

SUBJECT: 'DIET_NOTES_PHASES_1-2-3-4'_2009_Mar_3.

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¹ SAD Menu (Standard American Diet) vs. EAT FOR HEALTH PHASE FOUR MENU

NUTRIENT	SAD SAMPLE MENU	PHASE 4 MENU
Calories	2057	1661
Protein %	12	14
Carbohydrate %	49	65
Fat %	39	21
Cholesterol mg	213	0
Saturated Fat g	34	9
Dietary Fiber g	17	77
Sodium mg	3811	478
Vitamin A (IU)	4523	82,525
Beta Carotene mcg	1700	45,281
Vitamin C mg	52	899
Calcium mg	785	1337
Iron mg	12	32
Folate mcg	330	1717
Zinc mg	7	13
TOTAL MANDI	11	119

ANDI Scores rate foods on a scale of 1 - 1000

MANDI Scores assign point values to specific serving sizes of foods and Recipes

Use MANDI scores when rating your daily Menu

1. Eat For Health (Book 2 – Green Cover) Page 11, Gift of Health Press, March 2008, Contact Dr. Fuhrman (see address Pg 1)

ISBN: 0-9799667-3-6

Diet Notes Cont: Pg 2

ANDI AND MANDI SCORES OF COMMONLY EATEN FOODS

ANDI Scores rate foods on a scale of 1 - 1000

MANDI Scores assign point values to specific serving sizes of foods and Recipes

Use MANDI scores when rating your daily Menu

2. *Eat For Health (Book 2 – Green Cover) Page 79, Gift of Health Press, March 2008, Contact Dr. Fuhrman (see address Pg 1)*

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**IF YOUR FOODS ARE NOT LISTED ON THESE LISTS ((DO NOT EAT IT)),
PERHAPS HAS NO KNOWN NUTRITIONAL VALUE**

VEGETABLES (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Mustard Greens, cooked	1000	1.5 cups	25.0
Watercress, raw	1000	3 cups	7.0
Kale, cooked	1000	1.5 cups	25.0
Turnip Greens, cooked	1000	1.5 cups	25.0
Collard Greens cooked	1000	1.5 cups	33.0
Bok Choy, cooked Chinese Cabbage	819	1.5 cups	20.5
Spinach, raw (Baby)	738	5 cups	18.5
Spinach, cooked	702	1.5 cups	23.0
Swiss Chard, cooked	670	1.5 cups	16.7
Brussels Sprouts	667	2 cups	22.0
Arugula, raw	556	5 cups	9.5
Radish	550	7 items	2.2
Bean Sprouts	441	1 cup	11.0
Cabbage, raw	402	1.5 cups	10.1
Romaine Lettuce	384	5 cups	9.6
Vegetable Juice	367	8 oz	9.1
Broccoli, raw	361	1.5 cups	9.0
Zucchini	355	2.5 cups (1 item)	8.9
Boston Lettuce	353	5 cups	8.8
Carrot Juice	346	1 cup	14.2
Dandelion Greens, cooked	334	1.5 cups	8.4
Tomato Sauce (Sodium Free)	332	½ cup	5.6
Red Pepper	332	1.5 cups	5.5
Broccoli, cooked	330	2 cups	13.5
Escarole, raw	321	3 cups	5.5
Carrots, raw	292	1.5 cups	7.6
Cauliflower	284	1.5 cups	7.1
Green Pepper	255	1.5 cups	6.4
Asparagus	233	2.0 cups	8.0

Salsa	227	¼ cup	2.5
Tomato, diced	168	2 cups	5.6
Butternut Squash	158	1.5 cups	7.8
Mushrooms	128	1.5 cups	3.2
Beets (canned or raw)	126	1.5 cups	4.0
Celery	124	1.5 cups	1.7

VEGETABLES (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Iceberg Lettuce	109	5 cups	2.7
Eggplant	98	2 cups	3.2
Sweet Potato	82	1 cup	4.4
Green Peas	75	1.5 cups	4.1
Artichoke	64	2 items	2.1
Onions	50	1 item	1.6
Cucumber	49	1 item	1.2
Potato (white)	34	1.5 cups	1.8
Corn (whole kernel raw, can)	24	1.5 cups	1.5

