

# ***Tobacco Use, Diabetes and other Chronic Diseases: Take Action for Cessation***



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# Presentation Objectives

What do you know about diabetes?

Diabetes facts (stats, populations)

What is diabetes (basics)

Diabetes complications and how to prevent them

How tobacco use complicates diabetes and other chronic diseases

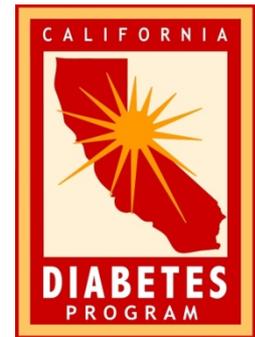
Managing Diabetes - Balance

Tobacco use cessation – Story & Coach

Tools, community linkages, resources

**What do you know  
about diabetes?**

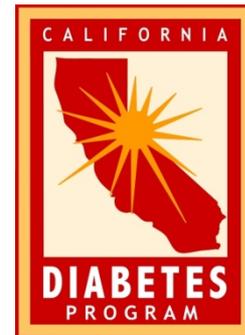




# Diabetes is...

- **Serious** - Chronic lifelong condition, there is no cure. More children now diagnosed with Type 2 diabetes.
- **Common** – Approximately 1 in 10 people have diabetes in the U.S.
- **Preventable** - Modest changes in lifestyle can prevent type 2 diabetes and diabetes complications
- **Controllable** – Following diabetes self-management strategies can reduce risk of complications

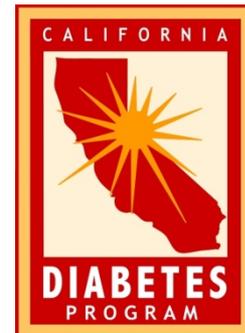




# What is Diabetes?

- A condition where the body does not make or properly use insulin
- Diabetes is identified by high levels of blood glucose diagnosed by a health care professional
  - Fasting blood glucose  $\geq 126$ mg/dl (in lab on 2 occasions)
  - Random blood glucose  $\geq 200$  mg/dl
  - Blood glucose  $\geq 200$  mg/dl at 2 hours using a 75 gram oral glucose tolerance test
  - HgbA1c  $\geq 6.5\%$





# Complications of Diabetes

- Leading cause of kidney failure, new cases of blindness, and non-traumatic lower limb amputations
- Adults with diabetes have heart disease death rates 2-4 times greater than adults without diabetes
  - 2-4 times greater risk for stroke
- Overall risk of death is 2 times that of persons of a similar age but without diabetes



# Who has Diabetes?

Nationwide almost 25.8 million people (8.3%)

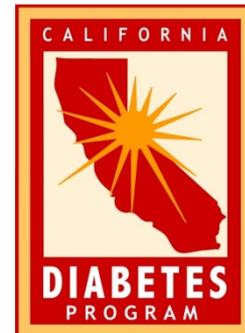
7.0 million undiagnosed

65 years and older 10.9 million (26.9%)

79 million are estimated to have pre-diabetes



Source: National Diabetes Fact Sheet, Centers for Disease Control and Prevention, 2011



# In California

- Approximately 1 of every 7 people in California have diabetes
  - That's 4.0 million (14.3%) of adult population
- 1.4 million (5.2%) don't know they have diabetes

Source: California Diabetes Program 2011





# Who has diabetes in CA?

- 1 in 8 adult African Americans (12.4 percent)
- 1 in 7 American Indians/Alaskan Natives/Pacific Islanders (13.7 percent)
- 1 in 9 Latinos (10.9 percent)
- 1 in 11 Asian Americans (8.8 percent)
- 1 in 14 Whites (7.1 percent)

2009 CDP fact sheet



# Chronic disease & Mental Illness

- People with SMI die 25 years earlier, most often from cardiovascular disease (40%) (Colton 2006, Saha 2007)
  - Due to lifestyle, antipsychotic medications, substance abuse
- People with severe mental illness (SMI) are two times more likely to have diabetes than the general population (Dixon 2000, NDIC 2011)
- People with SMI who smoke are less likely to receive treatment & services for metabolic disorders (Himelock 2009)
- Smoking puts people with SMI at much increase risk for CVD and metabolic disorders (Kelly 2009)



# National Diabetes Health Disparities

## For Adults >20 years:

- Non-Hispanic Whites 7.1%
- Asian Americans 8.4%
- Hispanics 11.8%
  - 13.3% for Mexican Americans/13.3% for Puerto Ricans
  - 7.6% for Cubans/Central/South Americans
- Non-Hispanic Blacks 12.6%
- 16.1% of American Indians and Alaska Natives (served by IHS)

# Pre-diabetes

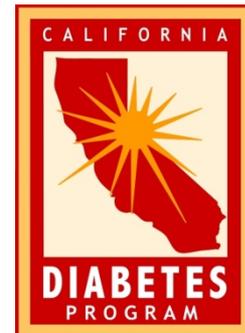


## About 11.1 million people in California have pre-diabetes

Pre-diabetes is a higher than normal blood glucose, but not high enough to be called diabetes

- Fasting blood glucose  $\geq$  100 to 125 mg/dl
- Oral glucose tolerance test  $\geq$  140 to 199 mg/dl
- HgbA1c  $\geq$  5.7-6.4%

People with pre-diabetes have insulin resistance which increases the chances of developing diabetes and heart disease



# Diabetes – Type 1

- The body produces little or no insulin
- Autoimmune disease
- Children and young adults
- 5% of people with diabetes





# Diabetes – Type 2

- Body doesn't make enough insulin or use it effectively
- Controlled with diet and exercise, oral medication, insulin
- 90% of people with diabetes
- Can be prevented or delayed





# Type 2 - Pathophysiology

- Impaired insulin secretion ( $\beta$  cell dysfunction)
- Impaired insulin action (insulin resistance)
- Both have genetic and environ-mental influences



