

Stomach

1

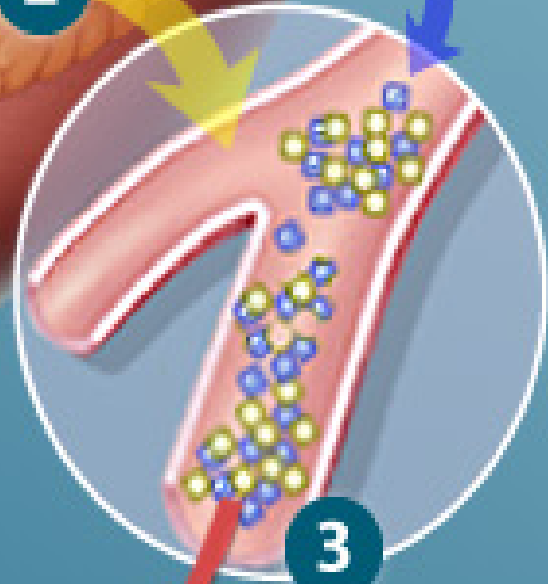


glucose

2

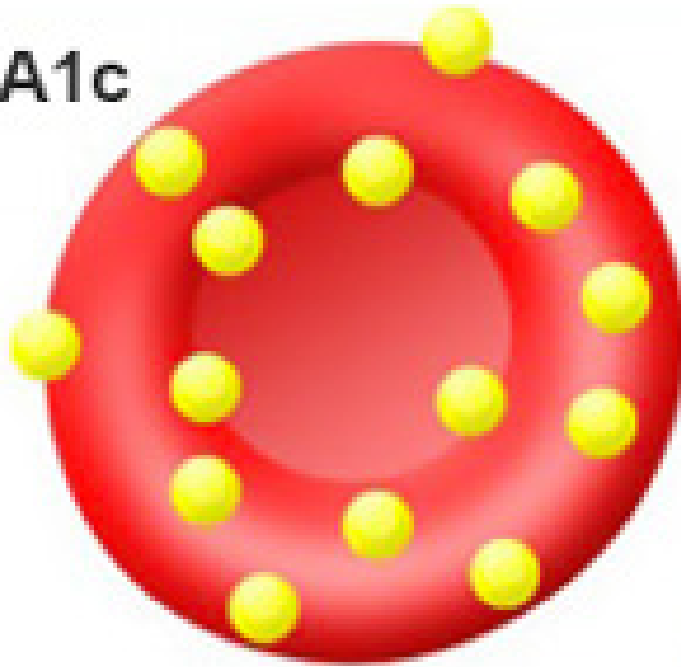
insulin

Pancreas



3

High HbA1c



 Red Blood Cell

 Glucose



Low HbA1c

Normal

- Fasting Blood Sugar: 5.6 mmol/L or less
- OGTT: Less than 7.7 mmol/L
- HbA1C: 5.5% or less

