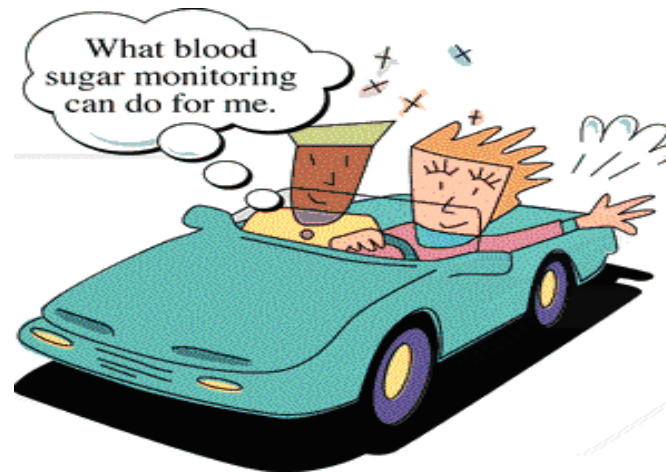


# Let's Talk About Meters and Meds



Adapted for Upstate Medical University by:  
Kristi Shaver, BS, RN, CDE, MS-CNS Student (2014)  
January 2014

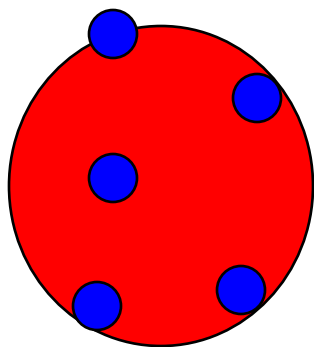
# How to monitor diabetes control:

- Hemoglobin A<sub>1</sub>C, or just "A<sub>1</sub>C"
  - Blood test drawn in the lab
  - An **average** of blood glucose over **2-3 months**
- Self monitoring blood glucose (SMBG)
  - Routine checking at home
  - Tells you what your blood glucose is at a specific moment in time

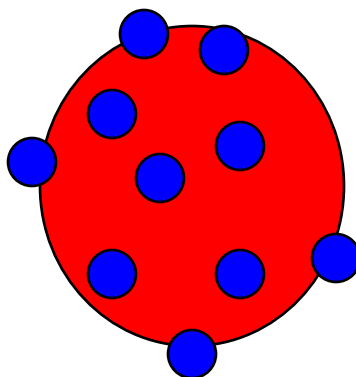


# Hemoglobin A<sub>1c</sub>

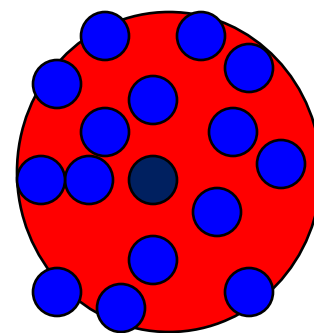
Gives the BIG picture of diabetes control



Prediabetes  
5.7-6.4%



Goal  
Less than or about 7%



High  
Above 7%

Checked 2-4 times a year



# What does the A1C mean?

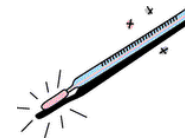
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<u>A1C %</u>		<u>Range</u>	<u>Average glucose</u>
12	—————→	240-347	298
11	—————→	217-314	269
10	—————→	193-282	240
9	—————→	170-249	212
8	—————→	147-217	183
7	—————→	123-185	154
6	—————→	100-152	126
5	—————→	76-120	97

# Why Check Blood Glucose Levels?

Helps you see the effect of:

- what you eat & how much you eat
- how hard you exercise, the type of activity, how long you exercise
- diabetes pills or insulin
- stress & illness
- changes in your body

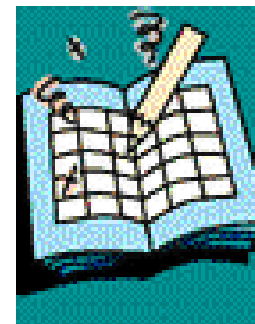


Gives you information to make decisions

# Self Monitoring of Blood Glucose (SMBG)

*What is involved:*

- 1** Check blood glucose on a regular basis.
- 2** Record blood glucose levels in a log book.
- 3** Identify patterns to see when blood glucose levels are outside of desired range.
- 4** Determine the cause of blood glucoses being too high or too low.
- 5** Take action to improve blood glucoses.