# Diabetes - Gestational

- Found in pregnant women without diabetes
- Without intervention, women have a 40 to 60 % chance of developing type 2 diabetes within 5 to 10 years





# Risk Factors for Chronic Diseases

- Greater risk with age
- Race or ethnic
- Obese or overweight
- Family history
- Gestational diabetes
- Behavior:
  - Diet, Activity, Smoking
- High blood pressure
- High cholesterol
- Sociocultural factors:
  - Acculturation, language proficiency





# Signs and Symptoms of Diabetes

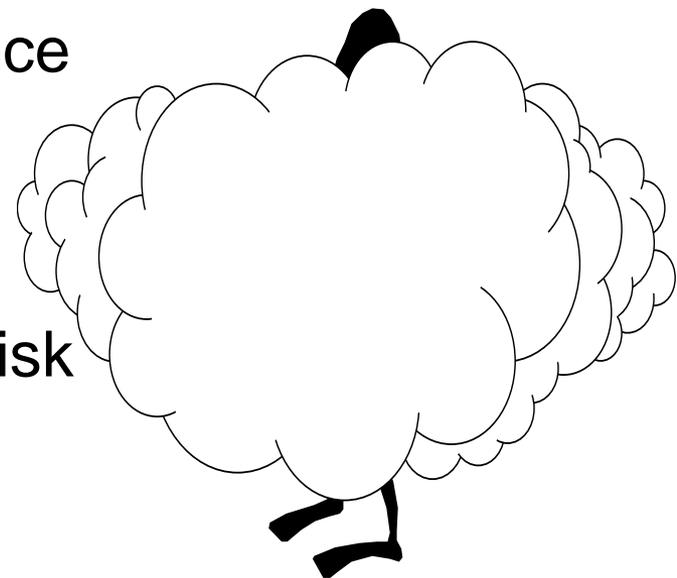
- Increased thirst
- Increased urination
- Increased fatigue
- Weight loss
- Nausea/vomiting/abdominal pain
- Blurred vision
- Increased infections
- Cuts and sores that do not heal
- Those with type 2 may have no symptoms





# Smoking and Diabetes

- Smoking increases insulin resistance (2<sup>nd</sup> hand also)
- Increases diabetes-related complications
- Smoking may be an independent risk factor for type 2 diabetes
- Secondhand smoke exposure is associated with development of impaired fasting glucose or diabetes over 15 years



# What can you do to prevent diabetes?



**The Diabetes Prevention Program (2002 NEJM) major multicenter clinical research study**

## **Lose Weight**

- Lose 5 to 7 percent of body weight

## **Be Active**

- 30 minutes - five days a week



The DPP found that participants with pre-diabetes who lost a modest amount of weight through dietary changes and increased physical activity **sharply reduced their chances of developing diabetes.**

<http://diabetes.niddk.nih.gov/dm/pubs/preventionprogram/>



## DPP results continue to be positive

- 10 year follow-up of diabetes incidence and weight loss from DPP Outcomes Study (DPPOS) results persist. *The Lancet, 2009; 374:1677-1686*
- Exercise increases insulin sensitivity in those with prediabetes. *Diabetes Care, Oct. 31, 2011*
- Even low level of physical activity helps cut mortality risk in metabolic syndrome.  
*BMC Medicine Sept. 29, 2011*



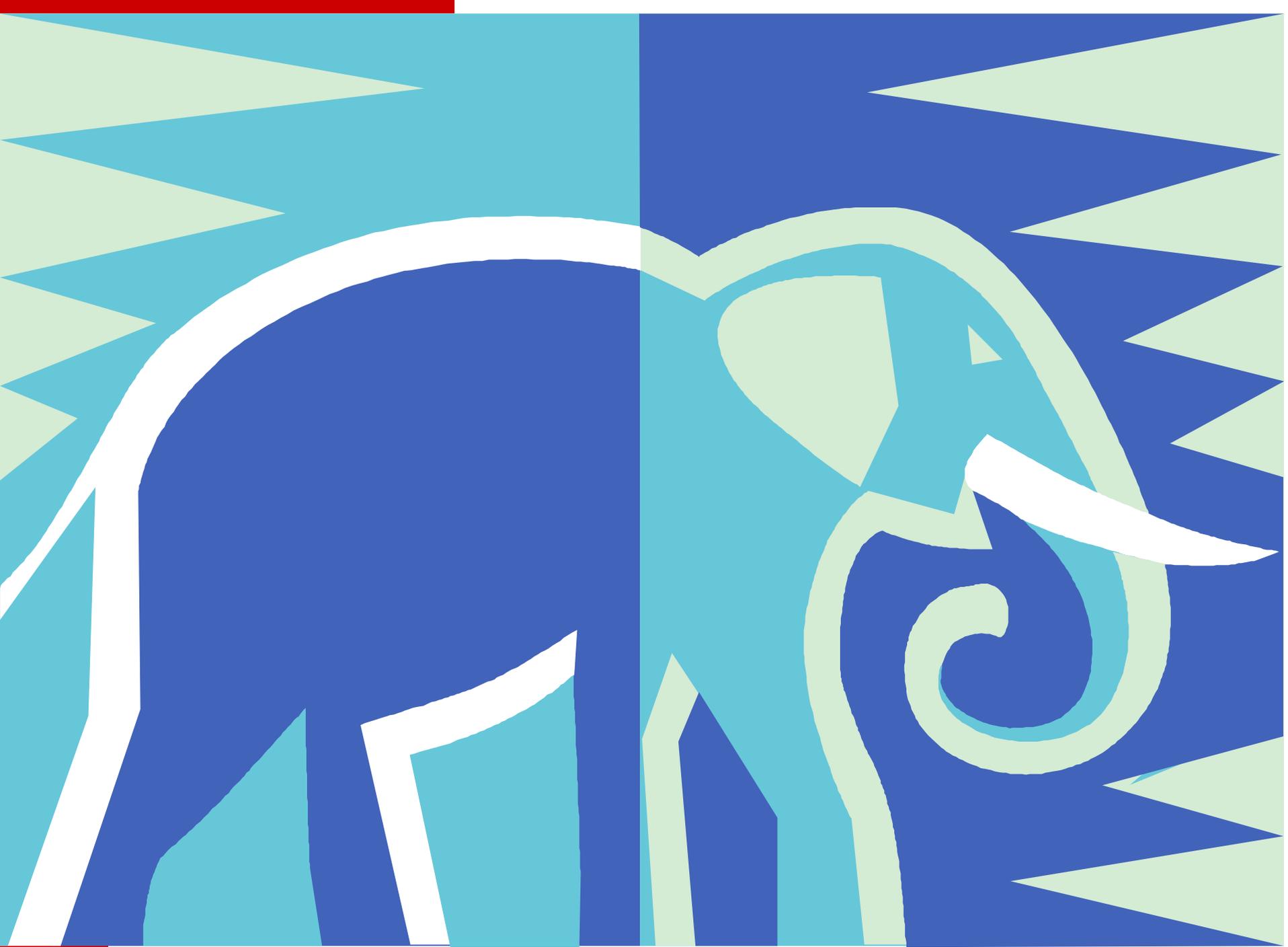
# Physical Activity Can Prevent Delay and Control Diabetes!

