

How To Evaluate, Prevent & Reverse Diabetes and Pre- Diabetes Naturally

Part 2

Youngberg Clinic

www.dryoungberg.com

(951) 676-9922

Re-Engineering Genetic Risk

Transforming Sicknes into Health

The Transformational Power of the Health Message!

Camp Meeting 2011

Wes Youngberg, DrPH, MPH, CNS, FACLM
Specialist in Lifestyle & Nutritional Medicine

What is Diabetes?

What is Diabetes?

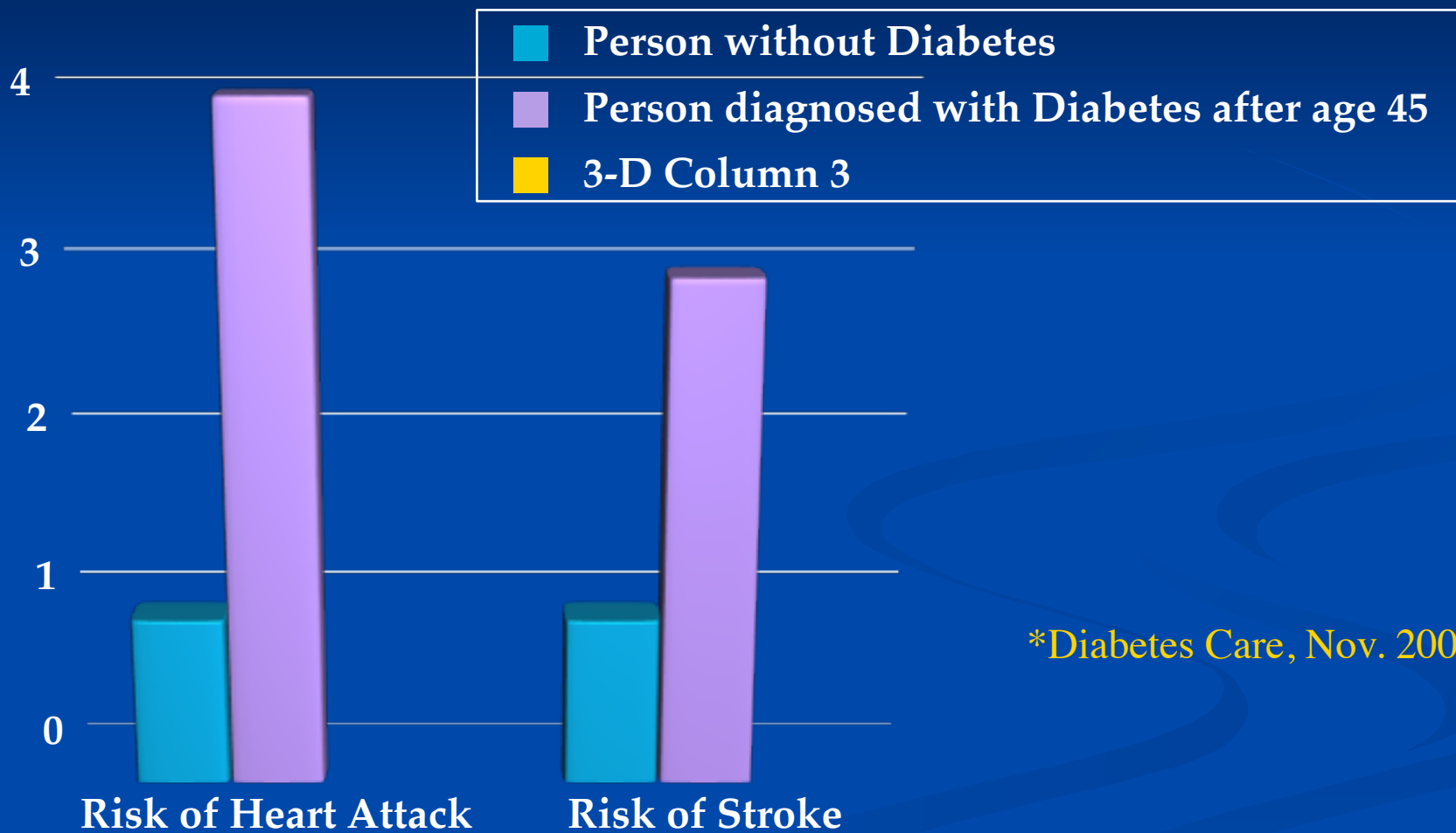
Diabetes is a blood sugar so high that it's high enough to cause serious health complications!

Stages of High Blood Sugar

Time from Food Intake
 Optimal Blood Sugar
 Stage 1 -High Blood
 Stage 2 -High Blood Sugar
 Stage 3 -Pre-Diabetes
 Stage 4 -Advanced PreDM
 Stage 5 -Diabetes

