

Diabetes & Oral Health

Presented by:

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In Collaboration with:

The NH Diabetes Coalition

Division of Public Health Services

Southern NH AHEC

A stylized silhouette of a mountain range in shades of teal, located at the bottom right of the slide.

Objectives

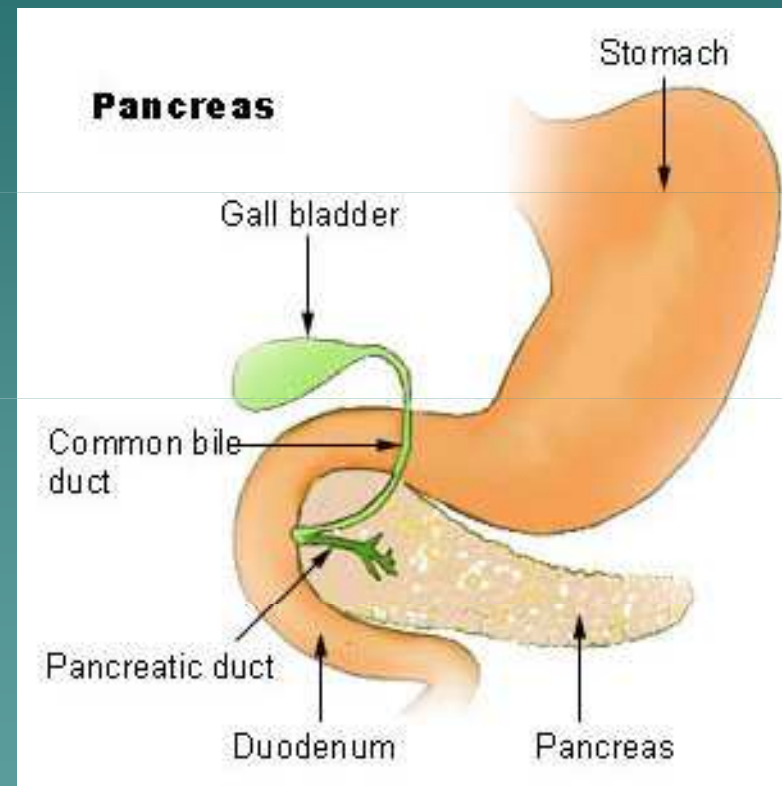
- ◆ Discuss basic pathophysiology of Diabetes and the importance of Blood Glucose Control to prevent complications.
- ◆ State the impact of Diabetes on oral health as well as the effects of poor oral health on diabetes.

Objectives (cont)

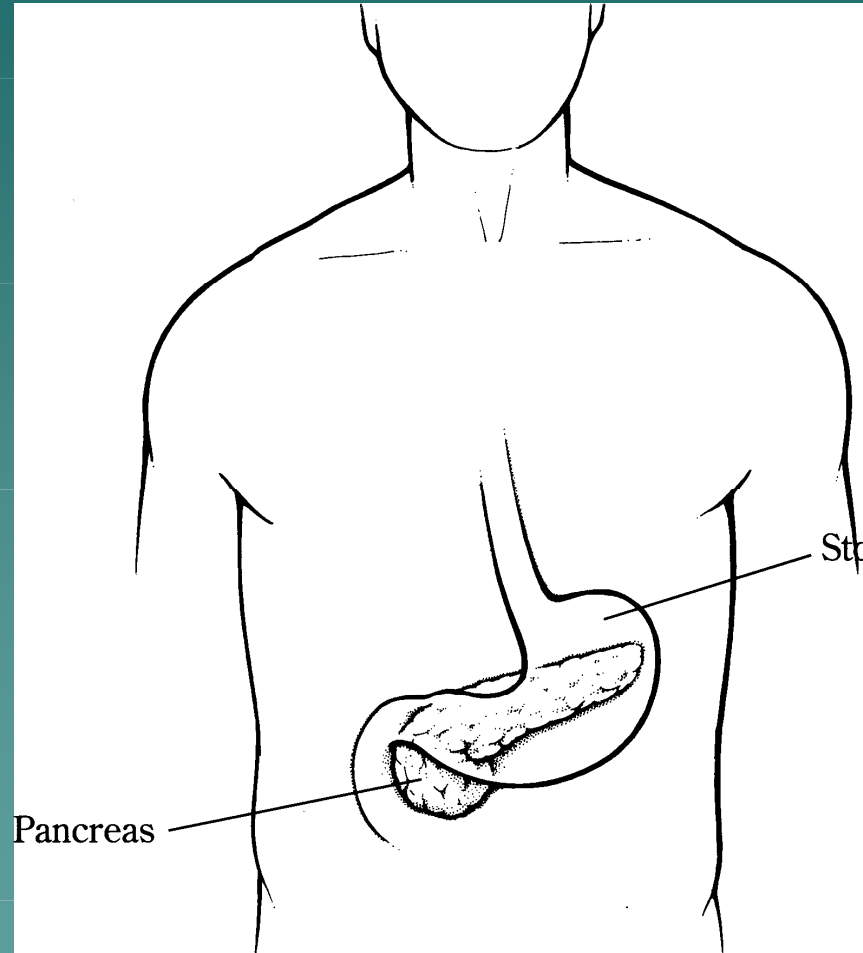
- ◆ Discuss educating patients with diabetes on the connection between good oral health and glucose control as well as their individual risk factors.
- ◆ Demonstrate the use of a communication sheet to keep the primary care provider updated on the oral health of their patients with diabetes.