## BE ACTIVE – HAVE FUN!

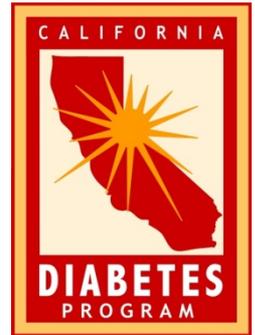
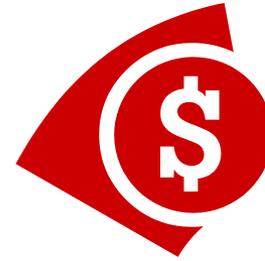
- ✓ Burns calories
- ✓ Helps your body use insulin better
- ✓ Lowers blood glucose
- ✓ Helps to lower blood pressure and cholesterol
- ✓ Helps prevent depression and improve quality of sleep

How can you be more active?





# Diabetes is Costly



- Average annual health care costs for a person with diabetes: \$13,243; without diabetes: \$2,560
- California spends an estimated \$25 billion annually

*Diabetes Care Quality Improvement: A Resource Guide for State Action.* US Department of Health and Human Services, Agency for Healthcare Research and Quality, AHRQ publication No. 04-0072, September 2004.

# Costly Situation



- 2007 – Healthcare Cost of Diabetes (24 million Dx)
  - \$174 Billion (direct and indirect costs)
  - Approximately \$1 of every \$5 healthcare dollars
  - Increase of \$42 Billion since 2002
  - \$8 Billion increase each year
  - 2.3 x the healthcare cost of those w/o DM

\$\$

Sources: US Centers for Disease Control, ADA and National Institutes of Health



*The goal of diabetes management is . . .*

**\*To manage blood glucose.**

*The purpose of blood glucose management is . . .*

**\*To prevent complications.**





# Acute Complications

- *Hypoglycemia - Type 1 & Type 2*
- *Ketoacidosis (DKA) - Type 1*
- *Hyperosmolar Syndrome (HHS) - Type 2*



# Chronic Complications

## \* *Microvascular*

- *Renal*
- *Ophthalmic*
- *Neurological*

## \* *Macrovascular*

- *Cerebro vascular*
- *Cardio vascular*
- *Peripheral vascular*





180 mg/dl

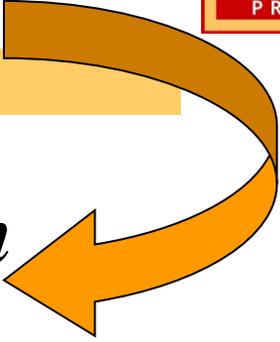


$\uparrow$  *BG*  $\rightarrow$  *Fluid*  $\uparrow$  *BP* *i i*

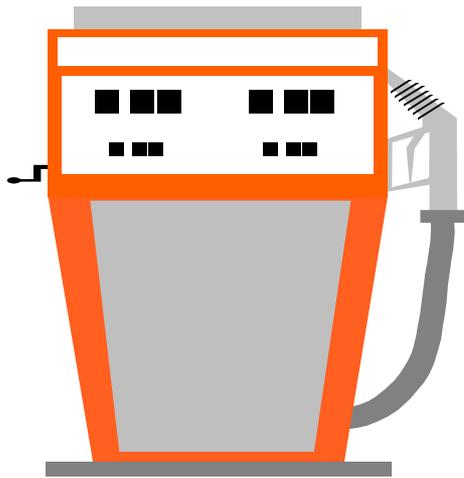
80 mg/dl



$\uparrow$  *Urination*



- *Thirsty*
- *Tired*
- *Dry Skin*
- *Slow healing*
- *Blurry vision*



*Glucose*





**“Diabetes doesn’t kill patients.”**

**“Poor glycemic management does.”**

*Experience  
Based  
Practice*



*Evidence  
Based  
Practice*

**Headline “TGC Endocrine Today, March 2006”**  
*“the underlying theme of the December, 2003 consensus conference”*  
**Inpatient Glycemic Management Clinical Practice Recommendations.**  
*AACE along with representation of 11 other professional organizations.*



- A<sub>1</sub>C
- Blood Pressure
- Cholesterol
  - Total Cholesterol, LDL, HDL &
  - Triglycerides
- Smoking Cessation



# ACTIVITY

More?

Less?

When?