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FRUIT (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Strawberries	211	1.5 cups	7.0
Pomegranate Juice	172	1.5 cups	5.7
Plums	156	3 items	6.4
Raspberries	146	1.5 cups	6.0
Blueberries	128	1.5 cups	6.3
Grapefruit	128	1.5 cups	5.3
Orange	108	1 item	3.6
Cantaloupe	99	2 cups	4.1
Kiwi	98	2 items	4.0
Watermelon	90	2.5 cups	3.7
Orange Juice	86	8 oz	3.5
Apple	75	1 item	2.5
Peach	74	2 items	2.4
Cherries	68	1.5 cups	3.3
Apricots	65	4 items	2.1
Pineapple	64	1.5 cups	2.6
Mango	51	1 item	2.5
Prunes	46	¼ cup	1.9
Pears	45	1 item	1.9
Honeydew Melon	44	2 cups	2.2
Avocado	37	half	2.6

Grapes	31	1.5 cups	1.3
Banana	30	1 item	1.2
Figs	29	¼ cup	1.2
Dates	19	¼ cup	0.9
Raisins	16	¼ cup	0.7

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NUTS (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Brazil Nuts	116	¼ cup	6.8
Sunflower Seeds	53	¼ cup	3.1
Flax Seeds	43	2 T	1.4
Sesame Seeds	40	¼ cup	2.4
Pumpkin Seeds	35	¼ cup	1.8
Pecans	29	¼ cup	1.6
Tahini Butter	29	2 T	1.6
Walnuts	28	¼ cup	1.5
Pistachios	25	¼ cup	1.5
Almonds	19	¼ cup	1.1
Peanuts (unsalted)	18	2 T	1.0
Peanut Butter (Unsalted, raw)	15	¼ cup	1.0
Cashews	15	2 T	0.7
Cashew Butter	13	2T	0.7
Pine Nuts	11	¼ cup	0.6
Macadamias	10	¼ cup	0.6

BEANS (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Tofu	85	4 oz	2.8
Lentils	68	1 cup	4.0
Black Beans	57	1 cup	3.4
Edamame	57	1 cup	3.7
Adzuki Beans	55	1 cup	3.5
Kidney Beans	55	1 cup	3.3
Soybeans	47	1 cup	3.0
Chickpeas	47	1 cup	3.0
Soy Burgers	42	1 item	2.1
Soy Milk	40	8 oz	2.0
Soy Cheese	27	½ cup	1.5

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GRAINS (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Oats, Cooked	53	1 cup	3.1
Brown Rice, cooked	40	1 cup	2.4
Sprouted Grain Bread	39	1 slice	2.3
Barley, cooked	32	1 cup	1.7
Whole Wheat Bread	24	1 slice	.8
Quinoa, cooked	21	1 cup	1.1
Whole Wheat Pasta, cooked	19	2 cups	1.3
White Pasta, cooked	18	2 cups	1.3
White Bread	17	1 slice	0.9
Bagel, whole grain	18	1 item	1.0
White Rice, cooked	12	1 cup	0.7

FISH (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Yellow Fin Tuna	53	3 oz	3.1
Flounder/Sole	40	3 oz	2.0
Shrimp	40	3 oz	1.3
Salmon	39	3 oz	1.9
Swordfish	38	3 oz	2.0
Canned Tuna, in water	35	3 oz	1.7
Cod	32	3 oz	1.1

DAIRY (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Skim Milk	36	8 oz	1.2
Plain Yogurt, low fat	26	1 cup	1.4
Feta Cheese	21	2 oz	1.1
Whole Milk	20	8 oz	1.0
Cottage Cheese, low fat	18	1 cup	1.0
Fruit Yogurt, low fat	14	1 cup	0.9
Cheddar Cheese	11	2 oz	0.6
American Cheese (non processed)	10	2 oz	0.5
Vanilla Frozen Yogurt	9	1 cup	0.5

Vanilla Ice Cream	7	1 cup	0.5
Cream Cheese	4	4 tablespoons	0.2

MEAT (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Deli Turkey Breast (non-processed)	33	3 oz (3 slices)	1.1
Eggs	28	2 items	1.4
Chicken Breast	27	3 oz	1.3
London Broil	26	3 oz	1.6
Pork Loin	23	3 oz	1.4
Ground Beef (99% Lean)	20	3 oz	1.3
Bologna	13	3 oz (3 slices)	0.7
Hot Dog, kosher beef	8	1 item	0.4

REFINED/PROCESSED (LIST = HIGHEST NUTRITIONAL VALUE TO LOWEST)

	ANDI	SERVING SIZE	MANDI
Milk Chocolate Bar	21	1 bar (43 g)	1.3
Pizza	18	2 slices	1.2
McDonalds Cheeseburger	16	1 item	1.0
Popcorn	14	4 cups	1.0
Pretzels	13	10 items	0/8
Potato Chips	11	1 oz (10 items)	0.6
Saltine Crackers	11	5 items	0.4
Granola Bars, Chocolate Chip	11	1 item	0.4
McDonalds French Fries	10	medium bag	0.7
Sugar Cookies	5	2 items	0.2
Corn Oil	3	1 Tablespoon	0.1
Olive Oil	3	1 Tablespoon	0.1
Honey	1	1 Tablespoon	0.0
Cola	0.7	8 oz	0.0

METHOD OF CALCULATING ANDI AND MANDI SCORES

A DESCRIPTION OF THE ANDI AND MANDI NUTRIENT SCORING SYSTEM

Dr. Fuhrman's Aggregate Nutrient Density Index (ANDI)

Nutrient Data for each food item was obtained for an equal caloric amount of each food.