Basic Pathophysiology

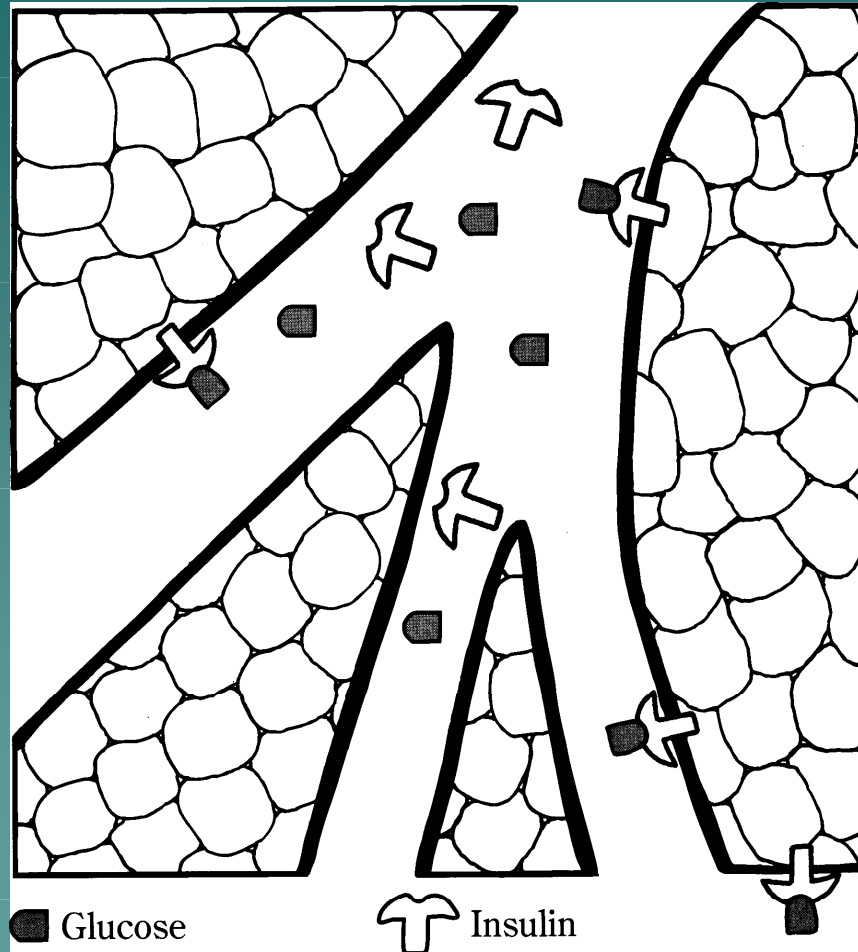
- ◆ Normal Glucose Metabolism
- ◆ Glucose metabolism in Diabetes
- ◆ The role of the liver



