



Lesson 1

What is Diabetes? And the A of the ABCs of Diabetes

Materials Needed:

Facilitator- diacell, stress ball and stick pins, materials to make blood sugar bags (see recipe in appendix)

Participant- materials to make blood sugar bags and recipe

POLL

DO: start class with poll question: Have you ever used video to talk with a person or a group of people?

Tip:

Starting the class with interaction sets the tone for participation. It also lets the facilitator better understand the group's experience with video for communicating. If very few people have used video for communicating, the facilitator may want to spend more time helping people get familiar with the video chat tools and answering questions.

SAY: Thank you for taking the poll. If you are a person who hasn't used video for a group class or to talk to someone before, I want you to know its OK. You do not need experience with video to take this class. It is my job as a facilitator to make sure you feel comfortable and you get everything out of these diabetes classes that you are hoping to.

INTRO TO ZOOM TOOLS

SAY: My name is _____ and this is Living Your Best Life (with Diabetes!) I might also call it LYBL for short.

SAY: Welcome! LYBL is a diabetes engagement program that is dedicated to helping people get involved in their diabetes management, so they can live healthy with diabetes. A person with diabetes has to make many choices every

day that have to with diabetes management. What to eat, whether or not to be active, when or how or if to take medication, how to manage stress.... LYBL is hoping to give people support in making those choices, and provide an opportunity to meet and learn from other people living with diabetes too.

SAY: You should have each taken a pre-evaluation that was emailed to you. If you did not take the pre-evaluation let me know after class today. We will take this same evaluation again after the last day. This is NOT an evaluation of you. It is an evaluation of ME and these classes only. When filling out the evaluation I don't want you to feel any stress or pressure.

SAY: Before we do class introductions, I want everyone to learn about the tools we will use in this class.

DO:

Show participants where the chat box is. Invite everyone to type his or her name in the chat box. If someone doesn't want to type their name, do not press them in case there are literacy issues; in this case, suggest they type any key or symbol.

Help everyone find his or her microphone. Practice muting and unmuting. Practice calling on people one at a time.

Practice raising hands and lowering hands.

Practice thumbs up.

Practice thumbs down.

Practice clapping hands for agreement.

Explain to participant where they can see the names of the other class participants.

SAY: Because we are hoping to get to know each other better, if everyone could consider keeping their camera on as much as possible. It helps us to feel like we are talking to each other when we can see each other.

INTRODUCTION: (slide 2)

SAY: Let's take a moment to meet each other. I will introduce myself by answering the three questions on your screen. I will then call on folks one at a time so you can also introduce yourself by answering the same three questions.

I will just start at the top of the participant list and work my way down. When I call on you please unmute your mic. When you are done introducing yourself, please mute your mic if you have noise in the background.

DO: Read the following three questions out loud.

1. Your name
2. One thing you love about our community.
3. One reason you decided to take this class.

DO: Introduce yourself. When you are done call on the next participant to introduce themselves. Continue until everyone has had a chance to answer the questions.

DO: After each person has answered question 3 make sure they know when they can expect to learn more about the topic they came to class for. Or if you will not be covering what they want to learn. For example, if a person says they are taking the class because they want to learn about nutrition, let them know that will be covered some in class 2 and also class 4. If someone is hoping to learn about low income housing or some other type of resource or issue that will not be addressed in class- let that person know that topic will not be covered, however you will try to find a person to help them with their specific concern after class. Make every attempt you can to connect that person with someone who can help them, but we want to be up front with participants about what they can expect or not expect from class.

DO: Review the class agenda. (slide 3)

SAY: For class today you will need the following items from your LYBL tool box.

DO: Hold up items needed by participants.

LESSON- WHAT IS DIABETES? (slide 4)

ASK: What is diabetes?

SAY: Use your chat box to answer the question. If you are uncomfortable using your chat, you can also use your microphone.

DO: Read aloud people's responses as they chat them.

SAY: When blood sugar builds up in a person's blood stream and becomes too high and stays too high, we say that person has diabetes.

