



Ultrahealth™ EAT (Exercise Activity Thermogenesis) Guide

Eating for Ultrahealth™: Adjusting Your Daily Intake

First let's calculate your Ultrahealth™ daily energy intake. Let's return to the sample patient we talked about earlier in Dr. A's Habits of Health, 2nd Edition part 3.3.

Here are her relevant numbers:

- 46-year-old female
- 5 foot, 9 inches (69 inches)
- Utilizing the EAT walking and two-day-a-week weight-training programs
- Body mass index of 24
- 162 lbs (down from 206 lbs)

We'll plug those numbers into the formula for calculating total energy expenditure (TEE), from the appendix:

$$TEE = BMR + PAL + TEF$$

Let's break that formula down to see how many calories she's currently burning in a day:

1. BMR (basal metabolic rate) = $10 \times (\text{weight in pounds} \times 0.455) + 6.25 \times (\text{height in inches} \times 2.54) - 5 \times (\text{age}) - 161$
= $10 \times (164 \times 0.455) + 6.25 (69 \times 2.54) - 5 \times (46) - 161$
= $746 + 1,095 - 230 - 161$
= 1,450 calories per day
2. PAL (physical activity level) is the difference between your baseline BMR and your BMR modified for activity (BMR \times Activity Factor). To determine your activity factor, see the Activity Factor Table in Dr. A's Habits of Health, 2nd Edition, part 3.3, page 512. As you'll recall, this modified BMR is called your EEpal.
EEpal = BMR \times Activity Factor
= 1,450 calories \times 1.5 (active)
= 2,175 calories per day

As you can see, her BMR has increased as a result of her level of activity.

3. TEF (thermic effect of food) = EEpal (2,175 kcal) \times 0.1 (that is, 10%)
= 217 calories per day

So by taking the 2,175 calories we calculated by adding in her PAL, and then adding the 217 calories she uses to process her food (her TEF), we come up with a total energy requirement of 2,392 calories per day—her TEE.



Currently, this patient is consuming and expending approximately 2,400 calories per day through her new active lifestyle and has remained at a stable BMI (body mass index) of 24 for the past two years. Her blood chemistry is normal, including her glucose and hs-CRP, her lipid profile is within normal range, and she is off the Lipitor. Her thyroid function has never been better, her blood pressure is down to 125/80, and her body fat is 26 percent—all within normal limits. She is enjoying an optimally healthy, energy-filled life and has made the decision to take the next step—to achieve Ultrahealth™ and seize its potential to extend her new thriving life.

To take that step, she'll need to figure out her adjusted Ultrahealth™ calorie intake. To do so, she'll start with her optimal health TEE of 2,392 calories per day and use this formula:

Optimal Health TEE × 0.85 = new energy intake per day

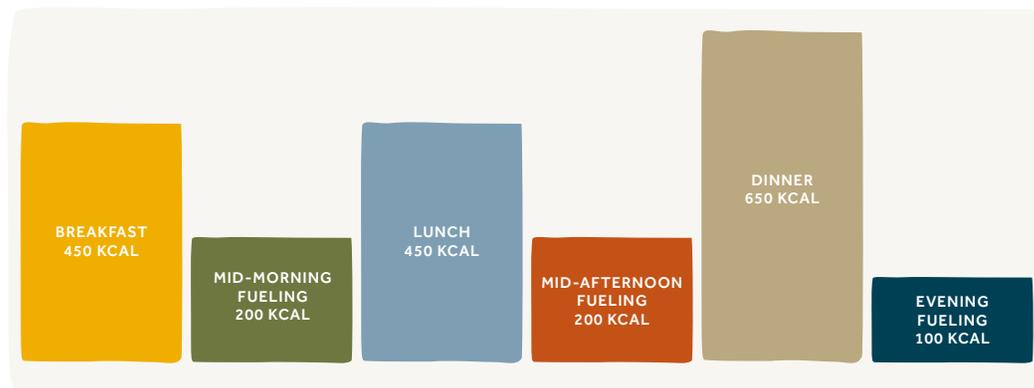
Or, for this patient: 2,400 kcal × 0.85 = 2,040 kcal/day of energy intake.