The Pancreas



Normal Glucose Metabolism

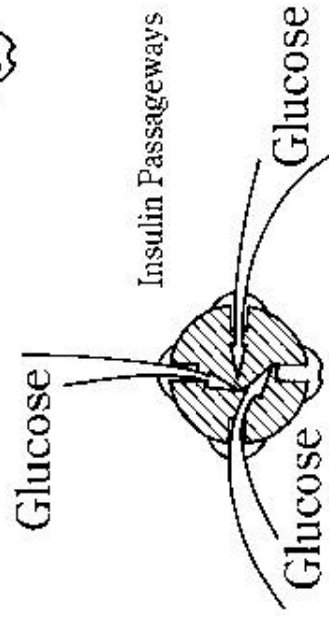


How Insulin Works

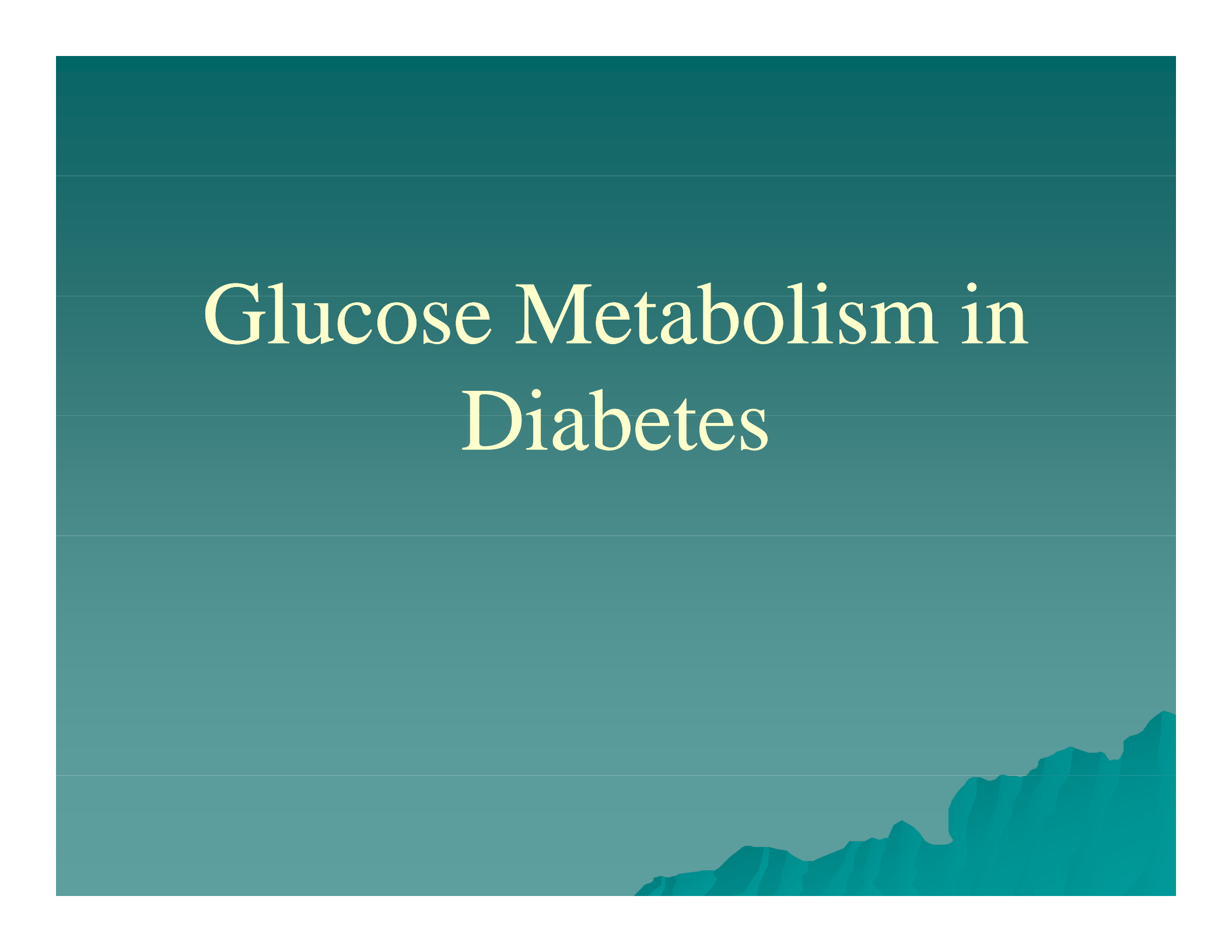


Receptor Site

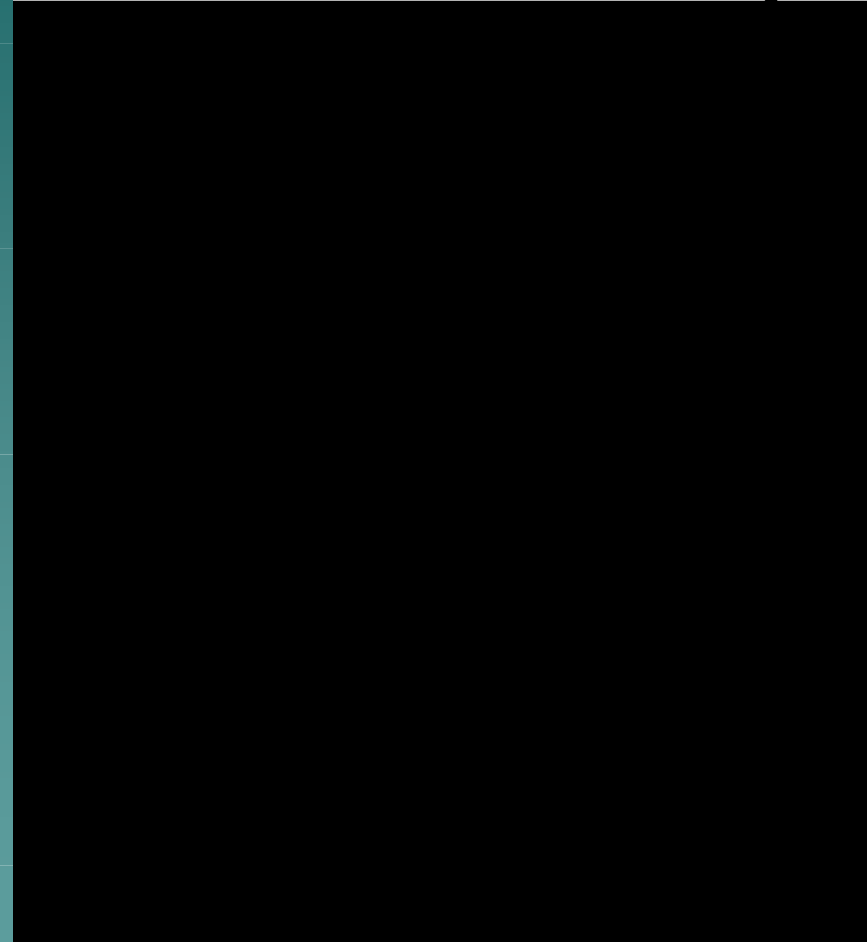
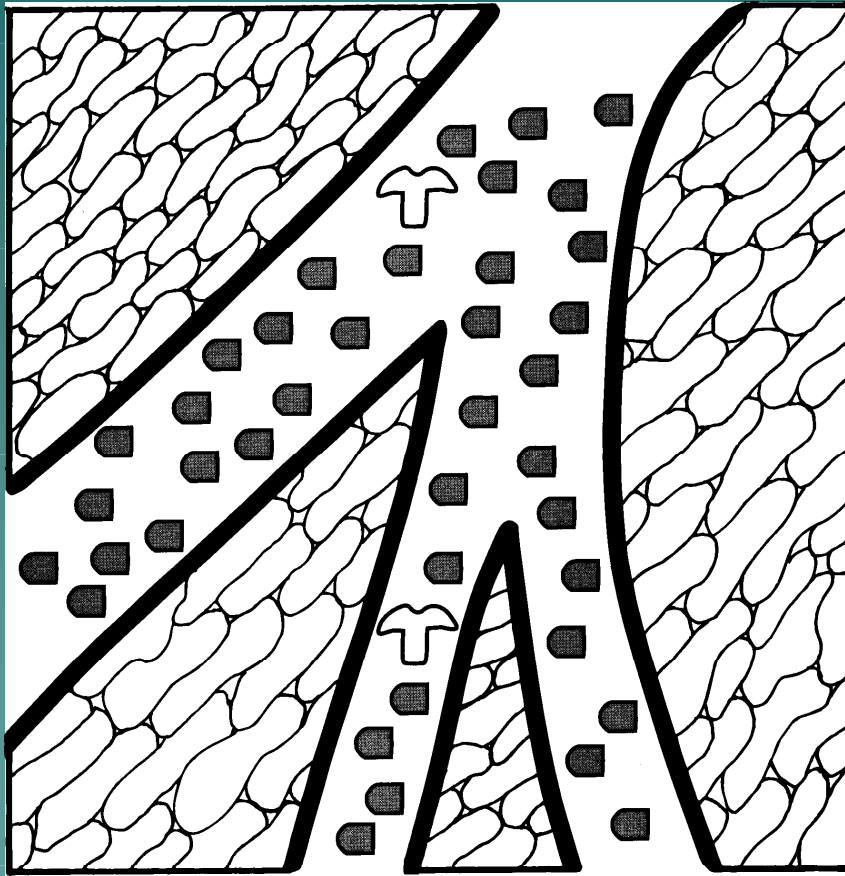
Insulin Fills Receptor Sites



