# Shawn M. Talbott, PhD CNS, LDN, FACSM, FAIS, FACN Chief Science Officer



# **Thursday - December 18**

# 7:40am = KFXA FOX 28

# **5pm News = KGAN CBS 2**

# 9pm News = KFXA FOX 28



### A Life Vantage. FREED



# Causes of "Imbalance" (Stress)

- Emotional stress (deadlines, bills, traffic...)
- Physical stress (aging, sleep deprivation, exercise...)
- Environmental stress (air/water pollution, heat, cold...)
- Non-Optimal Diet (processed foods, inadequate nutrients/phytonutrients...)

- Athletes / Dieters / Short-Sleepers / Stressed
  - Share the SAME *biochemical* disruptions
  - Share the SAME psychological outcomes
  - Exhibit the SAME benefits to restored biochemical balance













# What is LifeVantage? A Lifestyle Development Company.

# **Our Vision**

To help people around the world to develop their best selves and live their best lives.

# **Our Mission**

Bring innovation and inspiration through a compelling global business opportunity offering science-based products that help everyone feel, look, and perform their best.

# A Life Vantage.



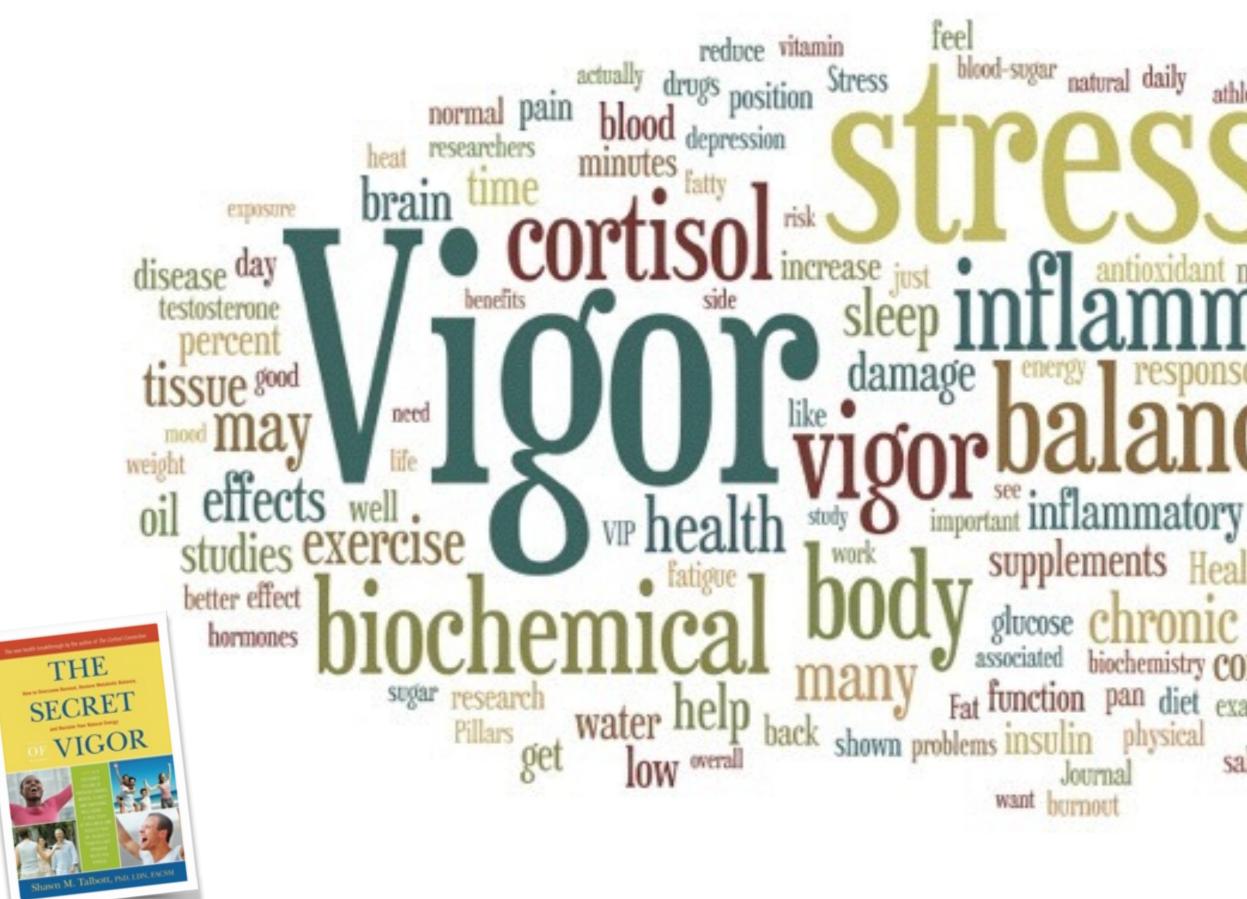
Vigor 3-tiered mood state... characterized by:

