


**Diabetes Boot Camp – Class 1**  
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 President, Diabetes Education Services

[www.DiabetesEd.net](http://www.DiabetesEd.net)




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### Important Stuff

- ▶ Welcome to our First Boot Camp
- ▶ We will meet for 7 sessions - From 11:30am to 1pm PST
- ▶ I will stay after the program to answer any questions “off – line”
- ▶ The course will be recorded and available for viewing within 4 hours of completion of the session
- ▶ Login to the Online University to hear the recorded version, take the quiz and get your CEs
- ▶ Please email us with any questions or concerns at [susan@diabetesed.net](mailto:susan@diabetesed.net)






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### Getting Ready to take CDE Exam

- ▶ Recorded Webcast
- ▶ Online Courses
- ▶ Take as many practice tests as possible
- ▶ Study what you DON'T know
- ▶ Keep it Positive

▶ But MOST important



▶ Remember the Journey




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# What to Study?

## Articles to Review

ADA-Standards of Care PDF-This yearly publication by the American Diabetes Association outlines the goals of care for diabetes management. Since it is evidenced based, it includes a useful summary of the trials and research that the goals are based on. A must read if you are entering the diabetes field or preparing to take the CDE® or BC-ADM Exam.

ADA Standards of Care- Summary of revisions- A summary of key points and updates in the yearly publication by the American Diabetes Association.

AACE Comprehensive Diabetes Management Algorithm 2013. A slide set summary of the ACE/AACE Statement by an American Association of Clinical Endocrinologists/American College of Endocrinology Consensus Panel on Type 2 Diabetes Mellitus. Encourage all those planning to take CDE exam to review this info carefully.

The Scope of Practice, Standards of Practice, and Standards of Professional Performance for Diabetes Educators (2011). Chicago, IL: American Association of Diabetes Educators – a must read for anyone entering the field of diabetes or as a reference for those already in the field.

See CDE Examination Content Outline starting on page 22 of the NCBOE Handbook

Screening and Diagnosis of Diabetes Mellitus 2015 - At a glance summary sheet of the risk factors and diagnostic criteria for diabetes.

Management of Hyperglycemia in Type 2 Diabetes - 2015 Update – A Patient Centered Approach - This hyperglycemia roadmap was developed in collaboration by the American Diabetes Association and the Professional Association for the Study of Diabetes. [Go to website](#)



DiabetesEd.net>Resources



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## Study Tools –

Take as many tests as possible

Listen to Prep for CDE Webinar in your Bundle

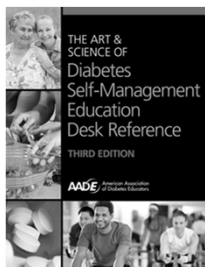
New Art and Science

Our Price: \$229.00

Both Books for \$279

Includes 400 questions

- ▶ 200 in book,
- ▶ 200 computer based



DiabetesEd.net>Books and Study



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## Diabetes - More than Hyperglycemia

- ▶ Discuss the epidemiology of diabetes.
- ▶ Describe the pathophysiology of diabetes and insulin resistance
- ▶ State the diagnosis and risk factors for type 2 diabetes.
- ▶ List the goals of care
- ▶ Discuss treatment strategies



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## Global Epidemic

- ▶ Every 10 seconds
  - ▶ 1 person dies with diabetes
  - ▶ 2 people develop diabetes
- ▶ Every year
  - ▶ 3 million deaths
  - ▶ 6 million new cases
- ▶ World Diabetes Day is November 14
- ▶ March is ADA Sound the Alert Day “find people w/ undetected diabetes”



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## 14. Diabetes Advocacy

- ▶ People living with diabetes should not face discrimination
- ▶ We need to all be a part of advocating for the best care and the rights of people living with diabetes.



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## Poll Question 1

- ▶ According to the CDC, what best describes the future prevalence of diabetes in the U.S.?
  - 50% of people above the age of 20 will have type 2 diabetes.
  - The rate of type 1 and type 2 diabetes will triple by the year 2050.
  - 1 out of 3 persons will have type 2 diabetes by the year 2050.
  - 1 out of 2 persons will have diabetes by the year 2050.



