**COPE Presents:** “Nonalcoholic Fatty Liver Disease: An Update on Clinical Management”

**Presented by:**

**Michelle T. Long, MD, MSc.**

**December 2, 2020**

*Moderator: Lisa Diewald, MS, RD, LDN*

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00:00:06.810 --> 00:00:12.030

Villanova Webinar 1: Good afternoon. Welcome to the December COPE webinar for health professionals.

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00:00:12.420 --> 00:00:22.680

Villanova Webinar 1: During these times when so many pandemic related changes have occurred in our personal and professional lives, we are very grateful that you've chosen to attend what promises to be an informative

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00:00:23.370 --> 00:00:34.980

Villanova Webinar 1: And insightful virtual continuing education opportunity. Today we will be exploring non alcoholic fatty liver disease and the clinical management lifestyle and nutritional considerations.

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00:00:35.520 --> 00:00:41.160

Villanova Webinar 1: We have 221 health professionals registered for this webinar and we're excited to get started.

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00:00:42.030 --> 00:00:54.570

Villanova Webinar 1: My name is Lisa Diewald. I am the Program Manager for the MacDonald Center for Obesity Prevention and Education at Villanova University Fitzpatrick College of Nursing. I have the pleasure of being the moderator for today's webinar.

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Villanova Webinar 1: Non Alcoholic Fatty Liver Disease, the accumulation of excess fat in liver cells for reasons unrelated to alcohol use

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00:01:03.000 --> 00:01:12.750

Villanova Webinar 1: is the most common cause of chronic liver disease around the world, affecting up to 1 billion people globally, including 80 to 100 million individuals in the United States.

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00:01:13.290 --> 00:01:21.510

Villanova Webinar 1: Obesity, lifestyle variations and insulin resistance are contributing risk factors for the development of non alcoholic fatty liver disease.

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Villanova Webinar 1: Despite the increasing prevalence, this condition is under recognized. Most patients are unaware of their disease and some health professionals may lack familiarity with the disease process and about available treatment.

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00:01:35.490 --> 00:01:43.800

Villanova Webinar 1: COPE is excited to address this condition today and shed light on its treatment through the presentation by Dr. Michelle Long who we will welcome in just a minute or two.

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00:01:44.670 --> 00:01:55.560

Villanova Webinar 1: Villanova University M. Louise Fitzpatrick College of Nursing is home to the first College of Nursing in the country to have a center devoted exclusively to obesity prevention and education.

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Villanova Webinar 1: COPE's goals are to 1) enhance nursing education and topics related to nutrition obesity prevention and and health promotion strategies.

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Villanova Webinar 1: 2) To provide continuing education programs such as this webinar on obesity and obesity related diseases for health professionals and educators and finally, to participate in research to expand and improve evidence based approaches for obesity prevention and education in the community.

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00:02:24.570 --> 00:02:34.680

Villanova Webinar 1: Before we begin the presentation, I would just like to remind you that PDFs of today's PowerPoint slides are posted on the COPE website@villanova.edu/cope

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00:02:35.130 --> 00:02:40.440

Villanova Webinar 1: After going to COPE's website, simply click on the webinar description page for this month's webinar.

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00:02:41.130 --> 00:02:46.050

Villanova Webinar 1: Please use the question and answer box on your screen to submit any questions for our speaker.

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00:02:46.740 --> 00:02:59.310

Villanova Webinar 1: All questions will be answered at the end of the program as time permits . The expected length of the webinar is one hour. The session, along with the transcript will be recorded and placed on the COPE website within the next week.

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00:03:01.290 --> 00:03:15.600

Villanova Webinar 1: If you use your phone to call into the webinar today and want credit for attending the webinar, please take a moment afterwards to email us at cope@villanova.edu and provide your name, so that we can send you your CE certificate

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00:03:18.180 --> 00:03:26.850

Villanova Webinar 1: The objectives of today's webinar are to understand the different types of non alcoholic fatty liver disease and risk factors for advanced liver disease.

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00:03:27.270 --> 00:03:39.300

Villanova Webinar 1: To learn about different tools available to non invasively diagnose and classify patients by risk. And lastly, to identify major treatment approaches, including dietary and lifestyle management.

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00:03:41.460 --> 00:03:53.400

Villanova Webinar 1: Villanova University M Louise Fitzpatrick College of Nursing is accredited as a provider of nursing continuing professional development by the American Nurses Credentialing Center Commission on Accreditation.

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00:03:54.060 --> 00:04:04.770

Villanova Webinar 1: Villanova University College of Nursing Continuing Education/ COPE is also a continuing professional education CPE accredited provider with the Commission on Dietetic Registration.

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00:04:06.600 --> 00:04:21.480

Villanova Webinar 1: Our webinar this month awards one contact our for nurses and one CPU for dietitians and DTRs. The suggested CDR performance indicators are listed on the screen. The CDR level of the webinar is 2.

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00:04:24.810 --> 00:04:27.900

Villanova Webinar 1: Now I have the pleasure of introducing our speaker.

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Villanova Webinar 1: Michelle T long MD is a physician-scientist with expertise in non alcoholic fatty liver disease and is Assistant Professor of Medicine at Boston University.

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Villanova Webinar 1: She completed her clinical training at Massachusetts General Hospital and Boston Medical Center.

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00:04:46.290 --> 00:04:55.050

Villanova Webinar 1: Dr. Long is the Director of the Nonalcoholic Fatty Liver Disease Research Center and Director of Clinical Research for the section of Gastroenterology

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Villanova Webinar 1: and Hepatology. Her clinical and research interests center on the relationship between non alcoholic fatty liver disease and cardiovascular disease.

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Villanova Webinar 1: Dr. Long is primarily interested in patient oriented research investigating fibrosis and inflammation in patients with non alcoholic fatty liver disease

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00:05:13.860 --> 00:05:32.010

Villanova Webinar 1: and in imaging and risk stratification strategies for hepatic fibrosis. Dr. Long overseas projects at Boston Medical Center and at the Framingham Heart Study where she is Principal Investigator of a study evaluating the prevalence and risk factors for liver fat accumulation and fibrosis.

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00:05:33.090 --> 00:05:38.400

Villanova Webinar 1: While we are preparing for Dr. Long's presentation to begin. I just wanted to mention that the planners at this webinar

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00:05:39.120 --> 00:05:47.430

Villanova Webinar 1: have no disclosures to report. The presenter of this program has disclosed relationships with entities unrelated to the material presented in the program.

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00:05:47.700 --> 00:05:53.670

Villanova Webinar 1: The Nurse Planner and Planning Committee will evaluate the presentation for any evidence of commercial bias.

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00:05:53.970 --> 00:06:05.070

Villanova Webinar 1: Accredited status does not imply endorsement by Villanova University, COPE, or the American Nurses Credentialing Center of any commercial products or medical nutrition advice displayed in conjunction with an activity.

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00:06:05.730 --> 00:06:13.230

Villanova Webinar 1: And with that, I welcome Dr Long to our COPE webinar program and I will turn things over to her for the presentation.

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00:06:14.430 --> 00:06:24.930

Michelle T. Long, MD, MSc: Thank you so much. It's such a pleasure being here, virtually with you all today to talk about one of my favorite topics and I hope you find is interesting is, as I do.

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Michelle T. Long, MD, MSc: So we will go over a general overview of non alcoholic fatty liver disease.

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Michelle T. Long, MD, MSc: and discuss some of the nuances of the condition and the diagnosis and how to identify people that may be at higher risk and then we'll discuss some of the treatment focusing on the diet and lifestyle interventions that we know about.