# What Do the Numbers Mean?

283 ?

85 ?

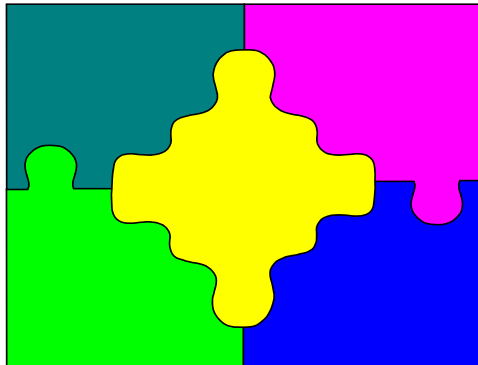
152 ?

63 ?



# *SMBG: Each blood glucose value is like one piece of a puzzle*

... the more pieces you have, the better idea you have about what the picture really looks like




Once you know the picture you will have a **clue** if a change in your treatment plan is needed or if things are working out.

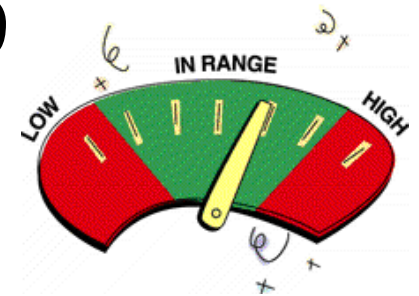




# 3 key points



- Think "high" and "low" not "good" or "bad"
- Think "blood check" not "blood test" 
- Expect readings to vary. Aim for a "range."  
Ex: 80-130 not just 120



**Before meals, a healthy  
blood sugar range is?**



# What should blood glucose (BG) levels be?

## Target range for most people:



80-130 before meals

Less than 180 2-3 hours after meals

Above 100 before bed and before driving

Remember: **EVERYONE** with diabetes should check!!

- Expect at least a 30 to 50 point rise 2-3 hours after your meal
- BG levels will not always be within range
- If most readings are in range, you are doing great!



# Making Sense of Your BG Values

1. Know your BG **Goals**  
(both A1C and BG goals)
2. Know your BG **Levels**  
(write them down in your log book)
3. Identify **BG Patterns**
4. Identify where a **Change** is needed

# Tips on Checking Blood Glucose

**Know when to check-** talk to your medical provider

**Insulin use-** before meals, bed, and driving

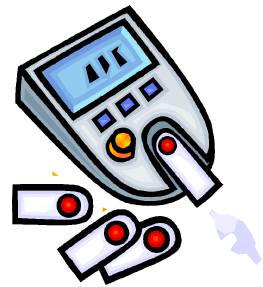
**Pills-** at least 1-2 times per day

**Diet & exercise alone-** at least 1 time per day, but  
different times

**Keep a logbook**



**Know how to get a good drop of blood**



**Know proper storage & disposal of supplies**

# When to check more often

If you are . . .

- having low blood glucose
- sick or having a lot of high readings
- having blood glucose levels outside of desired range
- on a new medication



If there are . . .

- changes made in your treatment program

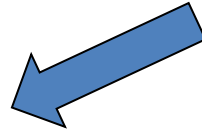


# True or False

Only people with diabetes taking insulin need to check a blood sugar...



# Do you have a meter?



Everyone with diabetes needs a meter and should check blood sugar levels.