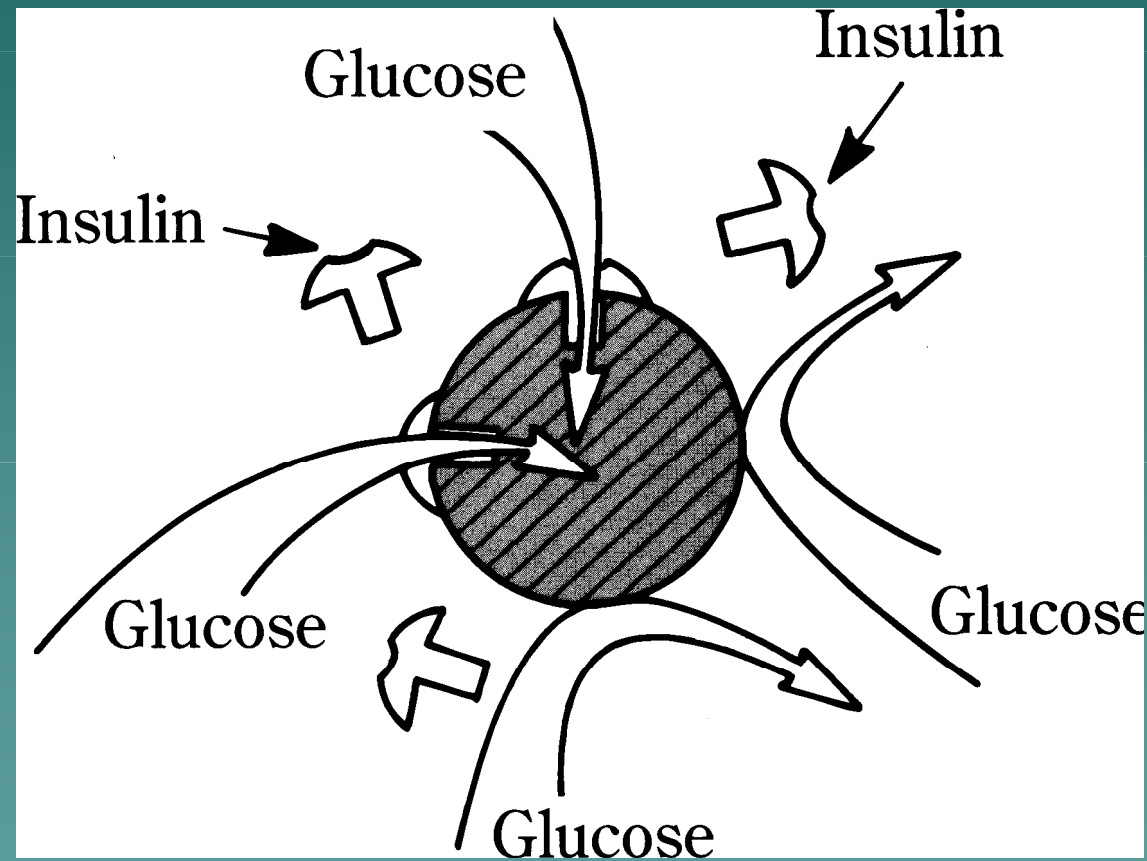
Glucose Metabolism in Diabetes

The background is a solid teal color. At the bottom right corner, there is a silhouette of a mountain range in a slightly darker shade of teal.