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Michelle T. Long, MD, MSc: Okay. Um, so first of all what all these terms mean. There are many different terms I'll use during this presentation and that you've probably have already heard so. NAFLD or NAF-UL-D as some people call it

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Michelle T. Long, MD, MSc: is the overarching term that describes the entire condition, which is a pathologically defined condition

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Michelle T. Long, MD, MSc: Based on liver histology, and it can range from having simple fat infiltration into the liver, all the way up to having cirrhosis of the liver.

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Michelle T. Long, MD, MSc: And in between this NASH, which is non alcoholic steatohepatitis is

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Michelle T. Long, MD, MSc: when you have inflammation. I'll show examples of what those things look like so. So NAFL describes all of those things.

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Michelle T. Long, MD, MSc: If you're specifically talking about just fat in the liver, then you might just simply call it liver fat or simple steatosis or NAFL without the D

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Michelle T. Long, MD, MSc: Or if you're talking about inflammation which can include, you know, fat, but there's inflammatory cells plus minus having some scar tissue or fibrosis, then you're talking about NASH

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Michelle T. Long, MD, MSc: Or if you're really talking about fibrosis without regard to the amount of fat that's in the liver or inflammation there and then you might just simply talk about fibrosis.

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Michelle T. Long, MD, MSc: You'll also hear the term term MAFLD which is now coming out of people. There's a kind of group of people that argue we should be calling this metabolic associated fatty liver disease and start coming away from the alcohol designation.

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Michelle T. Long, MD, MSc: But for the most part we are still we still mostly use NAFLD . And we'll see what happens over the next few years.

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Michelle T. Long, MD, MSc: So just to take a break and talk quickly about the liver. So the liver does many different things for us, it is important for synthesizing file cholesterol proteins. It's important for storage of glucose and glycogen.

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Michelle T. Long, MD, MSc: And it helps respond, you know, helps kind of deal with

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00:09:03.510 --> 00:09:18.450

Michelle T. Long, MD, MSc: if you're fasting and producing glucose for the body it is important for it has secretory functions. It makes clotting factors and helps blood clot

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00:09:19.380 --> 00:09:33.270

Michelle T. Long, MD, MSc: It's important for a detoxification of different medications that come when you ingest them and they're kind of cleared. Some medications are cleared by the liver and it also has important immune functions and

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00:09:34.590 --> 00:09:41.880

Michelle T. Long, MD, MSc: helps our bodies deal with certain types of infections and also in terms of metabolism is particularly bile

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00:09:43.380 --> 00:09:44.430

Michelle T. Long, MD, MSc: metabolism

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Michelle T. Long, MD, MSc: So, you know, you never really fully appreciate your liver until it's not working.

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Michelle T. Long, MD, MSc: We'll talk about fatty liver disease today, but the end stage of any liver disease including hepatitis C or alcohol related liver disease is cirrhosis of the liver and that's when you start seeing perturbations of some of these essential tasks.

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00:10:08.190 --> 00:10:19.380

Michelle T. Long, MD, MSc: So the liver is also very important for liver transport. After you eat it takes up free fatty acids from the gut from your meal and

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00:10:20.640 --> 00:10:28.170

Michelle T. Long, MD, MSc: converts them to various forms in the liver and also takes up

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Michelle T. Long, MD, MSc: HDL LDL and VLDL particles and transports them throughout the body. When you have any kind of perturbation in the liver homeostasis. So if you have increased uptake or increased de novo synthesis

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Michelle T. Long, MD, MSc: Or you have decreased removal or decreased export, all of those could cause increases to to liver fat or fatty liver disease.

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Michelle T. Long, MD, MSc: So we are seeing a major increase in fatty liver largely driven by the increase in obesity, which has run parallel, and has been increasing since the 1990s and

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00:11:19.080 --> 00:11:22.470

Michelle T. Long, MD, MSc: There is a group of people who will have NAFLD

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00:11:23.580 --> 00:11:40.980

Michelle T. Long, MD, MSc: without obesity-about 10% of people with NAFLD, do not have obesity and typically it's more, they have a higher amount of insulin resistance, sort of driving the fatty liver, but most mostly it's comes along with obesity.

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Michelle T. Long, MD, MSc: So just to go through what this actually looks like. So when you have

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Michelle T. Long, MD, MSc: just simple fat in the liver most people-simple steatosis-that is what most have when they have fatty liver. So in this case, if you do a biopsy sample, you will see the nice pink tissue is the normal liver cells and then you see these big droplets here-these clear

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Michelle T. Long, MD, MSc: white droplets on the slide here. And those represent fat, or steatosis

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Michelle T. Long, MD, MSc: And the big ones are macro steatosis. The small droplets are microsteatosis. So you'll see this. And in fact, you'll see, you know, you can see two thirds

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Michelle T. Long, MD, MSc: of the liver that's replaced by fat. So it can be very dramatic and most people will have this fat infiltration in the liver, without any inflammation.

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00:12:37.650 --> 00:12:56.850

Michelle T. Long, MD, MSc: Then there are some that will about a quarter of people with NAFLD will have inflammation as well. And in this little insert slide here you'll see a balloon hepatocyte which is the classic marker of NASH or non alcoholic steatohepatitis.

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00:12:58.110 --> 00:13:12.150

Michelle T. Long, MD, MSc: And this is when you start worrying about more complications specifically of the liver disease because this inflammation over time can lead to fibrosis. So here

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00:13:12.690 --> 00:13:23.550

Michelle T. Long, MD, MSc: we see a different stain of the liver cells, you still see the fat droplets and you can see that the overall kind of background of the liver is more like a deeper red- more purple.

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Michelle T. Long, MD, MSc: And that's because of increased inflammation from the NASH and then you'll see these kind of wisps of blue here, which is a special stain for fibrosis.

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Michelle T. Long, MD, MSc: And you can start seeing it with NASH and we think that age, smoking, having other liver problems or worse kind of metabolic syndrome features are all related to

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00:13:49.860 --> 00:14:08.970

Michelle T. Long, MD, MSc: Having worse fibrosis of the liver, although a lot of this hasn't been fully not it's not fully understood what why some people with fatty liver disease will stay having just fat in the liver and others will have NASH, you can't easily tell that by looking at someone. So that is a major

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Michelle T. Long, MD, MSc: Area that we're trying to investigate.

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Michelle T. Long, MD, MSc: And then the final common pathway all liver disease is when you have cirrhosis. So you can see in this example slide here there's much more these blue cells.

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00:14:24.570 --> 00:14:34.470

Michelle T. Long, MD, MSc: And these, these are, this is fibrous tissue that will kind of link the different areas of liver together the net liver will become shrunken and modular

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00:14:35.760 --> 00:14:44.460

Michelle T. Long, MD, MSc: And they will start having issues with some of the important liver synthetic functions or

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00:14:44.940 --> 00:14:51.570

Michelle T. Long, MD, MSc: detoxification or immune functions that we have, you know, generally take for granted until the liver stops working.

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Michelle T. Long, MD, MSc: Now the good news is that most of the people with fatty liver, like I said, have that simple steatosis and they don't have NASH and they will not progress to having end stage liver disease. But if you do have NASH, then your risk of progression to cirrhosis is about 20%

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00:15:11.580 --> 00:15:18.690

Michelle T. Long, MD, MSc: S0 about a quarter of people with fatty liver have NASH and about one fifth of those may progress to having cirrhosis.

