

# Module 3: All About Medicine

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## Dealing with Diabetes

Having diabetes can be stressful and challenging at times but if you are organized and well-prepared, it will be much easier for you to take control and stay healthy. One way to stay in control is to have a plan that has all three factors of living with diabetes: exercise, healthy eating, and medication.

Taking medicine is an important part of staying healthy when you have diabetes. If you have type 1 diabetes, medicine, such as insulin, is extremely important. If you have type 2 diabetes, you may or may not need medications. His or her doctor will say if it's necessary. If your doctor says that you need medication, then it is important that you include this in your plan to stay healthy.

If your doctor sees that it is best for you to take medication, then it's very important for you to take it just as the doctor suggests.

If you do not take your medication, or if you take it wrong, you can cause more harm than you think. You can feel terrible and cause other health problems that can even require a visit to the hospital. When you take your medication correctly, you are keeping your blood sugar levels from getting too high or too low, which will help you stay healthy and feel good.



## Tips for Type 1

If you have type 1 diabetes you can stay healthy by taking these four very important steps:

- taking insulin
- eating a healthy diet and following a meal plan
- checking blood sugar levels
- being active by playing and getting exercise

With all the steps it takes to manage your diabetes, it can get stressful and confusing. It is best to have a plan where all your steps are written down so that things can be easy to remember. It is also important to remember that everyone is different, so your plan should be specific to your needs and lifestyle.



## Tips for Type 2

- If you have type 2 diabetes, you can stay healthy by taking these three very important steps: getting to a healthy weight (by eating healthy and exercising )
- taking medicine if the doctor feels it's necessary
- checking blood sugar levels often

With all the steps you need to take to manage your diabetes, things can get confusing and stressful. There is a lot to remember to stay healthy and the best way to keep everything organized is to have a plan. Your diabetes management plan will be specific to your needs and lifestyle and should be written down so that it is easy to keep track of all the details.

The main goal of your plan is to stay healthy and manage your diabetes by keeping your blood sugar levels from getting too high or too low.



## How Do You Know if Your Diabetes Is Under Control?

There is a range that your blood sugar level should be between and it is important for your health that you stay in that range; this is called your target range. Your doctor or diabetes health care team will tell you what your blood sugar levels should be.

It is called your “target range” because it is something that you are aiming to hit. For example, if you've ever played darts or shot an arrow from a bow, you know that a target is what you're aiming for. When you are managing your diabetes means that you're aiming to keep your blood sugar level as close to the target range as possible.

Checking your blood sugar levels is extremely important because it is the only way to know if you are close to your target range. Checking your blood sugar and making sure it is in the right range prevents diabetic emergencies ! You check your levels with a machine called a glucose meter . Your diabetes health care team will help you figure out when and how often you should be checking.



## Checking Blood Sugar Levels

One step in staying healthy with diabetes is to check your blood sugar levels often. This step is important because checking your blood sugar levels is the only way to see how well your insulin injections and meal plan are working.

If you have type 1 diabetes, you should test blood sugar levels with a blood glucose meter. With type 1 diabetes, you will usually need to test three or four times a day, but it can even be more than that.

The meter works by taking a very small blood sample and reading your blood glucose levels. When you test, you'll feel a quick pinch.

You will feel much better and healthier when you keep your blood sugar levels in a healthy range. Not only will you feel better now, but you can prevent complications in the future too.

Your diabetes health care team will let you and your parents know what your blood sugar levels should be and how often you should test.



## Your HbA1C

Another way for doctors to know how your blood sugar levels are is to count your hemoglobin or red blood cells.

The HbA1C test can be done in your doctor's office or in a lab. In general, the lower your HbA1C level, the better you're doing controlling your blood sugar level, so remember that diet, exercise, and medication all play important roles in controlling your levels.

Your HbA1C level should be below 7.5% to prevent complications.

If you have any questions about you're A1C, be sure to check out the handout that you should have gotten from your doctor or nurse. If you don't have one, you can call the clinic or get one at your next doctor's visit.



## All About Insulin

There are several different kinds of medication that you can take to treat your diabetes but insulin is the most common. Insulin can be given through shots or through an insulin pump.