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## Diabetes in America 2015

- ▶ 29 million or > 9.3%
- ▶ 27% don't know they have it
- ▶ 37% of US adults have pre diabetes (86 mil)

### Diabetes



CDC's Division of Diabetes Translation. National Diabetes Surveillance System available at <http://www.cdc.gov/diabetes/statistics>



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## CDC Announces



35% of  
Americans will  
have Diabetes  
by 2050

Boyle, Thompson, Barker, Williamson  
2010, Oct 22:8(1)29  
[www.pophealthmetrics.com](http://www.pophealthmetrics.com)



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## Poll Question 2

- ▶ Which of the following interventions is most likely to decrease the prevalence of diabetes in the U.S.
  - Encourage people to drink more red wine.
  - Community based programs that promote daily, healthy lifestyle activities.
  - Making daily exercise mandatory
  - Increasing availability of gastric bypass surgery.



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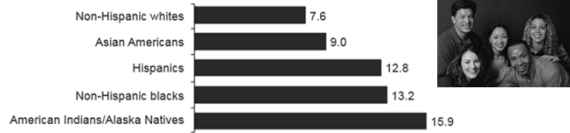
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## Age-adjusted Diabetes Prevalence

20 yrs or older, by race/ethnicity— U.S. 20014

**Age-adjusted\* percentage of people aged 20 years or older with diagnosed diabetes, by race/ethnicity, United States, 2010–2012**



\*Based on the 2000 U.S. standard population.  
Source: 2010–2012 National Health Interview Survey and 2012 Indian Health Service's National Patient Information Reporting System.

- Among Hispanic adults, the age-adjusted rate of diagnosed diabetes was 8.5% for Central and South Americans, 9.3% for Cubans, 13.9% for Mexican Americans, and 14.8% for Puerto Ricans.
- Among Asian American adults, the age-adjusted rate of diagnosed diabetes was 4.4% for Chinese, 11.3% for Filipinos, 13.0% for Asian Indians, and 8.8% for other Asians.
- Among American Indian and Alaska Native adults, the age-adjusted rate of diagnosed diabetes varied by region from 6.0% among Alaska Natives to 24.1% among American Indians in southern Arizona.



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## 32% of Medicare dollars go to Treat diabetes.



- ▶ **2012 - Total cost of diabetes \$245 billion**
  - ▶ Indirect costs: \$69 billion (disability, work loss, premature mortality)
- ▶ People with diabetes had 2-4 x's greater medical expenditures
- ▶ The largest components of medical expenditures are:
  - ▶ 43% - hospital inpatient care
  - ▶ 18% - prescription meds to treat complications
  - ▶ 12% - diabetes meds supplies
  - ▶ 9% - physician office visits
  - ▶ 8% - nursing/residential facility stays



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**Human Proinsulin Molecule**

Labels: LIVER, PANCREAS, SMALL INTESTINE, DUCT, ENZYME-PRODUCING CELL, INSULIN-PRODUCING CELL, ISLET OF LANGERHANS, BLOOD VESSEL.

- Beta – insulin - 60%
- Alpha – glucagon 30%
- Delta –somatostatin 10%

1 Surgeons remove the pancreas from a human cadaver.

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## Pancreas – Hormones that lower BG

### Beta Cells - Insulin

- Anabolic hormone - helps store glucose as glycogen in muscle, liver
- ▶ secreted in response to elevated glucose
- ▶ halts breakdown of glycogen in liver
- ▶ increases protein synthesis, fat storage
- ▶ powerful hypoglycemic

### Beta Cells - Amylin

- secreted in 1:1 ratio with insulin
- Causes satiety
- Lowers post-prandial glucagon response
- Slows gastric emptying
- Type 1 make none
- Type 2 make less than normal amounts



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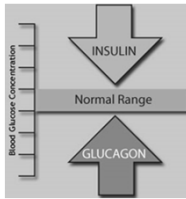
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## Pancreas – Hormone Raises BG



### Alpha cells - Glucagon

- Opposes action of insulin at the liver
- stimulated in response to low glucose levels
- stimulates liver to convert glycogen to glucose
- inhibits liver from glucose uptake
- causes hyperglycemia



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## Hormones Effect on Glucose

