

Division of Diabetes Treatment and Prevention

Nutrition Insights into Caring for People with Bariatric Surgery

Nilofer Couture, MPH, RD, LD, CDE, and Linda Johnson, MPH, RN, LDN

September 2014

Nilofer Couture:

Hi, I'm Nilofer Couture. Thank you so much for having us present to you today. I'm the Nutrition Department Manager at Cherokee Indian Hospital. I'm also a Diabetes Educator and have worked in long-term care and food service management. I've worked at Cherokee for 11 years, providing inpatient and outpatient nutrition care and overseeing a department of four other dietitians.

In these 11 years, I've seen the department grow and have enjoyed doing a variety of different jobs. One of the things we've recently started doing is providing bariatric medical nutrition therapy to our patients. The number of patients seeking bariatric surgery in Cherokee has grown over the last few years, and this presentation will cover how we got started and review some of our nutrition protocols.

I'd like to thank Dr. Ann Bullock, Dr. Michael Toedt, Jonathan Dando, Sarah Wachacha, Terri Morris, and Johnathan Ruger, who have all helped to make this presentation a reality. Now I'll have Linda, my colleague, introduce herself.

Linda Johnson:

I'm also very excited and feel very honored to be a part of this presentation, and we do thank you so much for joining in. I have been a Registered Dietitian for the past 25 years. The majority of my experience has been counseling people needing and/or desiring weight management, either on a one-on-one basis or in-group sessions.

I began my nutrition career working for a hospital-based health promotion department, which was responsible for providing nutrition counseling for people attending cardiac rehab, weight management, and the OptiFast program, which is a medically supervised weight loss program for people with BMI over 40.

Since 2007, I have been working with Cherokee Hospital as a clinical dietitian. I provide medical nutrition therapy to patients being referred to the Nutrition Department for all types of chronic diseases, including weight management. And, as Nilofer said, for the past three years, we have seen a growth in patients being referred for pre-bariatric surgery. Now, I'll turn it back over to Nilofer and we will begin our presentation.

Nilofer Couture:

So these are our printed objectives and our emphasis will be on standards of pre-bariatric nutrition care. Before we start, I thought we'd take a little poll just to get an idea so that we can see if you also regularly see pre- or post-bariatric patients in your practice, and if you do, if you have a support group in your facility, and if you have nutrition protocols for pre- and post-bariatric patients.

So I see that you guys are checking in there and it looks like a majority of you actually don't see a lot of bariatric patients, although it looks like one quarter of you do. Most of you don't have a support group in your facility and some of you look like have nutrition protocols, but the most of you don't.

So BMI is what's commonly used to describe the status of weight. There are different categories for obesity that range from Class 1 to Class 3. Class 1 obesity is a BMI between 30 and 34.9. Class 2 is between a BMI between 35 and 39.9. Class 3 is what we call severe obesity where the BMI is greater than 40. These categories come into play when determining weight criteria for bariatric surgery.

This slide shows you how all the major physiological systems of the body are affected by obesity. It also shows how extensive the pre-op assessment needs to be. We'll just be focusing on diabetes in this presentation but there are many other aspects of health to look at, such as psychological assessments, which are also part of the pre-op protocol.

As we all know, the diagnosis of diabetes is increasing over time and this slide shows the number and percent of the U.S. population diagnosed with diabetes, obtained from the National Health Interview Survey. Here we see that obesity and diabetes are related, in that as the incidence of obesity increases so does Type 2 diabetes. You can almost superimpose the obesity map over the diabetes map, and they almost sort of match. What is really significant is that the rates of obesity and diabetes for our Native populations are much higher than the national average.

The prevalence of obesity among Native Americans is 54% and much higher than the national average that we just saw of 26%. So it's almost double that of the general population. Increasing obesity rates has increased the incidence of diabetes among all racial and ethnic groups. As this slide shows, the prevalence of diabetes is highest among Native Americans, and in Cherokee it's actually even higher.

In Cherokee, our obesity numbers are similar to the IHS population. It's sort of close to IHS numbers; it's about 54%. But our diabetes prevalence numbers are a little bit higher at 21%, or about 22% versus 16% for the IHS population. In fact, in the over 50-age group, diabetes prevalence in Cherokee is almost 50%.

