PILGRIMS WELLNESS CLINIC

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Energy Balance: Juggling the In & Out

Let's do some math! Energy needs vary dramatically from person to person depending on: sex, height, weight, age, activity factor, body composition (lean vs. fat tissue), genetics, hormones, lifetime weight status, set-point weight, meal composition, stress factors and social lifestyle. The "gold standard" for estimating a person's basal metabolic rate (BMR) is the Mifflin-St Jeor equation. Plug your numbers into the equation below, or go to morekale.com.

RMR (F) = [9.99 x weight in kg] + [6.25 x height in cm] – [4.92 x age] – 161

↓ ↓ ↓

_____ + _____ – _____ – 161

Wt# / 2.2 = Wt in kg | Ht" x 2.54 = Ht (cm) | My RMR = _____

BMR & RMR can be used interchangeably. They represent the amount of energy required to maintain the body's normal metabolic activity, such as respiration, maintenance of body temperature and digestion. Specifically, **it is the amount of energy required at rest with no additional activity.** The energy consumed is sufficient only for the functioning of the vital organs such as the heart, lungs, nervous system, kidneys, liver, intestine, sex organs, muscles, and skin. In order to estimate the amount of energy you need in a day, you must multiply this number by an activity factor.

Activity Factors

Sedentary	Mild	Moderate	Heavy
AF 1.2	AF 1.3-1.375	AF 1.5-1.55	AF 1.7
Little or no exercise + Desk job	20 min intensive exercise 1-3x/wk Busy lifestyle – on feet for many hrs/d	30-60 min intensive exercise 3-4x/wk On feet most of day	60 min intensive exercise 5-7x/wk Labor-intensive job (ie: construction)

My RMR _____ x AF _____ = _____ daily kcal goal

For weight maintenance range = +/- 10%

For stable weight loss = – 500 kcal/day

For weight gain = + 500 kcal/day

DAILY CALORIE GOAL RANGE: _____

Other factors to take into consideration when you are estimating your energy needs:

- **Lean Body Mass** – muscle weighs more than fat and it also burns more calories! If you are a woman 30% or less body fat, your energy needs are elevated.
- **Type of Activity** (Aerobic vs. Anaerobic) – Aerobic activity (cardio) is going to increase your RMR/BMR for only a short period of time after exercise but a gradual increase in *overall* RMR/BMR will occur through consistent anaerobic exercise (strength training) as lean body mass increases.
- **Food Composition** – The "Thermic Effect of Food" accounts for about 10% of total energy expenditure for the day. If you do not get regular and consistent protein, this number could change substantially since protein takes the most energy to metabolize

  PROTEIN >> CARBS >> FAT
- **Food Timing –** Depending on your personal needs, some people require constant snacking and eat 6 small meals per day while others thrive off 3 square meals per day.
- **Sleep** – Not enough sleep does not allow your body to fully recover from the day's food intake and exercise. If you do not get enough sleep on a regular basis (chronic under-sleeping), you could be at risk for metabolic and hormonal imbalances.
- **Stress** – I cannot stress enough how important managing stress is! We cannot eliminate stress from our lives; therefore we must learn to cope. If you cannot name 2-3 *healthy* stress coping strategies that you incorporate into your life, get on it!
- **Set-Point Weight –** Most of us have a set-point weight where our body feels most comfortable in terms of managing energy. Constantly fighting against this is impractical.
- **Genetics** – Ever heard of the "Thrifty Gene"? Some scientists believe certain genes exist that makes some people more 'thrifty' with their energy than others. About 25% of our body fat is determined by genes. For more info see Inherent Health or Thinner Gene websites.
- **History of Dieting –** If you are one of those people who have hopped from 1 fad diet to another – each promising more rapid weight loss than the next – than you may have a sluggish metabolism. We are primal beings and when your body thinks there is not adequate food to sustain life, it holds onto everything it can get! This is called SURVIVAL!
- **Hormone Imbalance –** Whether it's thyroid, sex or hunger and satiety hormones, being tested for and managing your hormones can make ALL the difference in metabolism.
- **Medications –** Some medications, especially birth control, antidepressants and antipsychotics, can have a serious side effect on metabolism. Be proactive about die and exercise if you are on any of these medications.
- **Micronutrient deficiencies** – if you don't have the cofactors to get the energy into your cells or to manufacture it once it gets there, you will have a sluggish metabolism!

Why BMI is not a great benchmark...

Table 13.3 Strengths and Limitations of Various Tools for Defining Overweight

	Strengths	Limitations
BMI (body mass index)	Gives ratio of weight to height Accurately predicts health risks related to obesity in large groups of people	Cannot indicate pattern of fat or amount of fat or lean body mass Does not account for differences in gender, frame size, or activity level
Body composition	If done properly, most accurate way to measure body fat	Can be expensive Equipment not always available
Fat patterning	Tells us about a person's body shape Can indicate if a person has a higher risk of certain chronic diseases	Does not directly measure body fat content