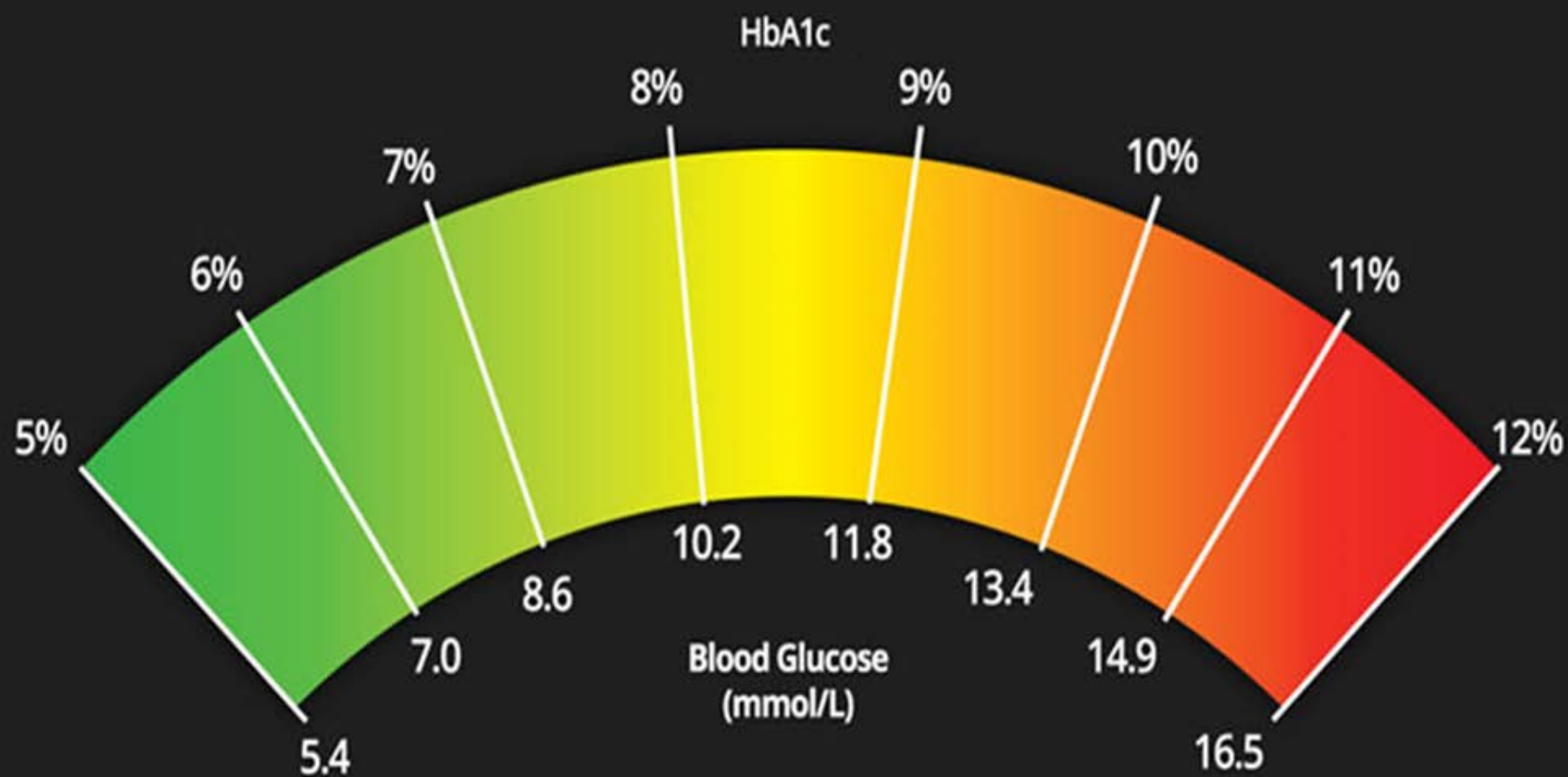
Pre-Diabetes

- Fasting Blood Sugar: 6.1 to 6.9 mmol/L
- OGTT: 7.8 to 11 mmol/L
- HbA1C: 6.0% to 6.4%

Diabetes

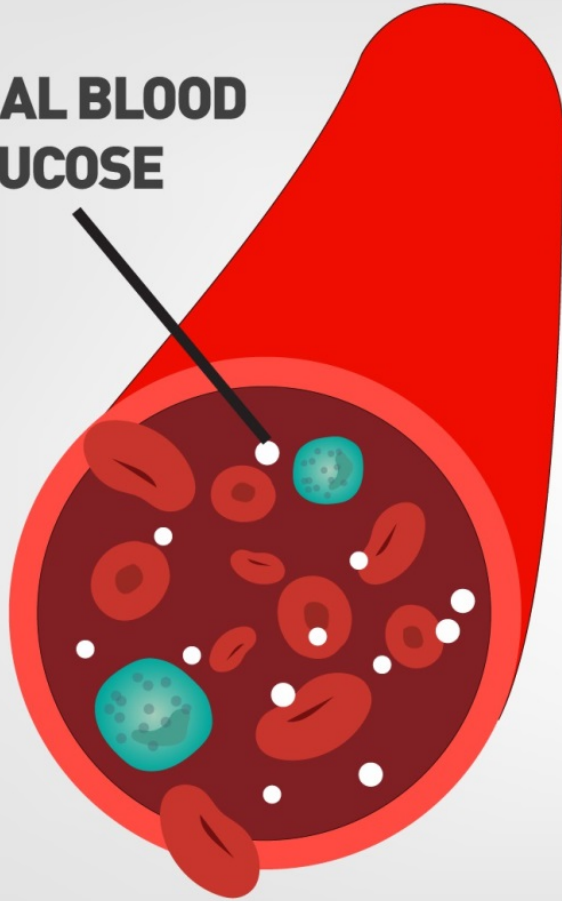
- Fasting Blood Sugar: 7.0 mmol/L or greater
- OGTT: 11 mmol/L or greater
- HbA1C: 6.5% or higher

