

STAFF TRAINING MANUAL

REEVUETM
Indirect Calorimeter

www.korr.com

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Ch 1. Introduction

Congratulations! You are about to implement the most exciting weight loss program ever! The Target Caloric Zones program combines the science of metabolic testing with good teaching principles, behavioral reinforcements, and life-style changing strategies.

Now you may be wondering, “What did my boss get me into?” Not to worry! This manual will walk you step by step through the process. Before you know it, you will be an expert in “Target Zones!”

First of all, it is important to know that KORR recognizes and respects the expertise of medical professionals. We’re not here to tell you how to do your job. The goals of this program are simple:

- 1. Motivate patients to begin a weight loss program by offering a new and exciting service.*
- 2. Measure their Resting Metabolic Rate, revealing unique information about what it will take for them to reach their weight loss goal.*
- 3. Provide the framework to teach the basic principle of “burn more than you eat.”*

After that, your expertise takes over! You can implement any philosophy of nutrition and weight management you may have, or you can use the program developed by KORR, “Eating To Your Metabolism: the Target Zones Program.” The point is, metabolic testing has drawn your patient through the first step of the weight loss process. You now have their attention, and you can truly help them change their lives!

Ch2. Who needs training?

ALL STAFF Metabolic testing will generate a great deal of interest from current patients and new patients. Anyone in your office may be called upon to answer basic inquiries. Consequently, we recommend that everyone in your office be able to explain the basics of how the test is done, what information it reveals, and why they should have it done.

WEIGHT LOSS COUNSELORS Certain members of your staff will most likely be identified as those administering the test and counseling patients. They should read this manual thoroughly, as well as the “Eating To Your Metabolism” guide, and the REEVUE user manual.

PHYSICIANS Physicians within your practice will want to read this manual to help them explain the results in the most time efficient manner. The User Manual provides more details related to the technology and physiology of metabolism.



Ch3. Promoting the Test

Korr has provided you with banners, posters, and brochures that will catch the interest of patients. But remember, this is a whole new thing for them. Despite what they read, most will still want to ask questions and talk to a “real” person. It is important to be enthusiastic and promote this new service. You might consider the following comments:

“Have you heard about our new service? We can actually test your metabolism by measuring your breathing for just 10 minutes! ”

“How does it work? Well, since it takes oxygen to make energy, we just measure how much oxygen your body uses in 10 minutes, and that tells us how much energy (or calories) you are burning.”

“Metabolic testing begins as the REEVUE measures the amount of oxygen in the room. It then measure how much oxygen was in the air you breathed out during the test. By subtracting those 2 numbers, REEVUE is able to calculate how much oxygen your body used.”

“Is it accurate? Actually, it is the same technology they use in the hospital, so it is VERY accurate.”

“Is it hard? No! You just sit in a chair, relax, and breathe through a breathing tube. That’s it!”

“What does it tell you? It tells you how to eat the most calories possible and still lose weight.”



Be careful that you don’t get too off track with complicated discussions about metabolism. It is important for the patient to know that a metabolic test provides information they can understand and use.

Test Preparation

If someone schedules a test, you need to give them the test preparation handout that instructs them how to be best prepared for their test. You may want to go over those points with them.

- Avoid eating for 4 hours prior to testing. This does not include drinking, although very cold water can affect results if ingested just prior to testing.
- Avoid exercising before testing. This does not include normal activities. It is referring to a workout that sustains the patient's heart rate for a sustained period of time.
- If possible, avoid the use of stimulants such as caffeine on the day of the test. Patients may ask about what are stimulants. Never advise they stop taking prescription medication without the express instruction of the physician. Over-the-counter antihistamines, caffeine, and some herbal remedies should be avoided.

The handout looks like this:

Your next Metabolic Test is scheduled for ▶

Preparing for the Test


It is desirable to measure your metabolic rate at a true resting level. To ensure you are at rest, we recommend the following preparation:

1. You should avoid eating a meal 1 hour before the test.
2. Avoid exercising on the day of your test.
3. If possible, avoid the use of stimulants such as caffeine on the day of the test.

During The Breath Test

During the test you will be invited to recline in a comfortable position. You will be given a mouthpiece or a mask to breathe into. You will be breathing in air from the room, but the gas that you breathe out will go into the metabolic analyzer to measure your metabolic rate.