Hormone	Effect
▶ Glucagon (pancreas)	⬆
▶ Stress hormones (kidney)	⬆
▶ Epinephrine (kidney)	⬆
▶ Insulin (pancreas)	⬇
▶ Amylin (pancreas)	⬇
▶ Gut hormones - incretins (GLP-1) released by L cells of intestinal mucosa, beta cell has receptors)	⬇



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## Bariatric Surgery

- ▶ Consider on diabetes pts w/ BMI >35, esp with comorbidities
- ▶ Remission (BG normalized)
  - ▶ rates range from 40 – 95%
  - ▶ Better results with newer diabetes (more beta cell mass)
  - ▶ Due to increase incretins (gut hormones)
- ▶ Still researching long term benefits, cost effectiveness and risk



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## Signs of Diabetes

- ▶ Polyuria
- ▶ Polydipsia
- ▶ Polyphasia
- ▶ Weight loss
- ▶ Fatigue
- ▶ Skin and other infections
- ▶ Blurry vision
- ▶ Glycosuria, H<sub>2</sub>O losses
- ▶ Dehydration
- ▶ Fuel Depletion
- ▶ Loss of body tissue, H<sub>2</sub>O
- ▶ Poor energy utilization
- ▶ Hyperglycemia increases incidence of infection
- ▶ Osmotic changes



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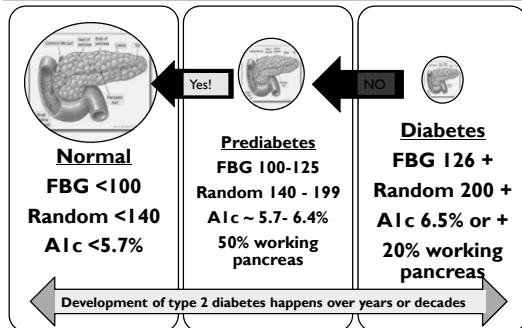
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## Natural History of Diabetes




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## Diagnostic Criteria

- ▶ All test should be repeated in the absence of unequivocal hyperglycemia
- ▶ If test abnormal, repeat same test to confirm diagnosis on a different day
- ▶ If one test normal, the other abnormal, repeat the abnormal test to determine status
- ▶ Medicare still using fasting as criteria for reimbursement for education



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## What Kind of Diabetes?



- AJ, a 22 year old female admitted to the ICU with a blood glucose of 476 mg/dl and a pH of 7.1.
- ▶ What further questions and or testing is needed to determine if patient has type 1 or type 2 diabetes?



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## Type 1 Rates Increasing Globally

- ▶ 23% rise in type 1 diabetes incidence from 2001-2009
- ▶ Why?
  - ▶ Autoimmune disease rates increasing over all
  - ▶ Changes in environmental exposure and gut bacteria?
  - ▶ Hygiene hypothesis
  - ▶ Obesity?



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### Poll Question 3

- ▶ According to the American Diabetes Association Standards of Care, who should be screened for type 1 diabetes?
  - a. High risk individuals, based on family history of autoimmune diseases.
  - b. All teenagers at puberty.
  - c. High risk ethnic groups
  - d. All individuals starting at the age of 45



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### Incidence of Type 1 in Youth



- ▶ **General Pop 0.3%**
- ▶ **Sibling 4%**
- ▶ **Mother 2-3%**
- ▶ **Father 6-8%**
- ▶ Rate doubling every 20 yrs
- ▶ Many trials underway to detect and prevent (Trial Net)



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### Type 1 Diabetes ~ 10% Genetics and Risk Factors

- ▶ Auto-immune pancreatic beta cells destruction
- ▶ Most commonly expressed at age 10-14
- ▶ Insulin sensitive (require 0.5 - 1.0 units/kg/day)
- ▶ Combo of genes and disease susceptibility
- ▶ Risk Factors:
  - ▶ Autoimmunity tends to run in families
  - ▶ Higher rates in non breastfed infants
  - ▶ Viral triggers: congenital rubella, coxsackie virus B, cytomegalovirus, adenovirus and mumps.
- ▶ Living longer (avg age expectancy 68.5)



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## How do we know someone has Type 1 vs Type 2?