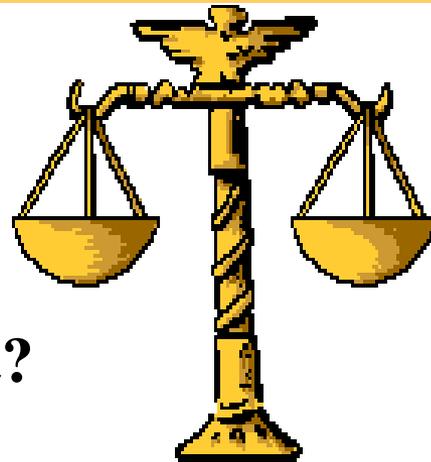
## BLOOD GLUCOSE

### FOOD

When did you eat?

What did you eat?

How much did you eat?



### INSULIN

Endogenous?

Exogenous?

### STRESS

Acute?/Chronic?

Emotional?/Physical?

More?/Less?

Eustress?/Distress?

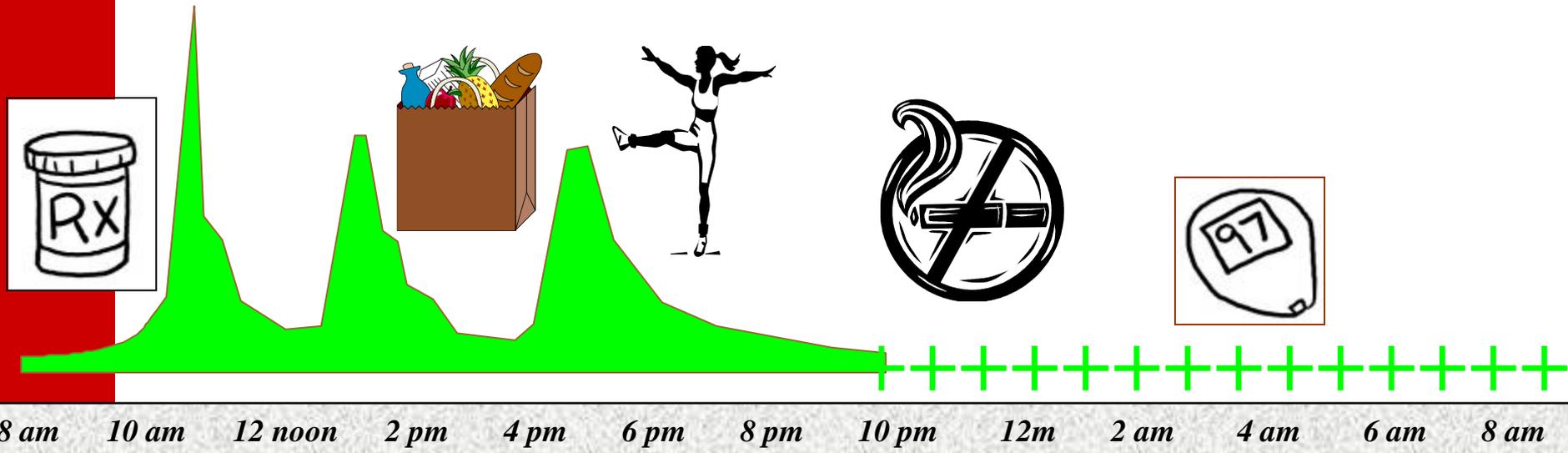




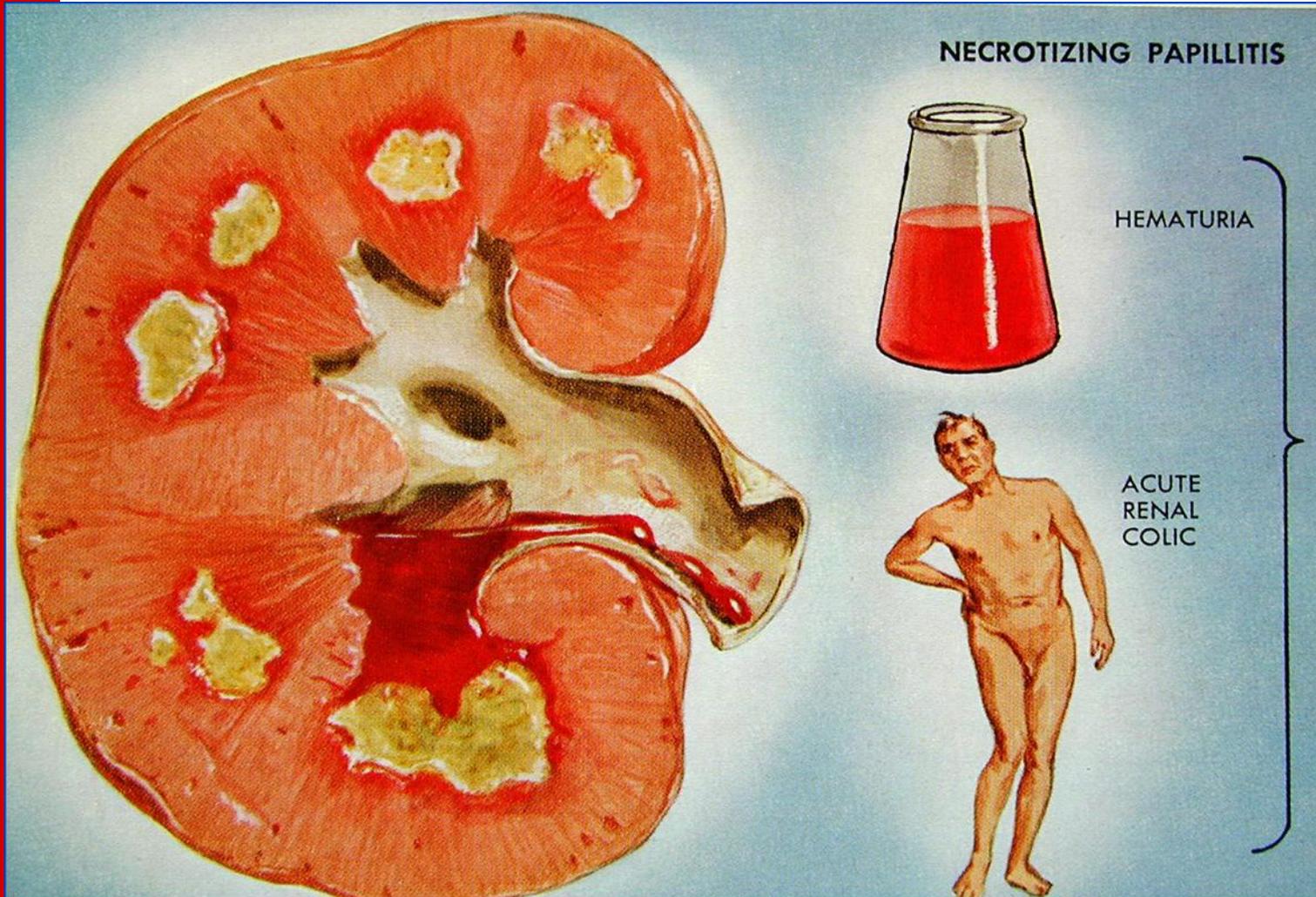
# Suggestions for success:

*Minimize variables*

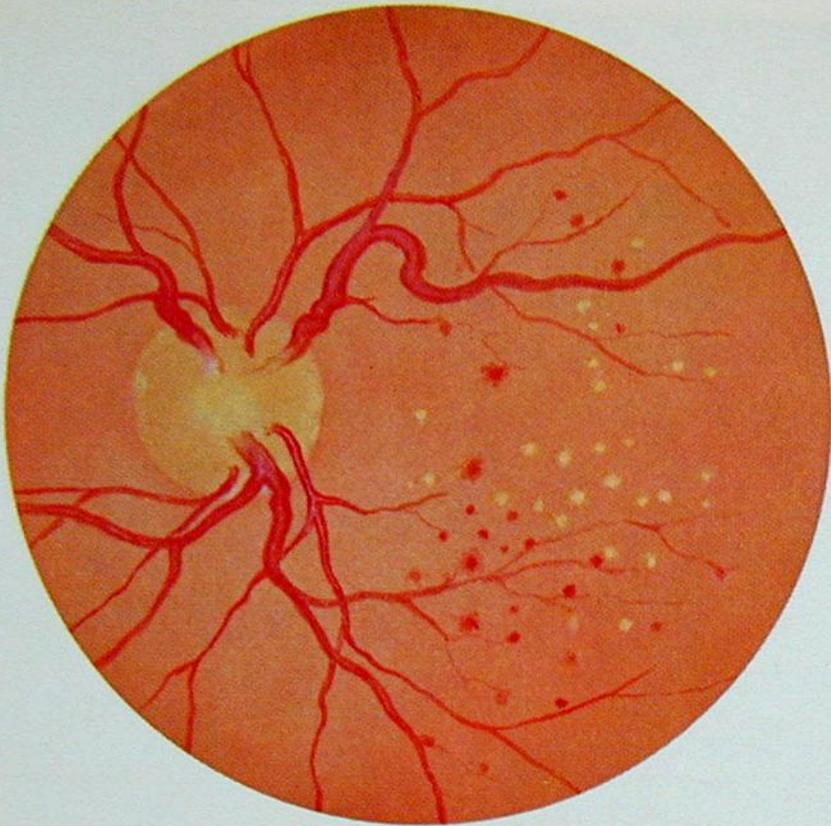
*Mimic normal physiology*



# Nephropathy



# Retinopathy

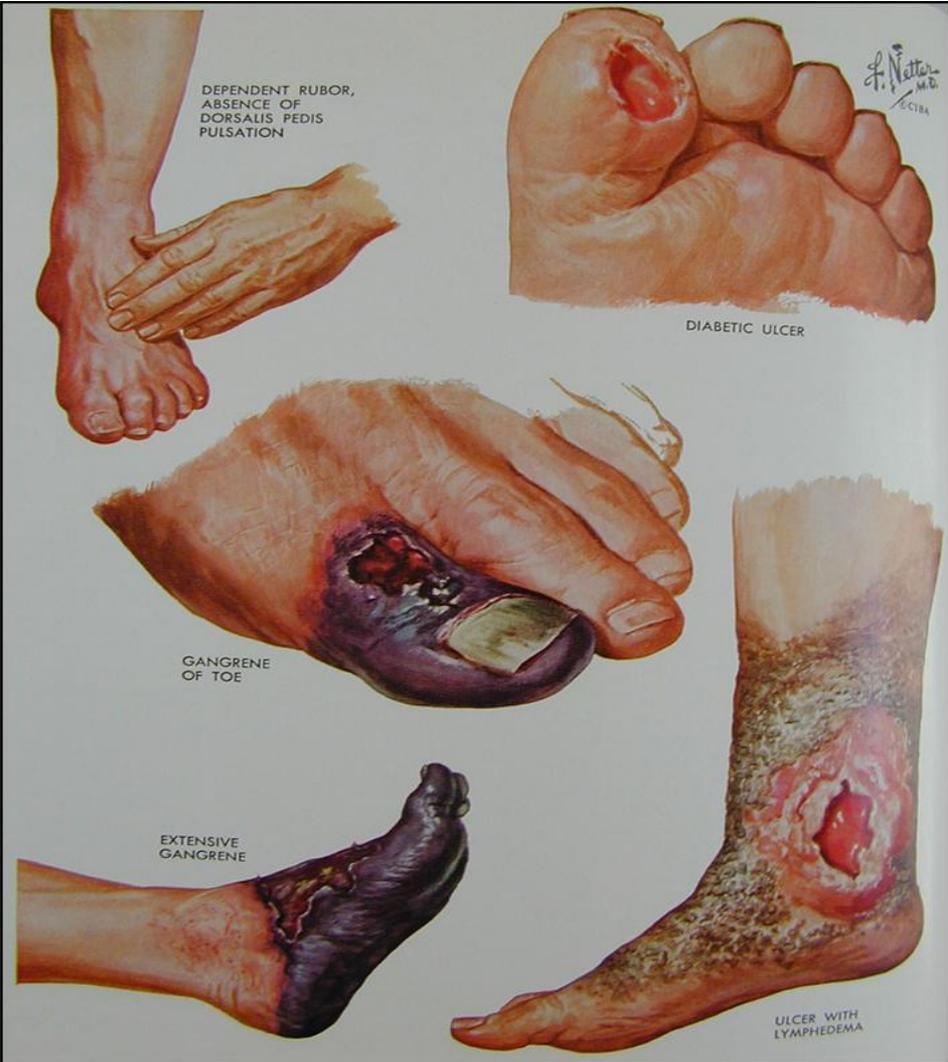


VENOUS DILATATION, MICRO-ANEURYSMS,  
MINUTE HEMORRHAGES AND YELLOWISH  
SPOTS IN OCULAR FUNDUS

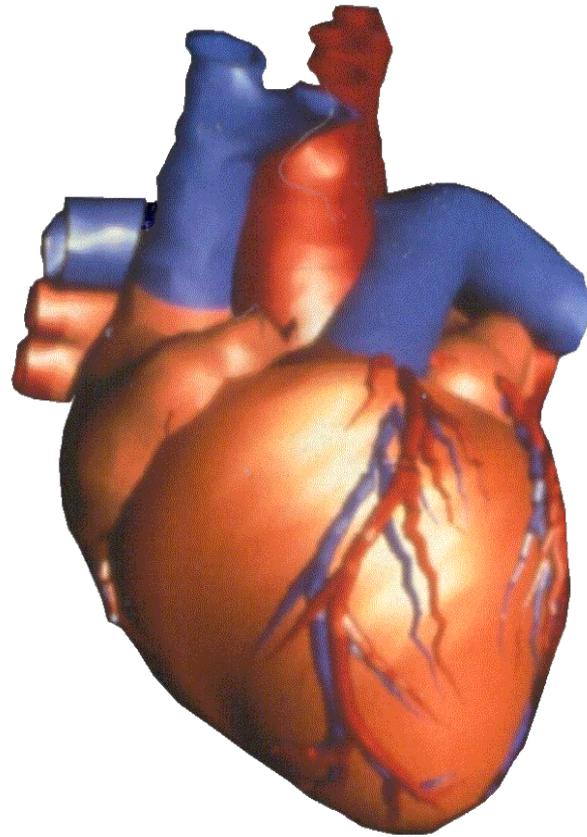


RETINITIS PROLIFERANS AND  
MASSIVE HEMORRHAGE

# Neuropathy/PVD



# Myocardial Infarction

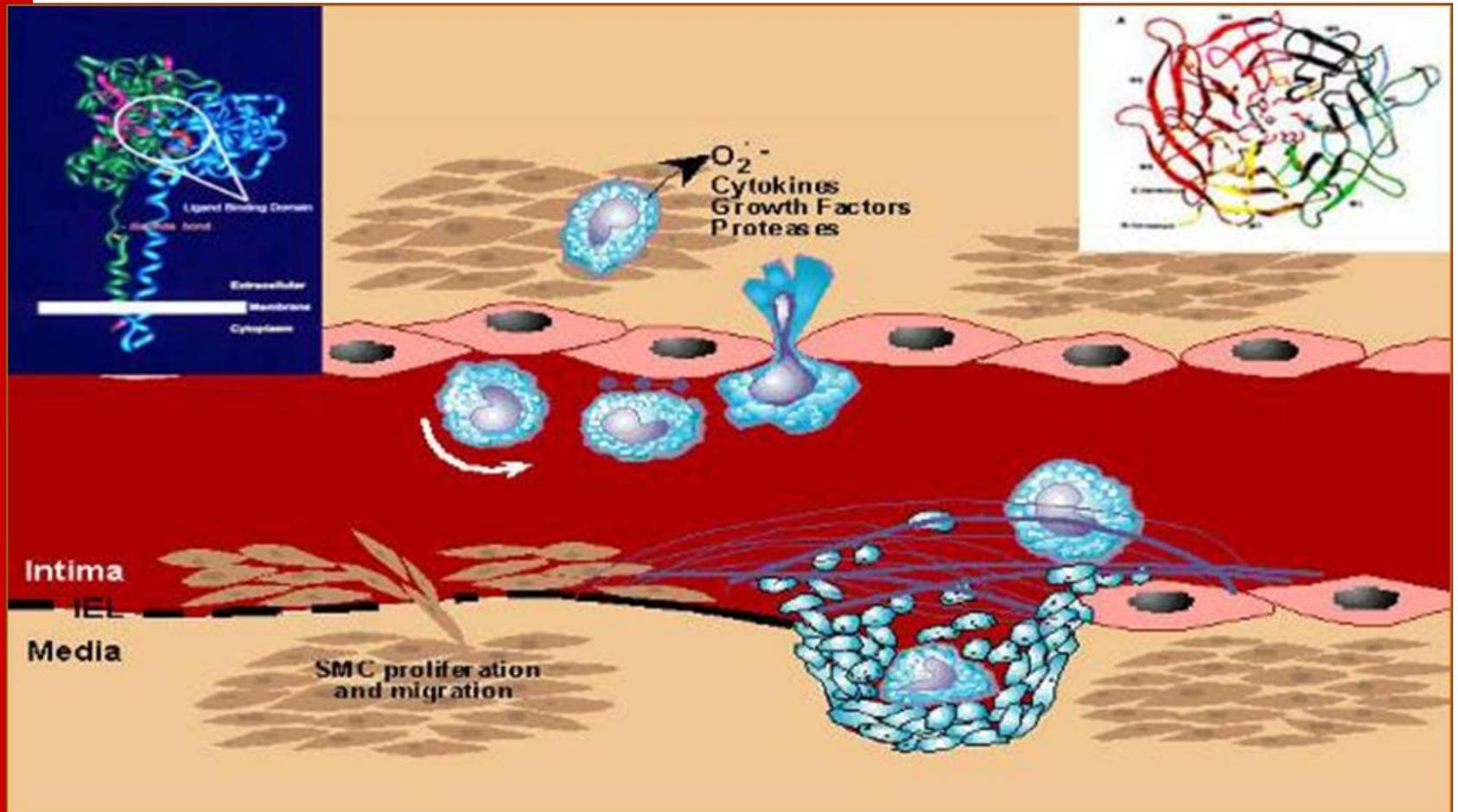


# What is different when blood glucose is poorly managed?

## The angry platelet



# Vascular Response

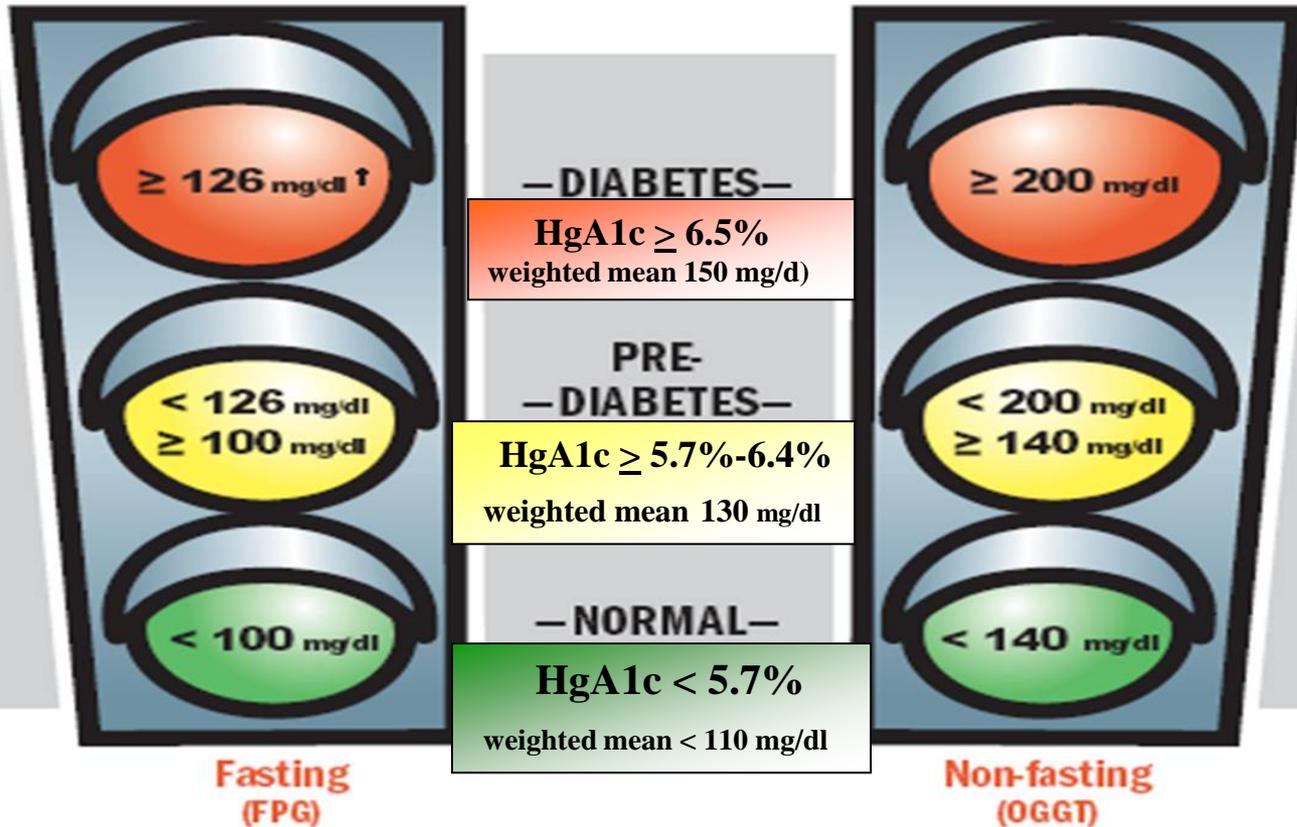


# Vascular Inflammation



# Don't miss the signals— WATCH FOR DIABETES!

Approximately 1/3 of all people with diabetes may be undiagnosed.\*