So the IHS recommendation for weight management now includes a discussion on bariatric surgery and the need for ongoing support. It recommends that providers discuss the option of bariatric surgery with patients who have BMIs greater than 35, particularly when lifestyle therapy and pharmacotherapy fail to control their diabetes or other comorbid conditions. It also recommends ongoing lifestyle support for these patients.

The American Society for Metabolic and Bariatric Surgery developed its criteria for bariatric surgery based on the 1991 NIH consensus conference criteria. And that is that weight loss surgery be recommended for BMI greater than 40, which is what we call Class 3 obesity. For BMIs greater than 35, they recommend at least two obesity related comorbidities such as diabetes, hypertension, sleep apnea, and so forth. There has been consideration for extending surgery for BMI's between 30 and 35 but this remains somewhat controversial at this point.

Our contract providers have different criteria based on age, BMI, and various comorbidities. We have one contract provider who only takes patients with BMIs less than 50, while the other doesn't have a weight limit. This actually is determined by the equipment that is available in their facility more than anything else.

We know that a lot of celebrities have had bariatric surgery and they have influenced many others to have it as well. However, despite these increasing numbers, surgery is rarely used and fewer than 1% of patients eligible for surgery are treated each year, according to the American Society for Metabolic and Bariatric Surgery. Nevertheless, the number of patients who are having surgery has steadily

increased over the years. This slide shows the various surgeries that are done in the United States. The most common surgeries that we see are the Roux-en-Y and the gastric sleeve, which is also what we see the most often in our patients having surgery.

So I thought we would just pause here for a minute to take a poll to see which procedures you see most often in your patients having bariatric surgery. So looks like it's pretty close between the Roux-en-Y and the gastric bypass. And then you have some patients with the band.

Well that's kind of interesting. All right, so many of our patients with diabetes are seeking bariatric surgery for better diabetes control and possibly to reverse diabetes. Many of our providers are also recommending bariatric surgery to patients to improve overall diabetes control. We even have some obese patients seeking bariatric surgery to prevent diabetes, because they have such a strong history of diabetes, family history of diabetes. What's important to note is the American Diabetes Association definition of remission, which is a normalization of blood glucose levels in the absence of medication.

I'll present data regarding our patients in a few minutes. But this article in Lancet is a meta-analysis of bariatric surgery studies involving a little over 3,000 patients with diabetes, and it reported that 78% had remission of diabetes and that the remission rate was sustained two years post-op.

So this is Randy Jackson of American Idol fame. He had bariatric surgery in 2003, after he was diagnosed with diabetes in 2001. As of 2012, Jackson's diabetes has been at bay. His blood sugar was controlled by diet and exercise alone, and he no longer takes medications. I'm not sure if Randy's diabetes has returned, but up until 2012 he was still in remission. Remission rates vary for patients with bariatric surgery and diabetes. It's based on the extent of weight loss, the number of years the patient has had diabetes, and the type of surgery.

Roux-en-Y is considered the most effective at controlling blood glucose levels because of the regulation of the incretins. What's important to consider is that a lot of these studies are largely based on clinical reports and not A1Cs, and follow-up of cohorts is poor. A lot of these studies are not very similar at all so they're hard to compare, and they all seem to have different definitions of remission. However, when we use the American Diabetes Association definition, we get much lower remission rates than when we use various other definitions.

What's important to know or to remember is that the maintenance of weight loss is probably more important than initial weight loss for long-term glycemic control. And this study says that glycemic control deteriorates in bariatric surgery patients who are unable to maintain weight loss.

So this study by the DiGiorgi looked at 42 Roux-en-Y gastric bypass patients with diabetes for a little over three years, greater than or equal to three years, and followed them up with lab data and performed post-op tests on them.

The post-op weight loss and diabetes status was assessed. Recurrence or worsening was defined as A1C of greater than 6 and fasting blood sugar greater than 124, and/or medication required after remission or improvement. So, what the study said was that the incidence of diabetes recurrence or worsening with initial resolution or improvement was significant. And they said that patients who had the greatest likelihood of recurrence or worsening had lower pre-op BMIs, had regained a greater percentage of their lost weight, had greater post-op glucose levels, and patients on diabetes meds before surgery were more likely to experience improvement versus resolution.

So what it shows is that only 8% of patients in this study went into remission, but you can see that the vast majority of the patients did improve their diabetes management or control.