DO: Stop sharing screen, so your camera is full screen.

SAY: To talk about how diabetes works in the body, lets first start by talking about how digestion works in a body without diabetes.

DO: Use a diacell to demonstrate while you review typical digestion in a person without diabetes.

DO: Show the large diacell model and explain this is your cell.

SAY: I have billions of cells, we all do. And those cells need energy so it can do its job.

ASK: Where do our body's cells get energy from?
ANSWER: The food we eat.

SAY: The food we eat contains energy. Carbohydrates in food is one of the main places our body gets energy from. The body breaks carbohydrates into glucose, and releases glucose into the bloodstream so that it can be used by our cells for energy. Glucose is another name for sugar.

NOTE: It's important to teach participants that glucose and sugar mean the same thing, as health care professionals may say glucose or sugar. You want participants to understand that their healthcare professionals are talking about the same thing).

DO: One of the blocks at the end of one of the strings on the diacell will represent glucose. Show participants the block and tell them it is glucose.

SAY: Your body's cells needs glucose for energy. You must have glucose in your bloodstream all the time.

SAY: Here is my cell, it's starving (lift cell). I ate a food with carbohydrates and it broke down into glucose and was released into my blood (lift block).

ASK: Can the glucose just go into the starving cell and supply it with the energy it desperately wants?
ANSWER: NO.

ASK: Does anyone know why? What is missing?

SAY: You can have plenty of glucose in your bloodstream. You can have a cell that is STARVING and desperate for some glucose to use as energy. But without the hormone _____(what?)_____ glucose cannot get out of the bloodstream and into the cell to be used as energy.

ASK: Does anyone know what hormone gets glucose out of the blood and into our cells to be used for energy?

ANSWER: Insulin

DO: The other block at the end of the other string on the diacell will represent insulin. Show participants the other block on the string and tell them it is insulin.

SAY: We have an organ called the pancreas. The pancreas is where insulin is made. The pancreas senses when the blood sugar starts to rise and it secretes insulin into the bloodstream. Insulin looks for glucose and attaches to it.

DO: Demonstrate the insulin and the glucose blocks connected together.

SAY: Insulin is necessary for glucose to get out of the blood and into the cell, but even after insulin attaches itself to glucose and takes glucose to the cell, it can't just shove the glucose into the cell, insulin needs to find a special lock on the cell. Think of the cell as a house with a locked door, and insulin is the key. Insulin has to find the keyhole on the door in order to open it.

DO: Show the connected insulin and glucose trying to get into the diacell.

SAY: The lock on the cell door is called its "receptor". Insulin finds the cell's receptor and "unlocks" the cell, allowing glucose to enter the cell and be used as energy.

DO: Demonstrate the adjoined insulin and glucose finding the "receptor" on the diacell, and mimic the insulin "unlocking" the lock, thus allowing glucose to enter the diacell.

SAY: This is how it works in typical digestion in a person who does not have diabetes.

DIABETES

SAY: What about type 2 diabetes? Let's take a look at how digestion can look different in a person with type 2 diabetes.

DO: Demonstrate with the diacell how digestion works in a person with type 2 diabetes.

SAY: Just like in a person without diabetes, a person with diabetes has billions of cells that need energy to do their job.

DO: Show the cell.

SAY: Just like a person without diabetes a person eats a carbohydrate rich food and their body breaks the carbohydrates down into glucose.

DO: Show the glucose block on the string of the diacell.

SAY: Also, just like in a person without diabetes, the pancreas responds to the glucose entering the blood stream by squirting out some insulin into the bloodstream.

DO: Show the insulin block on the other string of the diacell.

SAY: Just like in a person without diabetes, the insulin finds the glucose in the blood stream and hooks up with it to take it to the cell.

DO: Demonstrate this with the diacell.

SAY: The insulin CAN find the receptor and it CAN unlock the cell to allow the glucose to enter the cell, but it doesn't work well. It's like when they used to make keys by hand at the hardware store. Remember how sometimes you could get a "sticky key"? You could get the door open, but it was a pain. You had to wiggle it around and it might take a couple of tries before you got the door to open. Insulin resistance is similar. The door will open, but it takes too long, and it's not efficient.