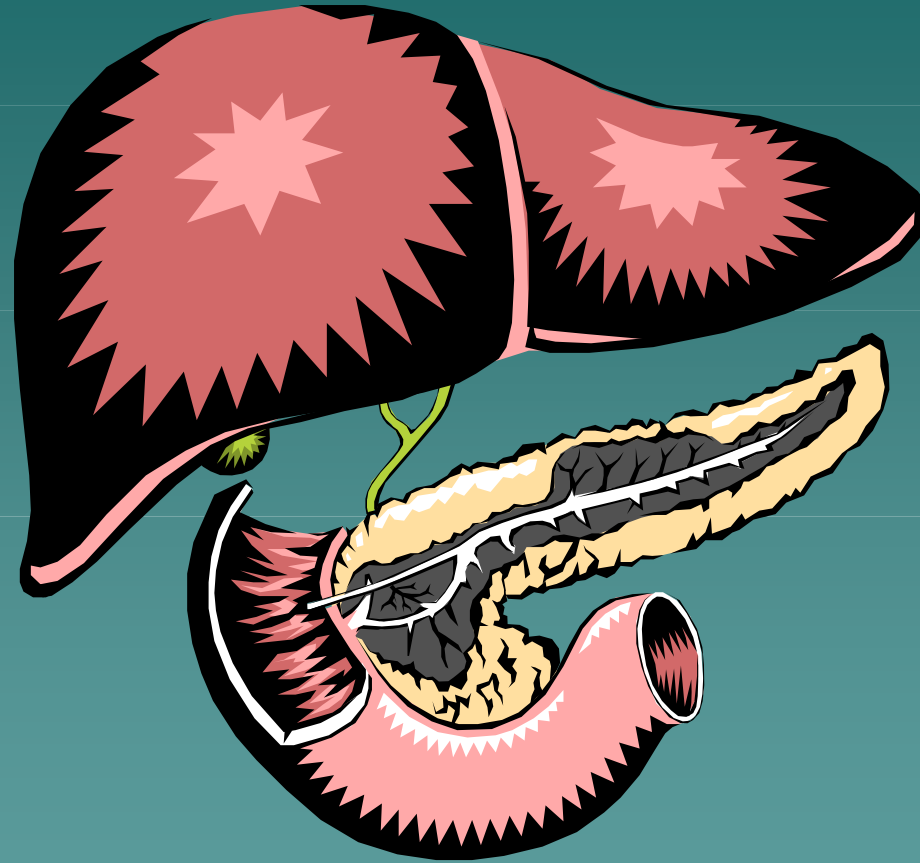
What difference do you see on the left compared to the first slide we looked at?



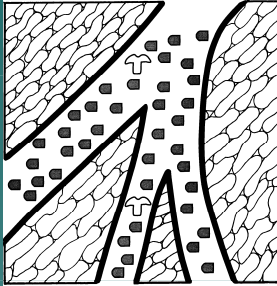
Insulin Resistance



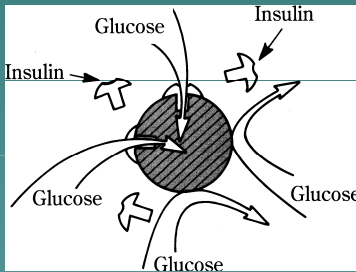
The Role of the Liver



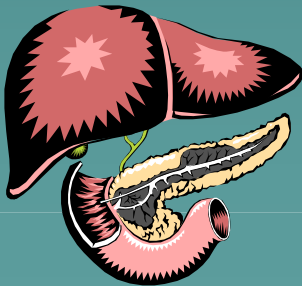
The 3 Culprits in Type 2 Diabetes



- ◆ Not enough insulin



- ◆ Insulin resistance



- ◆ The Liver

Type 1 or Type 2 Diabetes

- ◆ We reviewed Type 2 Diabetes. Type 1 Diabetes is when the body (pancreas) stops making insulin altogether. The pancreas is no longer able to make insulin, so the person has to take insulin to stay alive.
- ◆ Is Type 1 the “bad” kind and Type 2 “ok”? No...any Diabetes that is not controlled can lead to complications. That is our goal, to prevent complications. So either Type 1 or Type 2, control is the bottom line.

Treatment of Diabetes

Type 1

- ◆ Insulin Dependent
- ◆ Meal plan and activity important
- ◆ Blood glucose monitoring part of insulin dosing
- ◆ Ketone testing

Type 2

- ◆ Meal Plan & Exercise
- ◆ MP, Exercise & Oral agent/s
- ◆ MP, Exercise, OA, & insulin
- ◆ MP, Exercise, & insulin
- ◆ Blood Glucose monitoring
- ◆ Ketone testing not necessary.



