

How to Prepare for Your Metabolic Evaluation

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Please Note: In the instructions below, I've put especially important points in *italics*. You'll probably note that in some places, the instructions are a bit repetitious; that is intentional. The instructions are important for us to get accurate measurements during your metabolic evaluation. If poor memory and concentration are part of your symptoms, please let us know. My technician or I will spend as much time as necessary to make sure you understand the instructions. If necessary, enlist the help of a relative, friend, or someone else to help you to prepare properly. Thank you for cooperating with this.

The testing you'll undergo at the clinic is state-of-the-art for evaluating your metabolic status. However, to get accurate results, *you must closely follow our instructions for preparing for your evaluation*. Below are the step-by-step instructions. Please read them carefully, and if any point isn't clear to you, phone the clinic so that one of us can make it clear to you.

You will, of course, come to our clinic for my technician or me to take some of your measurements. But before you come to the clinic, you'll take two types of measurements at home. In a section below, I describe those two home measurements. I also explain below how you should prepare for the measurements my technician or I will take at the clinic. In addition, I explain what you must do in preparation for your lab tests at the medical lab I will send you to. (Of course, if you've already had your lab tests done elsewhere, you won't go to the lab here. But you'll need to provide us with copies of the test results.)

At the end of these instructions, we have a **CHECK-OFF LIST**. *Please read over the list now*. Doing so will give you an overall understanding of what we need for you to do. This will help you understand the detailed instructions in the sections below.

After we send you a copy of these instructions, or after you download and print them, my technician or I will talk with you and go over each step. *We'll need to make sure each step is clear to you*. Please don't hesitate to ask questions if something isn't clear to you.

In evaluating your metabolic status, we'll consider the results of six types of tests. They are your:

- | | |
|----------------------------------|-----------------------------|
| (1) basal body temperature, | (2) basal pulse rate, |
| (3) body composition, | (4) resting metabolic rate, |
| (5) thyroid and other lab tests, | (6) your clinical status. |

By clinical status in (6), I refer to your health history, your symptoms, and the results of a physical examination. We may also include an electrocardiogram (ECG or EKG) and special physical exam tests.

You will measure your basal body temperature and basal pulse rate. We will measure your body composition and resting metabolic rate at the clinic. For thyroid and other blood test levels, you'll either (1) go to the Boulder Community Reference Lab or Quest Diagnostic Lab to have blood drawn, or (2) provide us with the results of the following lab tests:

• Comprehensive metabolic profile • Lipid panel • CBC (with automated differential and platelet count) • Ultrasensitive TSH • Free T₃ • Free T₄ • Thyroglobulin antibodies

- Thyroid peroxidase antibodies
- Free testosterone
- Insulin-like Growth Factor-1 (IGF-1)

The sections below describes the measurements. Within the sections, there are separate headings for each type of measurement. Under each heading, I give step-by-step instructions. Please read the instructions, and *if anything isn't perfectly clear to you, let us know*. You can reach us at 303-413-6003

**MEASUREMENTS YOU'LL TAKE AT HOME:
YOUR BASAL BODY TEMPERATURE &
YOUR RESTING PULSE RATE**

You'll need a thermometer to take your basal body temperature. And, you'll need a clock with an easy-to-see second hand to take your basal pulse rate.

The word "basal" simply means that you take the measurements at a time when your body functions are at their slowest rate. The slow rate keeps your heart beating, your blood flowing, and other vital body functions going.

Your metabolic rate, body heat, and pulse rate are at their slowest when you first wake up from sleeping. This is the ideal time to measure your basal temperature and basal pulse rate.

When we get out of bed in the morning, our body functions speed up. The purpose of the speed up is to provide increased energy to meet the demands of staying upright against gravity and going through our daily tasks. The speed up increases our metabolic rate, body temperature, and pulse rate. So, it's crucial that you take your temperature and pulse rate when you first wake up *before* you get out of bed. When you take your temperature and pulse rate, make sure you're comfortably warm in bed. If you're chilled your temperature will be higher and your pulse rate faster than basal.