DO: Show the connected glucose and insulin trying to "unlock" the receptor, but struggling. Act as if the insulin is not quite fitting well with the receptor. After a few tries, finally the glucose can enter the cell.

DO: Ask any willing participant to type this in chat so you can come back to it: Type "1st problem in diabetes- The CELL is insulin resistant".

ASK: During all that time that the insulin is trying so hard to unlock the receptor so that glucose can enter the cell, where is the glucose? If the glucose isn't in the cell being used for energy like it's supposed to be, where is it?

ANSWER: it's still in the bloodstream, and because people eat throughout the day- glucose that can't get in cells, start to build up in the blood stream.

ASK: If the pancreas secretes insulin when glucose levels start to rise, what do you think it continues to do while glucose builds up in the bloodstream?

ANSWER: Secrete more and more insulin.

ASK: The pancreas can work overtime, for a really long time- years! But can it work overtime forever?

ANSWER: No! Eventually the pancreas cannot keep up with demand and it gets pooped out. It can no longer secrete enough

insulin to keep up with demands and the blood sugar starts to rise. This is when a person develops diabetes.

DO: Ask any willing participant to type this in chat so you can come back to it: “2nd problem in diabetes- the PANCREAS gets pooped out”.

SAY: There is one more main problem with type 2 diabetes we are going to talk about. When we eat food we have a steady source of energy for our cells. But we don't eat all the time. We might go a long time between meals, we sleep at night, we might be stuck somewhere without food. But we still need glucose in our blood.

ASK: What would happen if we had no glucose in our blood?

ANSWER: We wouldn't be living! We need blood sugar ALL THE TIME!

SAY: Since we know we need glucose in our blood all the time to live we know we must have to get blood sugar from some place besides food. Otherwise the human race would never be here. When we don't have food, or when we are sleeping our body has a backup plan to get glucose. It has to do with the liver. Your liver stores glucose. Any time we don't have food, or at night when we sleep- our liver puts out just a little bit of glucose into the blood stream all night long, to keep our blood sugar nice and steady- and not go too low. BUT in type 2 diabetes, insulin resistance affects our liver too. Instead of calmly putting a little bit of glucose into the blood stream all night long, it's like your liver drank coffee all night, and it puts out lots and lots of glucose into the blood stream.

ASK: Has anyone ever gone to bed with one blood sugar and then woke up the next day with a much higher blood sugar, even though you never ate any food? This is because we get blood sugar from our liver too. Food isn't the only place our blood sugar comes from. And in type 2 diabetes it is common for a liver to be hyperactive at night or when we go long periods without eating and put too much sugar into the bloodstream.

DO: Ask any willing participant to type this in chat so you can come back to it: “3rd problem in diabetes- the LIVER is hyperactive”

DO: Type on whiteboard the three problems in diabetes, referring to the chat boxes.

SAY: Why does it matter that diabetes has all these different problems? Well some of the medications we take address just one of these problems. That is why many people are on more than one type of medication. Different lifestyle choices we make affect one problem more than another, that's why we have different lifestyle choices we can make that help us better manage our diabetes.

SAY: There are actually more than these 3 problems happening in the body, but these are the three we will talk about in this class. These problems are briefly discussed in your book on page 100 and 101.

DO: Stop sharing your whiteboard.

SAY: I'm going to ask some questions. Please use your chat boxes to answer questions. (or use microphones if class is small).

ASK: What is the difference between type 1 and type 2 diabetes?

SAY: In **type 1 diabetes**, the body has an autoimmune disorder. The person's body attacks and kills the insulin producing cells of the pancreas. A person with type 1 diabetes has NO INSULIN. A person with type 1 diabetes must inject synthetic insulin to be used by the body. Without insulin they would die.

ASK: Which type of diabetes is more common, type 1 or type 2?

ANSWER: type 2. Type 2 diabetes is far more common than type 1 diabetes.