- ▶ Type 1
  - ▶ Positive antibodies
    - ▶ GAD
    - ▶ ICA
    - ▶ IAA and others
  - ▶ Younger people develop quickly
  - ▶ Older people take longer to develop
  - ▶ Body wt and presentation



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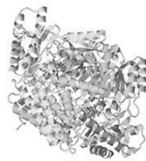
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## Autoantibodies Assoc w/ Type 1

Panel of autoantibodies –

- ▶ GAD65 - Glutamic acid decarboxylase –
- ▶ ICA - Islet Cell Cytoplasmic Autoantibodies
- ▶ IAA - Insulin Autoantibodies



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## Type 1 Diabetes Associated with other immune conditions

- ▶ Celiac disease (gluten intolerance)
- ▶ Thyroid disease
- ▶ Addison's Disease
- ▶ Rheumatoid arthritis
- ▶ Other



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## Medalist Study – Harvard Joslin Diabetes Center

- ▶ After 50 years with diabetes
  - ▶ Many still produced some insulin
  - ▶ Many had no eye disease



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## How to Get Screened? [www.DiabetesTrialNet.org](http://www.DiabetesTrialNet.org)

- ▶ How to get families linked to screening?

Information for Healthcare Professionals

About TrialNet	<b>Refer a Patient</b>
TrialNet Progress Report 2011 [pdf]	Patients can complete the <u>online screening</u> .
How to Refer Patients	Patients can call toll free anytime:
Join TrialNet	1 - 800 - HALT - DM1 (1-800-425-8361)
Links	
Handouts for Patients	contact one of our <u>participating centers</u> .
Peer Reviewed and Published Articles	
Our Investigators	

Sign up for the TrialNet Newsletter! [Learn More >](#)



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## AJ – Next Steps?

For AJ, a 22 year old newly diagnosed with T1DM

1. What baseline lab work, tests does she need?
2. What referrals?



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## Diabetes Lab Evaluation - ADA

Test	Frequency
▶ A1c	Dx and 2-4 x's a yr
▶ Fasting lipid profile	Dx and Annually
▶ Microalbuminuria	Dx and annually
▶ Creatinine / GFR	Dx and Annually
▶ Thyroid Stimulating Hormone (type 1 over 50, hyperlipidemia, women >50)	Dx and Annually
▶ Screen for Celiac Disease	Type 1 Dx, repeat prn
▶ Liver function test	Annually



ADA Clinical Practice Recommendations *Diabetes Education SERVICES*

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## Comprehensive Diabetes Evaluation – Referrals - ADA

- ▶ Annual dilated eye exam
- ▶ Family planning women of reproductive age
- ▶ Registered Dietitian for MNT
- ▶ Diabetes Self-Mgmt Program
- ▶ Dental exam
- ▶ Mental Health Professional, if needed

ADA Clinical Practice Recommendations



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## Type 1 Summary

- ▶ Autoimmune pancreatic destruction
- ▶ Need insulin replacement therapy
- ▶ Often first present in DKA
- ▶ At risk for other autoimmune diseases



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## Type 1 in Hospital

- ▶ 43 yr old admitted to evaluate angina.
- ▶ Morning blood sugar is 92.
- ▶ Based on Regular insulin sliding scale, no insulin required.
- ▶ Breakfast tray shows up and patient says, I need my insulin shot before I eat.



**What do you say?**



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## What kind of Diabetes?

- ▶ Pt is 58, states she has had type 1 diabetes for 18 years. Quit smoking a year ago and gained about 20 lbs. BMI 25.
- ▶ Meds
  - ▶ Humalog 18-23 units before each meal
  - ▶ Lantus 28 units at bedtime
  - ▶ Metformin 500mg TID
- ▶ What tests would you recommend?



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## What type of Diabetes?