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00:15:20.190 --> 00:15:39.240

Michelle T. Long, MD, MSc: The good news though is that disease progression is slow. So this is a meta analysis that came out of about five years ago, they looked at different studies where people had paired liver biopsies. Now again, why are you doing paired liver biopsies in people? It may be that they are

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00:15:40.350 --> 00:15:51.630

Michelle T. Long, MD, MSc: There may be something you know that there's concerning about them. Generally, we don't do a second liver biopsy if we can avoid it, but they had pair liver biopsies. On average,

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00:15:52.770 --> 00:15:59.430

Michelle T. Long, MD, MSc: Over you know over about 14 years or so, follow up, they found that for, for simplicity purposes

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00:15:59.910 --> 00:16:10.680

Michelle T. Long, MD, MSc: The rate of progression was pretty slow. About one stage or one increase in their amount of liver fat every 14 years although the confidence interval was very wide.

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00:16:11.520 --> 00:16:19.350

Michelle T. Long, MD, MSc: And then for Nash, there was about one stage progression every seven years, which is it was in line with most other

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00:16:22.410 --> 00:16:26.880

Michelle T. Long, MD, MSc: Most other forms of chronic liver disease as well.

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00:16:28.290 --> 00:16:28.950

Michelle T. Long, MD, MSc: So,

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00:16:30.180 --> 00:16:31.170

Michelle T. Long, MD, MSc: that

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00:16:33.840 --> 00:16:43.620

Michelle T. Long, MD, MSc: So that is something that we need to consider here, although there are some people who will be faster progressors and we don't fully understand why that is.

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00:16:44.610 --> 00:16:56.130

Michelle T. Long, MD, MSc: The bad news is, as you all know, obesity starts the young and so if you have young children or adolescents who have obesity. They may already be forming

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00:16:56.970 --> 00:17:09.480

Michelle T. Long, MD, MSc: Inflammation in their liver and so by the time they come to see me, I take care of adults, in their late 40s early 50s, they may already have established cirrhosis because of many years of NASH

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00:17:10.590 --> 00:17:19.020

Michelle T. Long, MD, MSc: And we are seeing kind of globally a rising mortality due to liver disease and adults.

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00:17:20.850 --> 00:17:34.320

Michelle T. Long, MD, MSc: We're seeing an increase in in death related to liver disease here across the bottom is shows the years 1999 to 2013 and the different colors here are different age categories.

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00:17:34.830 --> 00:17:53.010

Michelle T. Long, MD, MSc: And these are deaths per 100,000 adults and you can see the red line here for the 55 to 64 years old, we are seeing a rising mortality due to liver disease. And we're also seeing a rising indication for liver transplant due to fatty liver disease.

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00:17:54.600 --> 00:18:00.090

Michelle T. Long, MD, MSc: Here the solid black line is waitlist registrations

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Michelle T. Long, MD, MSc: from people with NASH, the indication for their need for liver transplant. So we talked about how the final common pathway of all liver disease is end stage liver disease,

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00:18:10.740 --> 00:18:22.170

Michelle T. Long, MD, MSc: whether that's from Hepatitis C or alcohol related or other forms of liver disease. And as recently as over the last five years now are able to pretty reliably cure hepatitis C.

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00:18:22.710 --> 00:18:35.580

Michelle T. Long, MD, MSc: we're seeing that which was our prior most common indication for liver transplant; we are seeing those numbers decrease. And we're seeing the numbers for for NASH increase and also alcohol related liver disease.

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00:18:37.320 --> 00:18:48.330

Michelle T. Long, MD, MSc: So now we said before that,most people will not go on to develop end stage liver disease which is a good thing. But what happens

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00:18:49.530 --> 00:18:52.140

Michelle T. Long, MD, MSc: is there is an increased risk

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00:18:54.750 --> 00:18:55.200

Michelle T. Long, MD, MSc: Of

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00:18:56.580 --> 00:19:13.440

Michelle T. Long, MD, MSc: Cardiovascular disease. And that's largely driven by the inflammation that we see with NASH. And so the most common reason why people die with fatty liver disease is because of cardiovascular disease and cardiovascular related mortality.

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00:19:14.580 --> 00:19:19.020

Michelle T. Long, MD, MSc: And we think that there's a vicious cycle that

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00:19:20.100 --> 00:19:32.850

Michelle T. Long, MD, MSc: develops where the fat itself can also lead to increased inflammation and increased inflammation can worsen liver fat and we've shown this in the premium hurts study where we have

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00:19:33.270 --> 00:19:41.940

Michelle T. Long, MD, MSc: CT scans done that have measured liver fat and we looked at people that had liver fat at baseline and then we looked at those

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00:19:42.930 --> 00:19:49.920

Michelle T. Long, MD, MSc: who didn't have other cardiovascular risk factors and then we looked at what is their risk over six years of developing hypertension

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00:19:50.220 --> 00:20:00.360

Michelle T. Long, MD, MSc: or type two diabetes and if you had fatty liver, then your risk of developing type two diabetes over a six year period, your odds ratio was about 2.8

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00:20:00.660 --> 00:20:13.650

Michelle T. Long, MD, MSc: So compared to someone without NAFLD you had, 2.8 times increase odds of developing type two diabetes and a 1.37 increase odds of developing hypertension.

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00:20:14.970 --> 00:20:15.900

Michelle T. Long, MD, MSc: Similarly, if you

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Michelle T. Long, MD, MSc: if you didn't have fatty liver, but you had high triglycerides, hypertension impaired fasting glucose or type two diabetes. What was your risk of then subsequently developing

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00:20:28.710 --> 00:20:38.130

Michelle T. Long, MD, MSc: non alcoholic fatty liver disease and the most striking was for diabetes. So if you have diabetes, and you don't have increased blood liver fat now

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00:20:39.090 --> 00:20:53.460

Michelle T. Long, MD, MSc: You have a five times increase the odds of developing liver fat over six years compared to those that do not have diabetes. So, these cardiovascular risk factors are very much

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00:20:54.930 --> 00:21:01.380

Michelle T. Long, MD, MSc: A contributing factors to developing fatty liver disease and fatty liver disease can be making them worse as well.

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00:21:03.450 --> 00:21:11.700

Michelle T. Long, MD, MSc: So now we're going to talk a little bit more about the patients that we need to think about for fatty liver and who's at risk.

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00:21:12.750 --> 00:21:17.820

Michelle T. Long, MD, MSc: Which are the patients with NAFL at greatest risk for disease.

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00:21:18.960 --> 00:21:23.280

Michelle T. Long, MD, MSc: So it's really fibrosis. So, this graph here.

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00:21:24.900 --> 00:21:32.670

Michelle T. Long, MD, MSc: shows a few different colors here. So you have the blue and the gold and those are people with liver disease

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00:21:33.090 --> 00:21:39.510

Michelle T. Long, MD, MSc: that is related to NASH, which is the gold and the blue is non fatty liver related liver disease.

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00:21:40.020 --> 00:21:49.020

Michelle T. Long, MD, MSc: And they, but they don't have fibrosis compared to the red and the green, which is either Nash or not nationally liberties with fibrosis.

