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Being Healthy and never exercising? It is possible!

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Your Life Your Health

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Never, go to the gym? Never lift weights? Never jog around a track? You may be among the healthiest people in the world. The healthiest people in the world as a result of physical activity are people who have never and would never go to a gym but who because of their life style are very active. My father was a great example. In his entire life, he never “exercised.” He never went to a gym or lifted weights, but his job had him walking long distances, lifting heavy objects and staying active. And, then when he finished his work day, he continued gardening or working in the yard or doing other tasks which required physical exertion. As a result, he was never overweight, never modified his diet, never had diabetes, hypertension or other diseases associated with a sedentary lifestyle.

Gyms and tracks and weights and structure exercise are not a part of nature’s design. They are the result of our distortion of nature’s design. They are a result of the change in our life styles which we associate with progress but which often result in the deterioration of our health.

In previous *Your Life Your Health* articles, we have established that:

1. Two weeks of total bed rest will deteriorate your physical conditioning more than thirty years of aging – and we have demonstrated that it is easier to regain your conditioning after thirty years of age than it is to regain it after two weeks of bed rest.
2. A sedentary life style evidenced by watching more than 10 hours of television a week and/or by working less than 10,000 steps a day, is a greater risk factor for the development of heart failure than diabetes mellitus which is by itself and independent risk factor for heart disease.
3. An extremely active lifestyle such as that of the Amish in Pennsylvania or the Masai in East Africa can overcome the side effects of a diet high in saturated animal fat and a high calorie diet.
4. However, even the beneficial effects of an active lifestyle can be overcome by smoking, excessive alcohol use, stress

The problem for most of us is that our jobs do not require physical exertion. Therefore, we spend most of our day accumulating “inactive hours” which requires us to pack our physical exertion into a short period of time at gyms, on tracks, or in other structured exercise programs in order to be healthy.

Total Energy Expenditure (TEE)

If you want to understand why you gain weight or how you can lose weight, you must have an approximation of your TEE. Your daily “Total Energy Expenditure” (TEE) is a combination of three things:

- Digestion of Food (Thermogenic Rate) 10% -- this is the energy required to process the food which you eat.
- Physical Activity (Active Metabolic Rate) 20% -- this is the energy which is consumed by the activities in which you engage each day. We will look at some of the common activities and their contribution to your TEE later in this article.
- Energy for basic body processes (Basal Metabolic Rate) 70% -- this is the energy which you consume just by living and breathing. This is what you would consume if you just sat all day.

Thermogenic Rate

Your thermogenic rate is a fairly fixed number based on the amount of food you eat each day. Because the figures we use in clinical practice to estimate your caloric needs are a rough approximation, it is not unwise simply to ignore the thermogenic rate and let that “make up” for our usual underestimation of how much we eat and for our usual overestimation of how much exercise or work we do. There is, however, one absolute way of knowing whether you are exceeding your total energy expenditure in what you eat. If you are gaining weight, you are eating too much. If you are losing weight, you are eating less than your TEE. There is no magic here; you can know for sure.

BMR

The 60-70% of energy which is used each day with your BMR is the surprising number for most of us because we burn that much energy every day by doing absolutely nothing. SETMA’s electronic medical record uses the Harris-Benedict Equation to calculate the BMR (Basal or Resting Metabolic Rate) which is the way it has been done since 1919. Researchers today say that this equation is not entirely accurate. Every person has so many variables to consider, such as ratio of fat to lean muscle mass, genetics, activity level, menopause and many other things. Although it isn’t perfect, it is a good tool in helping to understand how much energy we need to consume and burn.

Calculating Your BMR:

- Women: $BMR = 655 + (4.35 \times \text{weight in pounds}) + (4.7 \times \text{height in inches}) - (4.7 \times \text{age in years})$
- Men: $BMR = 66 + (6.23 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in year})$

As you can see the variables which are directly used to calculate your BMR are weight, height, gender and age. If you have calculated this number, you now know

approximately how much your energy your body requires just for basic life processes. These are the functioning of your organs such as brain, kidneys, liver etc.

Some of the factors which affect your BMR are:

- Age: In youth, the BMR is higher; age brings less lean body mass and slows the BMR.
- Height: Tall, thin people have higher BMR's.
- Growth: Children and pregnant women have higher BMR's.
- Body Composition: The more lean tissue, the higher the BMR. The more fat tissue, the lower the BMR.
- Fever: Fevers can raise the BMR.
- Stress: Stress hormones can raise the BMR.
- Environmental Temperature: Both the heat and cold raise the BMR.
- Fasting/Starvation: Fasting/starvation hormones lower the BMR.
- Malnutrition: Malnutrition lowers the BMR.
- Thyroxin: The thyroid hormone thyroxin is a key BMR regulator; the more thyroxin produced, the higher the BMR. Some weight loss clinics will give a patient extra thyroid in order to boost their BMR. This is not safe and can cause long-term health problems. You should never take more thyroid than you need; even our thyroid function is low.