1. Relax and close your eyes during the test. You deserve a break – enjoy it!
2. Keep lips sealed lightly around the mouthpiece. It is important that all the air you breathe out is analyzed.
3. In just 10 minutes, your metabolic rate will be measured, and those results will be used to calculate your Target Caloric Zones. These Zones will be printed out in an easy to understand format that will outline for you just how to use your metabolism to help you lose weight.



That's it! Before you know it, you'll be on the road to comfortable, permanent weight loss.

The most common question regarding preparation sounds something like this:

Q: *"What will happen if...I eat (or I exercise, or I have a cup of coffee, etc.)"*

The answer to that question is simple.

A: *"These are all things that slightly increase your metabolic rate. Although their effects are minor, we suggest you follow the guidelines to get the best results possible. The closer you are to resting, the more this test represents your resting state."*

If patients push to know how much these things will affect their metabolic rate, the answer is that there is no way to know. Everyone is different, just as everyone's metabolic rate is unique.

Ch4. Understanding your patients

The weight loss patient is someone who may be quite different from those coming to your office with “traditional” illnesses. They may feel hesitant, or ashamed of themselves. But they have taken the first step by coming in to your office. It is now up to you to show them that you are there to help them.

1. Make them feel welcome.

Approach them immediately upon entering the facility. They may feel very lost and uncomfortable in this environment. Don't wait around for them to ask you for help.

2. Offer to explain metabolic testing in more detail.

Most people seeking help losing weight have dieted before. They are very skeptical of empty promises or gimmicks. Give examples of patients you have seen who have done the test and are seeing results. You might say,

“This program works because it allows you to eat the most food possible and still lose weight!”

“If you've had trouble losing weight in the past, you actually may have deprived yourself too much! Our success is based on knowing what your body needs to maintain a healthy metabolism.”

3. Accept these potential clients for where they are at, not where you think they should be.

Set reasonable goals, especially when it comes to exercise. Spend time to discuss activity and discover a form of exercise that your patient will not only enjoy, but succeed at. Increase their activity level gradually, focusing on what they can do, not what they can't.



Ch5. Doing the Test

When a patient comes in for their Metabolic Test, you want to start by weighing them. Spend some time talking with them and determine what their goals are. Help them settle on a reasonable goal.

Most overweight patients have an unrealistic expectation of what they should weigh, often going back to some ideal size they were as a teenager, or on their wedding day. Most experts agree that a 10% reduction in weight is the best initial goal. Reassure your patient that once that goal is met, you can re-evaluate their status.



A 10% reduction is calculated by taking their current weight, then moving the decimal point one place to the left. For example, if your client weighs in at 160 lbs, a 10% reduction would be 16 pounds.

Begin testing

Conducting the test is simple. Anybody can learn to do it in about 5 minutes.



More important than pushing the right buttons is what you are going to say to the patient as you prepare and administer the test. Patients appreciate when you take the time to carefully explain each step as it happens.

It's best to do testing in a quiet area, away from noise or distractions. It's also optimal that those being tested be in a reclining position.

Turning on the device

To begin testing, simply press the on/off button. The device will begin to warm-up, then automatically start calibrating. This usually takes 2 to 3 minutes. The breathing tube should NOT be attached to the device.



The breathing circuit

Remove a clean mouthpiece from the packaging and hand it to your patient. You may want to prepare them for the sensation of breathing through the mouthpiece. It is helpful if you have previously performed the test on yourself. Your explanation may sound something like this:

“Breathing through this mouthpiece might feel kind of restrictive at first. It’s kind of like breathing through a snorkel or scuba diving. All the fresh air you need will come in through this valve. And if at any time during the test you need to take the mouthpiece out to swallow, wet your lips or use a tissue, that’s OK. It won’t mess up your results. Just make sure all your exhaled air goes right in here. Hey, relax! It will get easier as you get used to it and before you know it, your 10 minutes will be up.”

Have the patient put the mouthpiece in first to get it comfortable. It doesn’t matter which way the valve is facing. Then bend or adjust the hose to get it in a comfortable position before plugging it into the device. Have her place the nose clip on to insure that all the expired air goes into the device. Once she’s comfortable, just connect the hose to the box.



Testing

The analyzer goes to work automatically-as soon as the first breath is detected. Just have your patient relax as much as possible with even breaths in and out - that's all there is to it!