TUCKER

"The red are for the illness, the blue are for the side effects of the red and the green are for the effects of the blue."

Medications that put the patient at risk for hypoglycemia



- ◆ Oral agents: Glipizide, glucotrol, amaryl, glucoavance



- ◆ Insulin

Hypoglycemia

- ◆ What is the definition of hypoglycemia?
- ◆ What are the symptoms of hypoglycemia?
- ◆ What is the preferred treatment for hypoglycemia?
- ◆ Try to find out the cause and help patient learn from episode

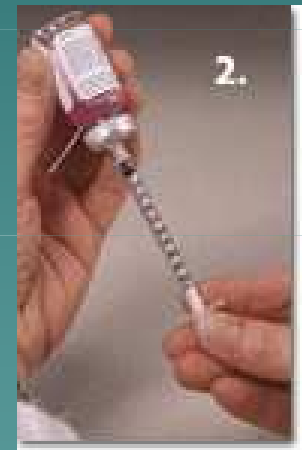
© 2004 Diabetes Interview



Despite the valiant efforts of the research group, the insulin suppository still had one major drawback.

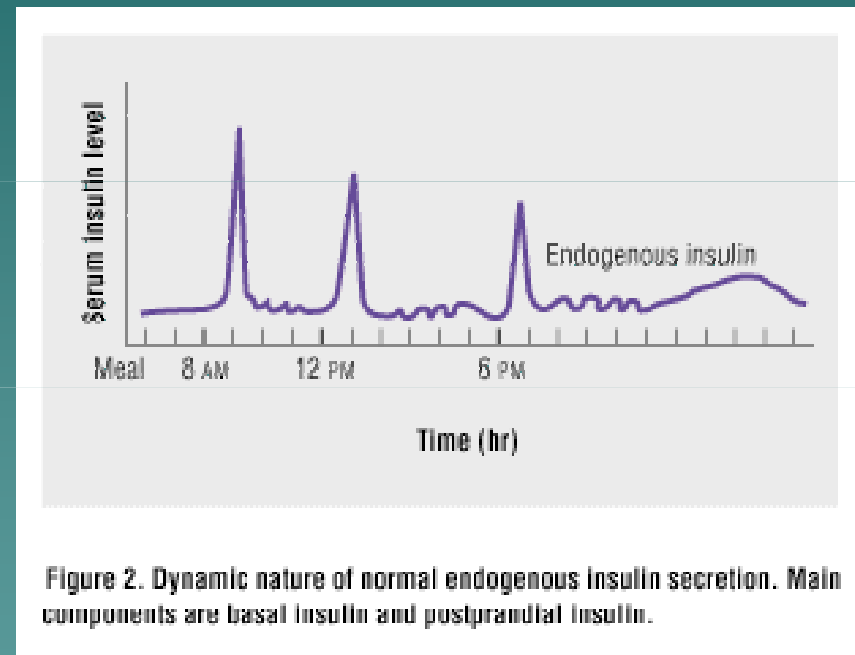
Insulin

- ◆ Insulin is a hormone that helps turn food we eat into energy
- ◆ NOT the enemy!
- ◆ Used in combination to mimic what body naturally does
- ◆ May be used with oral agents

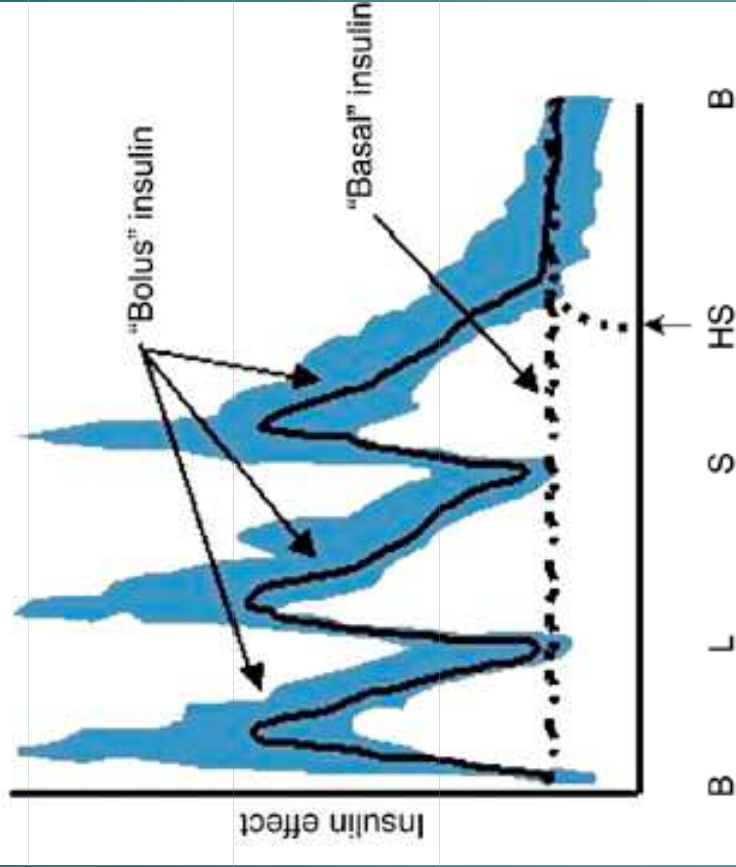


Insulin

- ◆ Try to mimic what body's natural insulin does
- ◆ Basal (background) insulin inhibits liver's release of glucose
- ◆ Bolus (prandial)
 - ~Food insulin
 - ~Correction insulin