Randy Jackson actually told WebMD that weight loss surgery is not a magic bullet. He said, like many patients who undergo gastric bypass, he eventually started regaining some of his weight, which is why he said he's committed himself to eating the right food and has kick started his fitness routine. He said he goes to see his doctor four times a year to see where his sugars are.

So the researchers in this study said that before widespread acceptance of bariatric surgery as the definitive treatment for those with Type 2 diabetes can be achieved, additional study of this recurrence phenomenon is indicated.

So Linda and I have been seeing quite a few bariatric patients in the last two or three years and we kind of looked at some of our numbers, and we actually looked at 31 patients that we've seen, that we had more information about. So this chart over here shows that 23 of those 31 had either pre-diabetes or diabetes. And what it shows is that 4 patients out of 23 had pre-diabetes, which is you know a small number, and 19 of the 23, which is the majority of our patients, actually had diabetes. What you can see is that right after surgery, the A1C tends to go, does go down, but over a period of time the A1C starts to creep up, most probably due to some weight regain.

What we also see in our patients is that only about one quarter of our patients having surgery have it just for weight loss alone. So the majority of our patients who have the surgery actually do have either pre or full-blown diabetes. Because weight regain and an increase in A1C is a big issue, the American Diabetes Association recommends lifelong support for patients with diabetes.

Let's look now at professional guidelines for surgery. So the American Academy of Endocrinology, the Obesity Society, and ASMBS, all recommend pre-op weight loss. This is usually done with a two-week liquid diet or very low calorie diet prior to surgery. That's typically done to just shrink the liver. We know from studies that lower A1Cs and some weight loss prior to surgery improves outcomes. We at CIH actually recommend a 5% to 10% weight loss pre-op over a six-month period. We know of course that pre-op weight loss improves glycemic control and as studies show, patients that A1Cs greater than seven have decreased wound healing and increased risk of infection, which is why we have that requirement. This is one of the reasons why we developed our pre-bariatric surgery protocols for both weight loss as well as glycemic control.

So in Cherokee over the past few years, we've had providers referring patients to bariatric surgery centers and patients having very minimal interaction with RDs at the hospital for pre-op MNT. We noticed following surgery that a lot of our patients were having significant weight regain.

Our hospital pays for surgery through contract health referrals. We also have Blue Cross and Blue Shield of North Carolina, which is our main insurer, starting to pay for bariatric surgery in 2006. And because of both of these payment systems, we saw increased numbers of patients requesting surgery. So Blue Cross and Blue Shield until recently had a requirement that all pre-bariatric patients have six months of MNT prior to surgery. These Blue Cross guidelines are what started us to recommend a six-month pre-bariatric MNT program prior to surgery when we were developing our bariatric protocol.

Unfortunately, this requirement has changed since July of this year and Blue Cross no longer recommends a six-month non-surgical weight reduction program prior to surgery. However, at Cherokee Hospital, we have decided to keep our requirements for six months of pre-bariatric MNT because we strongly believe that it takes that much time for patients to learn and practice new lifestyle changes for weight loss and for glycemic control.

Our bariatric protocol was initiated due to Blue Cross' weight reduction requirement and also because we wanted to standardize care for our patients. We wanted patients to focus on making lifestyle changes using a standard curriculum. This allows us to measure outcomes and provide evidence-based nutrition information in a specific time frame.

We developed our pre-bariatric protocol and presented it at a med staff meeting, had it approved. So now what happens is, when a patient requests bariatric surgery from their provider, the provider is required, actually, to talk to the patient about best practice requirements for bariatric surgery. One of which is six months of medical weight management. They then refer the patient back to us for MNT and we start six months of MNT with the patient. These six sessions will be discussed by my colleague Linda in much more detail. We do encourage 5% to 10% weight loss, and we encourage our patients to attend a free information session provided by one of our bariatric surgery centers. And also we encourage our patients to attend bariatric support group meetings, which we recently started at the hospital.

At the end of six months patients are assessed for behavior change and weight loss, and then we refer them back to their provider who will either initiate or defer a referral request with Contract Health. So once our patients enter the surgical weight management program of their choice, we have two surgical centers that we work with right now, and we don't really tell patients which one to go to, so we have them decide. So once they decide that and they go to their surgical center of choice, then the dietitians in these centers take over their MNT care.