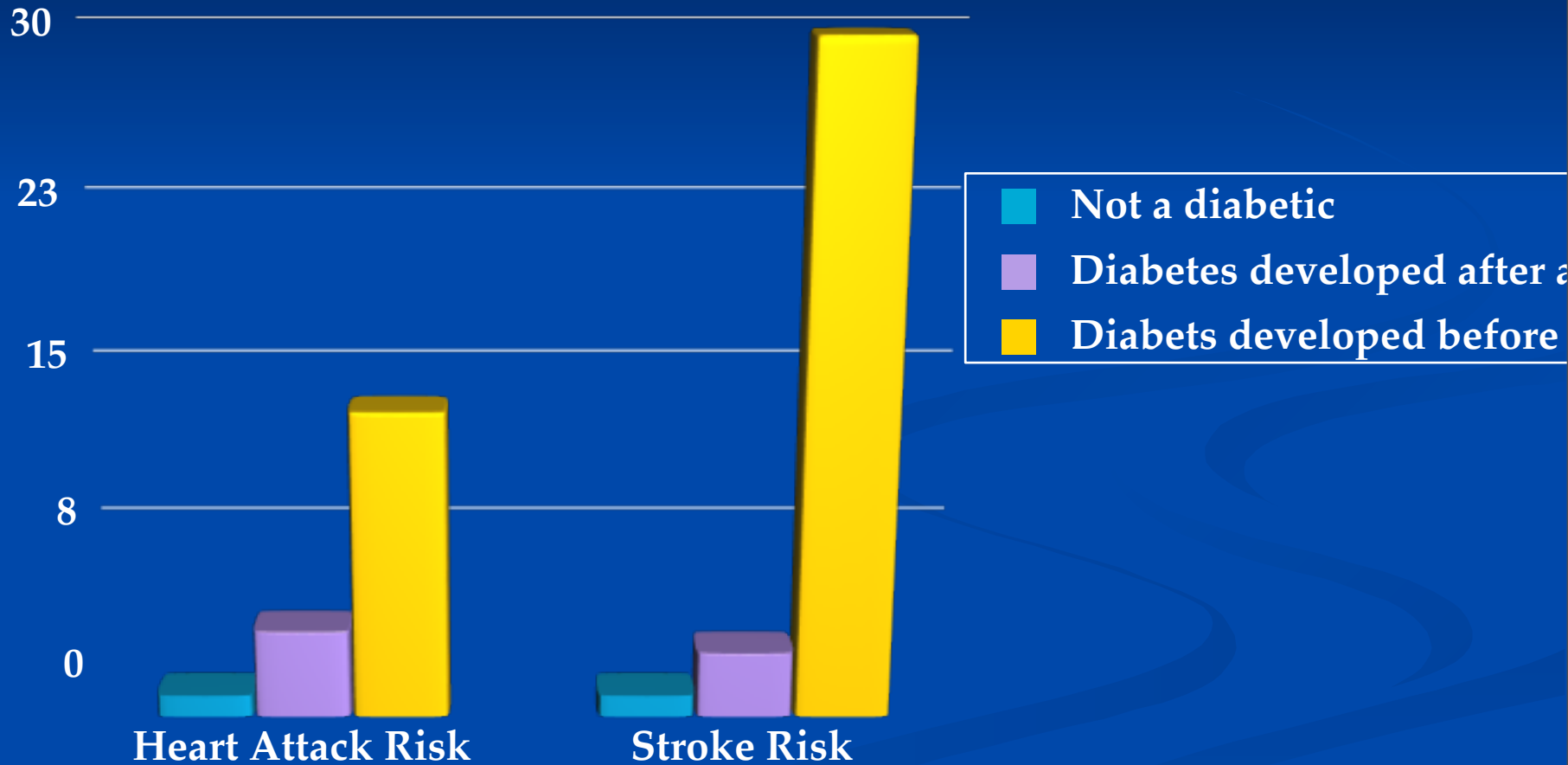
Fast	70-	85-	95-	100-	110-	126+
B1 Su	84	94	99	109	125	
1 HR	80-	120-	140-	160-	200+	
B1 Su	119	139	159	199		
2 HR	80-	100-	120-	140-	160-	200+
B1 Su	99	119	139	159	199	

Impact of Diabetes on CVD



*Diabetes Care, Nov. 2003

New Expectations from younger onset of Diabetes



What are the Underlying Causes of Diabetes?

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- Insulin Resistance

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- Insulin Resistance
- Pancreatic Dysfunction
 - Beta Cell Fatigue
 - Autoimmune (or other) damage

What are the Underlying Causes of Diabetes?

- Insulin Resistance
- Pancreatic Dysfunction
 - Beta Cell Fatigue
 - Autoimmune (or other) damage
- Adrenal Dysfunction

What is the best
strategy to prevent
complications?

Early Detection!

Transforming Tests

2-4hr GTT (F+1+2hr Glucose)
75gr Glucola OR Pancake meal
Insulin (F+2hr)
Cortisol (F+2hr)
A1C

WIN!

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Hope in a hopeless world

Saturday, July 9, 2011

The Pepsi–Jellybean Challenge

Transforming Tests



Fasting Insulin

Normal <20 uU/ml

Optimal 4-9 uU/ml

WIN!

Hope in a hopeless world

Saturday, July 9, 2011

www.photostogo.com

Transforming Tests



Hemoglobin A1c

Normal 4.0 – 5.6%

Optimal <5.0%

Risk of DM 5.7-6.4%

Diabetes > 6.4%

WIN!

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Hope in a hopeless world

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A1C % Test Level

Blood Glucose Test Average

12	300
11	270
10	240
9	210
8	180
7	150
6	120
5	80

Complications Reduced Risk

Nerve damage	35%
Vision loss	35%
Kidney Disease	35%
Peripheral Vascular Disease	22%
Heart Attack	18%
All diabetes-related deaths	25%



“No you can’t reverse the disease,
you can only manage it!”

WIN!

Millie Youngberg

TRUST: Trust me

Saturday, July 9, 2011



“No you can’t reverse the disease,
you can only manage it!”

WIN!

Millie Youngberg

TRUST: Trust me

Saturday, July 9, 2011

"I'm Lovin' It!"
Peter Travers, Rolling Stone

"Funny and outrageous!"
Dave Karger, Entertainment Weekly

"Two thumbs up!"
Clay A. Johnson

SUPER SIZE ME

A Film of Epic Portions

WINNER
BEST DIRECTOR
SUNDANCE
FILM FESTIVAL

DVD
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The Journal of the American Medical Association — To Promote the Science and Art of Medicine and the Betterment of the Public Health

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Vol. 292 No. 14, October 13, 2004

Review

Bariatric Surgery

A Systematic Review and Meta-analysis

Henry Buchwald, MD, PhD; Yoav Avidor, MD; Eugene Braunwald, MD;
Michael D. Jensen, MD; Walter Pories, MD; Kyle Fahrback, PhD; Karen Schoelles, MD

JAMA. 2004;292:1724-1737.

