.5	2.0	<input checked="" type="checkbox"/>
Tomatoes, raw	1	cup	32	0.4	7.0	1.6	<input checked="" type="checkbox"/>
Nuts, cashew nuts, raw	2	oz	314	24.9	17.1	10.3	<input checked="" type="checkbox"/>
Totals							
1684							
107.3							
163.6							
60.0							

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Carbohydrate Intolerance and Special Diets

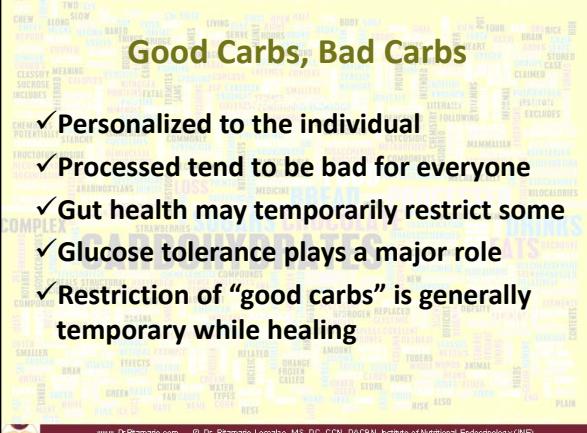
- ✓ Lactose intolerance
- ✓ Low glycemic
- ✓ Gluten and grain free
- ✓ Specific Carbohydrate Diet (SCD) and GAPS - monosaccharides only are allowed
- ✓ FODMAPs: **F**ermentable **O**ligosaccharides, **D**isaccharides, **M**onosaccharides **A**nd **P**olyols



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Good Carbs, Bad Carbs

- ✓ Personalized to the individual
- ✓ Processed tend to be bad for everyone
- ✓ Gut health may temporarily restrict some
- ✓ Glucose tolerance plays a major role
- ✓ Restriction of “good carbs” is generally temporary while healing



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