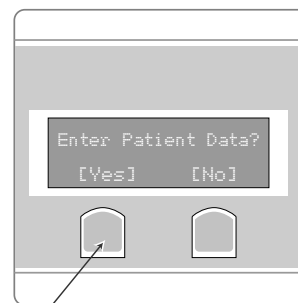


- If the patient seems tense, you can encourage them by saying, *“Just close your eyes and relax.”*
- If noise seems to be an issue in your testing location, you may consider headphones with quiet music.
- Watch them throughout the test to make sure they keep their lips sealed completely around the mouthpiece, and that the display shows even breaths. Don't talk to the patient during this time.

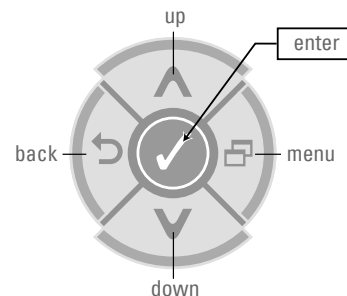
In approximately 10 minutes, the display will read “test complete” and the device will beep indicating that the test is finished. Be sure to discard the breathing tube and mouthpiece after each use.

Patient data

When the test is complete, the device will ask if you would like to enter patient data. If you would like to compare your patient's measurement to normal values and calculate their BMI, press the button under the answer “yes”.



Next enter their age, height, weight and gender. Those numbers are adjusted using the up and down arrows on the keypad. To enter, press the check-mark in the center.



Other menu options are available allowing physicians to view values such as VO₂, tidal volume, check calibration, etc. But you can read more about those in the REEVUE user manual.

Ch6. Presenting the Results

The test results are printed in a manner to facilitate teaching the patient. Familiarize yourself with the printout beforehand, paying extra attention to the detailed teaching on the back of the page.

Explaining the test results to your patient can be divided into 3 separate steps.

1. What you burn.
2. What you should eat.
3. How do you compare.

REEVUE Indirect Calorimeter

target CALORIC Zones These are Your measured daily caloric zones found from Your Metabolic Rate Test.

Your Energy Balance Results

There is one basic truth to weight loss: You need to burn more than you eat. Target Metabolic Zones tell you exactly how to do that. The following results of your test show you precisely how many calories your body actually burns, and calculates how many calories you should eat to lose or maintain your weight.

What you burn

Exercise + 200 Cals
(Estimated from Measurement)

Lifestyle + 554 Cals
(Estimated from Measurement)

REE
Resting Energy Expenditure
2779 Cals
(Metabolic Measurement)

Calories / Day
3539 Cals*
Total Energy Output

How much you eat

Need to burn more Calories than you eat!

Maintenance Zone
2770 to 3333

Weight Loss Zone
2225 to 2779

Medically Supervised Zone
0 to 2225
Medically Supervised Only

Calories / Day
Energy Input

*Total = REE + Lifestyle + Exercise

Exercise
This is an estimate of the number of Calories you would burn with 30 minutes of a moderate exercise level.

Lifestyle & Activity
This is the number of calories you burn performing your daily activities... working, playing, eating, etc. Activity accounts for a significant portion of the calories you burn everyday.

Resting Metabolic Rate
Today we measured your Metabolic Rate. This is the number of Calories your body burns everyday at rest.

Maintenance Zone
Once you reach your goal weight, this is how many calories your body needs to maintain your weight.

Weight Loss Zone
Comfortable weight loss comes from eating slightly less Calories than your body needs. By eating healthy foods throughout the day you should not feel hungry.

Medically Supervised Zone
Very low calorie diets should only be done under medical supervision. Supervision is required to ensure adequate nutrition, and to monitor and treat the potential side effects of metabolic rate.

How does your metabolism compare? Compared to a typical person of similar sex, age, height and weight, your metabolic rate is:

CAUTION: If you think you may not have sealed your nose or mouth around the mouthpiece, or if you exercised or ate a large meal beforehand, you may want to repeat the test (ask about correct test preparation).