So let's sum up. This woman's dietary optimization will include a decrease in daily calories to 2,040 calories. She'll accomplish this by eliminating all processed food and by choosing foods in the dark green section of the food charts. That way, she can be sure she's eating only nutrient-filled, low-glycemic carbohydrates, lean protein, and healthy fats. Here's how her daily eating plan will look:

- 2,040 kcal/day
- No processed foods
- Lowest-glycemic carbohydrates
- Increased soy intake (based on Okinawan longevity studies)
- Healthy fats, especially olive oil, fish oils, walnuts, and flaxseed
- Every-three-hour eating schedule

Here's a snapshot of a typical daily meal plan for someone consuming about that number of calories under the Ultrahealth™ program.

Sample Ultrahealth™ Daily Meal Plan.





With the Ultrahealth™ meal plan, you'll decrease your energy intake slightly from your optimal health level, but you'll still fuel every three hours. Here's an example of how your day's eating might look if you're taking in about 2,000 calories a day.

As you can see, while the calorie level of most of your daily fuelings has increased, you should keep your evening fueling at 100 calories and if you need to adjust your schedule to eat fewer calories, you steal those from your evening meal.

Caution: Consult your physician before you begin any exercise program or increase the intensity of your workouts in order to ensure that your blood pressure, lung function, and musculoskeletal systems can handle the increased challenge.

Note that while the Ultrahealth™ plan involves reduced caloric intake, it still requires you to fuel every three hours. To make this doable, I recommend you take another look at the fueling strategies in the healthy eating chapters. It's worth noting that OPTAVIA®, as a pioneer and leader in restrictive-calorie meal plans, provides an excellent method to help you implement a regimen of dietary restriction. Scientifically formulated portion-controlled meals are particularly effective in delivering a nutrient-rich, low-calorie diet that also provides plenty of health-supporting soy!

Of course, in addition to eating a full range of nutrient-dense foods, you'll want to make sure you're getting the full range of supplementation we discussed in Dr. A's Habits of Health, 2nd Edition. We'll augment that list by adding supplements that enhance your brain capacity and function for lasting health.

Exercise Enhancement: The Other Half of the Equation

Of course, it's not just your energy input that will change under the Ultrahealth™ system. You'll also be increasing your energy expenditure by 15 percent twice a week, on top of your current EAT walking and resistance program. Not only will you use more calories, you'll also receive increased cardiovascular benefits from these more intense workouts. Here's the formula you'll use to calculate this increased energy expenditure:

Optimal Health TEE × 0.15 = additional energy expenditure twice a week



For our sample patient: $2,400 \text{ kcal} \times 0.15 = 360 \text{ kcal}$. That's the number of calories she'll be burning twice a week on top of her already robust EAT walking and resistance program. This can be accomplished either by adding intensity to the two weekly EAT Resistance Program workouts or by switching two of your weekly EAT Walking Program walks for two twenty-minute interval-training sessions (plus ten-minute cool down), depending on your age, ability, and schedule.

In order to assure that your EAT Ultrahealth™ movements are on the cutting edge of exercise physiology, Greg Freitag, a top exercise physiologist at Johns Hopkins and an expert in the science of exercise helped design this program. Together, we've designed an enhancement program that's sustainable, provides just the right intensity, and is minimally intrusive to your busy schedule. These additional movements complete our EAT System, enhancing your energy expenditure and cardiovascular fitness to help support maximum functional longevity.

Intensifying Your Workouts: Options for Enhancement

I've developed several options for increasing your energy output. First, let's look at some ways to boost your current resistance workouts. Second, we'll explore once again high intensity interval training, an option you can use to enhance the intensity of two of your 30 minute walks per week.

Six Options to Boost Your EAT Resistance Workouts

1. Increase Repetitions

Instead of performing five repetitions of each exercise, perform six to eight, while maintaining the 8-4-8 pattern (contraction-holding-relaxation) as well as your speed.

2. Increase Resistance

Increase the weight or resistance you use in each exercise by 10–15 percent, while maintaining the 8-4-8 pattern and your speed. You can accomplish this by using resistance bands and heavier dumbbells. Make sure your exercise ball is fully inflated to ensure the greatest balance challenge to your core. You'll also want to increase your own focus and effort of contraction.