# Everyone with diabetes needs a meter



# Wash your hands, dry well



# No need to scrub alcohol on your fingers





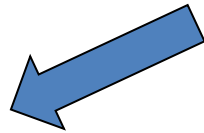
All meters have a  
**1-800#** on the back  
panel to call if you have  
questions

# True or False

You should always  
leave a spare blood  
sugar meter in the car...



Always carry a meter  
with you to check as  
needed



Avoid leaving the meter  
in the car-the temp may  
be **too hot** or **too cold**

# Know the name of your meter

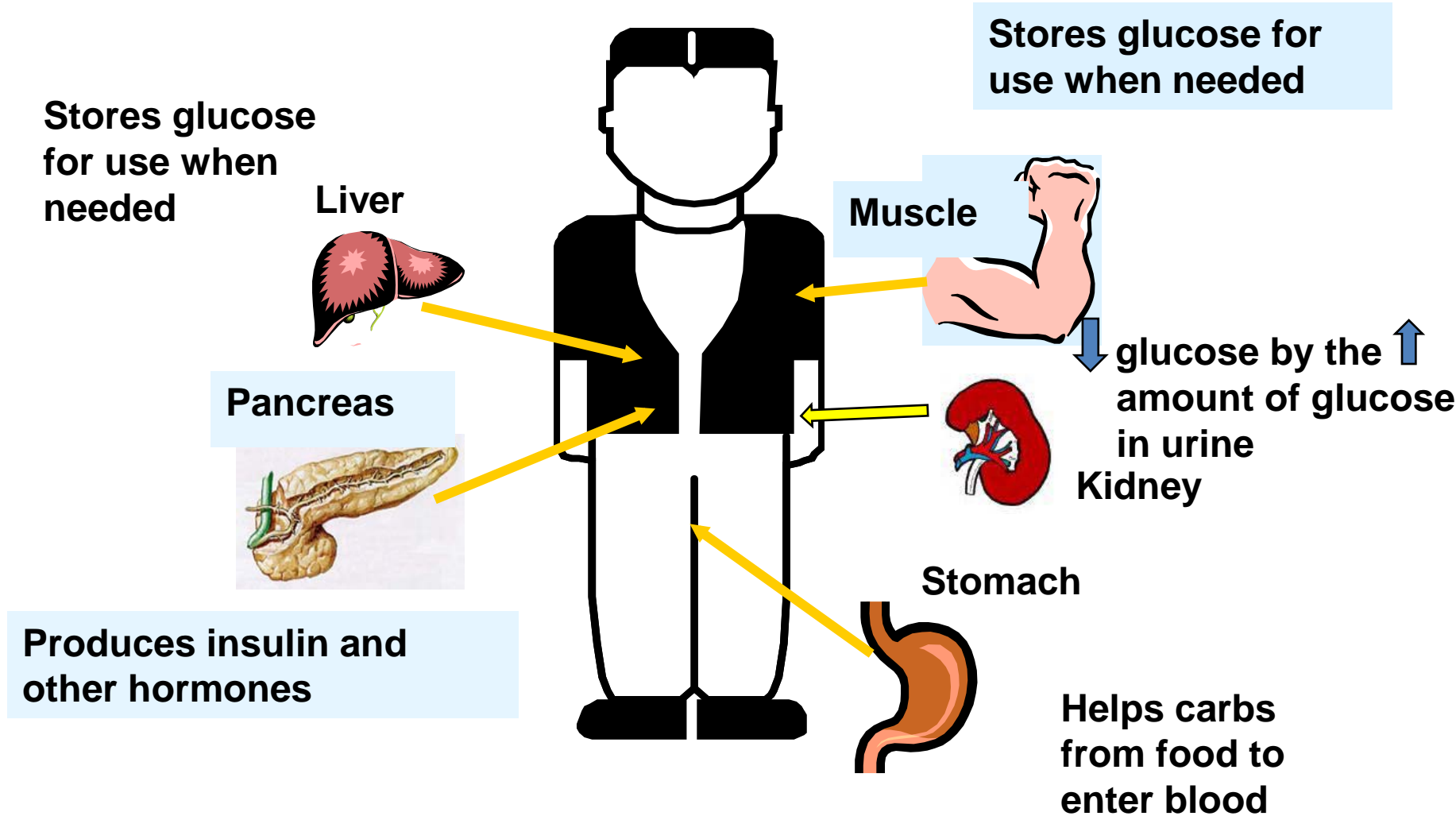


Ask your medical provider for a prescription for the test strips and lancets

# Medication Options



# Which Organs Affect Blood Glucose?





# Medications for Type 2 Diabetes

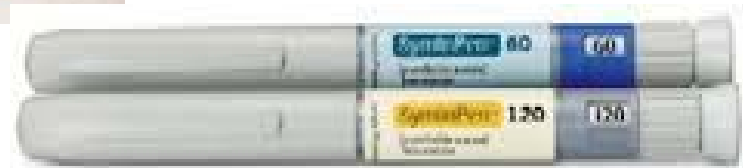
- PILLS



- INSULIN



- INJECTABLES



# True or False

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Some diabetes pills can cause low blood sugars...



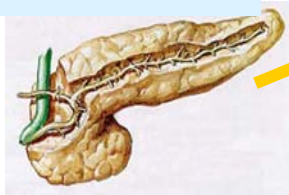
# Diabetes Medications

- Glucophage
- Tradgenta