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00:21:49.470 --> 00:21:58.980

Michelle T. Long, MD, MSc: And you can see that, you know, whether it's NASH or non naturally liver disease, overall survival is very similar over this kind of long term follow up with 20 years

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00:21:59.340 --> 00:22:04.230

Michelle T. Long, MD, MSc: The real thing that divides people is whether or not they have fibrosis. So, those that have fibrosis

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00:22:05.160 --> 00:22:29.940

Michelle T. Long, MD, MSc: from any cause of liver problems have a lower survival compared to those without fibrosis. They've looked at other pathologic liver conditions like ballooning and how much fat is in the liver, all of those things and none of those actually increase your risk of death

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00:22:31.290 --> 00:22:37.080

Michelle T. Long, MD, MSc: at least in this particular study, and there are some other studies that show some conflicting data, but

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Michelle T. Long, MD, MSc: this is a paper that came out of the enhanced studies. This is a survey that goes across the United States. They used a blood based marker

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00:22:47.880 --> 00:22:59.340

Michelle T. Long, MD, MSc: -a set of markers. It's called the NAFLD fibrosis score and it uses your age, what some of your liver biochemical tests like your AST and your LFT

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00:22:59.730 --> 00:23:10.170

Michelle T. Long, MD, MSc: and whether or not you have diabetes and then some other measures like your platelet count and albumin and then can give you a number which is what is your risk for having

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00:23:10.980 --> 00:23:23.130

Michelle T. Long, MD, MSc: liver fibrosis and they looked here in NHANES of all patients that is just a population survey of the United States. And they found that people with

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00:23:23.700 --> 00:23:29.790

Michelle T. Long, MD, MSc: who had a high level of this fibrosis score actually had

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00:23:30.480 --> 00:23:42.720

Michelle T. Long, MD, MSc: Increased hazard of death by all cause and also cardiovascular related death and this was even after the accounted for other cardio Metabolic Risk factors.

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00:23:43.020 --> 00:23:50.190

Michelle T. Long, MD, MSc: Now it's a little tricky because some of those cardio Metabolic Risk Factors like diabetes, for example, are in the score. So it's not a perfect

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00:23:51.450 --> 00:24:06.600

Michelle T. Long, MD, MSc: -there's certainly residual confounding here but you know I think it just shows you that we think, you know, non alcoholic fatty liver disease, particularly with fibrosis is probably an important contributor to mortality.

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00:24:09.750 --> 00:24:20.610

Michelle T. Long, MD, MSc: So how do you diagnose clinically significant NAFLD? Well, you can look for fat just on your regular imaging. And so, most commonly, someone will, you know,

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00:24:21.000 --> 00:24:34.800

Michelle T. Long, MD, MSc: have some abdominal pain, they'll get an ultrasound looking for gallstones, and they'll say, well, you don't have gallstones. But you do have a fatty liver and so we'll see that. We'll see that's the this picture here.

135

00:24:36.030 --> 00:24:46.770

Michelle T. Long, MD, MSc: This is an ultrasound image. This here's an MRI and here is a CAT scan and you look at how bright the liver is. And that really is what is telling you about

136

00:24:47.400 --> 00:24:57.480

Michelle T. Long, MD, MSc: whether or not, kind of quantifying how much fat is there. And these CT, ultrasound or MRI, they can tell about moderate to advanced

137

00:24:57.870 --> 00:25:07.080

Michelle T. Long, MD, MSc: fat level in the liver. They are not very good at picking up mild levels of fat, but they're really not good at picking up fibrosis. So they really just show

138

00:25:07.620 --> 00:25:19.710

Michelle T. Long, MD, MSc: fat in the liver and as fibrosis progresses, fat can actually go away. So some of those people that have the most advanced fibrosis may actually have the least amount of liver

139

00:25:20.430 --> 00:25:26.490

Michelle T. Long, MD, MSc: fat and so you'd say, oh, well, maybe you'd see other signs of cirrhosis on the imaging yes and no. I mean, if you have

140

00:25:26.790 --> 00:25:34.050

Michelle T. Long, MD, MSc: advanced fibrosis, if you have cirrhosis that's well established, then you might see some collaterals and you might see that really shrunken nodule liver

141

00:25:34.290 --> 00:25:48.870

Michelle T. Long, MD, MSc: -but not always. You know, we also have different stages of cirrhosis and if you have cirrhosis that is early stage,and you're not seeing those physical exam finding changes, then the liver may actually look

142

00:25:50.460 --> 00:25:53.460

Michelle T. Long, MD, MSc: pretty good on the CAT scan and

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00:25:54.690 --> 00:25:57.720

Michelle T. Long, MD, MSc: you can even miss cirrhosis on imaging

144

00:25:58.890 --> 00:26:10.920

Michelle T. Long, MD, MSc: What about abnormal LFTS on the liver function tests? I like to call it a liver biochemical test. Well the upper limit of normal ALT is 30 in males in 19 in women.

145

00:26:11.490 --> 00:26:25.980

Michelle T. Long, MD, MSc: But if you use EPIC or if you use e-clinical works the normal range is much higher than that. And that's because these normal ranges were developed, you know, in a population that probably had underlying fatty liver disease.

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00:26:27.000 --> 00:26:37.140

Michelle T. Long, MD, MSc: So you need to keep that in mind that the LFTs may be abnormal even though they're showing up black in your electronic health record.

147

00:26:37.830 --> 00:26:54.540

Michelle T. Long, MD, MSc: They may actually technically be normal or abnormal from a hematologist point of view, and many people with fatty liver will have normal liver biochemical tests, but the presence of abnormal liver chemistry does signal a higher likelihood of having NASH

148

00:26:55.980 --> 00:27:06.840

Michelle T. Long, MD, MSc: So it's something to keep in mind. We looked at this in the Framingham Heart Study. And so we have about 3000 or so Framingham Heart Study participants who have undergone

149

00:27:07.170 --> 00:27:11.310

Michelle T. Long, MD, MSc: CAT scans of their liver to assess that. And then liver blood test.

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00:27:11.700 --> 00:27:30.630

Michelle T. Long, MD, MSc: And we saw that, this was looking at people, the light gray or people that have liver fat and the dark gray are people that do not. And certainly you are more likely to have elevations to the ALT or AST. If you have liver fat, but still only 35% of people

151

00:27:32.010 --> 00:27:39.330

Michelle T. Long, MD, MSc: For ALT with liver fat had increase elevation there. So it's not a perfect test.

152

00:27:40.110 --> 00:27:53.820

Michelle T. Long, MD, MSc: NASH looking for that information. It's very challenging to find non invasively. So right now you can't pick up NASH. I can't do a CAT scan. I can't do even a specialized tasks and say yes, you definitely have NASH

153

00:27:54.180 --> 00:28:08.340

Michelle T. Long, MD, MSc: The only way to really do that is from liver biopsy. So that is the gold standard. And it's really problematic because we can scale that up and it has complications. So we are urgently looking for different ways to diagnose NASH

154

00:28:09.330 --> 00:28:17.220

Michelle T. Long, MD, MSc: because if we could cure NASH, then we wouldn't even have to worry about more end stage liver disease because NASH with is what drives cirrhosis

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00:28:18.480 --> 00:28:29.880

Michelle T. Long, MD, MSc: Now,what are risk factors for NASH? Namely age. So, and then metabolic syndrome risk factors. So if you see someone with fatty liver that has multiple

156

00:28:31.260 --> 00:28:42.780

Michelle T. Long, MD, MSc: metabolic risk factors and they're older -I'm not talking elderly I'm saying, like, you know, older the age of 50, then they may be more likely to have NASH.

157

00:28:43.740 --> 00:28:55.920

Michelle T. Long, MD, MSc: This is a paper that came out of the NASH clinical research network and they looked on the distribution of fibrosis stage compared. They're calling them elderly, it's only age 65 so

158

00:28:56.790 --> 00:29:04.890

Michelle T. Long, MD, MSc: But the distribution of fibrosis stage between those that are greater than or equal to 65 versus those that were not and the red

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00:29:06.000 --> 00:29:13.800

Michelle T. Long, MD, MSc: are the older adults and the green or the younger adults and the fibrosis stage gets worse as you move across

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00:29:14.190 --> 00:29:27.330

Michelle T. Long, MD, MSc: And so you can see that the older adults had sort of a higher burden and have the higher amounts of liver fibrosis. So it's definitely something to keep in mind when you're seeing patients.

