

>> Okay, this is chapter seven on weight management. It's a large chapter but I think you'll find it interesting. We're going to go through a lot of topics. We're just going to first talk about problems with being overweight, health problems, classifying overweight, how to assess if you're overweight or obese. And then we're going to talk about the weight loss medications, weight loss surgeries. So let's just get started here. First of all, a couple little facts. You probably have all noticed that obesity has been on the rise. Not just in the United States but all over the world, for many years now. I can recall when I was in elementary school there was literally one obese child in the whole school. And nowadays, you know, like half the school is obese. It's the way it is. So there's been a dramatic increase over the last 30, 40 years, of obesity. And the problem with that is when you're overweight or obese, it increases your risk for just about every disease. Cardiovascular disease, cancer. A lot of cancers are, I don't want to say directly related but, but indirectly related, your risk goes up for many cancers if you're overweight or obese. We'll talk about that. Hypertension, strokes, joint problems, Type 2 diabetes of course, and so many other health problems. And you can see from this map how obesity has changed. You can see here in the 90s the states, you can see down here white, well less than here you've got a very light blue, less than 10% of the population is overweight or obese. And then you can see over here, the yellow and orange states would be more of a higher density of obesity. And you can see in the 90s there was just really not all that much and then 98 it got worse. And then you can see in 07 now we've got quite a different picture. And that's what 14, 7, 7, 10 years ago. So who knows what it is now. So again, from your book you can see how it's just gone up and up. And so, staying at a healthy body weight it will help keep you healthier as you get older. The statistic right now is 65 to almost 70% of Americans are overweight and of that about 45% are obese. Like half. So, this is crazy. It's almost three quarters of the people are overweight, and almost half of the population are obese. It's just horrible. A lot, a lot of reasons, we'll go through some of them. You know, 20 years ago you can see here, this is one of the reasons, the serving size of a hamburger was a lot smaller than what it is now. So, part of it is our serving sizes, if you eat out, have just increased tremendously. And the other thing is there's on quick cure for being overweight or obese. There's a lot of infomercials an advertisements for different diets and weight loss supplements promising all these miracles. But it really, it took a long time to get to the point where you're overweight and obese and it's going to take a lot of time and hard work. And really just your discipline of losing weight and changing your lifestyle. I'm not a fan of diet, we'll talk more about that later. They just don't work, according to the research. You've got to really do a number of things. One of which, well three things really. One is decreasing your calorie intake and then coupling that with increasing your activity and then changing your behavior. Behavior modification, meaning when you're stressed, is that when you go to over eat? Or you're bored or you're angry or you're upset, is that when you reach for the wrong foods? If that's what it is, you know, changing that behavior. And we'll talk about that in a little bit. First let's talk about something called energy balance. Energy is the same thing

as calories. So energy and calories are pretty much the same thing in this context. And when we're talking about, energy balance, is taking in as many calories as you're burning or expending. So if you're taking in 2,000 calories a day but you're only expending 1,500 calories, you're not moving around much, you're obviously going to gain weight. So, energy intake or calorie intake is from not just your food but also what you drink. And the calories that you burn, we're going to go through this. Metabolism, digestion, absorption, and physical activity. So let's, and please know this for the quiz. There's positive energy balance and negative energy balance. Positive energy balance means you're eating more calories than you're burning off. So, if you're taking in more calories and you're not really moving around much, you're going to start gaining weight. However, there are times when you need to be in a positive energy balance. And that's if you're pregnant, of course you need to eat more than you're burning. Support the growth of your fetus. And kids that are growing need to take in more calories than their burning, so they can grow. However, there's a problem now with kids being overweight and obese. And you know, there's a fine line. You really don't want to put kids on a diet, that can lead to eating disorders. You just need to change how they're eating and get them more active. And then another problem with obesity is, you know, in your teens and twenties you can eat a lot, we're still growing, we burn a lot of calories. But as you reach your thirties and forties you're not as active as you used to be and you're not burning as many calories. And also your metabolism does slow down as you get older, as you reach into your thirties and onward. So between those factors we're still eating the same amount we did when we were kids, but we're not as active and we have a slower metabolism. And that can cause, you know, just a couple pounds of, a couple few pounds of weight gain every year. But you add that up at the end of ten years and that can be quite a significant weight gain. Now negative energy balance is the opposite of positive energy balance. Of course you're taking in fewer calories, than you're burning. And so you're burning more calories than you're taking in. So you're not matching those calories. And so, what happens is you lose weight. Now that is what is needed if you're trying to lose weight. But keep in mind, and we're going to talk about this in a bit, when you do lose weight you lose both – you not only lose adipose tissue, which is fat tissue, which is what you want to lose. You also lose muscle tissue and that is the bad part. Particularly of fast weight loss. And we'll talk about that in a little bit. But when you lose muscle tissue, now your metabolic rate, your metabolism is going to slow down. And that's why we find people lose a lot of weight in the beginning of the diet and then all of a sudden they start tapering off. They plateau. They don't lose any more weight. They're still eating that diet and even some people they gain weight. And that's because you lost muscle tissue. And this happens again, particularly with fast weight loss. Muscle tissue burns more calories and so, we'll get into that in a little bit. Now you don't need to know this for the quiz, we went over this in the earlier chapters of the term. But, how many calories are in a food, scientists measure is in a machine called a bomb calorimeter? If you remember this, they put the food inside of a chamber, surrounded by water. They heat it