Scale: SLOW ——— NORMAL ——— FAST

Data

Measured REE	11.63 kJoule/day (2770 kcal/day)
Predicted REE	9.21 kJoule/day (2201 kcal/day)
Estimated TEE	13.95 kJoule/day (3333 kcal/day)
VO ₂	403 ml/min (3.91 ml/kg/min)
FeO ₂	15.43 % expired oxygen
Minute Volume	10.02 Liters / min
Tidal Volume	945 ml
Respiratory Rate	11.3 breaths / min
Test Duration	5.9 minutes

Stats

Age: 29 years
Gender: Male
Height: 183 cm (6 R 0 in)
Weight: 103 kg (227 lbs)
BMI: 30.8

Caregiver's Interpretation

Target daily calories:

Next Test Date:

Exercise Goal:

Name: _____
Date: _____
Caregiver: _____

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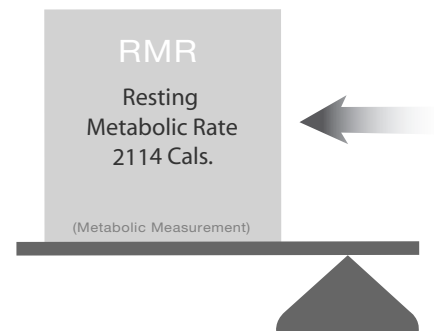
CAUTION: Consult your physician before starting any weight-loss or fitness program.

1. What you burn

Focus the patient on the left side of the scale. Explain that their body burns calories in 3 different ways, each represented by one of the colored boxes on the scale.

RMR

The largest box at the bottom of the scale is the measurement of their resting metabolic rate. Show them that number and explain that is how many calories they would burn in a day if they did nothing more than sit in a chair all day long.



“RMR is what we just measured, your Resting Metabolic Rate. It shows us how many calories your metabolism burns at rest.”

“This is how many calories your body has to burn just to stay alive.”

“RMR represents the majority (about 70%) of calories you burn in a day.”

“This measurement is not affected by activity or anything you do during the day.”



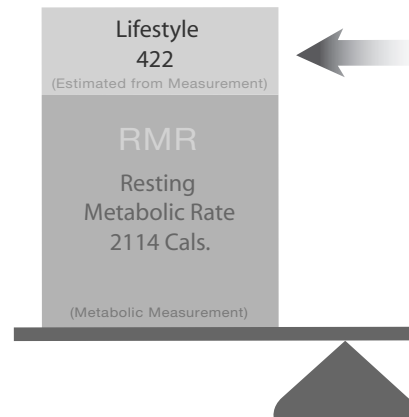
Lifestyle

The number in the middle box uses their RMR to estimate how many more calories they burn doing regular daily activities like making the bed, walking around the office, etc. Point out to them that this is an area where they can really increase the number of calories they burn. Even small changes like taking the stairs instead of the elevator or parking on the far side of the parking lot can add up to a great deal in this category.

“Look at the large number of calories you can burn through lifestyle! This isn’t becoming a marathon runner... it is simply moving more as you go through your day.”

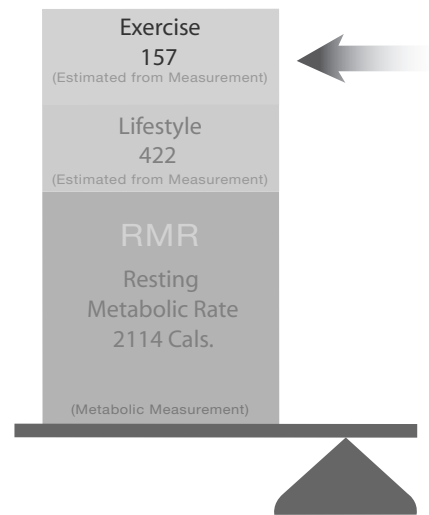
“As you can see, the greatest power to control or affect caloric burn lies in lifestyle changes!”

“Try just making small changes...like getting up from your desk once an hour to walk around the office, or walking around the house while chatting on the phone. This is where burning calories can really add up.”



Exercise

The top box uses the RMR to estimate how many calories they burn with 30 minutes of moderate exercise, like walking. Be sure to explain that although this number seems relatively small, the benefits of exercise go way beyond just calories burned. Exercise releases hormones that facilitate weight loss, increase fat burning muscle, and stabilize food cravings.



The ReeVue defines moderate exercise as 6 METS. A MET is a measure of intensity typically used by exercise physiologists and is based on RMR.

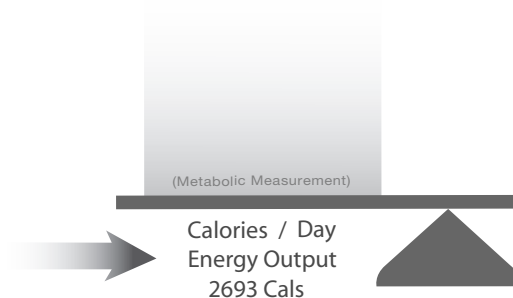
“This is an estimate of how many calories you burn every time you exercise for 30 minutes at a moderate level. Even though this is an estimate, it is based on your RMR measurement, making it unique to you.”