HbA1c as an indicator of Diabetes Control

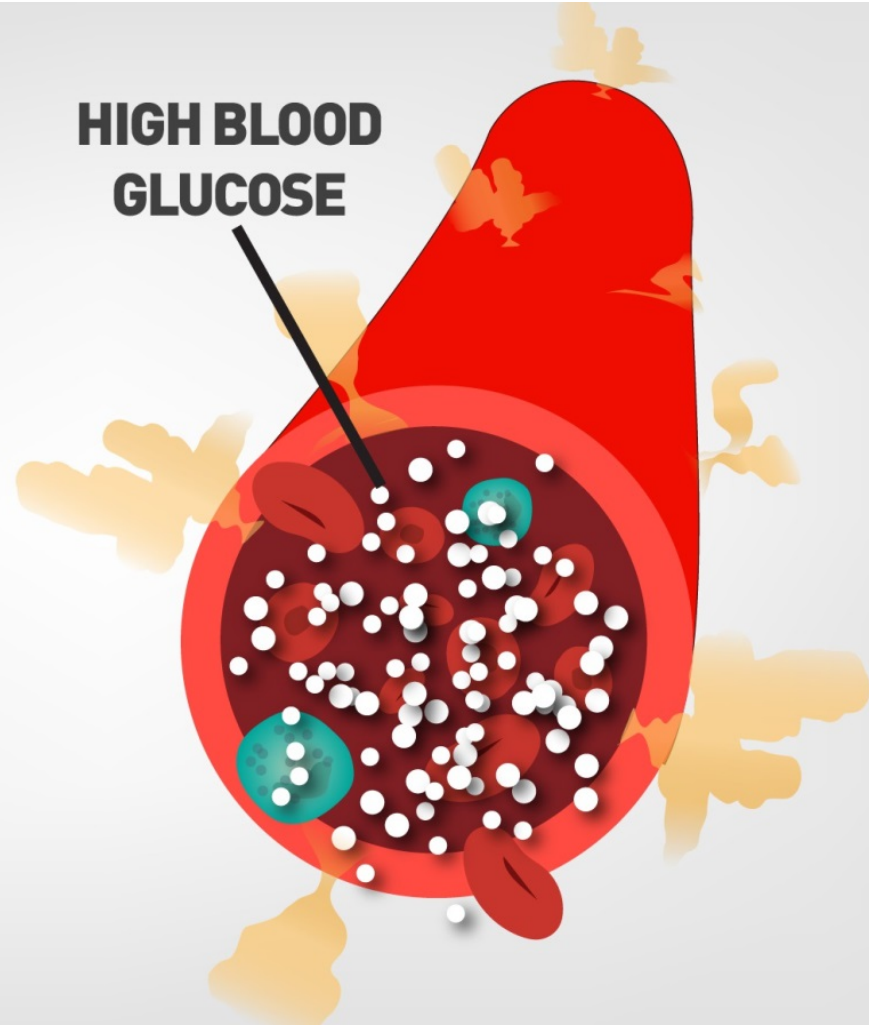


Glucose's effect on blood vessels

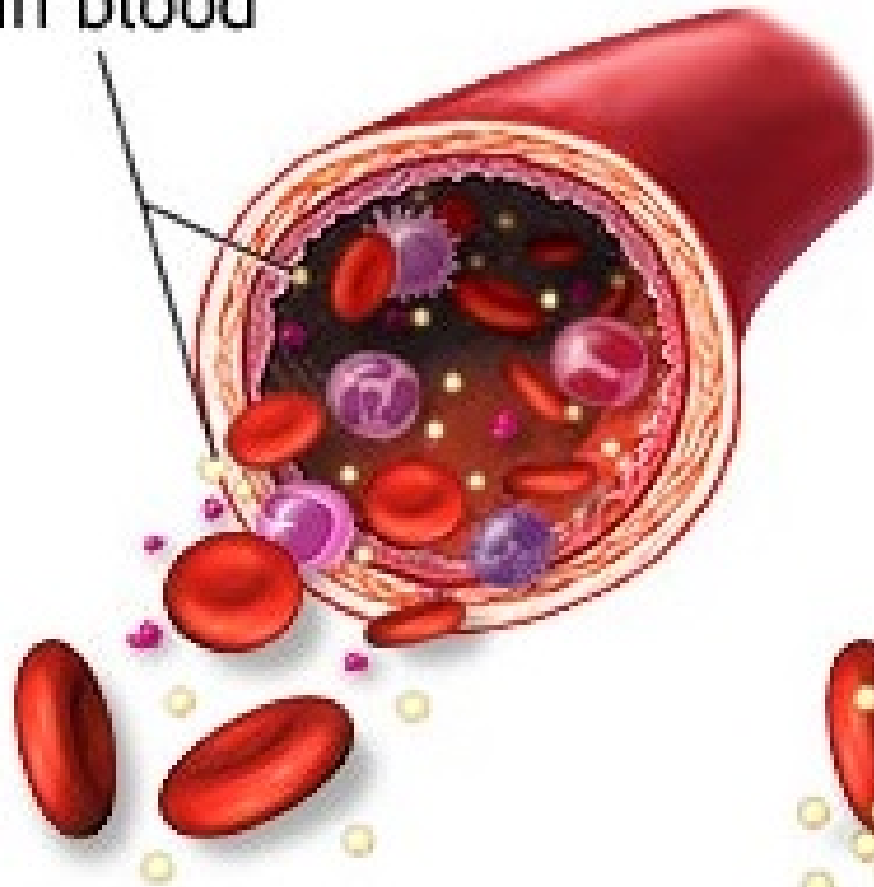
**NORMAL BLOOD
GLUCOSE**



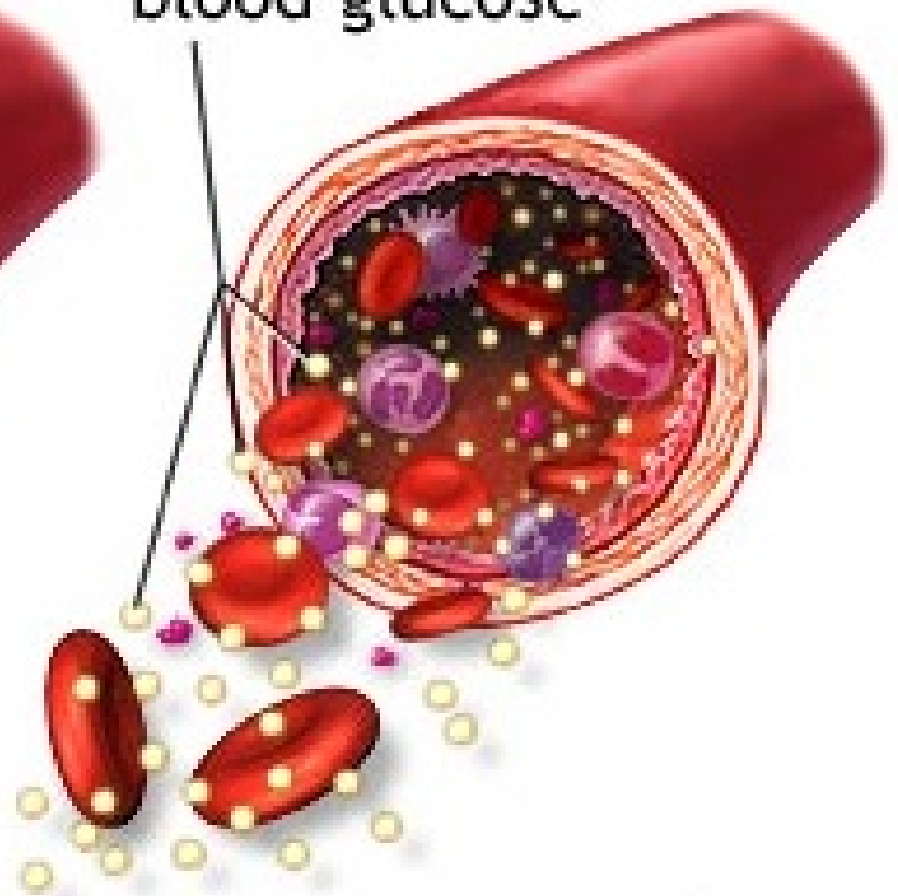
**HIGH BLOOD
GLUCOSE**



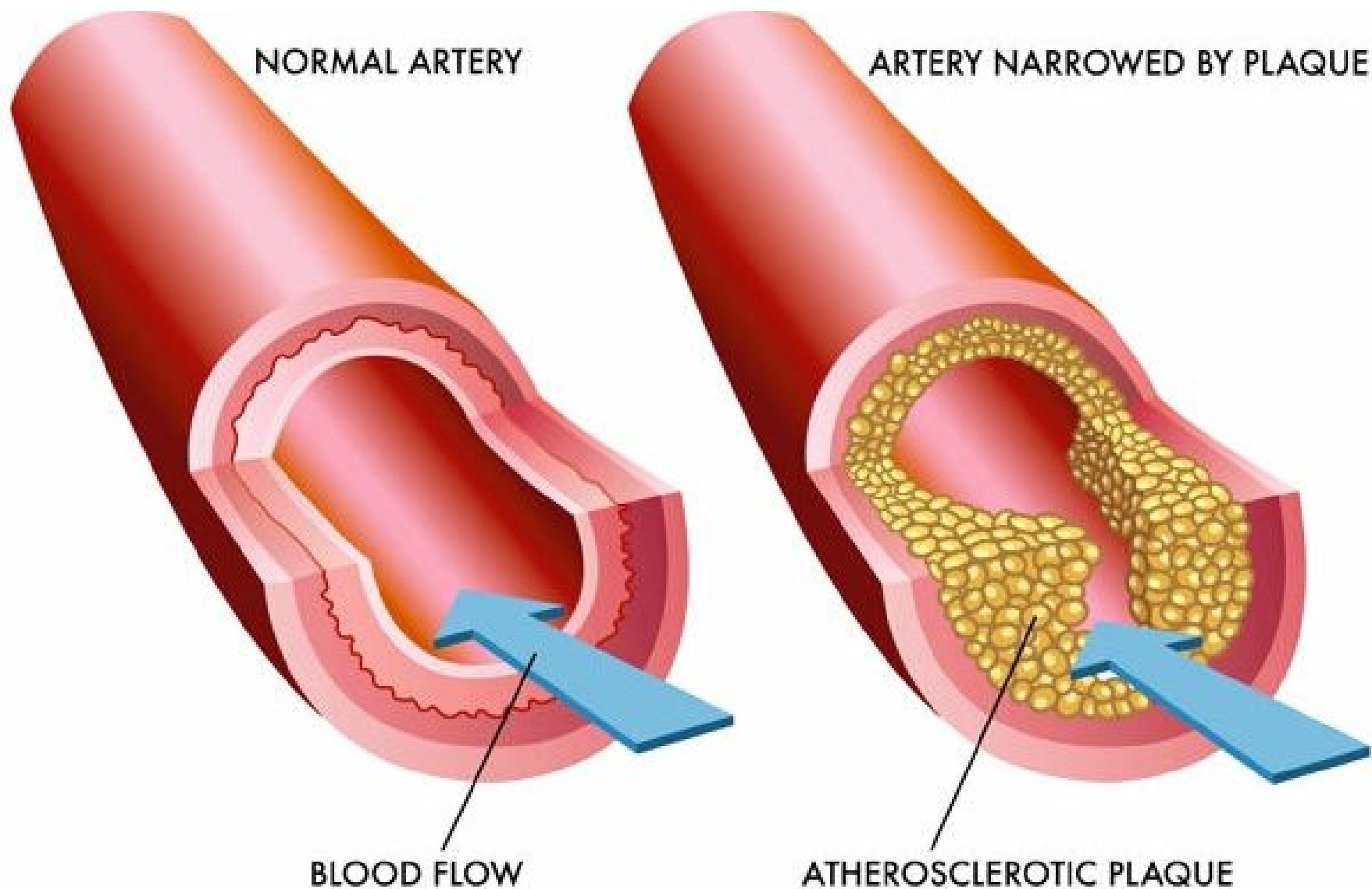
