

Maximizing the Burn, Minimizing the Time Tips to optimizing your workout

Fact:

- The body doesn't burn fat until the sugar stored in your blood and liver is burned. Once you hit your training zone heart rate (see below for definition), it takes only a half a minute to burn the sugar in the blood, but it takes up to 20 minutes to get through the liver's store of sugar.



What this means to you:

- **After you get to your training zone heart rate, exercise more than 20 minutes.** Every minute you spend above 20 minutes is burning fat alone. The time spent reaching your 75% maximum heart rate is your "warm-up" time.

Fact:

- **You burn calories most efficiently once you are at your training zone heart rate.** This method of calculating your target training zone heart rate is based on your age, maximal heart rate and resting pulse. To determine your training zone heart rate, do this:
 1. Before you get out of bed in the morning, count how many times the heart beats in a minute (this is your **Beats per Minute**). Do this three mornings in a row. Once you have those numbers, add them together and divide by 3 to get your **Average Resting Heart Rate**.
 2. $(220) - (\text{your age}) = \text{Maximal Heart Rate}$
 3. $(\text{Maximal Heart Rate}) - (\text{Average Resting Heart Rate}) = \text{Heart Rate Reserve}$
 4. $(\text{Heart Rate Reserve}) \times (70\%) = \text{Training Range \%}$
 5. $(\text{Training Range \%}) + (\text{Average Resting Heart Rate}) = (\text{Training Zone Heart Rate})$
- Counting the number of times your heart beats over a minute can be tiresome, especially while exercising. A quick way to estimate this is by counting the number of times the heart beats in 6 seconds. Multiply that number by 10, and you have your approximate target heart rate!

Example:

35 year old person with morning heart rates of 62, 58 and 60.

$$62 + 58 + 60 = 180$$

$$180/3 = 60 \text{ (Average Resting Heart Rate)}$$

$$220 - 35 = 185 \text{ (Maximal Heart Rate)}$$

$$185 - 60 = 125 \text{ (Heart Rate Reserve)}$$

$$125 \times 0.7 = 88 \text{ (Target Heart Rate \%)}$$

$$88 + 60 = 148 \text{ (Target Heart Rate)}$$

- For the example above, you would want to shoot for a little less than 15 beats in 6 seconds (or $15 \text{ beats} \times 10 = 150 \text{ beats per minute}$).

What This Means to You:

- Determine your Target Heart Rate using the calculation above. When you start exercising, take your pulse every minute or so, and determine your heart rate at that moment. When you reach your target heart rate, start the clock. Intermittently during exercise (every 5 minutes or so), repeat it. If your rate is above the target heart rate, slow down. If it is too low, speed up!



Fact:

- Intensity counts. More rigorous exercise burns much more calories. However, there is a trade-off. More rigorous exercise results in more injuries. Swimming seems to have the best of both worlds, as it is very rigorous, but the water protects your from injuries.

What This Means to You:

- If you enjoy the water, and you have somewhere to get wet, **SWIM!** If you are interested in local water aerobics or public pools, see the following page.
- If you're not a swimmer, then jog, bike, row a boat, or try the specialty training equipment at your local gym. If you do try these higher impact exercises, improving flexibility is very important (see below).

Fact:

- When asked how he finds time to exercise, a former President of the United States once said, "You don't find time to exercise, you make time."

What this Means to You:

- Schedule time for exercise into each day.
- In Charleston, we recommend the morning exercise to take advantage of the cooler temperatures.

Fact:

- You burn almost twice as much fat doing cardiovascular exercise (walking, swimming, running) compared to weightlifting. This is because cardiovascular (cardio) exercise relies on a long, slower release of sugar from fat cells. The benefit of weight lifting is that it builds muscle. Unlike other body tissues, muscle burns a lot more sugar (even when your sleeping). When muscle is gained, it raises your metabolism.

What This Means to you:



- If you are trying to lose weight, you want to focus on cardiovascular exercise 4 or 5 days a week.
- If you are trying to keep weight off, you want a balance of cardiovascular and weight lifting exercise (3 days a week of cardiovascular exercise and 2-3 days of weight lifting).

Fact:

- To stretch or not to stretch, that is the question. Recent research shows that stretching before exercise **DOES NOT** reduce injuries. However, people that are more flexible have much fewer exercise-related injuries.

What This Means to You:

- While stretching immediately before starting a workout won't prevent an injury that day, if you stretch daily to get more limber, over time you will be less likely to have an injury. An additional benefit is that stretching does burn calories! We recommend stretching **AFTER** exercise or before bed.
- If you want an stretching routine, *ask your doctor or nurse for the stress reduction handout*, which will demonstrate several Yoga exercises, which get you limber while burning calories!



Fact:

- Simply purchasing a pedometer will make you lose weight.

What This Means to You:

- Well, maybe not JUST buying a pedometer. Research does show that keeping track of how many miles you've walked in a day does increase the number of miles you walk. You can pick up a pedometer at any local sporting goods store.

Fact:

- Research shows that people involved in team sports are MUCH more likely to exercise regularly and are MUCH less likely to be overweight.