- ▶ 72 Years old
- ▶ A1c 3 months prior 6.2%
- ▶ A1c now 13.9%
- ▶ BMI 24.5
- ▶ Lost about 10 pounds over last month



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## Latent Autoimmunity Diabetes in Adults (LADA)

- ▶ Antibody positive to 1-2 of below
  - ▶ GAD-65 autoantibodies
  - ▶ Insulin Autoantibodies
  - ▶ Islet Cell antigen-2
- ▶ Adult Age at onset
- ▶ Usually need insulin w/in first 6 months of diagnosis
- ▶ Early insulin therapy may preserve beta cell function



*Diabetes Care* 26:536-538, 2003  
 Jerry P Palmer, MD and Irl B. Hirsch, MD



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## LADA Clinical Features Compared to Type 2

Feature	LADA	Type 2
▶ Age <50	63%	19%
▶ Acute hyperglycemia	66	24
▶ BMI < 25	33	13
▶ Hx of autoimmune dx	27	12
▶ Family hx autoimmune	46	35

*Practical Diabetology* March 08, Unger MD



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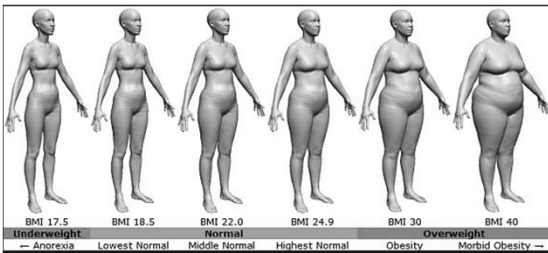
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## BMI – Visual Image



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## Poll question

- ▶ Which of the following is an accurate statement describing the risk between BMI and diabetes.
- a. There is an increased risk for diabetes when the BMI is 30 or greater.
  - b. There is no risk of diabetes when the BMI is less than 25.
  - c. The risk for diabetes increases as the BMI goes down
  - d. The risk for diabetes increases for Asian Americans when the BMI is more than 23.



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## Diabetes 2 - Who is at Risk?

(ADA Clinical Practice Guidelines)

1. Testing should be considered in all adults who are overweight (BMI  $\geq 25$ ) and have additional **risk factors**:
- ▶ First-degree relative w/ diabetes
  - ▶ Member of a high-risk ethnic population
  - ▶ Habitual physical inactivity
  - ▶ PreDiabetes
  - ▶ History of heart disease



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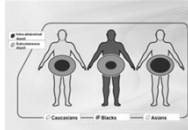
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## 2. Classification and Diagnosis of Diabetes - Update

### ▶ Screening criteria update for Asian Americans: BMI $\geq 23$

- the cut point for screening Asian Americans for prediabetes and type 2 diabetes is **now a BMI  $\geq 23$  (vs 25)** to reflect the increased risk of diabetes at a lower BMI level relative to the general population.



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## Diabetes 2 - Who is at Risk?

(ADA Clinical Practice Guidelines)



### Risk factors cont'd

- ▶ HTN - BP > 140/90
- ▶ HDL < 35 or triglycerides > 250
- ▶ baby >9 lb or history of Gestational Diabetes Mellitus (GDM)
- ▶ Polycystic ovary syndrome (PCOS)
- ▶ Other conditions assoc w/ insulin resistance:
  - ▶ Severe obesity, acanthosis nigricans (AN)



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## Poll Question 4

- ▶ Which of the following BEST describes insulin resistance?
  - a. Lack of sufficient insulin receptors on fat and muscle cells.
  - b. Visceral adipose tissue.
  - c. A physiological condition where insulin becomes less effective at lowering blood glucose levels.
  - d. Excessive triglyceride levels



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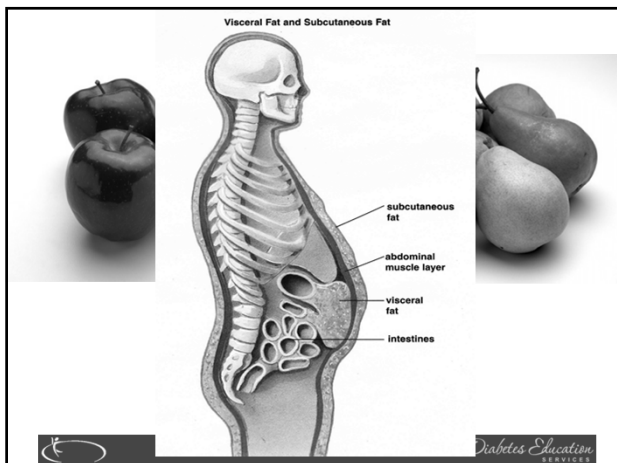
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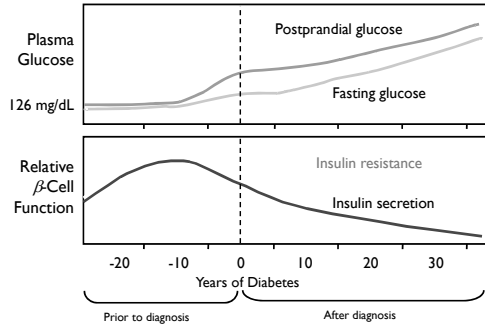
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## Natural Progression of Type 2 Diabetes



Adapted from Bergenstal et al. 2000; International Diabetes Center.



