Diabetes
Coronary Heart Disease

For Your Information

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TravelFit by PFIT compiled the following information from various and multiple medical, public and anecdotal sources.

None of the presentation or information is intended to be or should be utilized as a diagnosis, treatment or prescription.

The information is another tool that allows you to better personally direct your health and wellness program. You are the final authority for your health care and wellness.

As W. Mitchell said,
“IT’s not what happens to you, but what you do about it.”
Take Charge. It’s Your Life.

(www.wmitche.com)
Exercise is a required element for the control and management of:

Diabetes
Coronary Heart Disease
Leading Number Causes of Death

- Heart Disease: 650,000
- Cancer: 560,000
- Iatrogenic: > 250,000 - 300,000
  (http://articles.mercola.com/sites/articles/archive/2016/05/18/medical-errors-death.aspx)
  (http://www.bmj.com/content/353/bmj.i2139/rapid-responses)
- Stroke (cerebrovascular diseases): 144,000
- Chronic Lower Respiratory Diseases: 131,000
- Accidents (unintentional injuries): 118,000
- Alzheimer's Disease: 72,000
- Influenza/Pneumonia: 63,000
- Nephritis, Nephrotic syndrome, and Nephrosis (Kidney): 44,000
- Septicemia: 35,000

Diabetes: 500,000,000+
Inflammation:  
The Real Cause of Most Diseases

• Inflammation can be useful process. Injury, swelling, pain redness … protection
• Inflammation too intense or for too long, is very destructive and initiate a host of diseases
• Inflammation is avoidable by making simple changes and prevention
This graph shows the progression of insulin response from normal (dark green) to continuously elevated (pink) to insulinopenic (red) in which the patient’s pancreas is no longer able to produce adequate insulin in response to a glucose challenge.
Diabetes Epidemic & You
Joseph R. Kraft, MD, MS, FCAP

Should Everyone Be Tested?

**ABSOLUTELY NOT!**
Only those concerned about their future!

Joseph R. Kraft, MD, MS, FCAP
Kraft Pre-Diabetes Test  
Code: 8069  
$199.00  
At Home Kraft Glucose Tolerance  
Insulin  
7-10 Business Days
Diabetes

Diabetes Mellitus
Type I, Type II
Long Term Results of Diabetes

- Loss of Vision
- Kidney Malfunction
- Heart Disease
- Stroke
- Loss of Limbs
Types of Diabetes
Types of Diabetes

• **Type 1 (I) diabetes**
  – Insulin deficiency
  – Low or no insulin production by pancreas
  – 10% American Population (~700,000)

• **Type 2 (II) diabetes**
  – Insulin resistance at cellular level
  – Pancreas function
    • Insulin production may be adequate
    • As Type II progresses, and insulin sensitivity decreases further, requires exogenous insulin (injections)
  • 90% American Population (6,000,000)
Causes of Type II Diabetes

• Obesity – 80% of Type II are obese
  – BMI > 25  \[ \text{BMI} = \frac{\text{Weight} \#}{(\text{Height “}“) \times (\text{Height “}“)} \times 703 \]
  – Body Composition > 25% - Male, > 30% - Female
  – Abdominal Obesity (Waist Girth or Waist to Hip Ratio)
    • Male Girth > 40” or > 90% waist to hip ratio
    • Female > 35” or 80% waist to hip ratio
• > 30 years of age
• Family history
• Physical inactivity - Less than 30 minutes moderate activity every day
Real Cause of Type II Diabetes

• Insulin Resistance
• Excess Carbohydrates
• Low Fat
• Lack of Exercise
• Low Vitamin D, K2
• Low Magnesium
• Low incidence of other causes
Type III Diabetes (3)

- Alzheimer’s disease
- Brain self contained subsystem
- Brain cells produce their own insulin
- Brain cells require brain produced insulin
- Toxic protein ADDL removes insulin receptors from nerve cells (amyloid B-derived diffusible ligand)

To cut risk:
  - Exercise
  - Nutritious diet proper for your system
  - Balance of omega 6 to omega 3
HbA1C
Glycosylated Hemoglobin