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00:29:29.220 --> 00:29:39.030

Michelle T. Long, MD, MSc: So hepatic fibrosis. That's really remember we said that that's really important because that is what's really associated with lower with mortality.

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00:29:39.840 --> 00:29:45.420

Michelle T. Long, MD, MSc: And so the good news though is that early fibrosis is reversible. If we can find it. And we identify it.

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00:29:45.690 --> 00:29:55.350

Michelle T. Long, MD, MSc: Through weight loss to exercise and through perhaps therapy. There's new therapies that are coming down the track. There's a beta colic acid, which

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00:29:55.890 --> 00:30:08.490

Michelle T. Long, MD, MSc: We just had a positive phase three study that is undergoing review by the FDA. And there's some suggestion that Pioglitazone may also be helpful in fibrosis on

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00:30:09.300 --> 00:30:17.730

Michelle T. Long, MD, MSc: Reversing fibrosis for meta analyses and then there's a whole list of medications that are in the pipeline for NASH and so

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00:30:18.600 --> 00:30:29.220

Michelle T. Long, MD, MSc: We need to be able to identify people that have early stage fibrosis, because then we can cure that and we want to we want to find them in reverse their disease course.

167

00:30:30.210 --> 00:30:40.800

Michelle T. Long, MD, MSc: So we talked briefly about the NAFLD fibrosis score. This is really easy. Just go to nafldscore.come you don't you know mostly are things that you have

168

00:30:41.760 --> 00:30:54.570

Michelle T. Long, MD, MSc: Available for most patients. The thing to note here is the albumin is in grams per liter. And so depending on how you're used to the units on that you've just just watched those units, but

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00:30:55.320 --> 00:31:04.590

Michelle T. Long, MD, MSc: You pop in the numbers and you hit enter and it gives you a score and it's your risk of having clinically significant fibrosis. So I recommend everybody

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00:31:05.130 --> 00:31:11.760

Michelle T. Long, MD, MSc: That if you're seeing anyone for fatty liver disease. They should have this score calculated at least once a year.

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00:31:12.060 --> 00:31:23.490

Michelle T. Long, MD, MSc: The problem is that many will fall into this indeterminate range. It's not an intermediate range. It's really indeterminate. We don't know really what your risk of advanced fibrosis is so

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00:31:24.420 --> 00:31:36.030

Michelle T. Long, MD, MSc: I say anyone that is either in the indeterminate range or is a high risk for significant fibrosis should be, you should consider referring them for additional

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00:31:37.320 --> 00:31:44.820

Michelle T. Long, MD, MSc: evaluation with a liver specialist I've listed along the side of the slide a whole number of other tests that are available.

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00:31:45.180 --> 00:31:54.960

Michelle T. Long, MD, MSc: But I prefer the NAFLD fibrosis score because it does include a lot of things that you should have readily available, whereas some of the other ones are more proprietary

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00:31:57.150 --> 00:32:02.010

Michelle T. Long, MD, MSc: So what about other technologies? There's new So the

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00:32:03.630 --> 00:32:15.660

Michelle T. Long, MD, MSc: There is ultrasound based imaging techniques and MRI along the top here you have something called our fee which is a ultrasound based technology that's integrated into a normal

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00:32:16.290 --> 00:32:33.840

Michelle T. Long, MD, MSc: Ultrasound unit. So that may be available through your radiology department and they can give you a liver stiffness measurement, which relates to fibrosis, the middle part of this slide here, the colorful pictures. That is what an MRI elastography looks like.

178

00:32:35.820 --> 00:32:38.760

Michelle T. Long, MD, MSc: And again, it's measuring the stiffness of the liver.

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00:32:42.210 --> 00:32:45.570

Michelle T. Long, MD, MSc: Or you could use a fiber scan, which is a stand alone unit.

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00:32:46.860 --> 00:32:58.530

Michelle T. Long, MD, MSc: to measure liver stiffness and it also simultaneously measures liver fat. So this is what a fiber scan unit looks like. And what's nice about it is that it doesn't require

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00:32:59.070 --> 00:33:05.700

Michelle T. Long, MD, MSc: Much specialized training. It's good if you've had some experience the company will come out and train you and teach you how to do it, but

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00:33:07.380 --> 00:33:15.360

Michelle T. Long, MD, MSc: it also is the five minute test and you can have if you have one available, you can just do it right there in your office so you

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00:33:15.930 --> 00:33:27.030

Michelle T. Long, MD, MSc: push a button, put the probe over deliver and then you push the button and it mechanically induces a sheer wave and the machine measures how long that sheer wave takes to propagate through the liver.

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00:33:27.420 --> 00:33:31.230

Michelle T. Long, MD, MSc: And that relates to how the liver is. And so if the sheer

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00:33:31.770 --> 00:33:46.290

Michelle T. Long, MD, MSc: speed is slow, then you have low liver stiffness or not a lot of fibrosis is delivered. And if you have a faster wave of speed, then you have a stiff liver, which means there's probably fibrosis there. Now there are some caveats. If you have

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00:33:46.980 --> 00:33:51.780

Michelle T. Long, MD, MSc: Like very high viral hepatitis levels like hepatitis B levels that are over

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00:33:52.770 --> 00:34:02.100

Michelle T. Long, MD, MSc: a million, then sometimes it can cause it to be high or if you're not fasting, or if you have heart failure er anything that's going to increase hepatic blood flow

188

00:34:02.760 --> 00:34:09.120

Michelle T. Long, MD, MSc: can also cause you to have a falsely high level, but it's a good potentially screening

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00:34:09.660 --> 00:34:24.360

Michelle T. Long, MD, MSc: modality to us, or at least for risk stratified patients are they high risk for advanced fibrosis or not. Line numbers on this slide here. But when we talk about fibrosis, we really want to detect people that

190

00:34:25.560 --> 00:34:38.340

Michelle T. Long, MD, MSc: have intermediate to advanced fibrosis and that stage from zero to four being cirrhosis. So anyone who's a fibrosis Stage two or higher and important category to look for

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00:34:38.730 --> 00:34:47.880

Michelle T. Long, MD, MSc: and this here just shows you the liver stiffness cut points that we are looking for. So usually kind of roughly anything over eight, eight and a half

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00:34:48.720 --> 00:35:00.750

Michelle T. Long, MD, MSc: Is what we look for on the fiber skin in the liver stiffness measurement and if you have that, then there's a chance you may have more advanced liver disease and should have further investigation.

193

00:35:02.310 --> 00:35:16.200

Michelle T. Long, MD, MSc: So do we screen for NAFLD? Well, depends who you are as the American Diabetes Association recommends that anyone with insulin resistance or metabolic disease or BC should undergo a procedure to diagnose NAFLD

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00:35:17.070 --> 00:35:26.760

Michelle T. Long, MD, MSc: So they are recommending screening in those patients. If you talk to the American Society for the Study of liver Disease,

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00:35:27.300 --> 00:35:34.440

Michelle T. Long, MD, MSc: They last updated their guidelines a few years ago and they basically say well routines screening of high risk patients is not recommended.