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## Factors Associated with Insulin Resistance

- ▶ Abdominal obesity
- ▶ Sedentary lifestyle
- ▶ Genetics / Ethnicity
- ▶ Gestational Diabetes
- ▶ Polycystic ovary syndrome
- ▶ Acanthosis Nigricans
- ▶ Obstructive Sleep Apnea
- ▶ Cancer



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## Acanthosis Nigricans (AN)

- ▶ Signals high insulin levels in bloodstream
- ▶ Patches of darkened skin over parts of body that bend or rub against each other
  - ▶ Neck, underarm, waistline, groin, knuckles, elbows, toes
  - ▶ Skin tags on neck and darkened areas around eyes, nose and cheeks.
- ▶ No cure, lesions regress with treatment of insulin resistance



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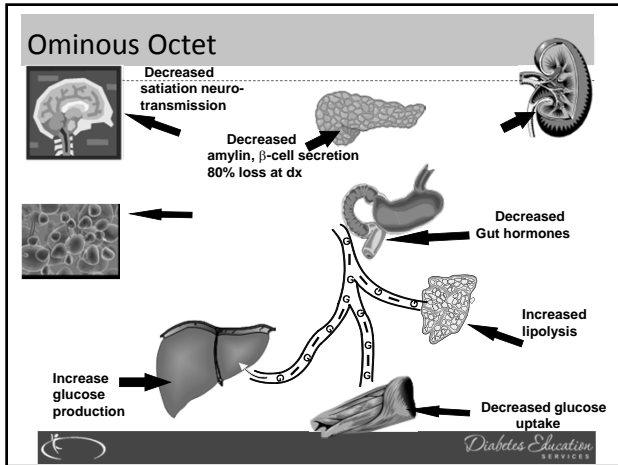
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### Comparison of Type 1, Type 2, LADA

	Type 1	Type 2	LADA
Obesity	x	xxx	x
Insulin dependence	xxx	30%	6mos
Respond to oral agents	0	xxx	x
Ketosis	xxx	x	x
Antibodies present	xxx	0	xx
Typical Age of onset	teens	adult	adult
Insulin Resistance	0	xxx	x

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### Diabetes is also associated with

- ▶ Fatty liver disease
- ▶ Obstructive sleep apnea
- ▶ Cancer; pancreas, liver, breast
- ▶ Alzheimer's
- ▶ Depression
- ▶ Cardiovascular disease

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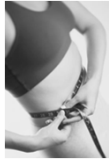
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## Cardio Metabolic Risk - 5 Hypers -

- ▶ Hyperinsulinemia (resistance)
- ▶ Hyperglycemia
- ▶ Hyperlipidemia
- ▶ Hypertension
- ▶ Hyper"waistline"emia (35" women, 40" men)



*Manifestations of Insulin Resistance*



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## Heart Disease & DM = 3-5xs Risk

- ▶ CHF
  - ▶ 7.9 % w/ diabetes vs.
  - ▶ 1.1 % no diabetes
- ▶ Heart attack
  - ▶ 9.8 % w/ diabetes vs.
  - ▶ 1.8 % no diabetes
- ▶ Coronary heart disease
  - ▶ 9.1 % w/ diabetes vs.
  - ▶ 2.1 % no diabetes
- ▶ Stroke
  - ▶ 6.6 % w/ diabetes vs.
  - ▶ 1.8 % no diabetes



▶ 2007 AACE

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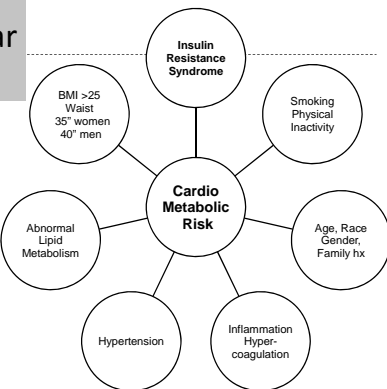
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## CardioVascular Risk Factors