• The American Diabetes Association (ADA)
  – A1C testing is the preferred standard indicator of long-term blood sugar control
  – A1C testing to be performed by all with diabetes at least four times a year
• When modifying diet or exercise regimen use A1C levels to track progress
• Testing is easy and inexpensive
  – Many national and local labs allow walk in without prescription or doctor authorization
  – No fasting required
  – Home Test Kits 99% accurate @ mendoza.com
Methods of Blood Sugar Control

• Food Intake
• Physical Activity
• Insulin Control
• Balance of all three required
Coronary Heart Disease
Coronary Heart Disease (CHD)
Coronary Artery Disease (CAD)

- Narrowing of coronary arteries
- 62 Million affected
- 2500 per day die (> 500,000 deaths per year)
- Leading killer in the United States
- Preventable
- Treatable
- Livable

- Signs Associated with CHD
  - Angina
  - Heart attack
  - Congestive heart failure
  - Arrhythmias
  - Atrial fibrillation
  - Ventricular tachycardia
  - Ventricular fibrillation
  - Mortality
  - Morbidity
Insulin Sensitivity

- Diabetes
- Other forms
Arterial Inflammation

- Inflammation – Recognized independent predictor for atherosclerosis and heart disease
- Disruption of endothelium lining of arteries
  - Hypertension
  - Turbulent flow
  - Stress Hormones
  - Diabetes
    - Concentrations of blood glucose remain high (150 mg/dl) for long periods
    - Damage the tiniest of arteries, arterioles, which supply blood directly to the tissues.
    - Circulation reduction hands, feet and coronary arterioles.
- Plaque is naturally drawn to site of inflammation
ACSM Primary Risk Factors (7) for Coronary Heart Disease (American College Sports Medicine)

- Blood Pressure (140/90 mm-Hg)
- Impaired Fasting Blood Glucose (100 mg/dL, >7.0)
- Obesity (BMI-25, 40”, 35”, .95, .80)
- Sedentary (<30 min/day)
- Family history (<55)
- Cholesterol (200 TC, 100 LDL, 40/50 HDL mg/dL 4:1, 50%)
- Smoking (Cigarette, Cigar, Pipe, Crack, Marijuana)
Independent Risk Factors
Markers for CHD

Science has established definitive, independent markers:

- Cardiac C-Reactive Protein (CRP)
  (high sensitivity – hs CRP)
- Lipoprotein (a)
- Fibrinogen
- Homocysteine
- Iron
  Serum iron, total iron-binding capacity (TIBC), UIBC (unsaturated iron-binding capacity), transferrin, transferrin saturation calculated (determine how much iron is being carried in the blood). Ferritin test (evaluate current iron stores.)
- 25-Hydroxyvitamin D
- Lp-PLA2 (Plac Test)
Risk Factors

• Low HDL (<40 mg/dl)
• High Blood Triglycerides (>100)
• Large Waist Measurement (M-40”, F-35”)
• Elevated Blood Pressure (>130 mm-hg)
• High Blood Sugar (Kraft-Pattern 2-5 Insulin Sensitivity)
• Smoking

• LDL Does not make the list
Primary Causes (Drivers)

What Do I Do?

• Excessive Sugar Intake: Insulin resistance, B/P, inflammation, dyslipidemia, etc. small causes
• Excessive Carbohydrates (sugar): Insulin resistance, inflammation, etc. small causes
• Omega 3/6 Balance: Inflammatory response
  Remove bad omega 6, 1:2 3/6 ratio
• Sedentary Lifestyle: Insulin resistance
• Lack of Sun Exposure: Low Vit D, Low NO, enzyme production, stress
• Vitamin K2, C, glutathione
• Magnesium Defficiency
Fat versus Carbohydrates

- Large quantities of fat affects very few population
- Large carb intake causes fat utilization mechanism dysfunction
- Keeping carbs low keeps insulin low.
- Heart runs on fat energy
- Every 5% of fat intake replaced by carbs causes 7% increase in Coronary Heart Disease
- No mechanism to store ingested fat directly into fat cells
- Lower Fat Diets *Always Fail*
How Do I Know My Real Risk?
Coronary Artery Calcium (CAC)