3. Increase Sets or Rotations

Complete three rotations instead of just two. This will increase your EAT resistance workout time by about one-third, or 10 minutes.



4. Decrease Recovery Time

Decrease the amount of time you rest between exercises from twenty seconds to ten seconds. Not only will this increase the demand on your muscle fibers, it will enable you to maintain an elevated heart rate throughout your resistance workout.

5. Increase Your Speed

Increase the speed of each repetition from 8-4-8 (contraction-holding-relaxation) to 4-2-4. You'll generate more force per repetition—which means you should also increase the resistance or amount of weight by 15–25 percent.

6. Maintain Muscular Contraction

Pay closer attention to keeping the contraction in your muscles, not your bones. It's common to “lock out” your joints during an exercise by straightening your elbows in a push-up or your knees in a squat, for example. But this transfers the weight onto your bone structure and away from working muscles, and is not recommended. By avoiding “locking out,” you increase tension and maintain a high level of intensity throughout your repetitions.

Intensifying Your EAT Walking Workouts through Interval Training

High Intensity Interval Training is an intense, time-efficient way to train your aerobic (cardiovascular) and anaerobic (muscle) energy-burning systems. It's called interval training because it consists of short periods, or intervals, of high-intensity cardiovascular activity followed by short periods of lower-intensity cardiovascular activity. By alternating high- and low-intensity intervals, you intensify the metabolic challenge to your muscles, increasing the amount of calories burned in each twenty-minute session—and that can help prevent injury by keeping exercise time shorter and saving muscles from overuse.

- High-intensity interval: around 75–90% of your maximum heart rate (MHR), or a rate of perceived exertion (RPE) of around seven–nine.
- Low-intensity interval: around 50–60% of your maximum heart rate (MHR), or a rate of perceived exertion (RPE) of around five–six.

If the weather's hot, exercise early or late in the day and remember to drink extra water to stay hydrated. Cut back or stop exercising completely if you feel dizzy, nauseous, lightheaded, or get a headache. And of course, remember to wear sunscreen when exercising outdoors!



Here are two sample twenty-minute interval-training sessions (plus a ten-minute cool down) that you can incorporate into your weekly Ultrahealth™ program in place of two of your EAT Walking Program thirty-minute walks. Feel free to tailor these interval workouts to any cardiovascular exercise you enjoy, including swimming, biking, walking, jogging, and elliptical training.

Interval A: Five-step interval

(four intervals, five minutes each)

- Perform your five-minute warm-up.
- Begin exercising at your baseline level (around 50–60% of MHR or an RPE of five–six) and maintain this level for one minute.
- After one minute, increase the intensity level of the cardiovascular machine you're using by one level (or the speed at which you're walking, jogging, or swimming) to increase your MHR by one 10% interval or your RPE by 1 (in other words, raise your MHR from 50% to 60% or your RPE from five–six).
- Maintain this intensity or speed for one minute, to minute two.
- At minute two, increase the intensity level of the machine by an additional level (or your speed) to increase your MHR by another 10% interval or your RPE by one (in other words, from 60% to 70%, or from six to seven).
- Keep increasing your MHR or RPE in this manner each minute until you reach minute five. At that point, reduce your intensity level back to your baseline of 50–60% MHR or an RPE of five–six.
- Continue this five-step, five-minute cycle for 20 minutes and then cool down by walking for 10 minutes.