"Basal-Bolus" insulin replacement



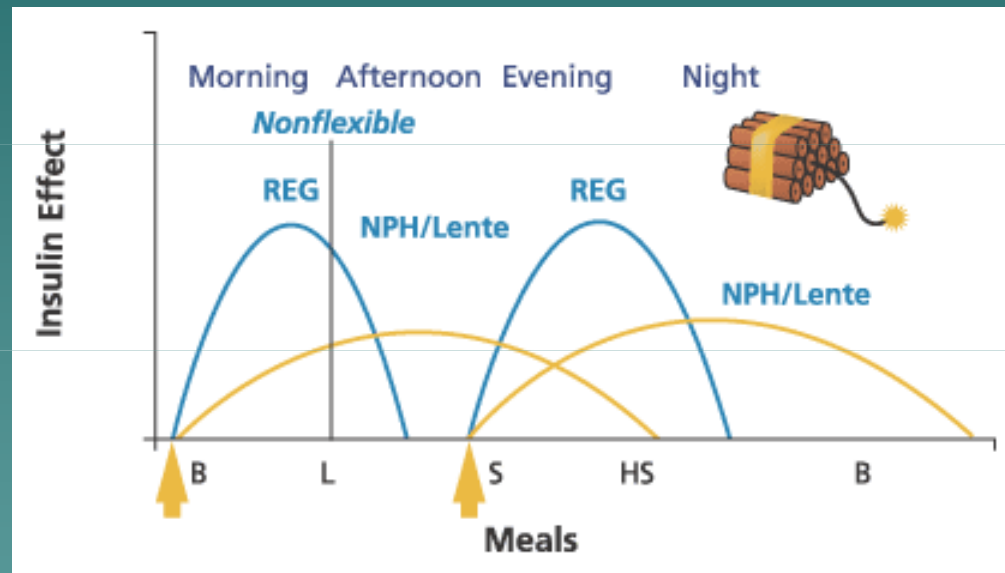
How Much?



- ◆ Based on body weight
- ◆ Type 2 VERY insulin resistant, large doses of insulin common
- ◆ Bolus insulin is adjusted to how much one is eating



Other Insulin Regimes





© 2004 Diabetes Interview

"...I was hoping you'd let me know how much more insulin I need to take if I decide to 'super-size' my order."

© 2004 Diabetes Health

Use of Insulin



- ◆ Basal/Bolus preferred
- ◆ Monitoring imperative
- ◆ Frequent adjustments necessary
- ◆ Realistic
- ◆ Work with the individual patient
- ◆ MANY “wives tales”

Insulin Delivery

- ◆ Vial/Syringe
- ◆ Insulin pens
- ◆ Insulin pumps



Monitoring

- ◆ Should be done by ALL people who have diabetes
- ◆ Frequency depends on medication/insurance
- ◆ Recording is VERY helpful



Target Blood Sugar

Daily Log *SAMPLE* Week Starting *MAY 15, 1999*

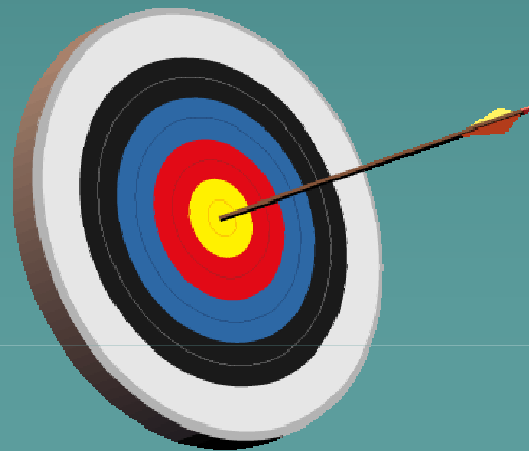
	Breakfast	Lunch	Dinner	Bedtime	Other	Notes
	Dose Blood Sugar	Dose Blood Sugar	Dose Blood Sugar	Dose Blood Sugar	Dose Blood Sugar	
Mon	109	117	122	115		
Tues	111	106		* 152		* MISSED EVENING WALK. START BACK TOMORROW!
Wed	126	121	131	120		
Thurs	113	128	179	* 241		* SICK w/ FLU. DRINKING DIET SODA. KETONES NEGATIVE.
Fri	159	147	136	130		FEELING BETTER TODAY
Sat	127		124	* 152	130 11pm	* EXTRA JUICE. HIDE SUGAR GO UP.
Sun	119	120	* 146	130		* LUNCH AT PICNIC.