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00:35:34.770 --> 00:35:44.070

Michelle T. Long, MD, MSc: But if you have diabetes, it's reasonable to do one of those risk stratification screening tools. So use that NAFLD fibrosis score or use another

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00:35:44.550 --> 00:35:54.390

Michelle T. Long, MD, MSc: another blood based one like the fibrosis 4 score, which uses your platelet count and LFT and AST or use that fiber scan

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00:35:55.380 --> 00:36:01.350

Michelle T. Long, MD, MSc: I'm using the abbreviation here the VCET is the fiber scan or transient elastography

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00:36:01.950 --> 00:36:12.480

Michelle T. Long, MD, MSc: And they also say if you have incidentally noted hepatic steatosis on imaging and you have abnormal liver blood test, then

200

00:36:13.110 --> 00:36:24.930

Michelle T. Long, MD, MSc: you should be evaluated for fatty liver disease. But if your liver blood tests are normal, If you have other metabolic diseases which most people do in America these days, then you should evaluate them.

201

00:36:25.680 --> 00:36:37.590

Michelle T. Long, MD, MSc: And the reason the main reason why they're not recommending routine screening is that their availability of treatments is just not there. So hopefully as treatments become available, they will update this recommendation.

202

00:36:38.760 --> 00:36:55.890

Michelle T. Long, MD, MSc: Okay, so now we're going on to what we can do about this. So the good news is that weight loss is highly effective. So this is a study that was a 52 week lifestyle intervention studies and they use a hypo caloric diet.

203

00:36:57.090 --> 00:37:12.750

Michelle T. Long, MD, MSc: And it was 750 kilocalories per day caloric deficient diet and they also did food diaries and it is shown here on this slide, the breakdown of what the diet was made up of

204

00:37:13.590 --> 00:37:25.710

Michelle T. Long, MD, MSc: And they had about 300 participants and about 250 of them had a paired liver biopsy and we were looking for the degree of weight loss associated

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00:37:27.240 --> 00:37:38.910

Michelle T. Long, MD, MSc: With the improvements in the novel this nasty here is basically like a composite score of how your liver biopsy is

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00:37:39.510 --> 00:37:45.960

Michelle T. Long, MD, MSc: Improving kind of globally versus having resolution of Nash and versus by process improvement.

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00:37:46.620 --> 00:38:00.090

Michelle T. Long, MD, MSc: So if people that had less than 5% weight loss. Some of them had sort of a global improvement in their liver biopsies, but only a small amount had improvement in not the like resolution of Nash or

208

00:38:00.780 --> 00:38:20.760

Michelle T. Long, MD, MSc: Improvement in fibrosis and as you can see is the we lost increased up to getting over a you know a seven to 10% weight loss, most of them had improvements in their liver biopsies and over 60% had resolution of Nash with a seven to 10% weight loss and

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00:38:21.840 --> 00:38:30.450

Michelle T. Long, MD, MSc: You know, some also 20% or so just under 15% had five versus improvement and if you had over a 10% we lost you did even better.

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00:38:31.440 --> 00:38:43.890

Michelle T. Long, MD, MSc: The bad news is that you can see sort of these ends here really small and so mu 70% of the study within this less than 5% weight loss on 18% last more than 70% and only 10%

211

00:38:44.160 --> 00:38:55.050

Michelle T. Long, MD, MSc: Were in the greater than 10% weight loss category and you all see this every day. This is where the struggle is so can make your nationally we reverse it absolutely on

212

00:38:55.500 --> 00:39:05.730

Michelle T. Long, MD, MSc: But the problem is is that it's really difficult to do at all. And then to sustain so we can talk about. We talked about specific macronutrients

213

00:39:06.630 --> 00:39:19.230

Michelle T. Long, MD, MSc: And, you know, as we know, fats are calorically dense, there are differences we see people with NASH consume more saturated fat and less polyunsaturated fat and fiber compared to controls.

214

00:39:20.280 --> 00:39:30.570

Michelle T. Long, MD, MSc: And cholesterol intake. There's also associations with NAFL and and cirrhosis. There has been some excitement about omega 3

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00:39:31.200 --> 00:39:40.380

Michelle T. Long, MD, MSc: Use because it may reduce Lipitor accumulation and improve insulin sensitivity, but unfortunately randomized control studies have shown no improvement on liver histology.

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00:39:41.010 --> 00:39:57.060

Michelle T. Long, MD, MSc: Carbohydrates are quickly converted to fat stores and they're added too many routes on we've shown a number of times that sugar sweetened beverages are also associated with fatty liver disease and fructose in particular, maybe important on because it up regulates hepatic

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00:39:58.380 --> 00:40:04.470

Michelle T. Long, MD, MSc: denovo lipogenesis of creating more fat in the liver and its associated with fibrosis.

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00:40:05.220 --> 00:40:15.600

Michelle T. Long, MD, MSc: And here, this on the slide here, we see that the more servings of fructose that you have a week you had an increase odds of having more advanced liver disease as measured by fibrosis

219

00:40:16.320 --> 00:40:33.810

Michelle T. Long, MD, MSc: So that's potentially important. We talked to all our patients about added sugars, making sure that they're consuming less than 10% of calories per day from added sugars and really going through this with our patients, you know, as I'm trying to give real life examples of

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00:40:35.220 --> 00:40:42.930

Michelle T. Long, MD, MSc: how much sugar in everyday things like how much sugar is in about a can of Coke or even a tablespoon of of

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00:40:43.620 --> 00:40:49.110

Michelle T. Long, MD, MSc: ketchup, which is quite a lot of sugar and then spending a lot of our time talking about the food label

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00:40:49.860 --> 00:40:56.940

Michelle T. Long, MD, MSc: And making sure people understand how to read that and where the hidden sugars like dextrose which may not jump out to most people as sugar.

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00:40:57.660 --> 00:41:10.800

Michelle T. Long, MD, MSc: So making sure that they're avoiding sugar in at least the first three ingredients on their food. What about proteins? high protein diets are associated with weight maintenance and promotes satiety

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00:41:11.610 --> 00:41:19.320

Michelle T. Long, MD, MSc: We see So what about in fatty liver well individuals with fatty liver consume more animal protein compared to those without fatty liver

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00:41:20.250 --> 00:41:36.690

Michelle T. Long, MD, MSc: And high animal protein intake is associated if you have fatty liver and you're overweight. Well, that is associated with fatty liver. I'm sorry. I meant if you have high animal protein and you're overweight, that's associated with fatty liver, but not if you're lean

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00:41:38.040 --> 00:41:44.130

Michelle T. Long, MD, MSc: So, you know, there may be red meat in particular may be

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00:41:45.270 --> 00:41:57.330

Michelle T. Long, MD, MSc: not a good choice for people with fatty liver disease. The odds of fatty liver increased by every quartile of red meat consumption. This was from the multi ethnic population based study

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00:41:57.870 --> 00:42:11.280

Michelle T. Long, MD, MSc: The MESA studies. So something to keep in mind that perhaps more lean meat or non meat protein sources may be advantageous in people with fatty liver disease.

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00:42:11.670 --> 00:42:24.150

Michelle T. Long, MD, MSc: So what is best. Well, there's really a paucity of well designed nutritional studies on there, few studies have been longitudinal and most are limited by short duration of follow up or small sample sizes and so

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00:42:24.720 --> 00:42:38.670

Michelle T. Long, MD, MSc: We don't really know. There is the European guidelines recommend the Mediterranean diet. And I think there were a lot of features here that make sense. Having kind of a plant protein based and then heavy with the vegetables.

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00:42:40.020 --> 00:42:54.480

Michelle T. Long, MD, MSc: and low on the added sugars, I think is good, the only bit here is with the wine and we generally recommend that people avoid alcohol because we have shown that even modest amounts of alcohol can worsen liver fat.