Context About 5% of the US population is morbidly obese. This disease remains largely refractory to diet and drug therapy, but generally responds well to bariatric surgery.

Objective To determine the impact of bariatric surgery on weight loss, operative mortality outcome, and 4 obesity comorbidities (diabetes, hyperlipidemia, hypertension, and obstructive sleep apnea).

0.5% for gastric bypass, and 1.1% for biliopancreatic diversion or duodenal switch. Diabetes was completely resolved in 76.8% of patients and resolved or improved in 86.0%. Hyperlipidemia improved in 70% or more of patients. Hypertension was resolved in 61.7% of patients and resolved or improved in 78.5%. Obstructive sleep apnea was resolved in 85.7% of patients and was resolved or improved in 83.6% of patients.

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Vol. 292 No. 14, Oct

Review

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How can we determine that Diabetes has been cured?

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- What are the diagnostic criteria for determining the presence of diabetes?

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How can we determine that Diabetes has been cured?

- What are the diagnostic criteria for determining the presence of diabetes?
- Resolution of hyperglycemia without need for pharmaceutical manipulation of blood glucose.

Latent Autoimmune Diabetes

Five Characteristics of

Latent Autoimmune Diabetes

Five Characteristics of

- Onset before age 50

Latent Autoimmune Diabetes

Five Characteristics of

- Onset before age 50
- Acute symptoms

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- Normal weight

Latent Autoimmune Diabetes

Five Characteristics of

- Onset before age 50
- Acute symptoms
- Normal weight
- Personal or family history of **autoimmune** diseases, such as rheumatoid arthritis and multiple sclerosis.

Transforming Tests

A male doctor with dark hair, wearing a white lab coat over a white shirt and a patterned tie, is shown in profile. He is looking down at a blue clipboard he is holding in his left hand. In his right hand, he is holding a black smartphone. A stethoscope is draped around his neck. The background is a blurred clinical setting.

**GAD Antibody
Islet Cell Ab**

WIN!

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Hope in a hopeless world

Saturday, July 9, 2011

C-Peptide

C-Peptide

$< 2\text{ng/ml} = 5\%$

C-Peptide

$< 2\text{ng/ml} = 5\%$

$2\text{-}4\text{ng/ml} = 50\%$

Why Treat Diabetes?

What are the Complications of Diabetes?

What are the Complications of Diabetes?

- Eye Damage & Blindness

What are the Complications of Diabetes?

- Eye Damage & Blindness
- Nerve Damage & Amputations

What are the Complications of Diabetes?

- Eye Damage & Blindness
- Nerve Damage & Amputations
- Kidney Damage & Dialysis Need



Is there hope for chronic illness?

WIN!
Family Time

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Saturday, July 9, 2011

Transformation

Transformation

- Do not conform any longer to the pattern of this world, but be transformed by the renewing of your mind.
 - *St. Paul's encouragement to friends in Rome*

Lifestyle Strategies for Transforming Diabetes at the Genetic Level

What's it going to take?

What's it going to take?

- Integration of multiple strategies that collectively achieve a sufficiency threshold.

SYNERGY



WIN!

"Just do it!"

www.photostogo.com

Saturday, July 9, 2011

SYNERGY

A photograph of two brown horses pulling a wooden plow in a field. The horses are harnessed together and are walking towards the right. The background is a lush green field with trees.

1 HORSE CAN PULL 2 TONS
2 HORSES CAN PULL 23 TONS

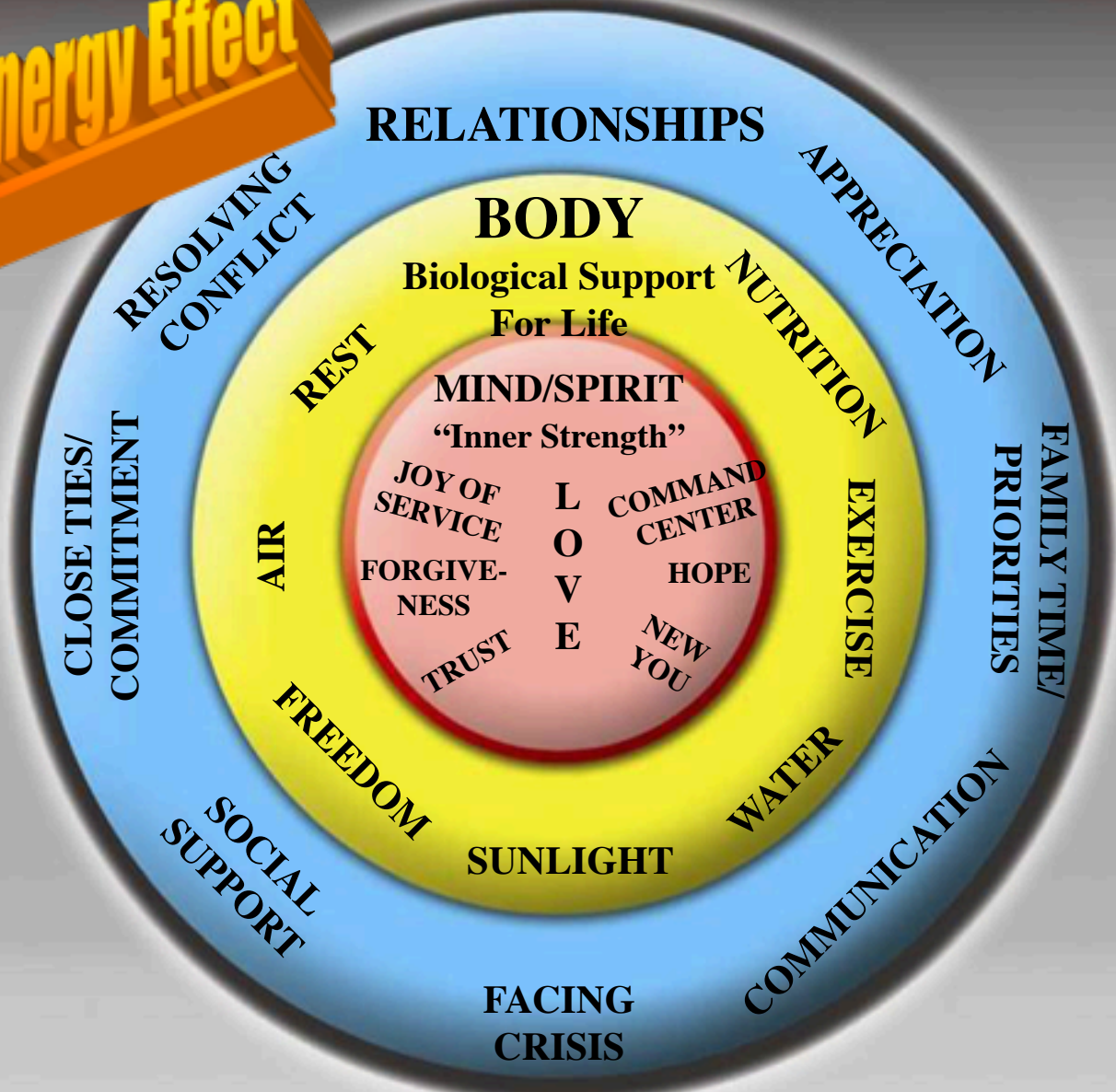
WIN!