Please take your temperature and pulse rate for a total of 5 days. *Record the measurements in the appropriate spaces in Table 1 (see below)*. Note that the table has a row for the date when you take the measurements. It also has separate rows for recording your temperature and pulse rate on each date. In addition, the table has a row for recording the day of your monthly cycle (if you have menstrual cycles) when you take the measurements (more about this below).

If you are female, it is especially important that you tell us where you are in your monthly cycle, if you have cycles. It's best to take your temperature in the follicular phase of your cycle; that is, after your period has stopped and before you ovulate. If you take your temperature during your luteal phase (between ovulation and the beginning of your period), be sure to let my technician or me know.

● **How to Take Your Basal Body Temperature:** You'll need a thermometer to take your basal temperature. Please use an electronic digital thermometer. Inexpensive basal digital thermometers are available, but you don't have to use one designated as a basal thermometer. Before you go to sleep, place the digital thermometer where you can reach it upon waking *without having to get out of bed*.

Take your temperature as soon as you wake up and before you get out of bed. Doing so makes the measurement a "basal" reading of your temperature. Leave the thermometer in your armpit until a minute after it beeps. Thermometers usually beep one minute after you start them, so you'll take your temperature for two minutes.

● **When to Take Your Basal Body Temperature:** If you can arrange to do so, take your basal temperature 5 mornings before the day you come to the clinic for measurements. If for some reason you miss one or more of the 5 mornings, don't be concerned. Make up the missed mornings by taking your

temperature on as many days as necessary immediately after we evaluate you at our clinic. We do, however, need a total of 5.

Before menopause, a woman can get her most accurate basal temperature measurements during the week after her menstrual flow has stopped. If you take your basal temperature during that week, that will be good, but it's not necessary as long as you let us know (by recording in Table 1) where you are in your cycle.

It's okay for you to take your basal temperature during a part of your monthly cycle that's distant from those ideal days. Slight daily fluctuations in your temperature may occur. Taking your temperature on 5 days will allow us to get an average temperature that smooths out the effect of fluctuations.

● **When *Not* to Take Your Basal Body Temperature:** If you have an infection such as a cold or the flu, please wait to take your basal temperature when you've fully recovered.

Table 1 has a row titled "Day of Cycle." In this row, after recording your temperature and pulse rate, record the day of your 28-day monthly cycle. If your cycle is too irregular for you to know which day you're in, just write a question mark in the space. If you estimate, write "apprx" for "approximate" after the estimated day.

After menopause, a woman can take her basal temperature on any day. If you're menopausal, please write an "M" in each of the five spaces in the "Day of Cycle" row.

Table 1. Basal body temperature and resting pulse rate measurements on 5 days.

Test #	Day 1	Day 2	Day 3	Day 4	Day 5
Date:					
Temp:*					
Pulse:†					
Day of Cycle:‡					

*Basal body temperature.

† Resting pulse rate.

‡ If you're menopausal, write "M" in the spaces. If you're not sure of the day of your cycle, write "?" or "apprx" in the spaces.

● **When to Take Your Basal Pulse Rate:** You should take your pulse rate just after waking up and before getting out of bed. You can take it while you're taking your temperature or right afterward.

● **How to Take Your Resting Pulse Rate:** You may be most familiar with taking your pulse rate by touching your wrist just back of the base of your thumb. If you know how to find the pulsing artery in your wrist, it's okay for you to take your pulse rate this way. But the wrist pulse may be faint when you first wake up, making it hard to get an accurate count. If so, you'll probably find it easier to find a pulsing artery in the side of your neck.



The "x" on the woman's neck in the picture to the left is about where you'll feel the pulsing of the artery in your neck. To feel the pulse on the *right* side of your neck, use the fingers of your *left* hand. (If you're more comfortable feeling the pulse on the *left* side of your neck, use the fingers of your *right* hand.) To feel the pulse on the right side of your neck, first

lift your chin just a little, and turn your head slightly to the left. Then place the padded parts of your fingers flat against your neck. You may have to move your fingers around just a bit to find the pulse. When your fingers are over the artery, you'll feel it pulsing outward toward them.