ASK: What are some of the ways diabetes affects our bodies if it isn't managed?

ANSWER: High blood sugar can affect our mood. It can make us feel crabby, or sad. It can give us low energy. Over time diabetes that isn't managed can also cause complications, such as problems with our heart or kidneys.

ASK: What are some of the ways we manage diabetes? (slide 5)

ANSWER:

Manage stress

Make and keep appointments with our healthcare team

Ask for support from family and friends

Ask questions at healthcare appointments

Healthy food choices

Stay active

Monitor blood sugar

DO: Give participants time to answer with chat or microphone, then advance slide to reveal any missing answers.

SAY: We are going to talk about each of these things over the next 7 classes.

LESSON- ABCs OF DIABETES, A (Slide 6)

SAY: Let's talk about the A,B,Cs of diabetes.

ASK: Has anyone ever heard of the ABCs of diabetes?

SAY: In diabetes we always want to monitor our A,B,Cs. When A,B,Cs are at goal we are at our lowest possible risk of getting a complication related to diabetes.

ASK: Can anyone guess what the A, B and C stand for? Go ahead and chat your guesses.

DO: Once everyone has guessed, advance the slide to reveal answer.

ANSWER:

- A stands for for A1c- we want to monitor and manage blood sugar
- B is for blood pressure, we want to monitor and manage blood pressure
- C stands for cholesterol, we want to monitor and manage cholesterol.

SAY: The A,B,Cs are all equally important. It is just as important to manage our blood pressure as it is to manage our blood sugar as it is to manage our blood cholesterol. The number one complication of diabetes is heart attack and stroke. If we only focus on blood sugar and nothing else, we are not paying attention to big risk factors for the most common complication of diabetes.

DO: Advance to slide 7

SAY: Today we are going to talk about A. A stands for A1c. A test for monitoring blood sugar. Let's talk more about monitoring blood sugar.

DO: Advance slide to reveal next question.

ASK: why do we care about our blood sugar? How does high blood sugar affect us? Go ahead and chat your thoughts.

Some ANSWERS: In the short term, high blood sugar can have a negative effect on mood and energy. Years of high blood sugar puts us at high risk for complications related to diabetes.

ASK: There are two ways we monitor our blood sugar. Does anyone know what those two ways are?

DO: Advance slide to reveal answer.

SAY: One way we monitor our blood sugar is with an A1c test.

DO: Stop sharing screen so participants can see you demonstrate A1c.

ASK: What is A1c?

SAY: Your red blood cells live for about 90 days in your blood stream. In your blood stream, sugar sticks to your red blood cells.

DO: Show stress ball and explain that it is a red blood cell. Use stick pins to illustrate sugar sticking to the red blood cell.

SAY: Your A1c is a measurement of the sugar that is stuck to your red blood cells. Your A1c tells you, on average, what your blood sugar has been 24 hours a day, 7 days a week for the last 90 days.

DO: Start showing slides again. Use slide 8 to illustrate what a typical A1c would mean for an average blood sugar.

ASK: Does anyone know what a healthy A1c goal would be for a person with diabetes?

ANSWER: Most people with diabetes have a A1c goal of less than 7%. Some people may have a goal of 8%, others may have a goal of 6.5%. Talk to your provider or diabetes educator if you are unsure of what your last A1c was, or what your goal should be.

ASK: How often should you have you A1c tested?

ANSWER: Never less than every 6 months, but some people may get their A1C measured every 3 months.

SAY: More information about A1c is in your book on page 8 and 9.

ASK: A1c is one way we monitor our blood sugar. What is another way?

ANSWER: Self monitoring blood glucose with a finger stick monitor or a continuous glucose monitor (CGM).

ASK: Who has a monitor? Does anyone not know how to use a monitor? If you are unsure of how to use a monitor, who can walk you through using your monitor, step by step?

ANSWER: Diabetes educator or pharmacist

ASK: What are things to consider when you are trying to decide what monitor to get?