"Just do it!"

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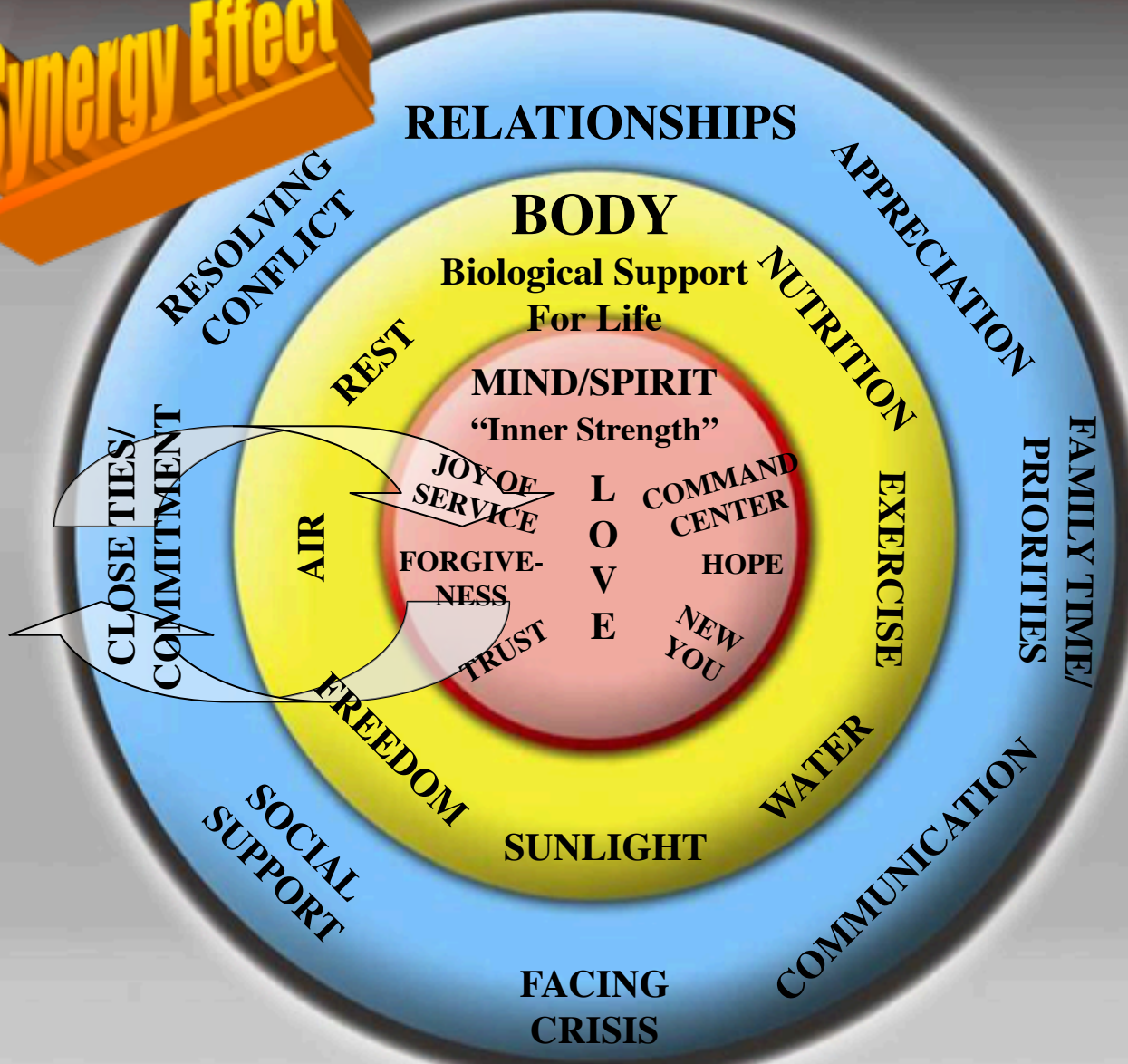
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Wellness Integrating Needs

<http://www.winwellness.org>

Synergy Effect



Wellness Integrating Needs

<http://www.winwellness.org>

Key Strategies for Blood Sugar Control?

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- Home Glucose Testing

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- First Class Foods

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- Optimize Digestion

Key Strategies for Blood Sugar Control?