- ◆ American Diabetes Association

- Fasting 90-130
- Post meal <180

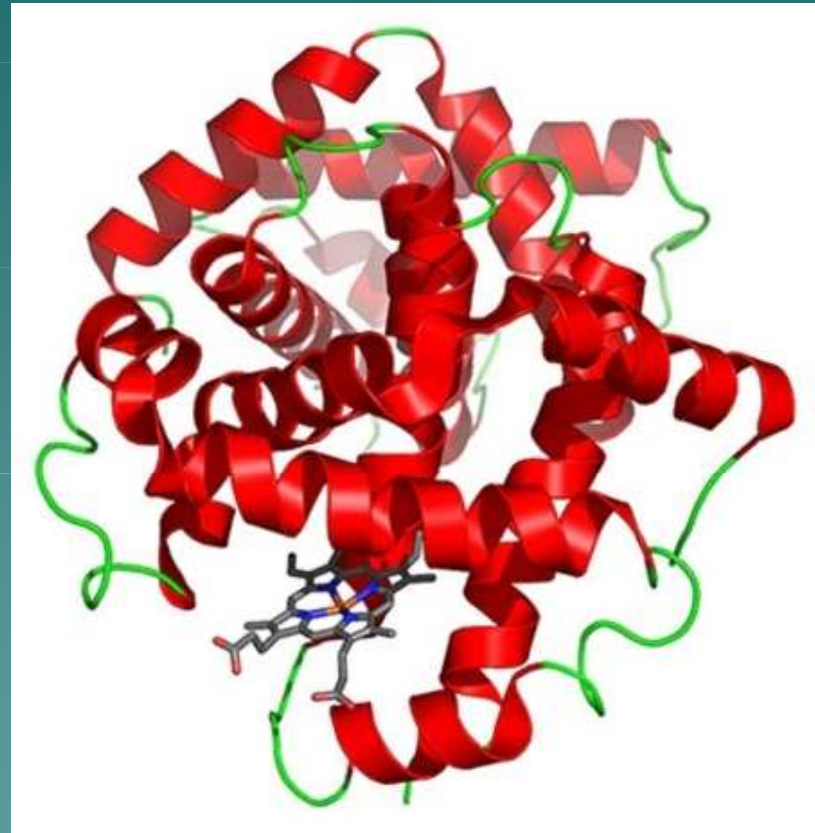
- ◆ American Academy of Clinical Endocrinologists

- Fasting <110
- Post meal <140



HgbA1c

- ◆ Shows average Blood Sugar over 2-3 month period
- ◆ Target:
 - ADA <7% (154 mg/dl)
 - AACE <6.5% (140 mg/dl)





"Management experience? Do diabetes and anger count?"

© 2006 Diabetes Health

Diabetes Impact on Oral Health

- ◆ Periodontal Disease
- ◆ Tooth Decay
- ◆ Xerostomia (Dry Mouth)
- ◆ Fungal Infections
- ◆ Poor Fitting Dentures
- ◆ Lichen Planus

Gingivitis = Periodontal Disease



Periodontal Disease

Patients with Diabetes are twice as likely to develop the infection periodontal disease due to uncontrolled blood glucose levels

The pain and discomfort associated with gum disease can discourage eating, thus affecting blood glucose levels, immune response and wound healing.

Periodontal Disease

Is Considered the 6th Complication of
Diabetes

- ◆ Retinopathy (eye disease)
- ◆ Nephropathy (kidney disease)
- ◆ Cardiovascular Disease (heart & brain)
- ◆ Neuropathy
- ◆ Foot problems

Tooth Decay

Patients with
Diabetes are at a
Higher Risk for
Root Decay Due to
Xerostomia (Dry
Mouth)



Xerostomia (Dry Mouth)

- Symptoms
- Treatments



Fungal Infections

- Symptoms
- Treatments



Lichen Planus

- ◆ Cause unknown, inflammatory condition
- ◆ Treatment is to manage symptoms (itching, burning)
- ◆ Appears red lacy bumps on tongue or cheek



POOR ORAL HEALTH = POOR OVERALL HEALTH

- ◆ Diabetes increases susceptibility to infection
- ◆ Infection in the body complicates blood glucose control. Two hours of hyperglycemia results in impaired WBC function for weeks.
- ◆ Increased risk for heart disease

Oral Rinses

- ◆ Alcohol Free
- ◆ Fluoride
- ◆ Chlorhexidine
- ◆ Saliva stimulants and replacements

Oral Hygiene at Home

◆ Toothbrushes

Manual vs Electric

Soft or extra soft
bristles

◆ Floss

Waxed vs Unwaxed

Interdental cleaners

ILL- Fitting Dentures

**A POTENTIAL
SOURCE FOR
INFECTION**



Care for Removable Dentures

- ◆ Removing dentures nightly
- ◆ Proper cleaning of mouth
- ◆ Proper cleaning of dentures
- ◆ Anti-fungal medications
- ◆ Denture adhesive use

EDUCATE MOTIVATE COMMUNICATE

Educate the patient

Motivate the patient to value their health

Communicate with PCP's

The Team Approach

- ◆ Disease of self-management—best managed by a team approach
- ◆ Team members:
 - Patient
 - PCP
 - Diabetes Educator
 - Dietitian
 - Exercise assistance
 - Podiatrist
 - Dental Team
 - Pharmacist

DENTAL – PCP - CDE

Communication Sheet

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