The following nutrients were included in the evaluation:

Vitamin C

Calcium

Iron

Vitamin E

Thiamin (Vitamin B1)

Riboflavin
 Niacin
 Vitamin B12
 Vitamin B6
 Folate
 Magnesium
 Zinc
 Selenium
 Dietary Fiber (total)
 Carotenoids:
 Beta Carotene
 Alpha Carotene
 Lutein and Zeaxanthin
 Lycopene
 Glucosinolate – compounds from cruciferous vegetables

ORAC score – Oxygen Radical Absorbance Capacity is a method of measuring the antioxidant or radical scavenging capacity of foods.

Nutrient quantities were converted to a percentage of their RDI (Recommended Dietary Intake). Since there is currently no RDI for Carotenoids, Glucosinolates, or ORAC score, the following goals were established, for the purpose of these calculations, based on available research and current understanding of the benefits of these factors:

***Carotenoids*¹:**

Beta Carotene 6.0 mg
 Alpha Carotene 1.5 mg
 Lutein and Zeaxanthin 4.2 mg
 Lycopene 6.5 mg

***Glucosinolates*²:**

Ten servings per week of cruciferous vegetables was considered optimal. It was determined that on average, 10 servings per week would translate to a daily intake of 35 mg glucosinolates. That was set as the goal for these calculations.

***ORAC*³:**

Evidence suggests that daily intake should be between 3000 – 5000 ORAC units to have significant impact on plasma (blood) and tissue antioxidant capacity. A daily goal of 5000 ORAC units was chosen as the goal for these calculations.

The percent RDI or goal for each nutrient was added together to give a total for each food item. (The ORAC score was given a weight of 2 due to the importance of antioxidant nutrients.)

Since the total for kale was or near the top of all commonly consumed foods that number was multiplied by .2472 to make kale's total score = 1000. This factor was determined by the formula 1000/total nutrient value of kale. Each food's total nutrient value was then multiplied by this same factor .2472, so that they would all be scored on a 1 to 1000 scale, where kale equals 1000. Where possible, values for calories from foods and

all nutrients other than Glucosinolate and ORAC were obtained from the USDA Database for Standard Reference.⁴ In a few cases, nutrient values from foods of similar composition were used to supply missing data.

Glucosinolate and ORAC scores were obtained from best available sources.^{5,6} In some cases ORAC scores were estimated using values of similar foods. It should be noted that nutrient values have variations due to soil type, season, geography, genetics, animal diets, processing, method of preparation, changes in product formulations, sampling designs, and methods of analysis.

Dr. Fuhrman's Aggregate Nutrient Density Index (MANDI):

MANDI is a food, meal and menu scoring system which assigns point values to specific serving sizes of individual foods and recipes. The purpose is to guide people towards achieving an ideal MANDI of 100 points per day. It is an aid to help visualize how to choose a diet rich in micronutrients. MANDI Scores for recipes were rounded to simplify menu calculations

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1. Food and Nutrition Board, Institute of Medicine, Dietary Reference Intake for Vitamin C, E, Selenium and Carotenoids; National Academy Press, Washington D.C. 2000; 4026-4037.
 2. Higdon J. Isothiocyanates; 2005; The Linus Pauline Institute, Micronutrient Research Center.
 3. McBride J. Can Foods Forestall Aging? Agricultural Research 1999; 47 (2); 15-17
 4. Nutritionist Pro Nutrition Analysis Software, Versions 2.5, 3.1, Axxya Systems, Stafford TX, 2005, 2006.
 5. Wu X, Beecher G, Holden J, et al. Lipophilic and Hydrophilic Antioxidant Capacities of Common Foods in the United states Journal of Agricultural and Food Chemistry 2004; 52:4026-4037.
 6. See Reference 2.
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The equation to determine the MANDI score is:

$$\text{MANDI} = \text{ANDI}/1000 \times \text{Calorie factor}$$

CALORIE RANGE	CALORIE FACTOR
1-4	1
5-9	4
10-14	7
15-19	11
20-24	14
25-29	17
30-59	25
60-89	33
90-119	41
120-149	49
150-199	54
200-299	64
300 AND UP	69