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- First Class Foods
- Meal Balancing
- Optimize Digestion
- Dinnerfast – or no food after 6pm

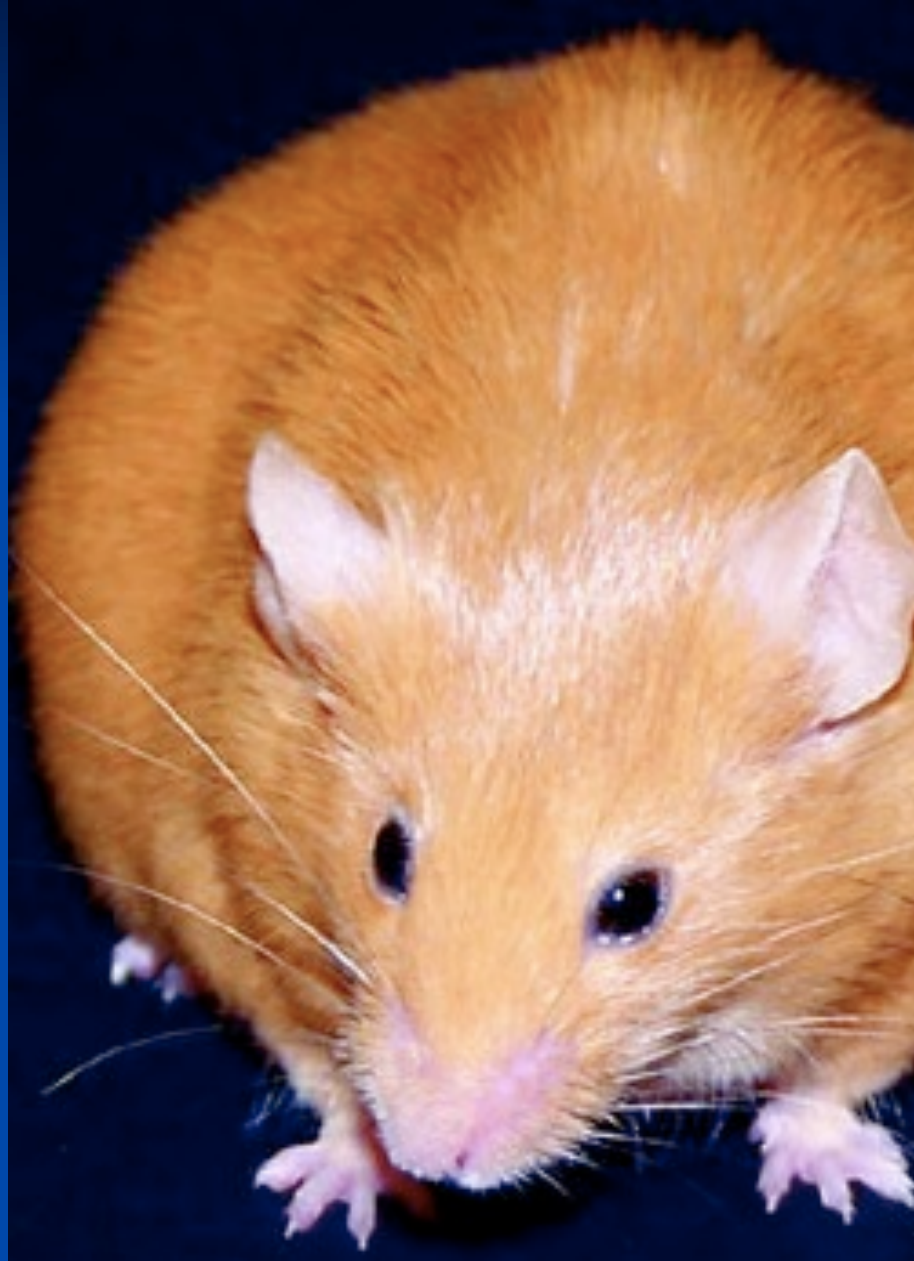
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- Dinnerfast – or no food after 6pm
- After Meal Light Exercise

Key Strategies for Blood Sugar Control?

- Home Glucose Testing
- First Class Foods
- Meal Balancing
- Optimize Digestion
- Dinnerfast – or no food after 6pm
- After Meal Light Exercise
- G.E.T. Fit and Wear pedometer

Key Trigger of Diabetes Gene



Inflammation

Cardiac CRP

FEBRUARY 23, 2004

BUSH'S
MILITARY RECORDS
IS DISNEY MOUSETRAPPED?

TIME

THE SECRET KILLER

- The surprising link between **INFLAMMATION** and **HEART ATTACKS, CANCER, ALZHEIMER'S** and other diseases
- What you can do to fight it

www.time.com AOL Keyword: TIME

C-Reactive Protein, Interleukin 6, and Risk of Developing Type 2 Diabetes Mellitus

Aruna D. Pradhan, MD, MPH

JoAnn E. Manson, MD, DrPH

Nader Rifai, PhD

Julie E. Buring, ScD

Paul M Ridker, MD, MPH

TYPE 2 DIABETES MELLITUS (DM) is estimated to affect 15 million Americans, is dramatically increasing in incidence, and is associated with an augmented risk for cardiovascular disease, especially among women.¹⁻³ Because of the resultant macrovascular and microvascular injury typical of this disease, the economic and functional burdens are greatest during mid-to-late adulthood. Compounding these issues, as many as one third of individuals with type 2 DM are undiagnosed, and approximately 20% have diabetic retinopathy or evidence of systemic vasculopathy at clinical presentation.⁴

Although the main physiological abnormalities are insulin resistance and impaired insulin secretion,⁵⁻⁷ the specific underlying determinants of these meta-

Context Inflammation is hypothesized to play a role in development of type 2 diabetes mellitus (DM); however, clinical data addressing this issue are limited.

Objective To determine whether elevated levels of the inflammatory markers interleukin 6 (IL-6) and C-reactive protein (CRP) are associated with development of type 2 DM in healthy middle-aged women.

Design Prospective, nested case-control study.

Setting The Women's Health Study, an ongoing US primary prevention, randomized clinical trial initiated in 1992.