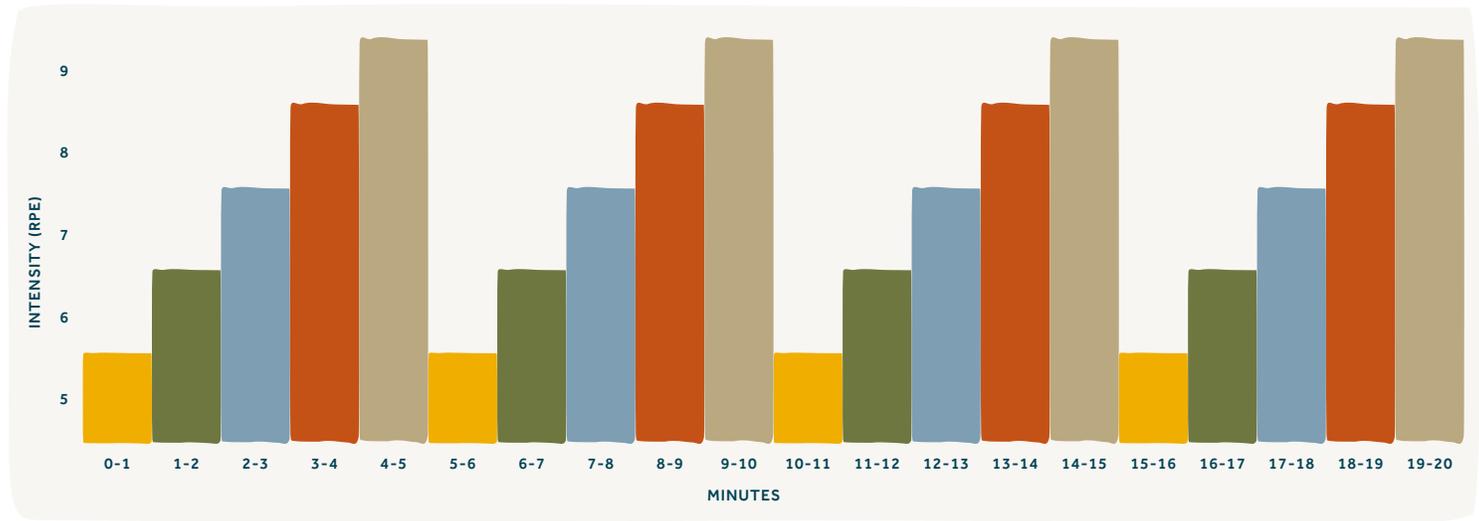
Interval B: Two-step interval (five intervals, four minutes each)

- Perform your five-minute warm-up.
- Begin exercising at your baseline level (around 50–60% of MHR or an RPE of 5–6) and maintain this level for two minutes.
- At the beginning of minute three, increase the intensity level of the cardiovascular machine you're using by four levels (or the speed at which you're walking, jogging, or swimming) to increase your MHR by a 40% interval or your RPE by four (in other words, raise your MHR from 50% to 90% or your RPE from five to nine).
- Maintain this intensity or speed until the beginning of minute five. At that point, reduce your intensity level back to your baseline for two minutes. After two minutes at baseline, return to the higher intensity level for two minutes.
- Continue this two-step, four-minute cycle for twenty minutes, then cool down by walking for 10 minutes.

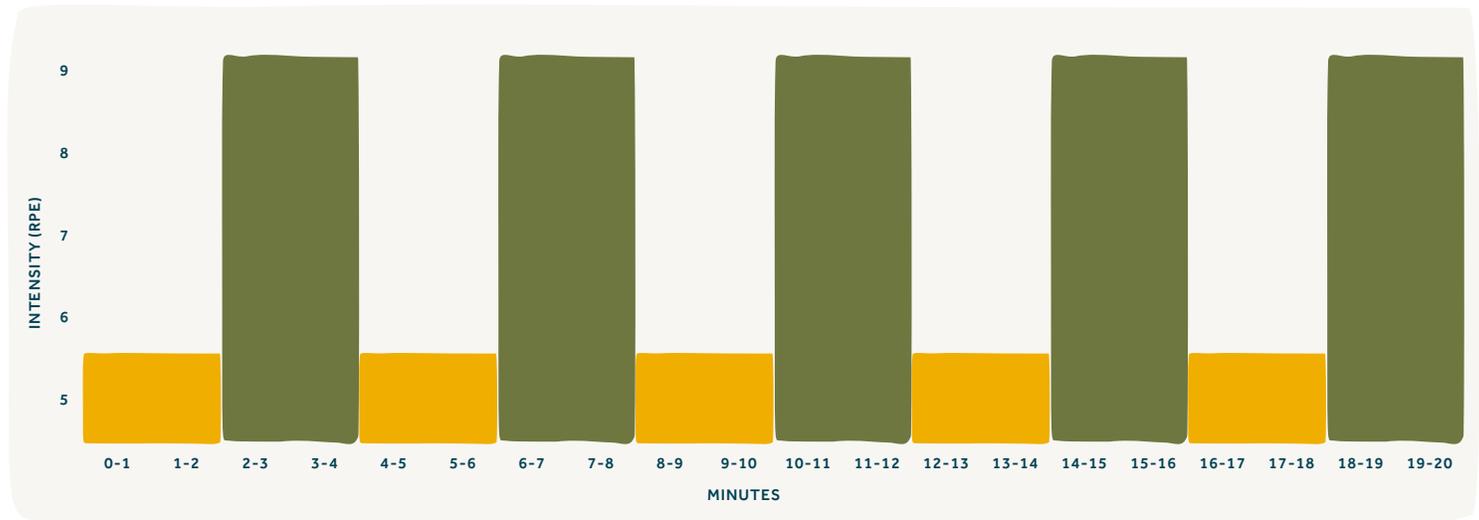
On the next page you'll find a minute-by-minute breakdown of these two interval-training options.