“Don’t be discouraged by this relatively small number. Exercise has many benefits besides just burning calories that are vital to weight loss.”

“Exercise is a way to burn extra calories and increase your rate of weight loss.”

Total Energy Expenditure

All 3 of these categories are added up at the bottom of the scale as a total energy expenditure (TEE). That is the total number of calories your client burns in a day.



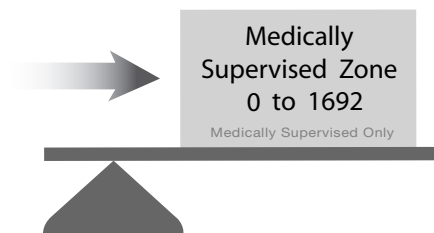
2. What you should eat

This side of the scale uses the RMR measurement to calculate 3 different zones. The effect of eating within these caloric zones can be explained the following ways:

Medically Supervised Zone

This zone shows the calorie range that is too low for most patients. Not only is it hard to get the nutrients their bodies need, but if their calorie intake drops this low, their metabolic rate will probably slow down. If their body perceives that they must be starving, it will hang onto every last calorie instead of burning it. Their bodies become very energy efficient, making it hard to lose weight. And with a slowed metabolic rate, it is very easy to regain any weight lost, even with “normal” eating.

Under the direct supervision of a physician, individuals sometimes can diet successfully in this zone. But it requires strict monitoring of nutritional status and metabolic rate.



“Drastically cutting calories can trigger a stress response.

When this happens, your body releases chemicals and hormones that make it hard to lose weight.”

“Don’t think that starving yourself will get you to your goal faster. It won’t”

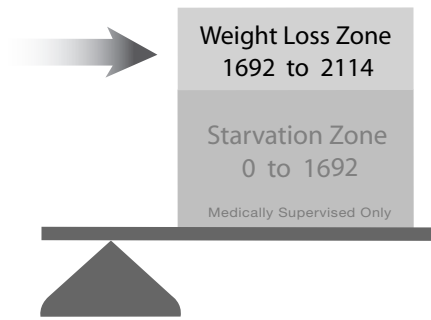
“If your body thinks it is starving, it tries to store fat, not burn it.”

Weight Loss Zone

This is the magic number...each client's own metabolic "sweet spot." Notice that the weight loss zone corresponds closely to the RMR measurement. Remember, RMR is the number of calories a person needs to keep their body alive.

If patients consume the number of calories in this zone each day, they will be satisfying their body's most basic needs. With those needs met, their body will be relaxed and satisfied. We call this "eating to their metabolism."

But note that there are still calories being burned through lifestyle and exercise. Those calories will tip the scale to the burn side, allowing your patient to lose weight at a rate of about 2 lbs a week.



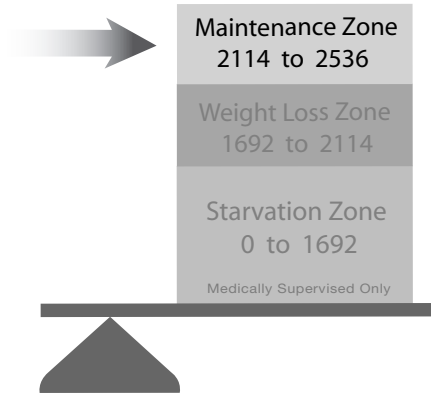
"This range of calories is where you should eat in order to lose weight. It is unique to you, based on your RMR measurement"

"Your goal is to eat the most calories possible within your Weight Loss Zone. Do this, and you will lose weight!"

"By making good food choices, you will find that you will have plenty to eat in your weight loss zone! Your goal is to satisfy your body, not deprive it."

Maintenance Zone

This zone is where your patient will want to eat to maintain their weight. It balances what they eat with what they burn so that weight stays stable. It is just above the weight loss zone, making the transition to maintenance very easy.