Glucose
in blood



Excessive
blood glucose



Cholesterol's effect on blood vessels



Blood pressure's effect on blood vessels

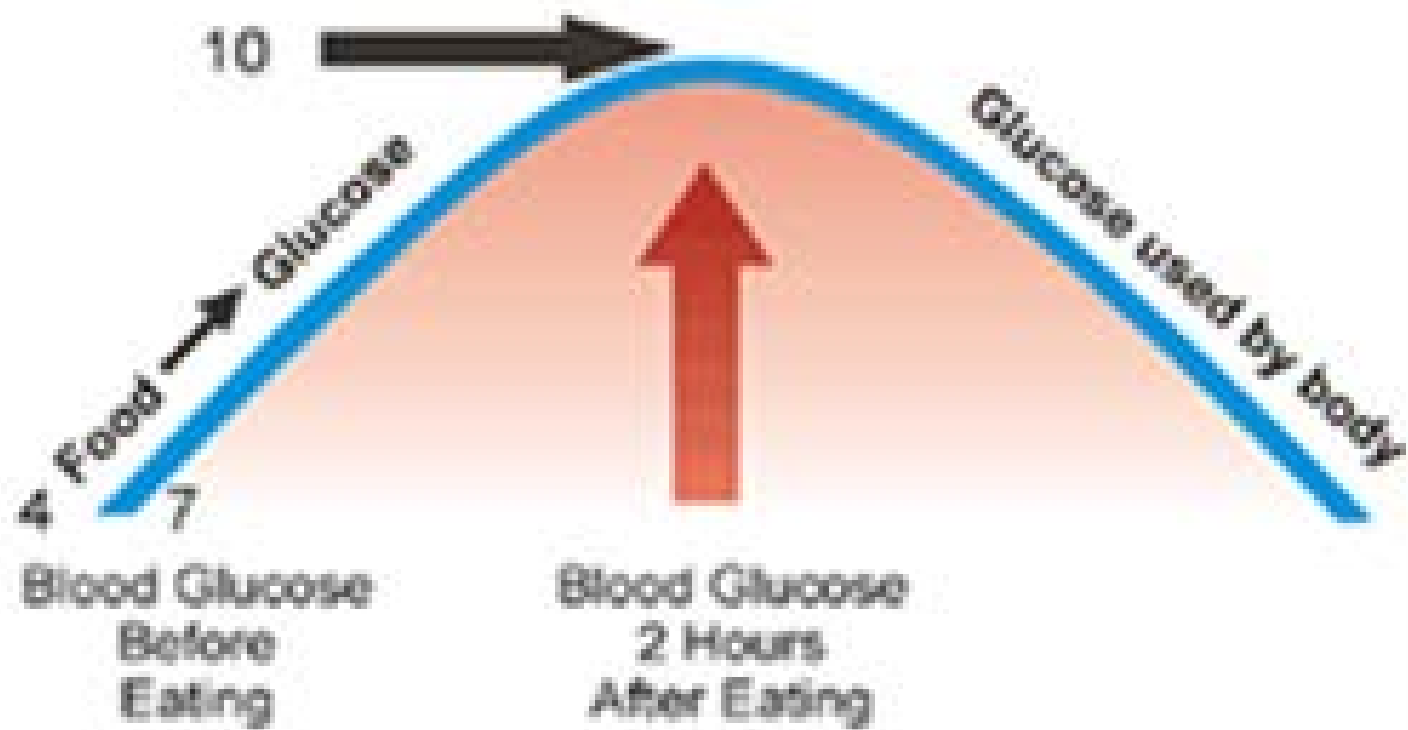


Normal Blood Vessel



Narrow Blood Vessel

Blood Pressure Blood Flow





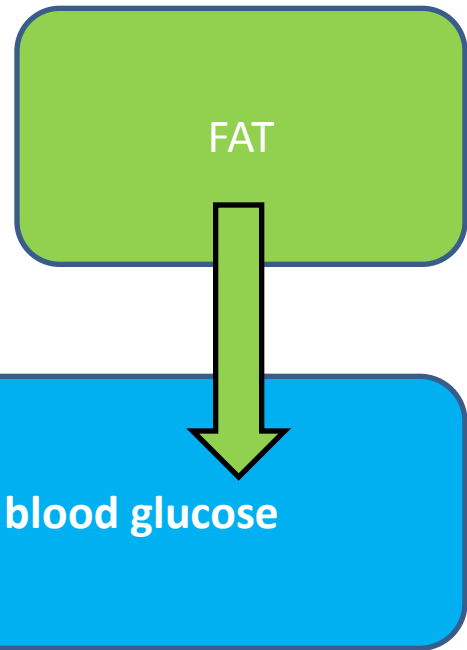