*The more risk  
factors =  
greater  
risk of heart  
disease and  
diabetes*  
ADA 2007



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## Bottom Line

- ▶ Cardiovascular disease is the leading cause of death for people with diabetes
- ▶ 65% of people with diabetes die from heart disease (36% in general population)
- ▶ Prevention and aggressive treatment of diabetes is critical



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***"Getting diabetes saved my life."***

***~ Sherri Sheperd***

**PLAN  
D**

*That's*  
**LOSE WEIGHT  
AND BEAT  
DIABETES  
(EVEN IF YOU DON'T HAVE IT)**  
**SHERRI  
SHEPHERD**

Enter Now to Win a Copy of the Book  
WITH BILLY HORNBECK  
READ BY THE AUTHOR



**Sherri Sheperd  
decided to embrace  
diabetes and use it as a  
motivator to improve  
her health.**



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## Other Types of Diabetes

- ▶ Gestational
- ▶ Other specific types of diabetes



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## Gestational Diabetes A public health perspective

- ▶ Body weight before and during pregnancy influences risk of GDM and future diabetes
- ▶ Children born to women with GDM at greater risk of diabetes
- ▶ Focus on prevention



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## Poll Question - 5

- ▶ What best describes gestational diabetes?
  - a. Diabetes discovered within the first 12 weeks of pregnancy.
  - b. Diabetes discovered in the 24-28 week of pregnancy.
  - c. Risk of getting diabetes before pregnancy.
  - d. Diabetes discovered at any point during pregnancy.



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## 12. Gestational DM ~ 7% of all Pregnancies

- ▶ GDM prevalence increased by
  - ▶ ~10-100% during the past 20 yrs
- ▶ Native Americans, Asians, Hispanics, African-American women at highest risk
- ▶ Immediately after pregnancy, 5% to 10% of GDM diagnosed with type 2 diabetes
- ▶ Within 5 years, 50% chance of developing DM in next 5 years.



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## 12. Screen Pregnant Women Before 13 weeks

- ▶ Screen for undiagnosed Type 2 at the first prenatal visit using standard risk factors.
- ▶ Women found to have diabetes at their initial prenatal visit treated as "Diabetes in Pregnancy"
- ▶ If normal, recheck at 24-28 weeks



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## 12. Management of Diabetes in Pregnancy

- ▶ Provide preconception counseling, focus on importance of glycemic control, A1c < 7%, to prevent anomalies
- ▶ Avoid teratogenic meds (ACE Inhibitors, Statins) in sexually active women not using reliable contraception
- ▶ Manage GDM with diet and exercise first, add meds if needed.



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## 12. Management of Diabetes in Pregnancy

- ▶ Women with pregestational diabetes need baseline eye exam in first trimester, monitor every trimester
- ▶ A1c target during pregnancy if < 6%, if can be achieved without hypo
- ▶ Meds used in pregnancy include insulin, metformin and glyburide, still need long term safety data



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## 12. GDM Criteria - 2 Options "1 Step" – 75 gm OGTT

- ▶ 24-28 weeks
- ▶ OGTT in am after overnight fast of 8 or > hrs
- ▶ **GDM Diagnosis if ANY** of the following values met or exceeded:

▶ FBG            1 HR            2HR  
▶ ≥92   or   ≥180   or   ≥153

*Based on Hyperglycemia and Adverse  
Pregnancy Outcomes Study - IADPSG*



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## 12. GDM Criteria – Option 2 "NIH 2 step"



### ▶ Step 1

- ▶ 50 gm Oral Glucose Tolerance Test (non-fasting)
- ▶ If BG 140\* at 1 hour proceed to Step 2

### ▶ Step 2 – 100 gm Oral Glucose Tolerance (fasting)

- ▶ **GDM Diagnosis if 2** values are met or exceeded

	Carpenter/Coustan	or	NDDG
• Fasting	95 mg/dL (5.3 mmol/L)		105 mg/dL (5.8 mmol/L)
• 1 h	180 mg/dL (10.0 mmol/L)		190 mg/dL (10.6 mmol/L)
• 2 h	155 mg/dL (8.6 mmol/L)		165 mg/dL (9.2 mmol/L)
• 3 h	140 mg/dL (7.8 mmol/L)		145 mg/dL (8.0 mmol/L)

NDDG, National Diabetes Data Group. \*The American College of Obstetricians and Gynecologists (ACOG) recommends a lower threshold of 135 mg/dL (7.5 mmol/L) in high-risk ethnic minorities with higher prevalence of GDM; some experts also recommend 130 mg/dL (7.2 mmol/L).