What we have told our contracted providers is that our patients cannot enter their program until they have completed six months of MNT with us. So when we have patients trying to bypass the system, the contracted providers typically refer them back to us. So these are actually for patients who receive payments through Contract Health. We have a lot of patients who seek bariatric surgery in Cherokee using their own health insurance and we don't really have much of a say with those patients.

At this time, we don't really know the total number of people from the reservation who have had bariatric surgery because Contract Health pays for some patients and then a lot of other patients actually use their own health insurance. What we do know is that Contract Health did begin approving copay for surgery in 2009 and has provided coverage for 21 patients electing to have surgery since the fall of 2012.

We have recently started a bariatric registry in RPMS to keep track of our patients who've had bariatric surgery, so we can follow them up for better post-op care. And then in 2013, at the end of last year, we did start our CIH protocol for bariatric surgery.

Okay. So Linda and I looked at data from our 31 patients that we looked at. We've been following them since 2012, when we did see an increase in the number of patients electing to have bariatric surgery. So with this little cohort of patients that we looked at, the BMI range in this group was between 39 and 74. This graph over here shows the average BMIs over time. From pre-op to three years out, which is at 36 months. I should add that our data for 36 months is very small and we're still in the process of collecting data since we only started our protocol about a year ago. What is significant about this is that our patients are electing to have surgery at much higher BMIs than the general population.

Well, this graph over here shows that after 24 months weight loss does start to level off, and at 36 months it starts to creep up, indicating some weight regain. Average weight loss for our cohort was 51 pounds at three months, 67 pounds at six months, 84 pounds at 12 months, and at 24 months, the average weight loss seems to plateau. And at 36 months, our data shows weight starting to increase, indicating some weight regain.

I'm going to now have Linda talk about the details of our pre-bariatric protocol.

Linda Johnson:

Okay. So that was some great research and good background. Now, we're going to get more into the nitty gritty of our lessons and what we have developed. I might say that what we have developed is just for our population, and I'm sure there are others of you that have developed other protocols, and we would be happy to talk more about what you are doing at a later time.

So when Nilofer and I started developing the MNT for pre-bariatric surgery, we wanted to find out what would be the most helpful to our patients in order for them to be successful, not only for surgery, but also long term. We have a passion for making, helping them with lifestyle changes that will last a lifetime, not just until they reach their goal weight. So we had to backup a little bit. One of our backups was to review again the guidelines. And of course, as Nilofer already talked about, having a pre-op weight loss of 5 to 10 percent helps to reduce liver volume to make the surgery easier and then to improve surgical outcomes.

At our hospital, we set the protocol of encouraging patients to lose 5% of their weight over a six month time. Some do and some do not. Also, this gives us a chance to work with patients who have A1Cs over 7%, to try to help to improve their glycemic control. So that was one thing.

The next goal that we looked at is from the surgeons. They are saying, for goals post-operatively, what they recommend is to ensure optimum outcome of the surgery post-operatively, we need to preserve protein stores, provide sufficient energy to spare protein, to ensure sufficient vitamin intake to allow for energy metabolism and health maintenance, to ensure an adequate mineral intake for the prevention of anemia and other outcomes of deficiency, and to ensure adequate hydration.

So as dietitians, we translated this into more -- what does this mean for our patients? How are their meal plans going to be after surgery? I'm not going to read all of these to you. You can read them. But what we are trying to do is create an opportunity for them to be the most successful, pre-surgical and post-surgical. They have a smaller pouch in their stomach, so the amount of times that they have to eat will be increased in order to provide the most nutrients. We also wanted to give as much information to them as possible around avoiding complications post surgery such as nausea and vomiting, dumping syndrome, dehydration, malnutrition, et cetera. There are certain vitamins like iron and calcium that are not adequately absorbed. We wanted to make sure that they are taking vitamin supplements as recommended, and to encourage adequate hydration. A lot of our patients don't like water. So trying to get them to drink water is a major hurdle.

So from the surgeons to the dietitians, now what does that mean to the bariatric patient? In real simple form, we use the bariatric food pyramid. The one that is for bariatric patient is on the left. The main difference as you can see, is the emphasis, for the bariatric patient, is on protein. Whereas for the general population, it is on grains, breads, cereals. Also, you notice that for the bariatric patient, the serving size for grains is two servings per day, whereas for the general population, it's six to eleven servings per day. Of course, this will vary with diabetic patients.