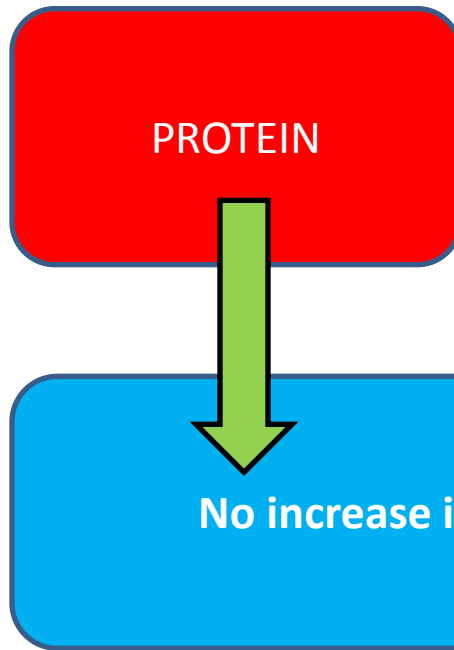
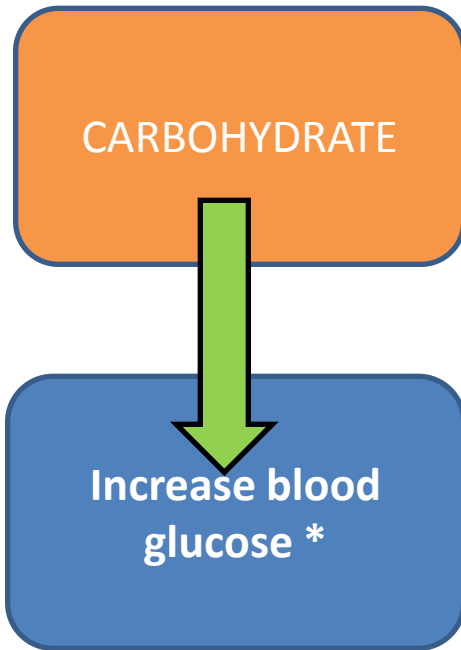
Blood Glucose Levels to Aim for:

Before any meal 4.0 - 7.0 mmol/L

2 hours after any meal 5.0 - 10.0 mmol/L

Targets for Glycemic Control

A1C%	Targets
≤6.5	Adults with type 2 diabetes to reduce the risk of CKD and retinopathy if at low risk of hypoglycemia*
≤7.0	MOST ADULTS WITH TYPE 1 OR TYPE 2 DIABETES
7.1  8.5	Functionally dependent*: 7.1-8.0% Recurrent severe hypoglycemia and/or hypoglycemia unawareness: 7.1-8.5% Limited life expectancy: 7.1-8.5% Frail elderly and/or with dementia [†] : 7.1-8.5%
	Avoid higher A1C to minimize risk of symptomatic hyperglycemia and acute and chronic complications



Metformin

Liver: decreases glucose production and release

Tissues: increases usage of glucose
\$

Dulaglutide, Liraglutide Semaglutide

(injectable)

Mimics incretin hormones:

Intestines: slows digestion

Pancreas: increases insulin release after meals

Liver: decreases glucose production
\$\$\$\$

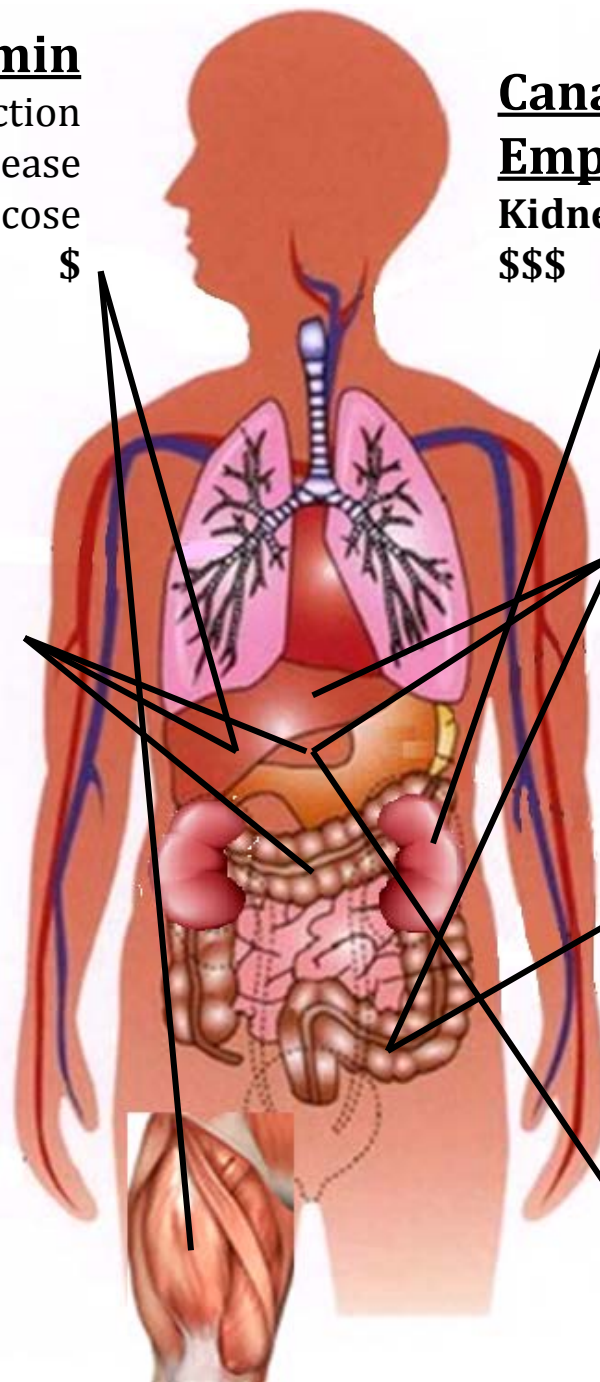
Approximate Costs

\$=\$25 per month or less

\$\$=\$50 per month

\$\$\$=\$100 per month

\$\$\$\$=\$200 per month or more



Canagliflozin, Dapagliflozin, Empagliflozin

Kidneys: excretes sugar through urine
\$\$\$

Linagliptin, Saxagliptin, Sitagliptin

Prevents breakdown of natural incretin hormones

Intestines, Pancreas, Liver
(see glutides)
\$\$\$

Acarbose

Intestines: slows absorption of dietary carbohydrates
\$\$

Gliclazide, Glyburide, Repaglinide

Pancreas: Secretes extra insulin
\$-\$\$

Class**	Effect on CVD outcomes	Hypoglycemia	Weight	Relative A1C lowering when added to metformin	Other therapeutic considerations	Cost
GLP-1 receptor agonists	lira: Superiority in people with type 2 diabetes with clinical CVD exenatide LAR & lixi: Neutral	Rare	↓↓	↓↓ to ↓↓↓	GI side-effects Gallstone disease Contraindicated with personal/family history of medullary thyroid cancer or MEN 2 Requires subcutaneous injection	\$\$\$\$
SGLT2 inhibitors	cana & empa: Superiority in people with type 2 diabetes with clinical CVD	Rare	↓↓	↓↓ to ↓↓↓	Genital infections, UTI, hypotension, dose-related changes in LDL-C. Caution with renal dysfunction, loop diuretics, in the elderly. Dapagliflozin not to be used if bladder cancer. Rare diabetic ketoacidosis (may occur with no hyperglycemia). Increased risk of fractures and amputations with canagliflozin Reduced progression of nephropathy and CHF hospitalizations with empagliflozin and canagliflozin in persons with clinical CVD	\$\$\$
DPP-4 Inhibitors	Neutral (alo, saxa, sita)	Rare	Neutral	↓↓	Caution with saxagliptin in heart failure Rare joint pain	\$\$\$
Insulin	glar: Neutral degludec: noninferior to glar	Yes	↑↑	↓↓ to ↓↓↓↓	No dose ceiling, flexible regimens Requires subcutaneous injection	\$- \$\$\$\$
Thiazolidinediones	Neutral	Rare	↑↑	↓↓	CHF, edema, fractures, rare bladder cancer (pioglitazone), cardiovascular controversy (rosiglitazone), 6-12 weeks required for maximal effect	\$\$
Alpha-glucosidase inhibitors (acarbose)		Rare	Neutral	↓	GI side-effects common Requires 3 times daily dosing	\$\$
Insulin secretagogue: Meglitinide		Yes	↑	↓↓	More rapid BG-lowering response Reduced postprandial glycemia with meglitinides but usually requires 3 to 4 times daily dosing	\$\$
Sulfonylurea		Yes	↑	↓↓	Gliclazide and glimepiride associated with less hypoglycemia than glyburide Poor durability	\$

YOU ARE AT THE CENTER OF YOUR CARE