Active Metabolic Rate (AMR):

Now, you can determine your Active Metabolic Rate (AMR) which is your BMR or resting rate plus the amount of energy you require for the level of physical activity you exert on a typical day. You multiply the BMR number you calculated above times the number below which represents your typical level of activity. In calculating your AMR, you multiple b your BMR according to this formula::

- If you are sedentary (little or no exercise): Multiply BMR x 1.2
- If you are lightly active (light exercise/work 1-3 days per week): Multiply BMR x 1.375
- If you are moderately active (moderate exercise/work 3-5 days per week): Multiply BMR x 1.55
- If you are very active (hard exercise/work 6-7 days a week): Multiply BMR x 1.725
- If you are extra active (very hard exercise/work 6-7 days a week): Multiply BMR x 1.9

Activities which contribute to your AMR

In 2004, the *International Journal of Behavioral Nutrition and Physical Activity* published a review article which detailed the activities which contributed to your total

daily energy expenditure. This data was developed through the National Human Activity Pattern Survey.

The survey included a 24-hour recall of daily activities for 9386 participants. All activities (or non-activities, including sleeping) over a 24-hour period were reported. This methodology is analogous to 24-hour dietary recalls used by national surveys of dietary intake [5]. Without prompting about the nature of the activities, respondents were asked to start with the time of arising on the previous day, and to describe everything they did and the time spent doing it – for example, "8:00–8:20, getting dressed; 8:20–8:30, eating breakfast." Activities were recorded in the respondents' own words, and recoded later by the authors. In addition to the identification of the specific physical activity, information on location and duration of the activity was obtained.

The study ranked 87 different activities and measured their contribution to a person's Active Metabolic Rate. In the table below one MET (metabolic equivalent tasks) is the energy expenditure and caloric requirement at rest. Mild exercise such as walking at a leisurely pace increases energy expenditure to perhaps 2.5 METs/hour of walking. Vigorous activity can result in 6 to more than 12 METs/hour of activity.

While it is seen that structured physical activity can contribute more “METs” to your Active Metabolic Rate per hour, the number of hours spent each day in other activities shows why an active life style outstrips structured exercise in contributing to your AMR.

As you can change your BMR by losing fat and gaining muscle, you can change your AMR by changing your daily habits, i.e., less time sitting and more time being active.

Full list ranking activities performed by subjects in the NHAPS study, 1992-1994

Rank	Activity Description	MET	Percent Total Score	Cumulative Percentage (%)	Average Duration (min)	Number of Subjects
(1)	Sleeping, napping	0.9	(19.06)	--	501	7493
1	Driving car	2.3	10.90	10.90	101	6574
2	Job: Office work, typing	1.5	9.24	20.13	415	2094
3	Watching TV/movie, home or theater	1.0	8.65	28.78	216	5919
4	Taking care of child/baby (feeding, bathing, dressing)	3.0	8.38	37.16	60	6545
5	Activities performed while sitting or lying quietly, little movement	1.3	5.78	42.94	158	4086
6	Eating (implied sitting)	1.5	5.30	48.24	76	6843
7	Cleaning house, general	3.0	3.93	52.18	126	1489
8	Talking/ Visiting, in person or on phone	1.5	3.78	55.96	132	2858
9	Job: Industrial plant/factory (e.g. assembly line)	3.0	3.78	59.73	490	333

10	Food preparation (cooking, baking, setting table, etc.)	2.0	2.93	62.67	53	3996
11	Job: Construction site	5.5	2.76	65.43	500	119
12	Job: Light intensity, stand/walking (e.g. hospital staff, real estate inspector)	3.0	2.67	68.10	464	291
13	Yard work-general: mowing lawn, trimming hedges	4.3	2.63	70.73	147	559
14	Attending event (social) talking while sitting	4.3	2.63	70.73	147	559
15	Shopping for non-foods (e.g. clothing)	1.6	2.22	72.95	142	1499
16	Job: Store clerk, bartender, hair stylist (light standing)	2.3	2.07	75.02	97	1408
17	Job: Farm hand (chores: baling hay, cleaning barn)	2.0	1.83	76.85	429	289
18	Job: Restaurant staff (e.g. waiter, chef)	2.0	1.83	76.85	429	289
19	Job: Teaching class	8.0	1.55	78.40	417	57
20	Laundry	3.0	1.48	79.87	433	129
21	Walking, moderately, doing errands, walking to school)	3.0	1.48	79.87	433	129
22	Fishing and Hunting	1.8	1.09	80.96	417	195
23	Cleaning kitchen (sweeping)	2.2	1.07	82.03	83	863
24	Shopping for food, putting groceries away	2.8	1.03	83.06	79	716
25	Swimming, exercise	3.3	0.93	83.99	294	103
26	Job: Mechanic	3.3	0.88	84.87	54	689
27	Gardening: Weeding, landscaping, picking vegetables	2.4	0.86	85.73	47	1125
28	Remodeling, repairing house, workshop, concrete work	7.0	0.83	86.56	121	96
		3.0	0.70	87.26	427	56
29	Exercise, aerobics	3.5	0.55	88.11	128	198
30	Job: Driving (e.g. truck driver, bus driver, ambulance, tractor)	2.7	0.58	89.69	354	88
31	Dancing/ Heavy Partying	3.6	0.61	88.52	222	123
32	Moving, packing items	4.0	0.56	90.25	166	122
33	Sports: Golf	3.5	0.53	90.78	73	318
34	Playing with children, baby	4.5	0.48	91.26	228	63
35	Household chores, light cleaning	2.8	0.47	91.73	107	173
36	Caring for another person	2.3	0.44	92.17	91	330
37	Home projects (sewing, wrapping presents, arts and crafts)	4.0	0.43	92.59	89	162
38	Exercise at gym (e.g. Stairmaster,	1.5	0.42	93.01	172	259
		7.2	0.40	93.42	85	103