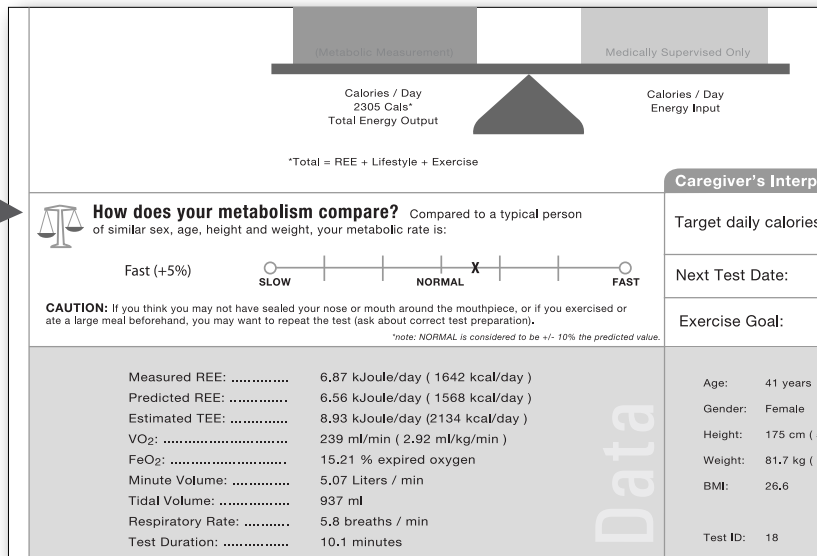
"The reason most weight loss programs fail is because the transition from 'dieting' to 'real life' is too abrupt. By learning to eat to your metabolism, you will actually be learning to stay slim and healthy for the rest of your life. Just see how close your Maintenance Zone is to your Weight Loss Zone."

"It is vital that we continue to measure your RMR throughout the weight loss process. Once you reach your goal, we'll be able to pinpoint the precise caloric intake it will take to keep you there for the rest of your life!"



3. Comparison scale

Most people want to know if their metabolism is “fast” or “slow.” This scale takes their metabolic rate measurement and compares it to the averages of other people of the same age, height, weight, and sex. Then it calculates whether they are faster, slower, or the same as those averages.



Most overweight people who have struggled with losing weight assume that their metabolism must be slow. Actually, if they are currently overeating, their metabolism may be higher than the averages because their bodies are trying to compensate for the extra calories. Or if they are significantly obese, it may also be high as their bodies exert more energy moving a large, heavy body.

Knowing your patient's metabolic rate is invaluable, regardless of how it compares to the averages. But the teaching power of this comparison is to eliminate the excuse of a slow metabolism.

If they read normal or above, you can approach it like this:

"Wow! Look at this! Your metabolism is normal! That's great! Now all we need to do is focus on what you eat, how much you are eating, and start burning a few more calories."

If they measure slower than normal, consider saying:

"This may explain some of your troubles in the past. But now that we know what we're dealing with it, we can really focus on getting your metabolism reved up and going again."

In either case, repeated testing is recommended to monitor the affect your interventions are having on their metabolic rates. Keep in mind that for the first month or two their metabolic rate may be pretty unpredictable as their bodies adjust to the changes.

Ch7. Answering the tough questions

1. "I can't lose weight eating this many calories."

Patients sometimes claim that they have been unsuccessful in the past eating at or below the same caloric intake recommended after their ReeVue test. They can stubbornly stand by the belief that cutting calories won't work for them. It is rarely successful to try to analyze whether or not they've been truly compliant cutting calories in the past. Your best approach may be to focus the patient on the present.

"I'm sure you've worked hard at losing weight, and you must be frustrated. I'm not sure exactly what was going on in the past. But what we've done today is test where you are today. Simply put, these results are your own body telling us how many calories it is burning right now. If we listen to your body and structure your eating around what it is telling us, you will lose weight."

2. "This machine must be wrong. I know my metabolism is slow!"

It is important to keep in mind that an RMR test may take away a patient's primary excuse for being overweight. This may be a very difficult reality to face. So gently, but firmly, reassure them of the medical accuracy of indirect calorimetry.

"This is the same kind of testing used in the ICU on critically ill patients. It is very accurate. So while your metabolism may be slower than it used to be, it is within a normal range for your age. What is most important is that now we know you have a healthy metabolism and what it will take for you to lose weight!"

3. Upon re-testing, "I did everything I was supposed to and my RMR went down! What happened?"

An individual's RMR is affected by many factors, including lifestyle and dietary changes. Some of those changes (even healthy ones) will decrease a metabolic rate at the same time that other behaviors are increasing it. Consequently, changes in RMR are impossible to predict and are not a measure of success or failure.

"A measure of your resting metabolic rate simply indicates where you are, not how good you've been. What it tells us is how we need to adjust your caloric intake to adjust for changes that occur as you lose weight."