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00:42:54.960 --> 00:43:04.590

Michelle T. Long, MD, MSc: So that is something to keep in mind with a Mediterranean diet and we just don't have enough information about the low carb or low fat or intermittent fasting diets

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00:43:05.040 --> 00:43:19.440

Michelle T. Long, MD, MSc: so we need more evidence there. And then all patients, where do they need to be successful? Really comprehensive lifestyle interventions. We're very happy as a hepatologist I'm very happy and work and partner with our colleagues

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00:43:20.100 --> 00:43:29.370

Michelle T. Long, MD, MSc: across the spectrum and and weight management to help really address a lot of the issues here because

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00:43:30.300 --> 00:43:46.770

Michelle T. Long, MD, MSc: the liver is just one piece. There really needs to be behavioral therapy in addition. And in addition to physical activity and exercise, we need people that are able to help our patients meet these goals.

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00:43:47.940 --> 00:43:56.610

Michelle T. Long, MD, MSc: So we've really focused on healthy eating as a lifestyle, keeping a positive focus focusing on the things they can do instead of avoid.

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00:43:57.600 --> 00:44:09.090

Michelle T. Long, MD, MSc: Healthy Eating portions, making healthy food choices, improving access to high quality foods and we focus on the healthy eating plate in my clinic because

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00:44:09.510 --> 00:44:23.490

Michelle T. Long, MD, MSc: I think it's pretty easy to understand and can really, really want to make this a lifestyle choice and focus on incremental changes and things that work within a patient's particular life

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00:44:24.720 --> 00:44:43.530

Michelle T. Long, MD, MSc: challenges, physical activity also improves liver fat. The majority of patients with fatty liver report minimal physical activity. So we generally recommend that you use the US guidelines of 150 minutes per week of moderate intensity physical activity

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00:44:44.610 --> 00:44:45.300

Michelle T. Long, MD, MSc: or

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00:44:46.380 --> 00:44:49.500

Michelle T. Long, MD, MSc: 75 minutes a week of vigorous activity.

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00:44:50.550 --> 00:44:51.990

Michelle T. Long, MD, MSc: And we know that

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00:44:53.220 --> 00:44:58.890

Michelle T. Long, MD, MSc: it can be a little bit difficult to understand the effect of exercise in particular, but

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00:44:59.250 --> 00:45:08.850

Michelle T. Long, MD, MSc: there's a meta analysis that shows that even in the absence of weight loss that exercise leads to a 20 to 30% relative risk reduction in liver fat.

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00:45:09.600 --> 00:45:15.600

Michelle T. Long, MD, MSc: So, you know, we encourage our patients to exercise and let them know we're not doing this for weight loss

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00:45:16.230 --> 00:45:27.030

Michelle T. Long, MD, MSc: but we're doing this for your mental health and for your well being and because even if you're not losing weight, it's going to help your liver. And so we tried to help keep our patients active.

247

00:45:28.410 --> 00:45:35.670

Michelle T. Long, MD, MSc: So just to summarize: I know that was a lot of information. I'm excited to take your questions. NAFLD is the most common chronic liver disease

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00:45:36.240 --> 00:45:46.110

Michelle T. Long, MD, MSc: and fibrosis likely affects 15 million Americans Hepatic fibrosis is associated with increased risk of liver and cardiovascular related morbidity and mortality.

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00:45:46.440 --> 00:45:54.900

Michelle T. Long, MD, MSc: There are new technologies to diagnose I process. So don't just think about fatty liver disease, think about what is my patients risk of having fibrosis?

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00:45:55.800 --> 00:46:10.410

Michelle T. Long, MD, MSc: And weight loss really is the cornerstone of treatment. In conclusion NAFLD is an important comorbidity in patients with cardiovascular disease and we need additional studies to better understand specific diets and macronutrients

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00:46:11.550 --> 00:46:13.080

Michelle T. Long, MD, MSc: So, thank you.

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00:46:14.520 --> 00:46:17.070

Michelle T. Long, MD, MSc: I'm available for questions at this point.

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00:46:25.230 --> 00:46:33.660

Villanova Webinar 1: Okay, thank you very much Dr Long we really appreciate the presentation. I think that the non alcoholic fatty liver disease fibrosis score

254

00:46:34.380 --> 00:46:47.250

Villanova Webinar 1: that you gave is particularly helpful because, as you said, most of those parameters that are indicated in that score are readily available. So I think all of us are going to commit that to memory for sure.

255

00:46:48.900 --> 00:47:01.980

Villanova Webinar 1: Before we get to Dr Long's presentation questions, I do have a few quick announcements. I want to remind everyone who has completed the webinar you will be emailed a link to the evaluation within a week.

256

00:47:02.640 --> 00:47:11.280

Villanova Webinar 1: The email will be sent to the email address you used to register for this webinar. The evaluation will expire in three weeks, so please complete it as soon as possible

257

00:47:11.760 --> 00:47:20.580

Villanova Webinar 1: to make sure that you get your CE certificate quickly. Once the evaluation is completed, the CE certificate will be emailed separately within five business days.

258

00:47:25.230 --> 00:47:28.470

Villanova Webinar 1: I wanted to let you know as we prepare for our

259

00:47:29.070 --> 00:47:39.000

Villanova Webinar 1: coming year's list of webinars we do want you to have a heads up that we will be having a webinar on the role of diet and cancer prevention and chemotherapy efficacy

260

00:47:39.300 --> 00:47:43.950

Villanova Webinar 1: that will be presented by Dr. Stephen Mittelman who is the Chief of Pediatric

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00:47:44.280 --> 00:48:00.510

Villanova Webinar 1: Endocrinology at UCLA Mattel's Children's Hospital in Los Angeles. It will be Wednesday, January 13 from 12pm to 1pm Eastern Standard Time and we will be providing more information and a registration link very shortly on our website.

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Villanova Webinar 1: Fitzpatrick College of Nursing is thrilled to be studying the impact of

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Villanova Webinar 1: COVID-19 on the healthcare workforce and, to this end, invites you to be a part of the nationwide CHAMPS study

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Villanova Webinar 1: If you are someone who knows a health professional, a first responder, an essential worker or support staff in a hospital or nursing home and are or did provide support for patients treatment sites or the community during the COVID

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Villanova Webinar 1: 19 pandemic, you are encouraged to participate by completing a short survey that takes about 10 to 15 minutes or so to complete. By hearing from workers

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Villanova Webinar 1: like you, we can better determine how we can improve services in the future. So to find out more, you can actually visit the COPE website where you'll find a direct link to participate.

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Villanova Webinar 1: COPE offers an online catalog of webinars and presentations, which can provide you with one contact hour or one CPU for each completed

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Villanova Webinar 1: webinar presentation. You can search for topics that are of interest to you and you can go and get those credits for a very nominal fee. You can search for topics on a wide variety of areas so simply go to the COPE website

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Villanova Webinar 1: to find out more.

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Villanova Webinar 1: Okay. And with that, we have some questions that we have for Dr. Long, first of all, a question. Can you comment on the effectiveness of vitamin E in non alcoholic fatty liver disease treatment or in the treatment of fatty liver diseases in general?