Participants From a nationwide cohort of 27 628 women free of diagnosed DM, cardiovascular disease, and cancer at baseline, 188 women who developed diagnosed DM over a 4-year follow-up period were defined as cases and matched by age and fasting status with 362 disease-free controls.

Main Outcome Measures Incidence of confirmed clinically diagnosed type 2 DM by baseline levels of IL-6 and CRP.

Results Baseline levels of IL-6 ($P < .001$) and CRP ($P < .001$) were significantly higher among cases than among controls. The relative risks of future DM for women in the highest vs lowest quartile of these inflammatory markers were 7.5 for IL-6 (95% confidence interval [CI], 3.7-15.4) and 15.7 for CRP (95% CI, 6.5-37.9). Positive associations persisted after adjustment for body mass index, family history of diabetes, smoking, exercise, use of alcohol, and hormone replacement therapy; multivariate relative risks for the highest vs lowest quartiles were 2.3 for IL-6 (95% CI, 0.9-5.6; P for trend = .07) and 4.2 for CRP (95% CI, 1.5-12.0; P for trend = .001). Similar results were observed in analyses limited to women with a baseline hemoglobin A_{1c} of 6.0% or less and after adjustment for fasting insulin level.

Conclusions Elevated levels of CRP and IL-6 predict the development of type 2 DM. These data support a possible role for inflammation in diabetogenesis.

JAMA. 2001;286:327-334

www.jama.com

C-Reactive Protein, Interleukin 6, and Risk of Developing Type 2 Diabetes Mellitus

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Par...

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Women's Health Study USA

The risk of developing diabetes increased by 4.2 times in women with CRP in the upper vs. lower quartile.

JAMA 2001;286:327

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Conclusions Elevated levels of CRP and IL-6 predict the development of type 2 DM. These data support a possible role for inflammation in diabetogenesis.

JAMA. 2001;286:327-334

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& Spa

Stopping
Inflammation

C-Reactive
Protein Levels
Plummet on
Pritikin Program

Profile



"I feel like
the richest
guy in the

Stop Inflammation

C-Reactive Protein Levels Plummet On Pritikin Program

In a newly published study, scientists found that the Pritikin® Program reduces C-reactive protein levels in women by 45%.* "No other diet-and-exercise program or drug therapy, including statins, has proven to lower C-reactive protein levels so dramatically – or so rapidly," states Dr. James Barnard, UCLA Department of

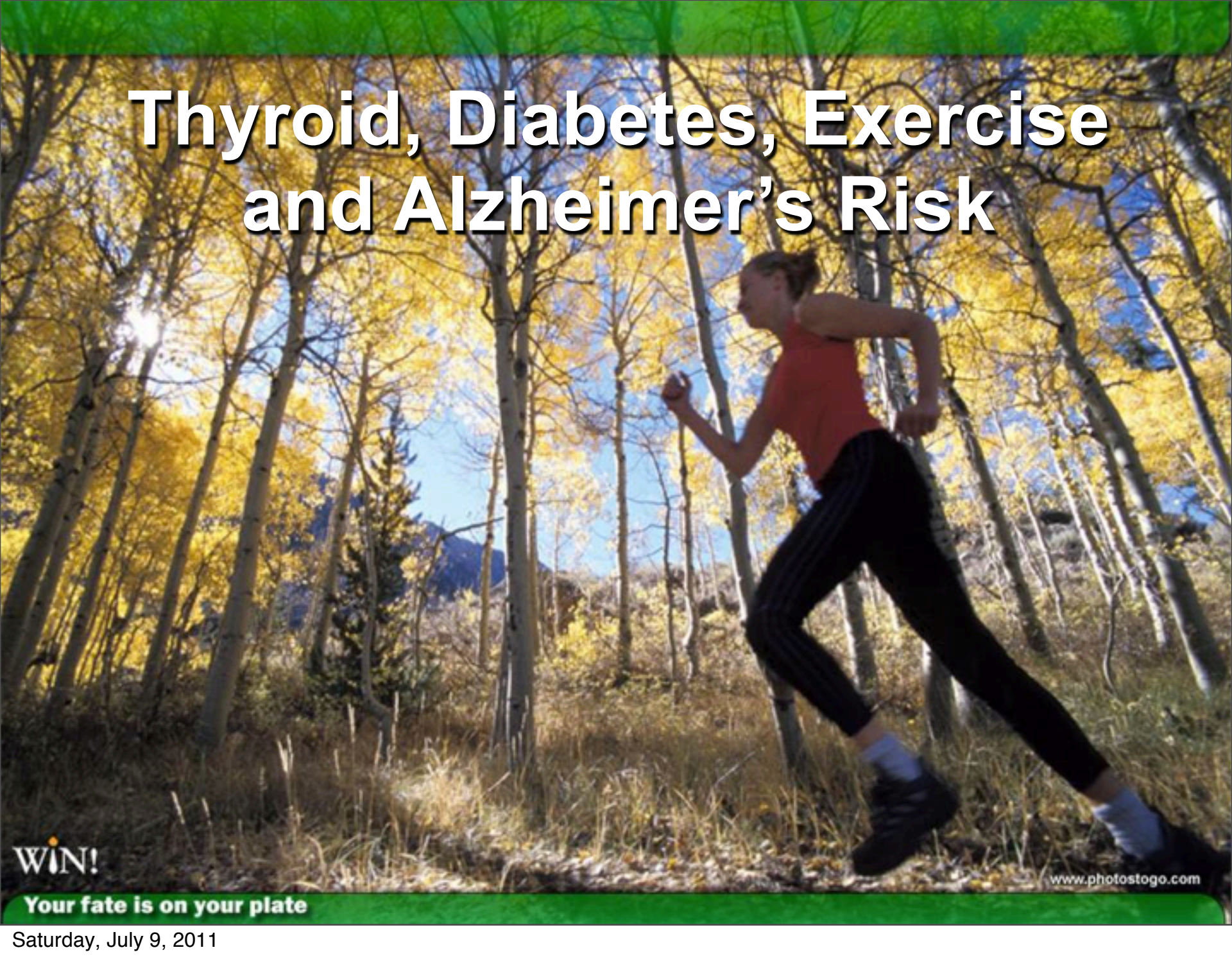


Dr. James Barnard

Five Gradations of CRP Risk

- The Harvard Study shows increasing health risk by 5 incremental levels known as quintiles [subgroups in the lowest, middle or highest 20% of risk].
- **1st Quintile is 0 to 0.6 [or lowest risk group]**
- **2nd Quintile is 0.7 to 1.1**
- **3rd Quintile is 1.2 to 1.9**
- **4th Quintile is 2.0 to 3.8**
- **5th Quintile is 3.9 to 15 [highest 20% of risk]**

