

Brigham Young University

Diabetic Diet

After balancing carbohydrates for various scenarios using the diabetic exchanges, menus were created to translate the exchanges into daily food choices. Some of these menus were then analyzed in ESHA to compare the nutritional information provided by the exchanges versus ESHA and discrepancies compared. Then, for three days, one of the menus was followed in order to teach the difficulty of living with such a restrictive and calculated diet.

Diabetic Exchanges

#1 2200 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 54	%P 17	%F 29
Starch	4		4		3	2	13	¹⁵ 195	³ 42	¹ 14
Meat			2		1		3		⁷ 21	⁵ 15
Veg			2		1		3	⁵ 15	² 6	⁸ 24
Fruit	1		1		1		3	¹⁵ 45		
Milk	1				1	1	3	¹² 36	⁸ 24	¹ 3
Fat	2		1				3			⁵ 15
Goal	86		86		86	43	Total grams	291	93	71
TOTAL	87		85		92	42	Total Kcals	1164	372	639

#2 4200 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 56	%P 16	%F 28
Starch	7	4	7	3	8	3	32	¹⁵ 480	³ 96	¹ 32
Meat			3		3		6		⁷ 42	⁵ 30
Veg		1	1		2		4	⁵ 20	² 8	
Fruit	1			1		1	3	¹⁵ 45		
Milk	1		1	1			3	¹² 36	⁸ 24	⁸ 24
Fat	2	1	2	1	2	1	9			⁵ 45
Goal	132	66	132	66	132	66	Total grams	581	170	131
TOTAL	132	65	122	72	125	65	Total Kcals	2324	680	1179

#5 3000 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 56	%P 16	%F 28
Starch	4	3	5	2	5	2	21	¹⁵ 315	³ 63	¹ 21
Meat			2		2		4		⁷ 28	⁵ 20
Veg			2		2		4	⁵ 20	² 8	⁸ 32
Fruit	1		1			1	3	¹⁵ 45		
Milk	1			1	2		3	¹² 36	⁸ 24	⁵ 15
Fat			1				1			⁵ 5
Goal	92	46	92	46	92	46	Total grams	416	123	93
TOTAL	87	45	85	42	94	45	Total Kcals	1664	492	837

#6 2000 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 54	%P 20	%F 26
Starch	3		3	2	3		11	¹⁵ 165	³ 33	¹ 11
Meat Alternatives			2	1	2		5		⁷ 35	² 10
Veg			3		2		5	⁵ 25	² 10	
Fruit	2		1				3	¹⁵ 45		
Milk Alternatives	1			1	1		3	¹² 36	⁸ 24	¹ 3
Fat	2		2	1	2		7			⁵ 35
Goal	86		86	43	86		Total grams	271	102	59
TOTAL	87		90	42	82		Total Kcals	1084	408	531

#3 1800 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 57	%P 17	%F 26
Starch	4		3		4	2	13	¹⁵ 195	³ 39	¹ 13
Meat			2		2		4		⁷ 28	⁵ 20
Veg			2		2		4	⁵ 20	² 8	
Fruit			1	2			3	¹⁵ 45		
Milk not used for Ca								¹²	8	5
Fat			1		1	2	4			⁵ 20
Goal	62		62	31	62	31	Total grams	260	75	53
TOTAL	60		60	30	70	30	Total Kcals	1040	300	477

#4 1500 kcal	B	AM Snack	L	PM Snack	D	HS Snack	Total Exchanges	%C 52	%P 19	%F 28
Starch	2	1	2		1	1	7	¹⁵ 105	³ 21	¹ 7
Meat			2		1		3		⁷ 21	² 6
Vege			2		1		3	⁵ 15	² 6	
Fruit				2	1		3	¹⁵ 45		
Milk	1	1				1	3	¹² 36	⁸ 24	⁵ 15
Fat			2		2		4			⁵ 20
Goal	46	23	46	23	46	23	Total grams	201	72	48
TOTAL	72	27	45	30	35	27	Total Kcals	804	288	432

Diabetic Menus

#3 1800 kcal	Meal Time	Portion Size	Exchange
Breakfast	7:30 am	1 large bagel (calcium fortified)	4 starches
Lunch	11:30 am	1-10" whole wheat tortilla	3 starches
		2 oz ground beef	2 meats
		½ cup mixed vegetables, sautéed in fat free margarine	2 vegetables
		½ cup tomatoes, diced, fresh	
		½ cup alfalfa sprouts, fresh	
		½ cup fruit cocktail	1 fruit
		2 TBS low fat dressing	1 fat
PM Snack	3:30 pm	1 medium apple (4 oz)	1 fruit
		17 small grapes (3 oz)	1 fruit
Dinner	7:00 pm	2/3 cup cooked millet (calcium rich food)	2 starches
		1 cup acorn or butternut squash	1 starch
		1 small whole wheat roll	1 starch
		2 oz chicken	2 meats
		1 cup cooked greens (calcium)	2 vegetables
		1 TBS low fat butter	1 fat
HS Snack	10:00 pm	½ large bagel (calcium fortified)	2 starches
		1 ½ TBS reduced-fat cream cheese	2 fats