In most people, this neck pulse is strong compared to that in the wrist. Feel the pulsations, and begin counting by the clock. Count the pulses for 30 seconds. Next, multiply the count by two. This will give you beats per minute. Record the rate in Table 1 along with your temperature for that day.

If you're not sure you're using this technique correctly, don't be concerned. Let us know. My technician or I will guide you through the procedure so that you learn to do it properly.

Please Note: The night before you take your pulse, you'll need to place a clock *with an easy-to-see second hand* close by. Make sure you can see the second hand while still lying comfortably in bed and taking your wrist or neck pulse.

HOW TO PREPARE FOR YOUR LABORATORY BLOOD TESTS

Preferably, you'll have your blood drawn at the lab on the same day you're scheduled to come for your measurements at the clinic. If you live in the Boulder/Denver area and I order your lab tests, you'll need to go to the Boulder Community Reference Laboratory (see attached directions) to have your blood drawn. Immediately afterward, you should come directly to the clinic (see attached directions) for us to take measurements. If you must go to the lab at another time, that will be fine.

If you're coming to Boulder from a distant city or state and your local doctor orders the tests, be sure to provide us with a copy of the results. A lipid panel that was done within the last three months is okay. However, the other tests, especially the thyroid-related tests, must be dated as close as possible to your evaluation in our clinic. These test should not have been done any longer than a week before your evaluation in our clinic.

You must fast for *12 hours* before going to the lab for your blood tests. *Fasting means that you consume nothing but water. However, please drink your usual amount of water.* Don't drink coffee, tea, soft drinks, or any other liquid except water during the fasting period. It's best to fast through the night and go to the lab early in the morning.

You must not eat before we measure your body composition and resting metabolic rate at the clinic. If you expect to be hungry after we perform the tests, please bring something to eat with you to the clinic. After we measure your body composition and metabolic rate (this will take about an hour), you'll be able to eat.

If you have low blood sugar when you don't eat for prolonged times, please let us know. We will determine how best to handle the problem so that we get accurate measurements.

HOW TO PREPARE FOR YOUR MEASUREMENTS AT THE CLINIC: YOUR TESTS FOR BODY COMPOSITION & RESTING METABOLIC RATE

We'll measure your body composition and resting metabolic rate when you come to the clinic. As I said above, preferably you'll come to the clinic for these two measurements immediately after your trip to the medical lab for blood tests. Please follow the instructions below to help us get accurate measures.

● **Activities *Not to Do.*** Several activities can alter the measures of your body composition and resting

metabolic rate. It's essential that you avoid these activities before coming to the clinic for your scheduled measurements. I've summarized these activities in Table 2 (see last page). Please carefully read the 6 items below and make sure you understand them. *If any of them is not clear to you, please call us so that we can clarify it for you.*

(1) For *4 hours* before coming to the clinic for measurements, don't eat. Please avoid eating a meal heavy in protein for 12 hours before; such a meal can raise your metabolic rate for that long a time. Eating carbohydrates raises your metabolic rate far less than does protein, and eating fats raises it much less than carbohydrates. Because of this, if you eat between 12 and 4 hours before coming to the clinic, choose fatty foods over carbohydrate foods, and carbohydrates over protein foods. Please avoid foods high in protein.

(2) Many people have symptoms of low blood sugar (hypoglycemia) when they don't eat for hours. If this is true for you, please let us know before the day you're scheduled to come in for your measurements. We'll need to work with you to make sure you don't have low blood sugar while we measure your metabolic rate.

(3) For *4 hours* before coming to the clinic, please don't exercise. By exercise, we mean any physical activity that raises your heart rate markedly. For example, we consider walking briskly exercise, especially walking briskly up stairs. When you walk up stairs, do so as leisurely as possible. *If you're running late for your appointment at our clinic, we prefer that you arrive late rather than walk rapidly to arrive on time.* If possible, give us a call to let us know you're running late, but don't stress yourself over being late.