Thyroid, Diabetes, Exercise and Alzheimer's Risk



WIN!

Your fate is on your plate

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Thyroid, Diabetes, Exercise and Alzheimer's Risk

Suboptimal TSH more than
doubled risk of Alzheimer's in 12
year study. TSH goal 1.0-2.2

- Archives of Internal Medicine - July 28, 2008

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Coffee & Diabetes



WIN!

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Coffee & Diabetes

Benefit or Risk?



WIN!

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WELLNESS INTEGRATING NEEDS!

Sunlight

www.dreamstime.com

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Vitamin D Deficiency



WIN!
Sunlight

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Vitamin D Deficiency

- One study found that 61% of Type 2 diabetics are Vitamin D deficient while 43% of non-diabetics were deficient. *Diabetes Care, March 2006*

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Diabetes Care, March 2006

Journal of Clinical Endocrinology & Metabolism, Aug 2006

Vitamin D and risk of Type 1 diabetes



Dr Elina Hyppönen

MSc, MSc, MPH, PhD

Centre for Pediatric Epidemiology and
Biostatistics

Institute of Child Health

London, UK

Northern Finland 1966 Cohort Study

- All pregnant mothers in the two northernmost provinces of Finland (Oulu and Lapland) with expected date of delivery in 1966 invited to participate -> 12,058 live births
- Information on vitamin D intake/status collected at 1 year of age (n=10, 366)
- Follow-up for type 1 diabetes up to December 1997

Hyppönen et al. *Lancet* 2001;358:1500-1503

Incidence of type 1 diabetes by dose of vitamin D supplementation

	Cases	Incidence /100,000 years at risk	Crude RR (95% CI)	Adjusted [*] RR (95% CI)
Dose of Vitamin D [†]				
Low	2	96	1 (reference)	1 (reference)
Recommended	63	24	0.20 (0.05-0.84)	0.21 (0.05-0.88)
High	2	15	0.14 (0.02-0.97)	0.14 (0.02-1.01)

* Adjusted for neonatal, social and anthropometric factors.

† Dose has been presented for infants receiving vitamin D regularly

Hyppönen et al. Lancet 2001;358:1500-1503

72% Lower DM2 Risk with

- National Public Health Institute in Finland
- 7503 (40-74yo) followed for 22 years
- 25(OH)D average - 17 ng/ml or 43 nmol/L .
- Average level in Men - 18 ng/ml
- Average level in Women - 15 ng/ml.

Knekt P, et al. Serum vitamin D and subsequent occurrence of type 2 diabetes. *Epidemiology*. 2008 Sep;19(5):666-71.



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WIN!
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You can Choose a New Direction

