

Diabetes: Impact on Gender

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Objectives

- Highlight the burden of diabetes among women
- Identify the unique challenges women with diabetes face within the context of life stages
- Discuss the research/initiatives for women at risk/with diabetes
- Discuss implications for the future

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Diabetes & Women's Health Across the Life Cycle

- Adolescent Years
- Reproductive Years
- Middle Years
- Elder Years

• Beckles GLA, Thompson-Reid PE, editors. Diabetes and Women's Health Across the Life Stages: A Public Health perspective. Atlanta; US Dept of HHS, CDC, 2001

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Diabetes Mellitus in the US: Prevalence

- 17 million Americans
 - 11 million diagnosed
 - 6 million not diagnosed
 - Disproportionate burden of diabetes on women - 51.2% females
 - Older women and black, Hispanic, American Indian and Asian/Pacific Islanders.
- 90% to 95% of cases are type 2 diabetes

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Diabetes Mellitus in the US: Overview

- Incidence
- Approximately 800,000 new cases diagnosed yearly

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Diabetes Mellitus in the US: Overview

- Complications
- blindness in adults
- end-stage renal disease
- nontraumatic amputations

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Economic Burden of Diabetes

- Diabetes is the 7th leading cause of death
- 2002 >>> \$132 billion
- Direct spending >>> \$ 91.8 billion

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Geographic Distribution

- 30.2 % urban
- 20 % rural
- 49.8 % suburban
- CA, TX, AR, LA, AL, TN, SC, WV, IL, PA, MI & Virginia

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The Adolescent Years

- 10 - 19 years of age
- Type 1 versus Type 2 diabetes
- Acute complications (DKA, hypoglycemia)
- Mortality rate
- Eating disorders
- Celiac disease

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The Adolescent Years

- Eating disorders - 15% below IBW, fear of weight gain, disturbed body image, interruption/amenorrhea X 3 months, bipolar disorder
- Celiac disease - autoimmune disorder that primarily affects the digestive system, 10 % of T1 DM, gluten intolerance

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The Reproductive Years

- 18 - 44 years of age
- 1.85 million women
- Type 2 diabetes
- Ethnic minorities
- Gestational diabetes - 2-4 % of all pregnancies

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The Reproductive Years

- Type 1 DM - diabetic retinopathy can accelerate, < 105 fasting, 2 hours PC < 130
- Pre-gestational Type 2 DM - oral agents versus insulin

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Polycystic Ovary Syndrome

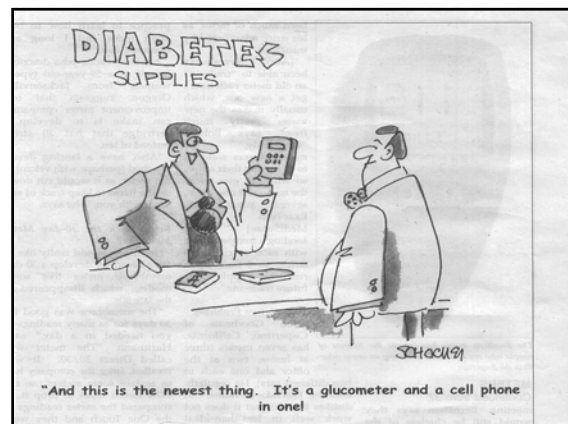
- Diagnosis - associated with anovulation coupled with an excess of androgens (testosterone)
- Treatment - biguanides, spironalactone
- Future implications - Type 2 DM

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Contraception

- Considerations - effectiveness, convenience, cost, affect on blood glucose
- Options - Multiple, monotherapy with progestins (depoprovera)
- Management - add insulin pre-menses and 1 - 2 weeks post depo injection
- Follow Up - blood glucose and blood pressure

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The Middle Years

- 45 - 64 years of age
- 27 million - expected to increase to 41 million by 2010
- 6 % of women aged 45 - 55 years
- Coronary heart disease (CHD) is a leading cause of diabetes related morbidity and mortality in this age group

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Cardiovascular Disease

- Men with diabetes have a twofold increased risk for CHD
- Women with diabetes have a fourfold increased risk for CHD