Due to time restraints we will not be able to discuss the diet stages postoperatively, and nor will we be able to go into the MNTs for post-surgery complications. Again, this is the way that Nilofer and I developed our sessions and we hope they will be useful to you as you prepare your pre- and post-surgery protocols. A lot of the handouts we used are from The Complete Counseling Kit for Weight Loss Surgery by Toni Piechota and that is offered through the Academy of Nutrition and Dietetics. We also supplemented them as well.

So as you can see in session one, it's assessment, as you would expect. Not only physically but behaviorally, dietary, weight loss attempts, their successes and failures, why's and how's of their weight regain, comorbidities, physical activity, looking at their food choices, portions, eating habits, but also the environment and social cues. Native Americans are very family oriented, and what comes out in our

support groups and through our sessions is, how do we deal with all the social aspects of dining out and celebrations.

We also have them fill out a form, "Ready or Not". We're wondering if this is the best time in their life to have the surgery. This surgery is a major change, and we just want to get them to start thinking, yes they want the weight off but is this the right time?

The last thing we do is go over behavior change goals. This is a list that includes things like eliminating carbonated beverages, decreasing sugar and fat, taking smaller bites, maybe having three meals a day, limiting snacks, et cetera. What we're trying to do is prepare them for surgery but also long-term success and usually we have them choose on their own two or three that they want to work on each month.

In session two, it is nutrition boot camp. This is when we are starting to help them make healthier lifestyle habits and changes to what they are currently doing. We are trying to improve their nutritional status for surgery, but also get better control of their nutrition related comorbidities. We're trying to help them understand how important it is to balance, not only their plate, their energy intake, and also energy output.

We focus on increasing fruits and vegetables and lean proteins. The majority of our patients we find eat one meal a day. They're usually not interested in breakfast. So what we try to do is encourage them to begin taking smaller meals in place of those meals that they skip. Because as you might know, the post surgery patients will need to eat about four or five times a day, and this is hard if it's something that you're not used to. Keeping food records is a very good way of getting them to learn how to self monitor their intake. They can do this through an app, MyFitnessPal for their phone or for their computer and/or in a journal.

In session three, we are starting to work more on helping them to slow down, eating with intent to feel their body, not just eating. Physical hunger versus emotional hunger, learning to stop when they're satisfied, learning ways to cope with stress besides with food, and exercise. Exercise is very hard for our patients because of the excess weight they carry. Their breathing is affected. They might have sore muscles with their excess body weight. There's no time. There's no place. They don't like to exercise. They don't see results. So what we're trying to do is help them to take small steps in finding out what they can do right now like maybe chair exercises.

Session four, we're focusing more on protein. Trying to get them to learn how and where they can find protein sources that they are going to need to consume. We had a bariatric support group meeting today and still, some of our patients that are three and four years out from having surgery are still saying it is very hard to get all the protein in that they need to. So we try to get them to start experimenting with smoothies, protein powders, shakes, bars, because there is a variety of them on the market.

We also spend some time talking about decisions to change. The cost-benefits of changing, this is our halfway point, they might not be seeing so many of the benefits right now so we try to get them to take time to look at how this is going to benefit them from the cost that they are putting in. Again, we have them fill out that behavior change goal sheet again, same one that we did in session one and see where they have made accomplishments, successes, their strengths, and what they need to continue to work on. During this time, we're encouraging them to come to the support group and attend a free information session.

In session five, this is a big session. We are working on portions and using the MyPlate and other handouts to encourage healthy portions. We review meal planning which is a huge barrier for a lot of our patients. We try to help them as much as we can, taking very small steps, maybe just meal

planning at dinnertime. Providing structure with as much help as they need. We have structured meal plans that we can provide for them or we can help them individually just with where they are in their family situations.

I might add throughout all of these sessions, eating out, dining out continuously comes up because that is one of their major hurdles is, how can I eat quickly, eat fast, but eat healthy? We do take time to help them learn how to make shopping lists, cook foods differently if necessary, et cetera.

The last thing that we work on during this particular session is the preconceptions of weight loss surgery versus reality. We do have a lot of people who had friends, aunts, uncles, sisters, brothers who have had this surgery, a lot of word of mouth. So what we try to do is help them get some of that information but help them to understand what the reality is as well.