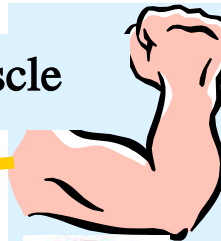
Liver



Pancreas

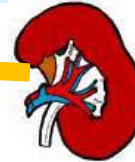


Muscle



•Actos

• Invokana

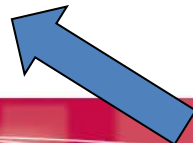


Stomach

- Januvia,
- Onglyza,
- Byetta,
- Bydureon
- Victoza
- Acarbose,
- Tradgenta

- Glimepiride
- Glyburide
- Glucotrol
- Januvia
- Insulin
- Byetta
- Victoza
- Onglyza,
- Tradgenta

May cause low  
blood sugars



# True or False

---

Insulin is a cure for diabetes ...

# Insulin



- Not a cure, but medicine available to treat diabetes
- Supplements or replaces the body's own insulin
- Needs to be viewed as a positive step

# Needles for pens or syringes are **TINY!**



# Insulin Action

PRODUCT	ONSET	PEAK	DURATION
Humalog (lispro)	10-30 min	0.5- 3 hours	3 - 5 hours
Apidra (Glulisine)	10-30 min	0.5- 3 hours	3 - 5 hours
Novolog (aspart)	10-30 min	0.5 -3 hours	3 - 5 hours
Regular (R)	30- 60 min	2- 5 hours	Up to 12 hours
NPH (N)	90 min to 4 hours	4- 12 hours	Up to 24 hours
Lantus (glargine) Levemir (detemir)	45 min to 4 hours	Flat (minimal peak)	Up to 24 hours