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## Postpartum after GDM

- ▶ 50% risk of getting diabetes in 5 years
- ▶ Screen at 6-12 wks post partum
- ▶ Repeat at 3 yr intervals or signs of DM
  - ▶ Encourage Breast Feeding
  - ▶ Encourage weight control
  - ▶ Encourage exercise
  - ▶ Make sure connected with health care
  - ▶ Lipid profile/ follow BP
  - ▶ Preconception counseling



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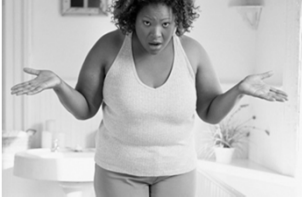
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## Start Metformin therapy

- ▶ For women with PreDiabetes and History of GDM



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## Other Specific Types of DM

- ▶ Medications such as: steroids, protease inhibitors and Prograf
- ▶ Secondary to Agent Orange
- ▶ Liver failure
- ▶ TPN or tube feedings
- ▶ Pancreatic cancers or removal
- ▶ Cystic fibrosis, pancreatitis
- ▶ Other



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## Online Courses

- ▶ Kids
- ▶ Older Adults
- ▶ Women



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## Moving on to the Lower Half



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## Profile of a High Risk Foot ADA

- ▶ Previous amputation
- ▶ Previous foot ulcer history
- ▶ Peripheral neuropathy
- ▶ Foot deformity
- ▶ Peripheral vascular disease
- ▶ Vision impairment
- ▶ Diabetic neuropathy (esp if on dialysis)
- ▶ Poor glycemic control
- ▶ Cigarette smoking



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## Diabetes and Amputations

- ▶ Rate declined by 65% from 1996-2008

- ▶ From 11.2 per 1000 to 3.9 per 1000



- ▶ Diabetes = 8 fold risk of amputations
- ▶ Highest rate in those over 75
- ▶ 50% of amputations can be avoided through self-care skill education and early intervention

- ▶ Stats from CDC 2012



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**No Bathroom Surgery**

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**You Can Make A Difference**

- ▶ Assess
  - ▶ Nail condition, nail care, inbetween the toes
  - ▶ Who trims your nails
  - ▶ Have you ever cut your self?
  - ▶ Shoes – type and how often
  - ▶ Socks
  - ▶ Skin/skin care and vascular health
  - ▶ Ability to inspect
  - ▶ Loss of protective sensation

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**5.07 monofilament delivers 10gms linear pressure**

10 Free Monofilaments  
[www.hrsa.gov/hansensdisease/leap/](http://www.hrsa.gov/hansensdisease/leap/)

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**KEEP THEM FEELING WONDERFUL**

**Medicare Pays for Therapeutic Shoes**

Under the Therapeutic Shoe Bill, Medicare patients with diabetes are entitled to one pair of shoes and three pairs of orthotic inserts. You are entitled to this benefit every calendar year. We call your doctor and take care of the paperwork, too. Our Certified Pedorthists come to your home to ensure a proper fit. All sizes available and many selections to choose from. Call today to get your shoes. Deductible or co-payments may apply. Sorry, no HMO's.

Ohio, Pennsylvania, Western New York, Florida and More.





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**Three Most Important Foot Care Tips**

- ▶ Inspect and apply lotion to your feet every night before you go to bed.
- ▶ Do NOT go barefoot, even in your house. Always wear shoes!
- ▶ Every time you see your doctor, take off your shoes and show your feet. Report any foot problems right away!


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**Thank You**



- ▶ Take Tests
- ▶ Review Outline
- ▶ Read Articles
- ▶ Keep studying what you don't know
- ▶ Exercise
- ▶ See you next week


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