\* Diabetes Care, Volume 27, Supplement 1, January 2004.  
† Confirm diagnosis with repeat test.



# The Association of Mealtime Glucose Spikes and Risk of CVD & Mortality



**Diabetes Intervention Study, 1996 → Post-meal, but not fasting glucose, is associated with CHD**

**The Rancho-Bernardo Study, 1998 → 2-hr post-challenge hyperglycemia more than doubles the risk of fatal CVD/heart disease in older adults**

**Funagata Diabetes Study, 1999 → IGT, but not IFG, is a risk factor for CVD**

**Whitehall, Paris, Helsinki, 1999 → Men in upper 2.5% of 2-hr post-meal glucose study, 1998 distribution had significantly higher CHD mortality**

**Pacific and Indian Ocean, 1999 → Isolated 2-hr hyperglycemia doubles the risk of mortality**

**DECODE, 1999 → High 2-hr post-load blood glucose is associated with increased risk of death independent of FPG**

1. DECODE Study Group. *Lancet* 1999;354:617–621
3. Tominaga M et al. *Diabetes Care* 1999;22:920–92
5. Hanefeld M et al. *Diabetologia* 1996;39:1577–1583  
1239

2. Shaw JE et al. *Diabetologia* 1999;42:1050–1054
4. Balkau B et al. *Diabetes Care* 1998;21:360–367
6. Barrett-Connor E et al. *Diabetes Care* 1998;21:1236–1239

# Questions





# Making the Link to Community Resources

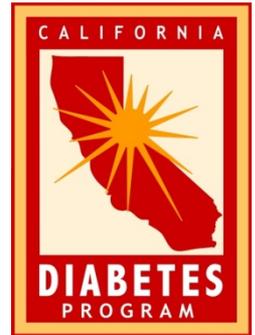


# What Are The Resources?

- What community resources do you connect with?
- How do you connect your clients to them?
- What would make it easier connect with community resources?
- What do your clients know about their communities?