	bike, treadmill)					
39	Yard work-hard: chopping wood digging, shoveling snow)	6.0	0.39	93.80	120	88
	Job: Feeding/ Working with					
40	livestock	4.0	0.38	94.17	80	131
	Pet care: Walking, Playing,					
41	Cleaning, Feeding	2.7	0.35	94.53	39	576
42	Car maintenance, repair	3.3	0.35	94.88	169	91
	Washing dishes/loading					
43	dishwasher	2.3	0.35	95.22	27	808
	Game, board or cards, bingo,					
44	crosswords	1.5	0.32	95.55	150	223
45	Painting walls	4.5	0.27	95.82	229	36
46	Playing outdoors with others	4.0	0.26	96.08	116	57
	Working in garage, general					
47	maintenance on items	3.0	0.20	96.28	145	52
48	Sports: Basketball	6.0	0.20	96.48	133	37
49	Other moderate recreational sports	6.6	0.18	96.65	118	22
50	Bike riding	8.0	0.17	96.83	95	31
51	Job: Packing, moving boxes	8.0	0.17	96.99	141	18
52	Volunteer work, unspecified	3.0	0.17	97.16	217	29
53	Other light recreational sports	3.5	0.15	97.31	122	54
54	Personal grooming (e.g. shaving, showering, brushing teeth)/ Dressing (sit/stand)	1.7	0.15	97.46	15	851
55	Jogging, exercise	7.0	0.14	97.60	53	57
56	Other heavy sports/exercise	9.7	0.14	97.74	131	14
57	Running, exercise	8.0	0.12	97.86	76	20
58	Sports: Baseball/Softball	5.0	0.12	97.97	133	22
59	Sports: Bowling	3.0	0.11	98.09	139	33
60	Hiking, exercise	6.0	0.11	98.20	214	14
61	Car washing	4.5	0.11	98.31	69	57
62	Waiting, standing	1.2	0.11	98.42	30	465
63	Game, video or computer	1.5	0.10	98.52	138	76
64	Ironing	2.3	0.10	98.63	54	125
65	Playing a musical instrument	2.5	0.10	98.73	106	51
66	Sports: Tennis	7.0	0.10	98.84	122	23
67	Sports: Darts, Billiards/ Pool	2.5	0.10	98.93	165	29
68	Job: Painting	4.5	0.09	99.03	272	13
	Lawn care: Watering, seeding,					
69	fertilizing	2.1	0.09	99.12	64	109
70	Sports: Soccer	7.0	0.09	99.21	115	12
71	Carpentry work	3.0	0.09	99.30	173	30
72	Art and Theater: Directing, Acting, Painting, Drawing,	2.2	0.08	99.38	213	34

	Ceramics					
73	Getting ready to leave (organizing)	3.0	0.07	99.45	29	122
74	Electrical Work	3.0	0.07	99.51	79	32
75	Job: High intensity, implied manual work (e.g. firefighter, oil well work)	10.5	0.06	99.58	83	10
76	Cleaning outside/ basement, heavy	3.0	0.06	99.64	125	29
77	Plumbing	3.0	0.06	99.69	204	18
78	Exercise, weight lifting	6.0	0.05	99.75	72	21
79	Job: Daycare	3.0	0.05	99.80	249	12
80	Walking, exercise	4.0	0.05	99.85	48	38
81	Yoga, Physical therapy	2.5	0.04	99.89	82	23
82	Choir Rehearsal, singing	2.0	0.03	99.92	95	20
83	Moving large items (furniture)	6.0	0.02	99.94	86	10
84	Sexual activity	1.3	0.02	99.96	93	31
85	Pumping gas	2.0	0.02	99.97	11	134
86	Flying airplane	2.0	0.01	99.99	236	5
87	Lighting fire, furnace	2.5	0.01	100.00	24	39

Improving your health will involve losing weight and exercise. Both will involve eating less and being more active. Being active involves much more than going to the gym. Remember, it is your life and it is your health.