4. "How can I have a fast metabolism if I am this overweight?"

When an overweight patient sees test results that are higher than average, they may be very confused. They assume "fast" means "thin." But metabolic rate reflects the activity of fat-free mass. Even if someone is fat, they may still have a great deal of fat-free mass. The back of the ReeVue printout teaches about fat and fat-free mass. Some studies suggest that carrying around excess weight can increase muscle mass and others indicate overeating may cause a temporary increase in RMR. The most important thing is to focus the patient on the positive.

"Your metabolic rate measurement shows that the active cells in your body (your organs, bones, and muscles) are burning more calories than average. This can be true for both thin people and overweight people alike. The good news is that now we know that if you eat within this Weight Loss Zone, you will be burning more than you eat. You will lose weight!"

Ch8. Counseling the patient

At this point, it is time to introduce patients to their eating plan. You may already have one in place at your office. Familiarize yourself completely with the program you are implementing. You may consider practicing by using family members or co-workers as test "patients" first.

Because Metabolic Testing is based on sound scientific principles, it will complement any diet philosophy you may adhere to. If you have a diet program you believe in, your initial obstacle may be getting the attention of your patients. But after viewing their metabolic test results, they have no more excuses, and you have a captive audience. You can show them that their metabolism is fine and that it is possible for them to lose weight! Get them excited about the prospect, then present to them your diet plan. They'll be excited and ready to go!

If you don't have a weight loss program in place, you may consider the following options available through Korr:



Simple Consult.

Some facilities want to offer something to their overweight patients, but are not ready to add a complete weight loss program. Korr produces a simple weight loss guide for this purpose called, "Hitting the Target." This pamphlet reinforces the concepts of energy balance as shown through Metabolic Testing. It also teaches how to track caloric intake, reduce portion sizes, attack emotional eating, and change unhealthy behavior. A sample of this brochure is provided with your ReeVue.

The concept of the 5 minute consult can also be incorporated with other weight loss programs or support groups that you may want to refer patients to. For instance, if your community offers American Heart Association's "Fit for Life", Overeaters Anonymous, Weight Watchers, or similar programs, you can refer your patients to them. But it is best if you can stay a part of the process by having them meet with you regularly to check on their progress, take a repeat RMR test, and give them encouragement. According to the CDC, people are 3 times more likely to lose weight when their physician is involved in the process.



"Eating To Your Metabolism" Plan.

Korr Medical has developed a simple plan to teach patients to plan their meals, track their caloric intake, and identify and eliminate destructive eating behaviors. The plan requires that patients keep a food journal which is shared with their physician or counselor each week. Patients identify emotional eating patterns and develop alternative coping mechanisms. They are encouraged to discuss their progress with a support group. It depends heavily on the expertise of the physician or counselors to evaluate and advise patients. It requires no cost to the facility and is an inexpensive investment for the patient.



DietMaster Pro Software.

Korr also offers DietMaster Pro, a software based diet program. Physicians and counselors utilize this software to assign meal plans to patients based on their Metabolic Rate Test. The client software helps to create meal plans, grocery lists, and to track eating through food journals. Each week their journals are e-mailed to the physician's office for evaluation. This program is a bigger investment for the facility, but does not require experienced staff to manage it.



Don't stress that you have to implement a complete weight loss program or become a "weight loss doc" in order to effectively help your patients who need to lose weight. Studies show that patients are more likely to lose weight when their physician is involved. Use Metabolic Testing as a "baby step" to get you patients involved in what is really going on in their body, and to confront the changes they need to make to become healthier.

Ch9. Keys to Success

- *Educate the patient.* People can't live principles they don't know.
- *Don't be judgmental.* Everyone feels that they've fallen short sometimes. The key is that your client needs to feel safe coming back to you, even when they've gotten off track.
- *Really listen.* You can learn a great deal about WHY your patient makes unhealthy choices if you really listen to what they are saying. Help them become aware of their motivations.
- *Have frequent contact.* Accountability increases the chance for success.
- *Provide support.* Patients learn a great deal when they don't feel alone. Weekly group classes are a great way to both educate and provide support.
- *Include daily exercise with your program.*

Encourage your patients! Get them excited about the knowledge they have just gained! Show them how long it will take them to reach their goal if they stick to their Zone. Let them know you believe in their power to change their lives and will be there every step of the way. They are truly on the threshold of a happier, healthier life!