In our last session, it's kind of culminating, everything that we have talked about for the past five months. We look at a new beginning. We try to help them to consider what is it and how they are going to begin their new life. There is a worksheet that they have to complete that helps them to understand their reasoning for having the surgery, reinforces that, but also brings up some fears. Maybe they went into a free information session, or a group session and all of a sudden, they're becoming more fearful. Barriers, family support, there are different things that, you know, what they need to address maybe in the family or to someone else to help them be more successful. We help them to understand that they physically will change, but their environment will not.

Again, we have them review their behavior goals and eating assessment to again list their strengths and their struggles. And then we provide them with a really fun handout, weight proofing your house to try to avoid some of the temptations, to remove those temptations so they won't get into that. And then at that point, we do let them know what the Cherokee Hospital protocol is and what they need to do next.

Although we don't spend a whole lot of time focusing on smoking cessation, we can provide them with resources to help them to quit smoking because before surgery, they will have to quit smoking and that also includes chewing tobacco. Now, Nilofer is going to speak a little bit more about our other program highlights.

Nilofer Couture:

Okay. So these are some of our program highlights since we've started seeing all these patients who are having bariatric surgery. We developed an EHR template for better MNT documentation, and that kind of helps us document a lot easier. And it also prompts us into asking patients certain questions. We also started a bariatric support group with the help of one of our contractors and we do that monthly. That actually started in July of this year. We have patients now from the community, but we also have people outside of the community who attend our bariatric sessions as well. We advertise them within the facility; we advertise them on our hospital Facebook page. Our contractors also recommend our support groups to their patients. In fact, some of them have a requirement that their patients attend at least one bariatric support group.

The other thing that's significant is that we started a telebariatric program with one of our contractors for follow up of pre- and post-op patients so they don't have to drive such long distances. We just do this once a month right now, but we might be increasing it to twice a month because patients really like that they don't have to travel an hour or two hours to see their doctor or to see their dietitian in their surgical facility. And then, we just recently started a bariatric registry to keep track of our patients for long-term follow up, and we hope to use that to also collect more data on our patients.

So in the future, we hope to continue to follow up patients long-term, because we know that long-term nutrition follow-up is very important to maximize weight loss and prevent weight gain. We know that for best long-term results, follow-up is definitely key. We also want to continue to encourage our primary care providers to refer post-bariatric surgery patients to us for weight regain or other nutritional problems. We'd also like to develop protocols for prenatal bariatric patients. We know that as weight goes down, fertility increases in women. And so, we are seeing quite a few post bariatric patients who are in our prenatal clinic and what we want to do is develop a better protocol to take care of these patients.

We want to continue to work on our communication between our contract providers and the hospital, especially 15 months post-op, which is when patients start to stop coming for their follow-up visits. We'd like to be able to tag bariatric patients in the EHR better, right now when we provide nutrition MNT it just go as under an obesity education tag. So it's hard to kind of search for these patients.

And then we work with behavioral health consultants in the hospital and would like to include them in our bariatric protocol so that they can see our patients within the first three months that they come to see us. And because we do know that a lot of our patients would benefit from seeing a behavioral health person. Just yesterday I saw a patient who had a BMI of less than 35 and who was adamant that he wanted to have bariatric surgery. He does have diabetes but he doesn't meet the criteria for BMI. And so, it was really helpful to have one of our behavioral health consultants in the clinic so that she could come in and talk to the patient with me at the same time. So we'd like to improve on our working relationships with them.

This is a list of resources that we have. There are alot more out there but these are just some that we use. And so with that, we're going to stop right now and Jan is going to take over.

Jan Frederick:

Nilofer and Linda, I want to thank you for the excellent presentation with lots of information and we commend you for your work there at Cherokee. I know that a lot of people want the kind of care that you're providing. It's interesting to see how you've put this program together.

For those of you who are participants, feel free to put your questions and comments for our presenters in the question box on the bottom of your screen. And while we're giving people an opportunity to do that, Dr. Bullock, do you have any additional comments?

Ann Bullock:

Sure, while people are typing in their questions for Nilofer and Linda, I just want to thank these two great colleagues of mine here at the Eastern Band of Cherokee, Cherokee Indian Hospital. For some of us, we have not yet entered the brave new world of bariatric surgery in any great numbers at our sites. For others, you're starting to see the uptick that Cherokee saw a few years ago, mainly because of insurance and other reasons that Nilofer detailed at the beginning as to why we're seeing so much more of it here now.