Remember that insulin helps glucose get into your cells so that it can become energy that your body needs. Without insulin, the glucose stays in the blood and blood sugar levels get too high.

There are a few different kinds of insulin. They are each different based on :

- how long they take to start working
- when they work their hardest to lower blood sugar
- how long they last

It is important to talk to your doctor about what types of insulin you will need and much you need to take each day. What the doctor tells you will be part of your diabetes management plan, along with your meal plan and exercise plan. Because each person with diabetes is different, they way people use insulin may be different too . Some people with diabetes need to take two injections each day. Others may need more than two injections or an insulin pump to keep blood sugar levels under control. Your doctor will figure out what's best for you.





## Types of Insulin

Depending on what your doctor says, you will have a certain type of insulin. Here is an overview of all the different types.

Insulin Type	How Long It Takes to Start Working	When It Works Hardest	How Long It Lasts	How It Works
Rapid-Acting Humalog Novolog Apidra	10-15 Minutes	30-90 Minutes	4 Hours	This type is used to help your body handle glucose that you absorb when eating a meal. Usually you take it right before eating, but it can also be taken just after eating. It looks clear and can be mixed with other types of insulin
Short-Acting Regular	30-60 Minutes	2-4 Hours	6-9 Hours	This type is also used to help your body handle glucose that you absorb when eating a meal, but it lasts longer than rapid-acting insulin. You should take it 30 minutes before eating. It looks clear and can be mixed with other types of insulin
Intermediate-Acting NPH	1-4 Hours	3-14 Hours	10-24 Hours	This type works to control glucose between meals and during the night. It looks cloudy and can be mixed with other types of insulin.
Long-Acting Lantus Levemir	1-2 hours	Even throughout	18-24 Hours	This type works to control glucose between meals and during the night. It looks clear but can't be mixed with other types of insulin.

## Insulin Calculations

It's very important that you give yourself the right amount of insulin based on what you eat. The UIC clinic has a great worksheet you can use to help you calculate how much insulin you should take based on the food they eat. It's the same formula and calculation no matter if it's a snack, breakfast, lunch or dinner.

If you ever have any questions about calculations, DON'T GUESS! The UIC clinic is here to help; here are their emergency numbers if you ever need them:

Date/Time:  
Breakfast

<input type="text"/>	-	<input type="text"/>	=	<input type="text"/>	-	<input type="text"/>	=	<input type="text"/>	units
Blood sugar		Goal blood sugar				Correction		# of correction units	

  

<input type="text"/>	÷	<input type="text"/>	=	<input type="text"/>	units
Carbohydrates				# of units for food	

  

<input type="text"/>	+	<input type="text"/>	=	<input type="text"/>	total units
Blood sugar Units		Food units			

## How Do You Keep Track?

There are different ways you can keep track of your diabetes. In general, it's really important to understand how your diabetes is affecting you so you can control your diabetes.

Here are 2 main ways:

1. Keep a Notebook.

Have a notebook that has the dates and the hours you tested your blood glucose levels to make sure that you are recording your results as accurately as possible. It is also important that you record ALL results, even the bad ones . Do not just focus on the normal ones, but also include high or low readings because they can give you a better understanding of your diabetes. You might need to write down other info, too, such as what you were eating or how active you were when you got a high or low result so that you and your doctor can better understand what contributed to it.

2. Your Blood Glucose Meter.

Did you know that your blood glucose meters can remember your blood sugar readings? With some blood glucose meters, you can print out your results or download your blood sugar readings to a computer screen. This can be a helpful and fun way to look at how your levels are running at different times of day. Keeping track of this information will help you learn more about how certain situations — like eating or exercising — affect your diabetes.

Bringing a complete blood sugar log to your diabetes clinic visit is very important to help your doctor figure out whether the amount of insulin you need should be changed.

## Sample Insulin - Blood Glucose Log

The UIC clinic has an Insulin-Blood Glucose Log that can help you to track diabetes information at every meal throughout the day.