**Physical Energy** 

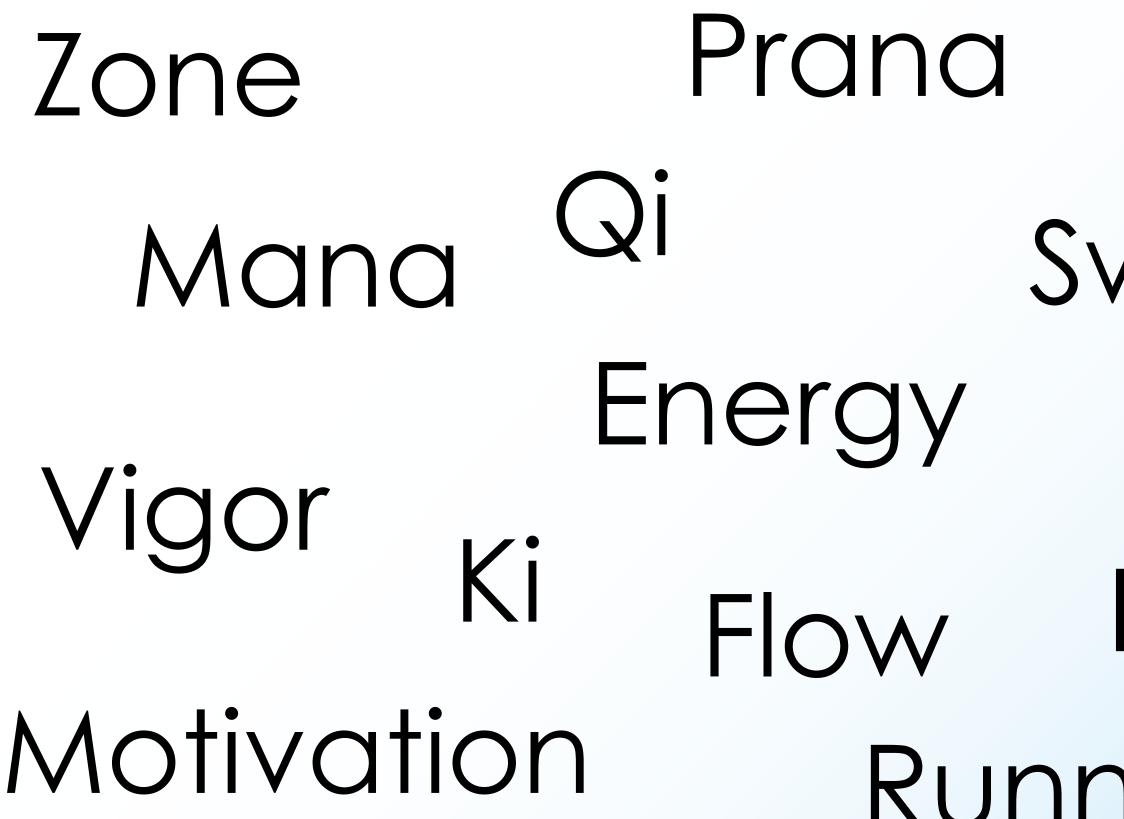
**Mental Acuity** 

**Emotional Well-Being** 





athletes even acids healthy obesity effective metabolic heart level dietary patients improve fat much enough cells activity take eat process mental biochemistry control immune cytokines Fat function pan diet example free changes foods salt add arthritis every known book



# Mood Swing Focus Edge

# Runner's High

# What does Energy mean to





### Oxidation (free radicals) Inflammation (cytokines)

# "Vigor"

### Allostation (cortisol)

### Glycation (glucose)



# Just an Antioxidant?













### Vitamin E and the Risk of Prostate Cancer

1150

The Selenium and Vitamin E Cancer Prevention Trial (SELECT)

Eric A. Klein, MD lan M. Thompson Jr, MD Catherine M. Tangen, DrPH John J. Crowley, PhD M. Scott Lucia, MD Phyllis J. Goodman, MS Lori M. Minasian, MD Leslie G. Ford, MD Howard L. Parnes, MD J. Michael Gaziano, MD, MP Daniel D. Karp, MD Michael M. Lieber, MD Philip J. Walther, MD, PhD Laurence Klotz, MD J. Kellogg Parsons, MD, MH Joseph L. Chin, MD Amy K. Darke, MS Scott M. Lippman, MD Gary E. Goodman, MD Frank L. Meyskens Jr, MD Laurence H. Baker, DO

IFETIME RISK OF PROST cer in the United Sta rently estimated to be though most cases an an early, curable stage, tre costly and urinary, sexual, at related adverse effects are c Even men who choose activ lance as an initial managem egy face anxiety, uncertain p and a measurable risk of sepsi low-up biopsies,3 and more third of those who initially def are ultimately treated.43 Wi

Author Video Interview ava www.jama.com.