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Michelle T. Long, MD, MSc: Sure, Vitamin D was studied in a randomized study. It was the pivotal study published in New England Journal about 10 years ago and they found that vitamin E, this is

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Michelle T. Long, MD, MSc: 800 units of vitamin E a day was effective in improving NASH but not fibrosis and these were for patients without diabetes and who had biopsy proven NASH

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Michelle T. Long, MD, MSc: So it is something definitely consider if your patients have known NASH that we do recommend vitamin E, and there have been subsequent studies to show safety in patients with diabetes, so

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Michelle T. Long, MD, MSc: There are other, you know, things to consider with vitamin E, and that there have been

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Michelle T. Long, MD, MSc: larger studies that have looked at a meta analysis of studies that use vitamin E, not for fatty liver, but for other indications and show there may be a slightly increased risk of mortality with long term use of vitamin E. So it does

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Michelle T. Long, MD, MSc: Give you pause there, you know, for the PIVENS study, when patients were on Vitamin E their

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Michelle T. Long, MD, MSc: biochemical tests improved, but when they came off it in the study, they went right back to where they were before. And so we do think that it would probably need to be a long term

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Michelle T. Long, MD, MSc: treatment as long as the patient still had NASH. And so something to consider there but we certainly do use it to improve NASH.

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Villanova Webinar 1: Okay, thank you. And can you discuss non alcoholic fatty liver disease and the mortality rate with esophageal varices? If the patient has non alcoholic fatty liver disease, esophageal vertices and type two diabetes, which do you set as a precedence in treatment?

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Michelle T. Long, MD, MSc: Yeah, great question. Um, you know. So if someone who has NAFLD with esophageal varices, meaning they have cirrhosis, then I treat them like any patient with cirrhosis. So certainly, you're going to treat their underlying diabetes as you would

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Michelle T. Long, MD, MSc: Then your chances that you're going to put them you know on something that's going to really reverse their fibrosis or less because they they probably, you know, have more established

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Michelle T. Long, MD, MSc: Fibrosis and cirrhosis, if they are starting to get complications from that. And so then it's sort of standard

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Michelle T. Long, MD, MSc: hepatology care for patients with cirrhosis and consideration for transplant. If someone is having complications, then

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Michelle T. Long, MD, MSc: You want to think about referring them to be evaluated for transplant.

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Michelle T. Long, MD, MSc: So there are clinical trials that are coming out for people with more advanced fibrosis and so

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Michelle T. Long, MD, MSc: There may be, you know, you may want to think about sending them to a tertiary care center or some place that has access to clinical trials because there may be available.

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Michelle T. Long, MD, MSc: And the other thing to think about is, there are some medications for type two diabetes that may actually be effective for NASH, specifically the

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Michelle T. Long, MD, MSc: SGLT-2 inhibitors and the GLP-1 agonists. So that might be something to think about. Now, there's the there's just some

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Michelle T. Long, MD, MSc: kind of preliminary data showing potentially improvement in in NASH, but we don't know of any fibrosis improvement and these need to be repeated in larger studies as well.

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Michelle T. Long, MD, MSc: Okay.

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Villanova Webinar 1: What is your opinion of artificial sweeteners in the,

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Villanova Webinar 1: not the treatment, but would you recommend restricting them or avoiding them? Is there any research on them

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Villanova Webinar 1: aggravating the condition?

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Michelle T. Long, MD, MSc: Yeah, that's a great question. I mean, you know, the thing with artificial sweeteners, is that you can still get that

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Michelle T. Long, MD, MSc: insulin spike.

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Michelle T. Long, MD, MSc: afterwards, and so I do have to worry about

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Michelle T. Long, MD, MSc: continued risk of insulin resistance.

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Michelle T. Long, MD, MSc: And so generally

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Michelle T. Long, MD, MSc: You know it's it's a balanced, right? And if you're really, if someone is like addicted to Mountain Dew and you can get them to do Diet Mountain Dew, that's a good thing. But like I would just prefer you drink water

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Michelle T. Long, MD, MSc: is the bottom line. But, you know, understanding that sometimes, you know, you really need to kind of balance things with our patients. So

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Michelle T. Long, MD, MSc: if it's if it's what they're willing to do and it gets them off of the

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Michelle T. Long, MD, MSc: sugar that I'm okay with it.

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Villanova Webinar 1: It's a real balance, isn't it?

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Villanova Webinar 1: Okay, another one. I work in an endo practice. So it makes sense to screen our patients for NAFLD based on your recommendation. What screening, would you recommend and should the endo office have the VCTE device?

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Michelle T. Long, MD, MSc: Yeah, I think it's a great question. You know, I think the simplest way to do it would be to use something like the NAFLD fibrosis score or to use something, also called SIV -4 the which is another

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Michelle T. Long, MD, MSc: easy test that you can do their calculators for that are on MD calc. So that is something that you could implement, you know, straight away.

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Michelle T. Long, MD, MSc: We, we have piloted a program. In fact, we just got this large grant from Gilead Sciences here at Boston Medical Center where we're going to be testing kind of different ways to do this.

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Michelle T. Long, MD, MSc: With you know with endocrine colleagues, because it may be that it makes sense to have the the VCTe device, the fiber scan device

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Michelle T. Long, MD, MSc: Right there in the endo office, but you need someone who is skilled at interpreting them.

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Michelle T. Long, MD, MSc: The fear is that, you know, the device does kind of pop this number out at you, but you really do need someone who's expert at reviewing the images to help you assess the quality. But if those skills are there

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Michelle T. Long, MD, MSc: I think that it would be a very fine choice for for kind of risk stratifying your patients with underlying metabolic disease, for sure.

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Villanova Webinar 1: And we have time for a couple more questions. I think the dietitians in the audience, especially may be curious to think you're opinion on

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Villanova Webinar 1: The ratio of carbs, protein and fat to

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Villanova Webinar 1: their fine tuning of diet recommendations. So the study

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Villanova Webinar 1: that you presented had a higher carb ratio 64% carb 22% fat 14% protein. Is it more important just to achieve that weight loss in whatever calorie ratio or carb protein, fat ratio that suits the patient or is there a preferred way to go in terms of allocating those three macronutrients>

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Michelle T. Long, MD, MSc: Yeah, very good question and I think that we're seeing again like we don't have a lot of great studies, but pretty much however you get there as long as you have weight loss, it doesn't really matter about the macro nutrient composition. So get there, how you got there. Don't worry about that.

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Villanova Webinar 1: Okay, great. And let's see. One more quick question. You mentioned your concern with younger patients developed with obesity developing

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Villanova Webinar 1: liver disease early. And how about those women that we might see in our practices with PCOS? Are they at the same level of risk and, if so,

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Villanova Webinar 1: You know, do the same recommendations apply, of course, to them as you follow them through the years?

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Michelle T. Long, MD, MSc: Yes, good question. And we certainly see an association with fatty liver in PCs patients. So I would follow the same recommendations, you know, considering that is like a metabolic disease equivalent. So another risk factor for for fatty liver

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Villanova Webinar 1: Okay, thank you. So we've run out of time for questions today, but I really appreciate all the questions that the audience has

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Villanova Webinar 1: Come up with. They were excellent and Dr. Long your, your attentiveness to answering the questions is greatly appreciated. I especially appreciate that you all gave us

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Villanova Webinar 1: some little action items that we can work on in our own practices that can help improve the situation. So thank you so much.

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Villanova Webinar 1: Lastly, I just wanted to remind our listeners to please feel free to provide your input your feedback on our evaluation. We do use your feedback. In fact, we used it for this webinar. We use your suggestions for topics you want to hear.

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Villanova Webinar 1: We will happily try to accommodate those interestd. So keep the feedback coming. We appreciate it very much. We hope that everyone stays well in this this difficult and uncertain time and Dr. Long especially, I wish you well and good health, going forward

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Michelle T. Long, MD, MSc: Thank you.

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00:59:05.640 --> 00:59:07.050

Villanova Webinar 1: Okay, take care.