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Metabolic Syndrome

- Definition
- Prevalence
- Gender Differences
- Intervention

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Definition of Metabolic Syndrome

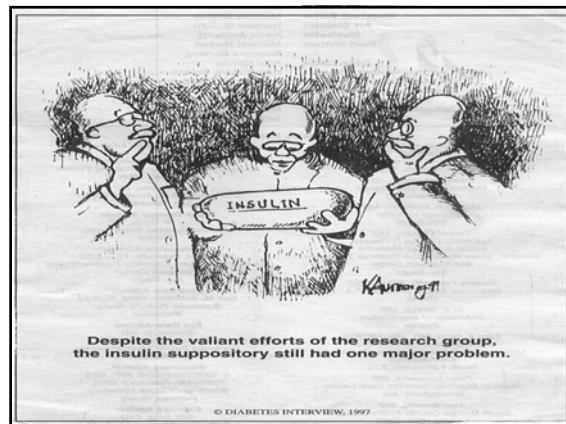
- High Blood Pressure > 130/85 mm Hg
- Fasting glucose > 110 mg/dL
- Waist Circumference >102 cm men /Waist Circumference > 88 cm women
- Triglycerides > 150 mg/dL
- HDL < 40 in men HDL <50 in women

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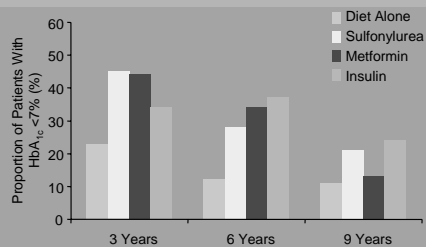
Cardiovascular Disease

- ABC's of cardiovascular health
- A1C < % 7)
- Blood Pressure< 130 / 80
- Cholesterol.....LDL < 100/ HDL > 45

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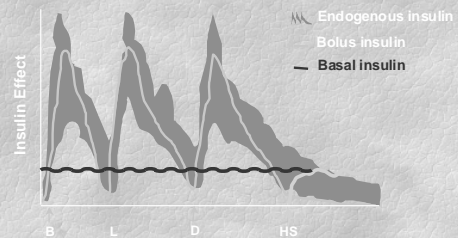
Monotherapy in Obese Patients With Type 2 Diabetes



Turner RC et al. JAMA. 1999;281:2005-2012.

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Mimicking Nature: The Basal-Bolus Insulin Concept



Adapted with permission from McCall A. In: *Insulin Therapy*. Leahy J, Cefalu W, eds. New York, NY: Marcel Dekker, Inc; 2002:193

Insulin Regimens

	Breakfast	Lunch	Dinner	Bedtime
Meal Time Insulin Orders	Give _ Units of _ Lispro (Humalog) _ Aspart (Novolog) _ Regular	Give _ Units of _ Lispro (Humalog) _ Aspart (Novolog) _ Regular	Give _ Units of _ Lispro (Humalog) _ Aspart (Novolog) _ Regular	
Basal Insulin Orders	Give _ Units of _ NPH _ Lente		Give _ Units of _ NPH or HS _ Lente or HS	Give _ Units of _ NPH _ Lente _ Ultralente _ Glargine

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The Elder Years

- 4 out of 5 doctors agree that as you age you should slow down and take it easy
- You should party with doctor # 5
- Which means ...

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The Elder Years

- 65 + years
- 20 million - expected to increase to 23 million by 2010
- Women outnumber men
- Economic reality - Almost 1/2 of elder women with diabetes have an annual income < \$10,000
- Ethnic minorities

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The Elder Years

- More co-morbidities, sensory & functional deficits, physical & financial limitations.
- Less preventive services
- Less aggressive therapies

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Gender Differences

- Obesity
- Cardiovascular disease
- Depression
- Eating disorders

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Diabetes Research & Initiatives

- DCCT, UKPDS - intensive blood glucose control
- DIGAMI, van den Berghe
- Diabetes Prevention Program - lifestyle intervention proved most effective
- Federal Initiative - 3 phase
- Small Steps, Big Rewards

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Future Directions

- Research
- Public & private partnerships
- Civic responsibility

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Dr. Pat Selig - Questions & Answers

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