What This Means to You:

- Peer pressure works! Use it to your advantage. Join a tennis league, or a soccer team, or a running club. Keeping active with others will make exercise a social event, and not a chore. A partial list of adult team sports is below:
 - The Charleston Sports and Social Club: <http://www.charlestonssc.com/>
 - The Mount Pleasant Recreation Department Adult Athletics: <http://www.mtpleasantrec.com>
 - Look Under Recreation -> Adult and Senior -> Adult Programs
 - Mount Pleasant Soccer Club: <http://www.mpsoccer.com/>

Healthy Diet tips:

- **Consider Vegetarianism:** The bulk of nutritional research indicates that the healthiest diet is one that greatly limits (or better yet, eliminates) food from animals. Multiple studies have shown that a vegetarian diet prevents and reverses diabetes and heart disease. Some research also indicates that this diet may prevent certain kinds of cancer. Unconvinced? See the recommended books below for more details...
- **Buy scales:** Buy both a bathroom scale and a food scale. Use the bathroom scale to weight yourself daily. Studies show that people who weigh themselves daily are more motivated and lose more weight. The food scale is to measure a serving (what is an ounce, anyway?). Getting a good set of measuring cups will also make figuring out what a serving is easier (see more below).
- **Use smaller plates:** An English study showed that simply using smaller (7-8 inch) plates as opposed to dinner plate (12-13 inches) increased the feeling of fullness and reduced food intake.
- **Eat 3 meals a day with 2 snacks:** The human body is designed to eat three meals a day. By skipping one meal (usually breakfast in our society), the body goes into storage mode, and when food comes in, a higher percentage gets turned into fat. By eating three meals a day, this is prevented. In addition, studies show that people that eat 3 meals a day eat *LESS* throughout the day (by eating smaller snacks and lunch/dinners). Eat the two small snacks in mid-morning and mid-afternoon.
- **Eat at restaurants less than once per week:** Studies show that most people's home cooking is much lower in fat and calories that those served at restaurants.
- **Stop drinking calories:** Most Americans *drink* all the calories they need in a day. Reduce your alcohol intake. Slowly change from whole milk to skim. Change from regular sodas to diet. Avoid juices – they often contain as many calories as regular soda.
- **Portion control:** The major contributor to obesity in America is oversized portions. Start reading labels. At the top of the nutrition label, it says: "serving size." Get out the scale and measure a serving. It will surprise you.

Recommended Diet Books: (Available through Charleston County Public Library @ <http://www.ccpl.org>)

- **The China Study** by T. Colin Campbell, PhD and Thomas M Campbell II
- **The McDougall Quick & Easy Cookbook** by John McDougall
- **The New McDougall Cookbook** by John A McDougall
- **Cooking the Whole Foods Way** by Christina Pirello

Helpful Websites:

- Dr. John McDougall's Website
www.drmcDougall.com
- Mayo Clinic Vegetarian Guide
www.mayoclinic.com/health/vegetarian-diet/Hq01596
- American Heart Association Vegetarian Guide
www.americanheart.org/presenter.jhtml?identifier=4777
- Calorie Search Engine for every food:
www.calorieking.com

Click on "Resources and Tools" tab at the top of the main web page. At the next web page click on "amazing food database search" to use the food database to calculate the calories contained in the foods you eat. It is useful to calculate the calories based on calories per gram or ounce. Once you know this you can weigh your portions using a food scale. The Resources and Tools web page also has calculators for computing:

- 1) Caloric needs to maintain a desired weight
- 2) The amount of calories you can burn performing certain activities and exercises
- 3) Your target heart rate

Diet and Exercise Guide: Putting the Together

Achieving and maintaining a healthy Body Mass Index (BMI) is associated with a decreased risk of heart disease and diabetes. Losing even 5% of your body weight can decrease the risk of these conditions. The numbers below represent your weight goal over the next six months and the amount of calories per day you need to achieve and maintain this weight goal.

Body Mass Index Chart

Weight in pounds	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215
Height																								
5'0"	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
5'1"	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	36	37	38	39	40
5'2"	18	19	20	21	22	22	23	24	25	26	27	28	29	30	31	32	33	33	34	35	36	37	38	39
5'3"	17	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	32	32	33	34	35	36	37	38
5'4"	17	18	18	19	20	21	22	23	24	24	25	26	27	28	29	30	31	31	32	33	34	35	36	37
5'5"	16	17	18	19	20	20	21	22	23	24	25	25	26	27	28	29	30	30	31	32	33	34	35	35
5'6"	16	17	17	18	19	20	21	21	22	23	24	25	25	26	27	28	29	29	30	31	32	33	34	34
5'7"	15	16	17	18	18	19	20	21	22	22	23	24	25	25	26	27	28	29	29	30	31	32	33	33
5'8"	15	16	16	17	18	19	19	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	32	32
5'9"	14	15	16	17	17	18	19	20	20	21	22	22	23	24	25	25	26	27	28	28	29	30	31	31
5'10"	14	15	15	16	17	18	18	19	20	20	21	22	23	23	24	25	25	26	27	28	28	29	30	30
5'11"	14	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24	25	25	26	27	28	28	29	30
6'0"	13	14	14	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28	29
6'1"	13	13	14	15	15	16	17	17	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27	28
6'2"	12	13	14	14	15	16	16	17	18	18	19	19	20	21	21	22	23	23	24	25	25	26	27	27

Weight Today _____

Weight Goal _____

Daily calories _____

Calories burned exercising

Exercise/1 hour

Walking

Swimming

Bicycling

Calories burned

250

500

400

More accurate calculators for daily caloric needs and calories burned during exercise can be found at www.calorieking.com under the "Resources and Tools" tab.