- CT Scan of coronary arteries
- Non-Invasive
- Low dose radiation (1/2 of mammogram)
- Cheaper than service to your car ($99-125)
- Obligatory for all US Presidents taking
- Not guess risk factors - Diagnostic

AHA Posted risk factors are similar to Russian roulette: 1 in 6 chance for coronary event
If CAC score is >1000, same as 1 shell in a double barrel shotgun and keep pulling the trigger for 3.5 years
Calcium Score vs. Presence of Plaque

• 0 = No evidence of plaque
• 1-10 = Minimal evidence of plaque
• 11-100 = Mild evidence of plaque
• 101-400 = Moderate evidence of plaque
• >400 = Extensive evidence of plaque

So what. I have a score. Now what?
CAC Calcium Score =
Risk Equivalent =
10 Year Cardiac Event Rate %

• 0 = Very Low = 1.1-1.7%
• 1-100 = Low = 2.3-5.9%
• 101-400 = Intermediate = 12.8-17.4%
• >400 = Very High - 22.5-28.6%
• >1000 = Very High High = 37%

Nothing 100%, yet CAC score of 0 - 15 year waranty
Can I Change My CAC Score?

• Yes, with positive lifestyle modifications
• Even with advancing age and no increase, reduced risk.
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Coronary Heart Disease
What Are You to DO?

Exercise - Daily

Choose Healthier Choices

Antioxidants

“What fits your busy schedule better, exercising one hour a day or being dead 24 hours a day?”

“Antioxidants! Antioxidants!...”
“The definition of insanity is doing the same thing over and over again and expecting a different result.”

albert einstein
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## Health Indicator Guidelines

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Reference Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Pressure (B/P) (Resting)</td>
<td>&lt; 125 / &lt;85 mm-Hg</td>
</tr>
<tr>
<td>Blood Glucose (Fasting)</td>
<td>Range: 70-100 mg/dL</td>
</tr>
<tr>
<td>Hemoglobin A1C (HbA1c)</td>
<td>&lt;7%, or 6% (insulin resistant, diabetes)</td>
</tr>
<tr>
<td>hs C-Reactive Protein (hs-CRP)</td>
<td>&lt; 1 mg/L</td>
</tr>
<tr>
<td>Homocysteine</td>
<td>&lt; µmol/L</td>
</tr>
<tr>
<td>Lipoprotein a (Lp (a))</td>
<td>&lt;14 mg/dL</td>
</tr>
<tr>
<td>Fibrinogen</td>
<td>&lt; 300 mg/dL</td>
</tr>
<tr>
<td>Total Cholesterol (TC)</td>
<td>&lt; 200 mg/dL</td>
</tr>
<tr>
<td>High Density Lipoprotein (HDL)</td>
<td>M: &gt; 40 mg/dL, F: &gt; 50 mg/dL</td>
</tr>
<tr>
<td>Low Density Lipoprotein (LDL)</td>
<td>&lt; 100 mg/dL</td>
</tr>
<tr>
<td>Triglycerides (Fasting)</td>
<td>&lt; 150 mg/dL</td>
</tr>
<tr>
<td>Total Iron</td>
<td>Range 70-100 µg/dL</td>
</tr>
<tr>
<td>Transferrin Saturation</td>
<td>Range 20-50%</td>
</tr>
<tr>
<td>Ferrin</td>
<td>Range 15-150 µg/dL</td>
</tr>
<tr>
<td>Prostate Specific Antigen (PSA)</td>
<td>&lt; 2.5 ng/mL</td>
</tr>
<tr>
<td>Waist Girth</td>
<td>M: &lt; 40”, F: &lt; 35”</td>
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<tr>
<td>Glutathione (Intercellular)</td>
<td></td>
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</tbody>
</table>
What To Do

- Take complete charge of your health
- Consider all treatments for efficacy, cost, residual effects
- Do not let the medical industry, supplement salesmen, quack cures, witch doctors or friends/family force you into an impractical course of treatment.
- Lifestyle Modifications
- Diet Modifications
- Supplementation
- Exercise - Exercise - Exercise