Interval A: Five-Step Interval



Interval B: Two-Step Interval



This chart breaks down your two options for interval- training workouts, minute by minute. In the top program, Interval A, you increase the intensity of your workout one minute at a time in five minute cycles. In Interval B, you cycle back and forth between high intensity and low intensity in four-minute cycles. End with a 10 minute cool down.

You now have a range of choices to increase the intensity of your EAT resistance or walking workouts. By incorporating these options twice a week into your exercise program, you're taking the steps necessary to challenge your body and build Ultrahealth™ longevity.



Let's sum up by taking a look at a sample week on the Ultrahealth™ movement plan.

	NEAT SYSTEM	EAT SYSTEM	TWO PER WEEK	TIME SPENT	CALORIES BURNED
MONDAY	WALKED FOUR FLIGHTS WALKED TO LUNCH	30 MINUTE EAT UPPER BODY	ENHANCED RESISTANCE TRAINING	30 MINUTES	650
TUESDAY	WALKED FOUR FLIGHTS CLEANED CLOSET	30 MINUTE EAT WALK		30 MINUTES	425
WEDNESDAY	WALKED FOUR FLIGHTS WASHED CAR	10 MINUTE COOL-DOWN WALK	INTERVAL TRAINING 20 MINUTES	30 MINUTES	575
THURSDAY	WALKED FOUR FLIGHTS RAKED LAWN WASHED DISHES	30 MINUTES EAT LOWER BODY	ENHANCED RESISTANCE TRAINING	30 MINUTES	600
FRIDAY	WALKED FOUR FLIGHTS WALKED TO LUNCH	30 MINUTE EAT WALK		30 MINUTES	450
SATURDAY	MALL SHOPPING DANCING WITH GIRLFRIEND	30 MINUTE EAT WALK		30 MINUTES	650
SUNDAY	CLIMBED STADIUM TO UPPER DECK	10 MINUTES COOL-DOWN WALK	INTERVAL TRAINING 20 MINUTES	30 MINUTES	600

A sample weekly Ultrahealth™ Movement Plan. Here's how one week on the ultrahealth movement plan might look, incorporating NEAT, EAT walking, EAT resistance training, and EAT enhancement.

Your Ultrahealth™ Movement Plan

- NEAT
- EAT Walking
- EAT Resistance
- EAT enhancement (twice per week, replaces EAT walking or resistance training for that day)



Together, these increased activities provide a robust movement plan that builds optimal cardiovascular, musculoskeletal, and brain health. Combined with the nutrient-dense, calorie-reduced fuelings you'll be getting through dietary optimization, you'll have the tools you need to create an Ultrahealth™ state and stay in top physical shape into your seventies and eighties.

In fact, there's no reason you can't continue this high level of fitness even into your 90s. Just look at Jack LaLanne, my all-time optimal health hero. He lived to 96 years of age and was among the first to realize the importance of extreme fitness and proper nutrition. He lived in a state of Ultrahealth™ and was working with a group of innovative health care professionals to create a supervised program of EAT-type activities specially designed to help senior citizens get fit and stay fit.