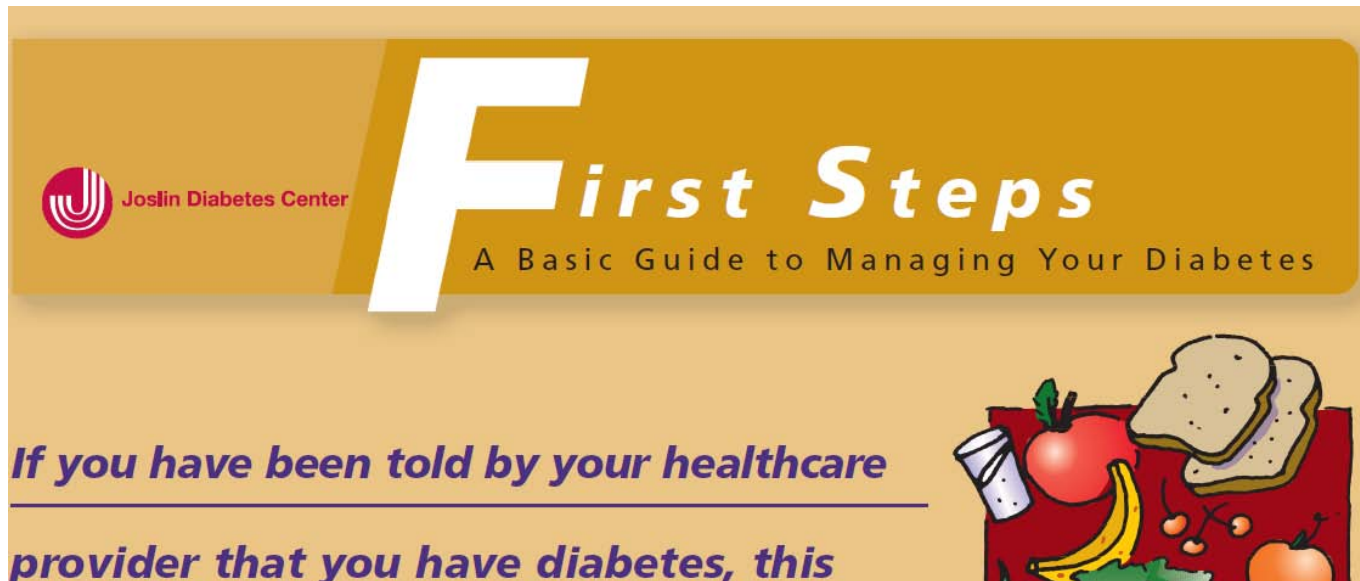
Go to the Patient Education link on the internal Upstate website



Select the Diabetes/Joslin Adult category



Check out all the great education materials!



The banner features the Joslin Diabetes Center logo on the left, followed by the title "First Steps" in a large, white, serif font. Below the title is the subtitle "A Basic Guide to Managing Your Diabetes" in a smaller, white, sans-serif font. At the bottom left, there is a line of text: "If you have been told by your healthcare provider that you have diabetes, this". To the right of this text is a colorful illustration of a plate of food including a sandwich, a banana, an apple, and some grapes.

**Joslin Diabetes Center**

# First Steps

A Basic Guide to Managing Your Diabetes

*If you have been told by your healthcare provider that you have diabetes, this*



# Online Diabetes Resources to Learn More:

1. **National Diabetes Education Program** 1-888-693-NDEP (1-888-693-6337) [www.YourDiabetesInfo.org](http://www.YourDiabetesInfo.org)
2. **Diabetes HealthSense**: An online library of resources for living well. [www.YourDiabetesInfo.org/HealthSense](http://www.YourDiabetesInfo.org/HealthSense)
3. **Academy of Nutrition and Dietetics** 1-800-877-1600 [www.eatright.org](http://www.eatright.org)
4. **American Association of Diabetes Educators** 1-800-338-3633 [www.diabeteseducator.org](http://www.diabeteseducator.org)
5. **American Diabetes Association** 1-800-DIABETES (1-800-342-2383) [www.diabetes.org](http://www.diabetes.org)
6. **American Heart Association** 1-800-AHA-USA1 (1-800-242-8721) [www.americanheart.org](http://www.americanheart.org)
7. **Centers for Disease Control and Prevention** 1-800-CDC-INFO (1-800-232-4636) [www.cdc.gov/diabetes](http://www.cdc.gov/diabetes)
8. **Centers for Medicare & Medicaid Services** 1-800-MEDICARE (1-800-633-4227) [www.medicare.gov](http://www.medicare.gov)
9. **JDRF** 1-800-533-CURE (1-800-533-2873) [www.jdrf.org](http://www.jdrf.org)