#5 3000 kcal	Meal Time	Portion Size	Exchange
Breakfast	8:00 am	1½ cups sugar cereal	3 starches
		1 small bagel (1 oz)	1 starch
		1 cup milk	1 milk
		½ cup canned peaches	1 fruit
AM Snack	11:00 am	24 animal crackers	3 starch
Lunch	2:30 pm	1 1/3 cup quinoa, cooked	3 starches
		1 medium roll (2 oz)	2 starches
		¼ cup cottage cheese	1 meat
		1 oz beef	1 meat
		2 TBS avocado	1 fat
		½ cup tomato, diced and sautéed in fat free margarine	2 vegetables
		1/2 cup onion, sautéed in fat free margarine	
		½ cup artichoke hearts, sautéed in fat free margarine	
		½ cup asparagus, sautéed in fat free margarine	
		2 TBS crasins	1 fruit
		2 TBS reduced-fat salad dressing	1 fat
PM Snack	5:30 pm	4-4" rice cakes	2 starches
		1 cup milk	1 milk

Dinner	8:30 pm	3 slices rye bread	3 starches
		2-4"x4" waffles	2 starches
		2 oz pastrami	2 meats
		½ cup sauerkraut	1 vegetable
		½ cup greens	1 vegetable
		1 1/3 cups fruit yogurt	2 milk
HS Snack	11:30 pm	1 cup raspberries	1 fruit
		1 English muffin	2 starches

#6 2000 kcal	Meal Time	Portion Size	Exchange
Breakfast	8:00 am	¾ cups dry oatmeal	3 starches
		4 TBS crasins	2 fruits
		1 cup soy milk	1 milk
		8 pecan halves	2 fats
Lunch	12:30 pm	2 slices bread	2 starches
		1 TBS honey	1 starch
		1 TBS almond butter	1 meat
		½ cup black beans	1 meat
		½ cup tomato	2 vegetables
		½ cup sprouts	
		½ cup cucumber	
		½ cup onion	
		1 cup sugar pea snaps	1 vegetable
		2 TBS avocado	1 fat
		2 TBS reduced fat dressing	1 fat
PM Snack	3:30 pm	10 whole wheat crackers	2 starches
		1/3 cup hummus	1 meat
		1 cup soy milk	1 milk
		10 stuffed olives	1 fat
Dinner	6:30 pm	2/3 cup brown rice	2 starches
		1-6" tortilla	1 starch
		½ cup black beans	1 meat
		1-3oz meatless burger	1 meat
		½ cup tomato cooked down to salsa	1 vegetable
		½ cup peppers, sautéed in fat free margarine	1 vegetable
		½ cup onions, sautéed in fat free margarine	
		1 cup soy milk	1 milk
		1 TBS avocado	1 fat
		8 large olives	1 fat

Comparison of Exchanges to ESHA

For diet number six ESHA calculated that the calories would be about 2200 for the day, compared to the exchanges which estimated calories at 2,023 for the day. This was a fairly large discrepancy, which could in part be due to the difficulty of assessing things by estimate and different foods used (ie. Different soy milks may have different fat and calorie content). The carbohydrates were surprisingly lower in ESHA than with using the exchanges, though the variations were sporadic for each meal, some being rather close to the exchange goals, and others being far from the goal. Oatmeal for example was estimated at 45 grams of carbohydrates with exchanges, but ESHA shows the exact same amount to be 58 grams of carbohydrates and it is unclear as to why, perhaps it can also be attributed to the fact that ESHA is more exact while exchanges are an estimate or the fact that they are using different types of oatmeal. Crackers were also very off, with ESHA showing only 13 grams of carbohydrate compared to the 30 grams in exchange. Tortillas were also very different, with ESHA showing 22 grams and exchanges 15 grams, which could be in part to a possible size difference in the tortillas because it was unclear in ESHA what the size of whole wheat tortilla was being used.

Experience Following the Diet

For my two days as a diabetic I followed the vegan 2000 kcal diet. The planning involved was exasperating, time consuming, and every day I forgot to bring some food item I was to eat that day. Even though the diet planned was for someone wearing a pump I tried thinking about how conventional therapy would impact my day and concluded I would have likely ended up in a coma from not eating when my insulin was peaking. Dinner was scheduled for 6:30 pm, however as I tried finishing one more thing before going home for dinner that one thing led to another until it was almost 9:00 pm before I finally ate dinner. The other difficulty was trying to eat when I wasn't hungry, or having to wait to eat. Many of the meals I eat normally are much smaller than the diabetic diet plan meals, but the snacks were smaller than what I usually eat, so I was either too full or still hungry all day. Eating times interfered with class or meetings, hindered me from eating at social events, and in all it was a very frustrating experience which made me appreciate the magnitude of the invention of the insulin pump.