up and they see how much heat is given off. Technically a calorie is the amount of heat needed to raise the temperature of that water surrounding the food by one degree Celsius. Again, you don't need to know that. This is the chamber, the bomb calorimeter. Here's your food, here's your water. They heat it up and they see how much heat is given off while this is – in your body it would be digesting, but in this thing it would be, you know, kind of dissolving. So obviously something that has more calories takes, puts off more heat. Okay, so let's get into how we actually burn calories in your day. And keep in mind this is a 24 hour circuit, basically. So within 24 hours we burn calories three ways. One is called basal metabolism or just metabolism, or BMR or metabolic rate. It goes by all of that. We also burn calories through your activity levels, it doesn't have to be necessarily going to the gym. But just how active are you in your day? And then also we burn calories when you, every time you eat, it takes calories to digest the food, absorb it and process it. So let's start with basal metabolism. Again, we'll refer to as BMR, basal metabolic rate. Some people say, oh I have a slow metabolism and it's harder for me to lose weight. What does that exactly mean? Well, in please know this for the quiz, you should know this definition. Your metabolic rate, it's the minimal amount of energy that you need to keep you alive. Okay? So, if you were laid down on your bed for 24 hours and didn't move, would you still be burning calories? Yes. You are burning calories through your metabolism. Because you're laying there, you're not moving, but your heart is beating. Your lungs are expanding, contracting, you're circulating blood, your liver and your kidneys are filtering, your brain is doing things. This all takes calories. And it does not include the calories for activity or digestion. This is just the amount of energy needed to keep you alive. And it's actually how we expend most of our days energy. It's 60 to 70% of your days total energy burning is through your metabolism, 60 to 70%. Everybody is a little different. And so, you can see almost three quarters of how much you burn a day is just your metabolic rate. Okay? So can you increase your metabolism? If you are one of these people that has a slow metabolism and you gain weight quickly. Yes, you can increase your metabolism by doing a few things. One is to get more lean body mass, or muscle tissue. Because like I mentioned earlier, muscle tissue burns more calories. Muscle tissue is a meaty kind of tissue, it takes energy just to, or calories, just to sustain it. Okay, so the more muscle tissue you have, the more calories you will burn in your day. So going to the gym, you're not going to build muscle by walking. You have to go to the gym or get weights for your home. And you need to lift, you know, a heavy enough weight that you get tired after 8 or 10 repetitions. And then you do two or three sets of each body part. And you need to do each body part about three to four times a day – three to four times a week, in order to build muscle. And it can take months. But this is one of the most, best ways to increase your metabolic rate. Remember, your metabolic rate burns 60 to 70% of your calories. So that's a pretty significant part to – a significant factor in losing weight. One of the things we have no control over, taller people tend to have a higher metabolic rate. Men tend to have a higher metabolic rate because of more muscle tissue. And your thyroid, if you have a sluggish thyroid your

thyroid has a big role in your metabolism. So, if your thyroid is a little sluggish you're going to have a slower metabolism. That might be something you need to get medication for. When you're pregnant your metabolism tends to go up. And if you drink coffee, caffeine, tobacco, also increases your metabolic rate but of course not that much. A very small amount. A lot of people drinking coffee and smoking they're obese. Just a small factor. Now on the other hand, if you lose muscle tissue, you know you stop exercising, you stop working out. You become more sedentary, now your metabolism is going to slow down because you lost the muscle tissue. If you're on a diet, believe it or not, if you're taking in too few calories that does actually slow your metabolism by a good 10 to 20% because your body thinks you're starving it. You know, if you used to take in 3,000 calories a day and now you're taking in 1,500, your body is like, "Whoa, she's starving me. I'm going to slow down metabolism to conserve." So you don't, that's another reason I'm not a fan of diets. It's not a matter of just decreasing calories. As you get older, past the age of thirty, your metabolism does slow down. Also, as you age you lose muscle mass unless you are active with weights. So, you can see here, here's a 40 year old guy and a 50 year old guy and you can see the difference. This guy has a little more fat tissue and this guy has more muscle tissue. It's not all that – it doesn't seem like a lot, but over 10, 20, 30 years it really starts adding up. So, this is just FYI if you want to figure out how many calories you burn from your metabolism you can take your body weight in kilograms. Remember, take your body weight in pounds, divide it by 2.2 and multiply it times, that would be your kilograms, multiply it by times 0.9 females or 1 for males. And then multiply that by 24 to get how many calories you burn just by your metabolic rate in a day. In a 24 hour period. And then you can start adding up how many calories you burn a day between metabolism, exercise and your food intake. Okay. I'm going to stop this here and we'll pick up on part 2.