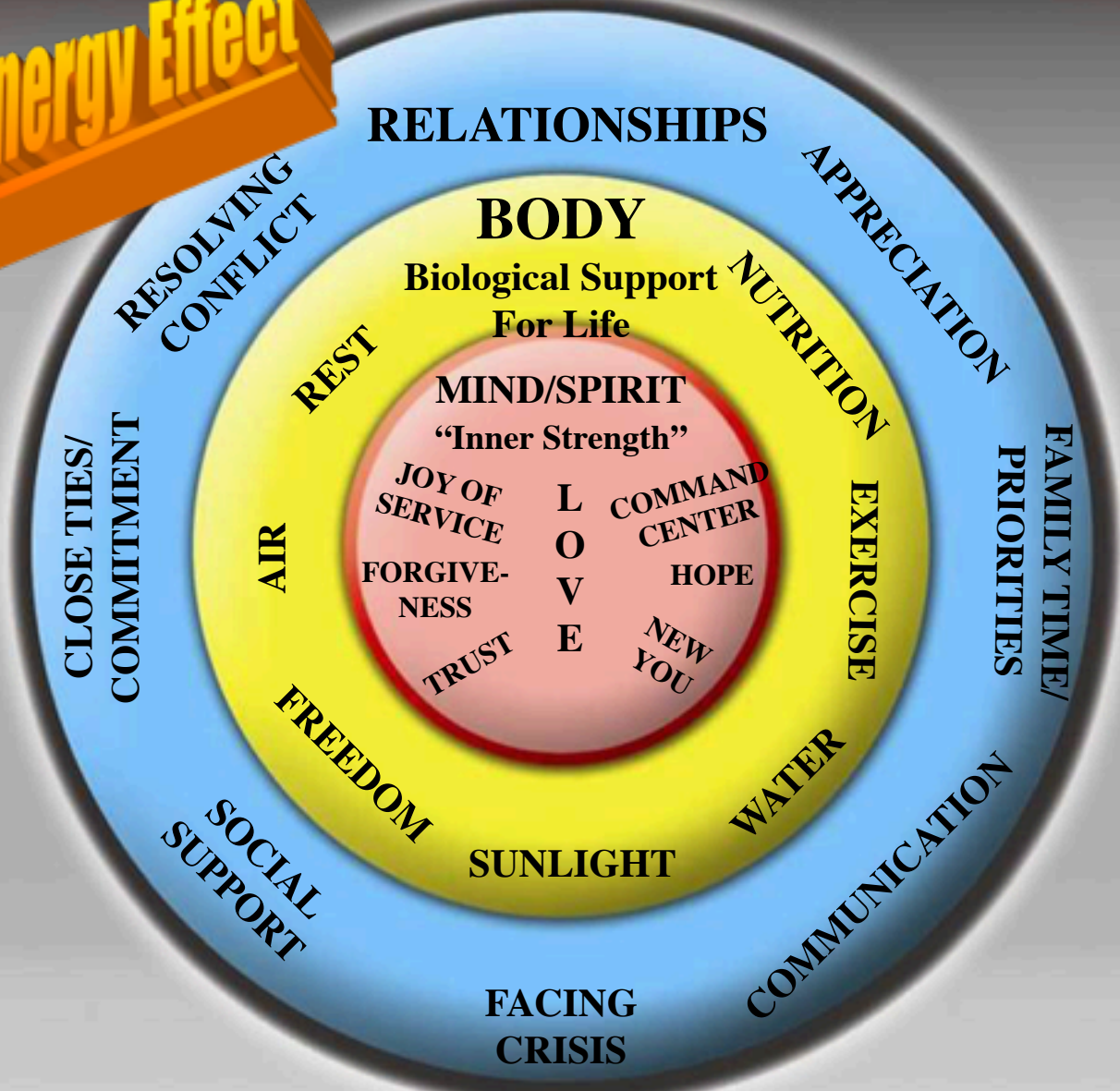


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WIN!
COMMAND CENTER

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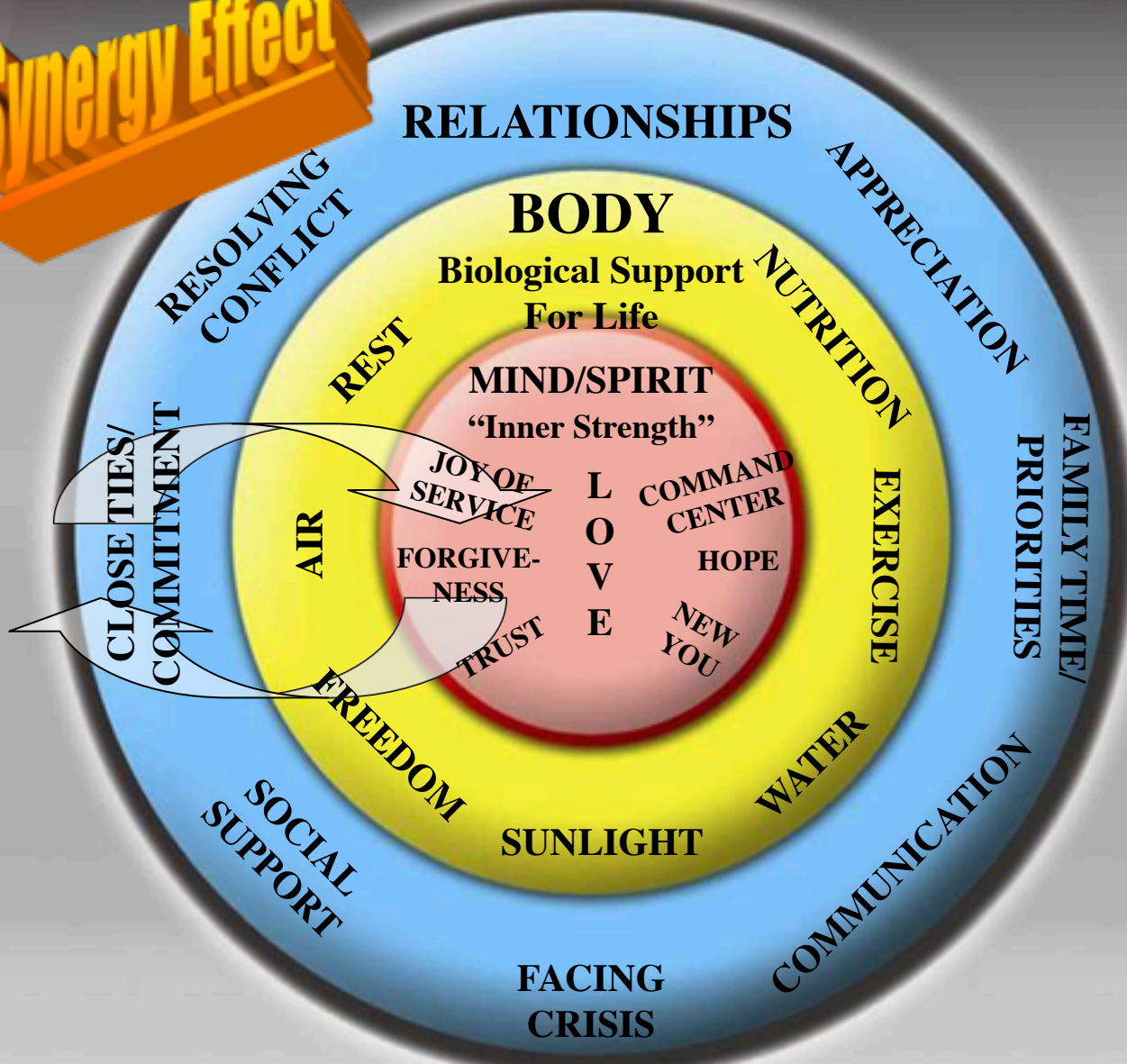
Synergy Effect



Wellness Integrating Needs

<http://www.winwellness.org>

Synergy Effect



Diabetes and PreDiabetes

•40 million of 100 million 40-74 year olds in the US already have prediabetes

-- American Diabetes Association

MMWR Morb Mortal Wkly Rep. 2003; 52: 833-837

WIN!

Your fate is on your plate

Saturday, July 9, 2011

“Plans fail for lack of counsel,
but with many advisors
they succeed.”

- The Book of Proverbs