If possible, don't drink alcohol for *24 hours* before coming to the clinic. To go to sleep, some people must drink a glass of wine or a beer before they go to bed. If this is true for you, please cooperate in two ways: (a) drink as little alcohol as possible the night before your evaluation, and (b) drink *a little* more water (say, 1 to 3 glasses) than usual the morning before you come to the clinic. Alcohol tends to dehydrate us, and replacing the water is important for an accurate body composition analysis. If you're somewhat dehydrated, your percentage body fat will be artificially higher when we measure it. We want to avoid this so that we get an accurate measurement.

(4) If you smoke cigarettes, please don't smoke one for at least *1 hour* before coming to the clinic.

(5) Don't take any over-the-counter drug the morning that you come to the clinic for measurements. When you fill out our evaluation questionnaire called the "FibroQuest form," please list all the drugs you take, both over-the-counter and prescription. This is important because we know the drugs that alter the metabolic rate. If you take a prescription drug that may influence your metabolic rate, please ask your prescribing doctor for approval *not* to take it before coming to the clinic for your measurements. Taking the drug only *after* we get your measurements will help us get accurate measurements. Also, don't take caffeine or eat caffeine-containing foods such as chocolate. Don't take stimulating or adaptogen herbs such as ginseng, and don't take nutritional supplements for 4 hours before coming to the clinic.

(6) If the weather is cold on the morning of your appointment at the clinic, *please make arrangements to stay warm.* If your skin gets chilled, muscles will tighten to generate heat, and this will increase your metabolic rate. So please do what's necessary to stay warm from the time you get out of bed to the time that you arrive at the clinic. Keep your room comfortably warm during the night and in the morning when you're preparing to come to the clinic. And wear warm clothing, including gloves, if the weather outside is cold.

● **Activities to Do.** In contrast to the list above of things not to do, it's important for you to *do* two things:

(1) **It's extremely important that you *do* drink water the morning that you come to the clinic for measurements.** As I said above, not enough water can alter the measurement of your body composition. I recommend that you drink at least two 8 oz glasses of water, and three if you're so inclined. However, don't overly hydrate yourself by drinking more.

(2) **When we measure your metabolic rate, it's important that you relax.** Being tense physically or troubled about something can increase your metabolic rate. Because of this, we ask you to cooperate in three ways:

- (a) If stretching, taking a hot bath, or some other method relaxes you physically, please do this before coming to the clinic.
- (b) Avoid emotionally arousing situations or issues the morning of your evaluation. If necessary, ask any relatives, friends, or coworkers to cooperate by delaying communicating with you about emotionally provocative matters until after your evaluation.
- (c) When we measure your metabolic rate, you'll be lying down. During this time, please consider yourself temporarily off duty from all other responsibilities. Let yourself relax and enjoy the brief time out.
- (d) If you have some special recorded music or other sounds that relax you, please bring them and a cassette or CD player with you to the clinic. If you don't have a player but you have a cassette tape or CD that will relax you, let us know that so that we'll have a cassette or CD player available for you to use.

CHECK-OFF LIST

I understand that I'm to do the following:

- Take my basal body temperature for 5 days, using a digital thermometer.
- Take my basal pulse rate for 5 days.
- Fast for 12 hours before going to the lab to have blood drawn.
- Fast for 4 hours before coming to the clinic for measurements, and avoid eating a heavy protein meal for 12 hours.
- Bring food to the clinic with me if I'm likely to have low blood sugar from fasting.
- Bring to the clinic a cassette tape or CD of music that relaxes me.

Table 2. Activities that can affect metabolism and body composition, and how long to abstain from them.

Activity	Hours to abstain from
Eating	4
Exercising	4
Caffeine consumption	4
Alcohol consumption	24
Cigarette smoking	1

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