INSULIN - BLOOD GLUCOSE LOG																									
Blood Glucose Target Number: <u>129</u>				Blood Glucose Target Range: <u>80</u> to <u>180</u>				Correction Dose: + / - <u>1.0</u> units for every <u>50</u> points																	
Pump Basal Rates:				Basal Dosage: <u>Lantus</u>				Bolus Dosage or Before Meals: <u>Humalog</u>				Other: _____													
1	_____			AM: _____				Break: _____				<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2" style="text-align: center;">CHILDREN'S HOSPITAL PHONE NUMBERS</th> </tr> <tr> <td style="text-align: center;">NON-URGENT</td> <td style="text-align: center;">(312) 996-1796</td> </tr> <tr> <td style="text-align: center;">AFTER-HOURS</td> <td style="text-align: center;">(312) 649-2639</td> </tr> <tr> <td colspan="2" style="text-align: center;">Have Operator Page Doctor On Call</td> </tr> <tr> <td style="text-align: center;">EMERGENCY</td> <td style="text-align: center;">(312) 649-2639</td> </tr> </table>				CHILDREN'S HOSPITAL PHONE NUMBERS		NON-URGENT	(312) 996-1796	AFTER-HOURS	(312) 649-2639	Have Operator Page Doctor On Call		EMERGENCY	(312) 649-2639
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2	_____			PM: _____				Lunch: _____																	
3	_____			Bed: _____				Dinner: _____																	
4	_____																								
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7	_____																								
<div style="display: flex; justify-content: space-around; align-items: center;"> <span style="background-color: #ffcccc; padding: 2px 5px;">Low</span> <span style="background-color: #ccffcc; padding: 2px 5px;">Normal</span> <span style="background-color: #ffffcc; padding: 2px 5px;">High</span> </div>																									
INSULIN DOSAGE										BLOOD GLUCOSE READINGS															
Date-Day	Type	B	SN	L	SN	D	Bed	Night		B	SN	L	SN	D	Bed	Night 1	Night 2	Notes							
	Bolus								Time																
	Extra								BG																
	Basal								Carbs																
	0.0								Ketone																

If you do not have a Insulin-Blood Glucose Log and would like one, call the UIC clinic at 312-996-1795 to request a copy or remember to get it at your child's next visit

## Diabetes Pills

There are different types of medications for people with type 2 diabetes. Some people with type 2 diabetes need to take diabetes pills or tablets. These pills are called “oral” medications because they are taken by mouth.

For people with type 2 diabetes, these pills or tablets can help the body make more insulin or help the body do a better job of using the insulin it does make. For best results, you should take these medications in addition to exercising regularly and eating healthy.

Be sure to ask what the medication does in your body and how it should be taken. Some medications are best taken with food.



## Glucagon

Many of medications used for diabetes like, insulin and other medicines help to keep your blood sugar levels from going too high. But sometimes people with diabetes experience really low blood sugar, or hypoglycemia.

Hypoglycemia can be extremely dangerous because if it is not treated right away, it can cause seizures or make a person pass out.

If blood sugars get too low, you might need a glucagon shot. Glucagon is a hormone that helps raise blood sugar levels very quickly. Your doctor will tell you about these shots and explain how and when to give you one. In addition to knowing how to administer the shot yourself, it also might be a good idea for older brothers and sisters, babysitters, teachers, and other adults who take care of you to know about these shots. It is best to make sure that everyone is prepared in case of an emergency. Everyone also should know when to call 911 because of a diabetes emergency.

The best way to avoid a diabetes emergency is to follow your doctor's instructions and take your medication the right way!



## Learn More Information

If you want to read more about any of the topics in this module, here are the websites where this information is from so you can read more:

To learn more information about Diabetes in general, KidsHealth offers a lot of information that is easy to understand. [Click here](#) to visit their website.

The Arkansas Diabetes Advisory Council has a great guide with lots of pictures about so many topics about diabetes. [Click here](#) to get the guide.

Learning About Diabetes is an organization that offers lots of basic handouts for different diabetes topics. [Click here](#) to visit their website.

Great job! You're another step closer to finishing the CHECK Diabetes Online Program. Hopefully you now know more about different types of diabetes medicines.

Now you can move on to the next topic, which talks about problems you might have with diabetes.