ANSWERS: Some things to fill in if they are missing: 1) price of the strips, 2) does your insurance cover only certain monitors? 3) Whether or not you want “alternate site testing” Testing on places besides a finger. 4) Is a continuous glucose monitor better for you?

ASK: Who can help you choose a monitor?

Answer: diabetes educator

ASK: Does anyone know what a continuous glucose monitor is? Often times they are referred to by their acronym, CGM.

DO: Use slide 10 to discuss how a CGM works.

SAY: CGM devices are about the size of a quarter. Each has a tiny sensor that goes under your skin, typically on the back of your arm. The CGM sensor reads your glucose levels and sends them to a reader device or a smartphone.

SAY: People with type 1 diabetes or people with type 2 diabetes who take more than one insulin shot or use an insulin pump, or people with severe hypoglycemia sometimes use CGMs.

SAY: A CGM is a device used to measure your glucose level every few minutes, 24 hours a day. Depending on the type of CGM, you could have over several hundred glucose readings in a day. You also can see daily glucose patterns over time (Slide 11).

SAY: CGMs provide with something called time in range.

ASK: Can anyone guess what “time in range” means?

ANSWER: The percent a person’s blood sugar is in range, and not too high or too low. The goal is 70% of a person’s blood sugars should be in range.

SAY: CGM lets you see your current glucose level and if your glucose is going up, down or staying steady (Slide 12).

ASK: Does anyone check their blood sugar in here?

ASK: Why would you want to check your blood sugar?

ANSWER: Fill in if not said: to learn information about how food, activity, illness, stress, a new medication, etc... affects your blood sugar. No two bodies are exactly the same. We each have different amounts of insulin resistance, our pancreases are not squirting out the same amount of insulin, some of us may have a liver that’s a little more hyperactive than someone else. Testing your blood sugar gives YOU information specific

to YOUR body. Most of your diabetes management is done by you. Checking your body's blood sugar give you information to help you make decisions that are best for you and your body. Also, testing your blood sugar can give you piece of mind that you are OK, if you are unsure. Or tell you if you have a low or high blood sugar.

ASK: When should you check your blood sugar?

ANSWER: Whenever you want to know more information!

Check it before and two hours after eating a meal, to learn how the meal affected your body.

Check it first thing in the morning to find out about your blood sugar when you are fasting.

Check it before and after walking to learn how much a walk can lower your blood sugar.

Talk to your diabetes educator about times you can check your blood sugar that would be helpful to you, or anytime you have a question about your blood sugar numbers!

ASK: (Slide 13) What is a healthy blood sugar range in the morning before eating? Two hours after eating?

ANSWER: The American Diabetes Association says 80- 130 in the morning and less than 180 two hours after eating. Some people may get a different number from their provider. Talk to your provider and diabetes educator if you are unsure of what your blood sugars should be.

NOTE: These ranges vary slightly in participants book on page 16. The lower limit is listed as 70, instead of 80. 80-130mg/dL is the most recent lower end recommendation. Mention this to participants so they do not get confused. There is more information on testing blood glucose on pages 18-20 and throughout the book.

ASK: What do you do if your number is lower than 70? **(Slide 14)**

ANSWER: eat something sugary right away. Try for about 15 grams of carbohydrates, such as a half of a cup of soda or juice or 3 or 4 hard candies or 3 or 4 glucose tablets. Wait 15 minutes then test again. If blood sugar is still below 80, treat again. Once blood sugar is in the normal range, eat a small meal and call your provider. If your blood sugar remains low after 3 treatments, call 911!

SAY: This information can also be found in your book on page 49.

ASK: Once your blood sugar is in the normal range again, and you've had a small meal, what should you do next?

ANSWER: Look for a possible cause of the low blood sugar! Did you eat less carbohydrate than usual, exercise more, did you drink alcohol without eating, did you take too much medicine? **Make sure your health care team is aware if you are having any problems with your blood sugar.**

IMPORTANT: Treating a low blood sugar is a very important skill for people with diabetes that take diabetes medication. Please tell participants to review their low blood sugar plan with their diabetes educator or provider.