As this spreads, as more people opt for this option, understanding how to create protocols that are not only helpful for patients before surgery, as they consider surgery, and then of course afterward. We could get Nilofer and Linda to come and give us another talk on all of the post-bariatric nutritional considerations. She mentioned a prenatal, but also others that are so important, because we don't know some of the long-term outcomes for bariatric surgery.

So it's a brave new world. It has helped some, for others it has caused some issues, but it's something that we're going to be seeing more and more of, so I really thank my great colleagues Nilofer and

Linda. So now I'm going to let them work on answers to some of those great questions that are coming in. Thanks everyone.

Nilofer Couture:

All right.

Jan Frederick:

Nilofer and Linda, this is Jan, we did get a couple of questions. If you want to read those, you can and answer them of course or I can read them for you. Do you have a preference?

Nilofer Couture:

Well, we can read them.

Jan Frederick:

Okay, go ahead then.

Nilofer Couture:

Okay. So the first one said, "What would be an example to defer a referral for surgery for someone who's in the six month MNT prior to surgery?"

One example would be a patient who actually has a problem with substance abuse. And we do see patients with substance abuse requesting bariatric surgery. We know that post surgery, it doesn't go away and so it's actually quite dangerous for patients to drink alcohol and to -- post-surgery. So we try our best to kind of identify these patients. Sometimes it's not easy to do, but they do get identified when they have a very thorough psychiatric evaluation when they go to the contracted provider, and it's usually a four or five hour psychiatric visit where they have to answer about several hundred questions.

Linda Johnson:

And also to touch on that, thank you so much for your questions. Usually, if a person's A1C is still high, or if it has not budged. I have a patient who had an A1C of 11, and she did not want insulin. And it took us a long time for her to accept the responsibility of caring for her health to start insulin. So somebody who has an A1C that has not improved, we might have to extend the medical nutrition therapy until they are at a safer surgical A1C.

Nilofer Couture:

Okay. So the next question is, "Can you explain how you have tagged patients in EHR?"

Actually we haven't been able to tag patients in EHR and that's something that we're wanting to do and we're going to work on that.

"Do you have protocols for follow-up labs?" Actually the surgical centers have protocols for follow-up labs, and our patients go back to them, you know, three months, six months, nine months, twelve months post-surgery and then they go back to the surgical centers annually.

Linda Johnson:

And I might add that they are also doing labs mostly for vitamins; vitamin B12, vitamin D, calcium, and iron.

Nilofer Couture:

Okay. So here's another question, "What happens to the patient that does not need the 5% to 10% weight loss goal but has high risk comorbidities?"

That 5% to 10% weight loss goal is just a guide. If we note that the patient has really worked on life style change and worked to increase their physical activity, we still recommend them for the surgery, especially if they have comorbidities like diabetes. So we don't deter them from having the surgery but we do like to tell them that we want to see some weight loss just so that they're also doing something during the six month period.

Linda Johnson:

And I might also add that we are one of the team players in this circle. We are not the deciders on whether the person has bariatric surgery or not. I had a patient that actually gained weight during the six months and I felt like I was at the end of what I could provide for them, and so I did refer them on to their physician, and I recommended that they be referred to the surgical hospital so that they would be able to work with them a little bit more in detail.

Nilofer Couture:

So another point that I should add is that we do have patients who come to see us for six months and who lose quite a significant amount of weight and then sort of change their mind. I've had a patient who dropped her BMI so much that the surgical center wouldn't take her and she was actually pretty mad that she couldn't have the surgery. So it kind of goes both ways too.

The next question is, "Have you done any patient satisfaction surveys as far as the surgery goes, and are patients satisfied with the outcome?"

Linda Johnson:

Usually, no, we do not have a patient satisfaction survey but I'm sure the hospitals do, where they have the surgery. But it's interesting that most of our patients in the support group who are talking about the surgery, it always comes up where patients who are pre-op say, "Well would you, are you glad you had the surgery?" All of them say, "Yes and I wish I had it sooner."

Nilofer Couture:

But, I also have to add that we need to see patients more than three years out, and maybe those answers might be a little bit different. Right now they're still sort of in their honeymoon phase, is what I call it, so they're all really excited about their weight loss