# California Diabetes Program



- Within the California Department of Public Health and the University of California San Francisco
- The mission of the California Diabetes Program is to prevent diabetes and its complications in California's diverse communities
- Funded by Centers for Disease Control and Prevention (CDC)
- Collaborates with health systems, health care providers, local, state, and national organizations to accomplish goals
- Website [www.caldiabetes.org](http://www.caldiabetes.org)

# Diabetes Information Resource Center (DIRC)



## What is DIRC?

- A quick and easy-to-use Web-based portal to find information, tools and programs about diabetes prevention and control
- An online learning community where organizations can find each other and share resources and best practices

[www.caldiabetes.org](http://www.caldiabetes.org)



# California Diabetes Program

*Providing Leadership, Promoting Quality, and Taking Action.*

[Home](#) | [About Us](#) | [Contact Us](#) | [Subscribe to Free E-Bulletin](#)

*Our mission is to prevent diabetes and its complications in California's diverse communities.*

**DIRC**  
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[DIRC Tip sheets](#)

**Welcome Guest**

If you have an account please log in below:

Email:

Password:

### Quick Links

- [2011 California Diabetes Summit \*\*NEW!\*\*](#)
- [Diabetes Risk Assessment Tool](#)
- [CalDiabetes News E-Bulletin](#)
- [Find your local Area Health Promotion Specialist](#)
- [Basic Guidelines for Diabetes Care](#)
- [Diabetes Health Record Card in 19 languages](#)
- [Do you cAARd? Ask-Advise-Refer](#)
- [Do you cAARd? Online CEU Program](#)
- [Diabetes in California Counties, April 2009](#)
- [2009 California Diabetes Summit PowerPoints](#)



## Diabetes Alert Day

In 2011, the Centers for Disease Control and Prevention (CDC) reported that there are 7 million people with undiagnosed diabetes.

**TAKE THE DIABETES RISK TEST**  
Know your risk for type 2 diabetes.

**ALERT! DAY**  
American Diabetes Association.  
JOIN THE MILLION CHALLENGE

The American Diabetes Alert Day, held on March 22, 2011, is a one-day "wake-up" call to inform the American public about the seriousness of diabetes, particularly when diabetes is left undiagnosed or untreated. Beginning March 22 through April 22, 2011, the American Diabetes Association asks the American public to take the [Diabetes Risk Test](#) to find out if they are at risk for developing type 2 diabetes. Although Diabetes Alert Day is a one-day event, the Diabetes Risk Test is available year round. Learn More: [National Diabetes Fact Sheet](#), [California Diabetes Fact Sheet](#), [American Diabetes Association Diabetes Risk Test](#)

Type 2 diabetes is preventable.

The [Diabetes Prevention Program](#) demonstrated that lifestyle interventions to lose weight and increase physical activity reduced the



# Resources - Support

## American Diabetes Association

**Phone: 1-800-Diabetes**

- Monday – Friday 8:30am to 8:00pm ET

**Online: [www.Diabetes.org](http://www.Diabetes.org)**

- All About Diabetes
- Diabetes Learning Center



# “Do you cAARd?”



Outreach program developed with diabetes educators to promote referral to Helpline

44% → 80% referrals

↑ 12% referrals by providers

↑ 33% callers with diabetes

A cartoon character with spiky hair, wearing blue polka-dot pants, holding a gold card that says "TAKE CHARGE".

**Do you cAARd?**

Ask every patient “Do you smoke?”  
Advise them to quit  
Refer them to the California Smokers’ Helpline by giving them the “Take Charge” Gold Card

## Diabetes Educators Toolkit

The **Do you cAARd?** project is a collaborative effort of California Diabetes Educators, the California Smokers’ Helpline and the California Diabetes Program.

The logo for the California Smokers' Helpline, featuring a stylized sunburst with a face.

California Smokers’ Helpline  
1-800-NO-BUTTS

The logo for the California Diabetes Program, featuring a red outline of the state of California with a yellow sunburst in the center.

CALIFORNIA  
DIABETES PROGRAM

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# You can make a difference

- ***“Never doubt that a small group of thoughtful committed citizens can change the world; indeed it is the only thing that ever has.” Margaret Mead***



# What's the Story - Activity

- Pair up
- 1 Read the story
- 1 Listen
- Coach – MI handout

# Coaching- Motivational Interviewing



**Express Empathy** – Listen, Acknowledge, Defuse  
**Support Self Efficacy** – previous quit attempts  
**Roll with resistance** – developing own solutions  
**Affirmation** – see themselves in a positive light

Refer to the Helpline 1-800-NO BUTTS



# Coaching reflection

- Share – what worked or what didn't
- Defuse shame and blame
- Affirmation believe in their ability to quit
  - ***"I believe in you"***





# Next Steps

- What can **you** do next?
- Do you cAARd? - Ask Advise Refer
- Use coaching techniques
- Order materials
- Call the Helpline and learn more

We would like to know:

What is something new you learned today?



**Thank you for all you do!**



**California Diabetes Program**

**[www.caldiabetes.org](http://www.caldiabetes.org)**

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