SAY: We talked about treating a blood sugar below 70 as an emergency, but your provider may give you a higher number they want you to treat at, such as 80. Additionally, many people with diabetes who take medication should carry something called glucagon. It is a hormone that can raise your blood sugar in an emergency, such as if a person becomes unresponsive and cannot swallow food. Ask your provider if you should carry glucagon with you at all times.

SAY: You can find this information repeated in your Type 2 Diabetes Basics book on page 49.

ASK: How often should you test?

ANSWER: It depends on the person. Some people benefit from frequent testing, some people can do fine with testing less frequently. Talk to your diabetes educator about a schedule for testing that would work for you!

ASK: Do you really need BOTH an up to date A1c AND to self-monitor blood glucose?

ANSWER: Just because a person has an A1c in goal, doesn't mean they aren't having low blood sugars that are affecting their quality of life, or even averaging out high blood sugars to provide an A1c number that is "in range." Self-monitoring blood glucose with a finger stick monitor or with a CGM can give you snapshots of what your body is doing at a specific time and tell you how your blood sugar responds to lifestyle changes.

SAY: BUT monitoring your A1c is just as important as self-monitoring your blood glucose. One tells you what your blood sugar is doing at a given point in time. Another tells you what your blood sugar is doing on average. If your finger sticks or CGM blood sugars are all great, but A1c is high, what should you do?

ANSWER: Work with your diabetes educator to test at another time of day, to find out when blood sugars are going high.

ACTIVITY- MAKE BLOOD GLUCOSE BAGS

DO: Hold up materials needed to make blood glucose bags. Give participants time to gather their materials. Review recipe and demonstrate how to make each bag.

SAY: I am going to give everyone 3 minutes to step away from their computer or phone and go to a sink or a counter to make their blood bags. Do not make the blood bags in front of your electronics, as I would hate for anyone to spill anything on anything that could be ruined. When you finish your blood bags, come back to your screen to share with your sealed bags.

DO: Set a time for 3 minutes.

DO: After everyone comes back to the class, prompt discussion with questions, such as, "Is anyone surprised by the way any of these bags feel?" "What surprises you?" etc...

WHAT DOES BETTER LOOK LIKE- ACTIVITY (slide 15)

SAY: In the box you were mailed you will find a piece of colored paper and a couple markers. You will need those for this last activity.

SAY: For this activity, I am going to ask you to close your eyes. I want you to picture yourself 3 months from now. Everything is going well for you. You feel healthy. You feel good. You feel in control of your health. You are well.

ASK What kinds of things are you doing?

ASK: Who are you with?

ASK: What is around you?

SAY: Open your eyes. Using stick figures if you like, use simple drawings to show what you saw when you closed your eyes. What is happening in your life 3 months from now, when you feel well and in control of your health?

DO: Allow participants 5 minutes to draw their vision of living healthy with diabetes.

SAY: You just drew YOUR vision of living healthy with diabetes. Living your BEST life with diabetes. Each one of us, has a different vision of what living healthy means. There is not a right or a wrong, your vision is specific to you. The

next 6 classes we are going to spend time talking about how to live your best life with diabetes, and this is the picture I want you to keep in mind.

GOAL SETTING

SAY: Look at the picture you just drew. Now think about what we talked about today.

DO: Show slide 16, 17 and 18

SAY: This is a summary of everything we talked about today.

ASK: Is there anything from your drawing or anything we talked about today that you would like to work on this week? Could you set a goal about it? Something you could work on this week? Something that can bring you closer to your vision of living healthy with diabetes?

DO: Review slide 19

SAY: Here are some examples of potential goals. You can use something similar or come up with something on your own.

SAY: Every week we will each set a goal and then we will check in with each other the next class and talk about how we did with our new goal. You can learn more about goal setting on pages 60-63 in your book.

NEXT WEEK:

DO: Show slide 20 to review what will be talked about next week, along with the time and day.

DO: Invite and encourage participants to please fill out end of class evaluation polls.

DO: Thank participants for attending and participating. Let participants know if you had fun and are excited to “see” them next week.