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Downloaded From: http://jama.jamanetwork.c

THE NEW ENGLAND JOURNAL OF MEDICINE

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interval, 1.03 to 1.331; of c

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Med 1996;334:1150-5.)

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This report presents

CARET study, which coil

of the steering committee

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The study's strategy, design

where."114 Briefly, CARET w

domization in Seattle in 1985

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randomly assigned in a 1:1 m

15 mg of beta carotene per day tive trustment) or placebu; the

carotene per day, 25,000 IU of

ther vitamin (two-by-two deal

additional study centers in 198

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The pilot groups receiving active agents were consolid

into a single group receiving a standard daily regimen of 3 beta carotene plus 25,000 IU of retinol in the form of reting

jects were assigned to active treatment for every subject as

be compared between active and placebo groups. The desig

for active intervention until late 1997 (110,000 person-years) porting of results in 1998.

Eligibility, Recruitment, and Randomization

at. Thus, in the pilot study with the cohort of smokers, t

acebo; therefore, the nates rather than numbers of end po

Workers exposed to asbestos were mon 45 to 74 years

the pilot study and 45 to 69 years of age in the later per

five years.

Study Design

study findings, and recry

with extensive hist

and related agents.<sup>10-13</sup>

min A had no benefit and

Conclusions. After an

### EFFECTS OF A COMBINATION OF BETA CAROTENE AND VITAMIN A CARDIOVASCULAR DISEASE

GILBERT S. OMENN, M.D., PH.D., GARY E. GOODMAN, M.D., M.S., MARK JOHN BALMES, M.D., MARK R. CULLEN, M.D., ANDREW GLASS, M.D., JA FRANK L. MEYSKENS, JR., M.D., BARBARA VALANIS, DR.P.H., JAMES H. SCOTT BARNHART, M.D., M.P.H., AND SAMUEL HAMMAR,

Abstract Background. Lung cancer and cardiovascular disease are major causes of death in the United States. It has been proposed that carotenoids and retinoids are agents that may prevent these disorders. Methods. We conducted a multicenter, randomized, double-blind, placebo-controlled primary prevention trial - the Beta-Carotene and Retinol Efficacy Trial - involving a total of 18,314 smokers, former smokers, and work-

ers exposed to asbestos. The effects of a combination of 30 mg of beta carotene per day and 25,000 IU of retinol (vitamin A) in the form of retinyl palmitate per day on the primary end point, the incidence of lung cancer, were compared with those of placebo. Results. A total of 388 new cases of lung cancer

were diagnosed during the 73,135 person-years of followup (mean length of follow-up, 4.0 years). The active-treatment group had a relative risk of lung cancer of 1.28 (95 percent confidence interval, 1.04 to 1.57; P=0.02), as

UNG cancer is the leading cause of death from cancer in the United States, accounting for approximately 29 percent of deaths from cancer and 6 percent of all deaths.' New approaches are essential to prevent lung cancer in persons who have smoked cigarettes or who have had occupational exposure to asbestos. Twenty-nine percent of men and 25 percent of women who are 45 to 64 years of are currently smoke,2 and at least 40 percent of men and 20 percent of women in this age group are former smokers.3 An estimated 4000 to 6000 deaths from lung cancer per year are attributed to exposure to asbestos."

On the basis of epidemiologic observations and laboratory studies, beta carotene and vitamin A have attracted wide interest as agents that may prevent lung cancer.69 The Beta-Carotene and Retinol Efficacy Trial (CARET) is one of several recent trials to assess the

From the Division of Public ISulth Sciences, Fred Henchinson Cancer Re-sarch Conne, Seattle (G.S.O., G.E.G., M.D.T., S.B.); the Departments of Environmental Health and Mollicine, University of Washington, Seattle (G.S.O., G.E.G., S.B., S.H.'s the Swedish Hospital Tamor Institute, Seattle (G.E.G.); the ent of Medicine, University of Cultiversia at San Prancisco, San Pran case (183), the Department of Medicine, Yale University, New Hores, Com. (M.R.C.); Kaiser Permanente Center for Health Research, Pertand, Oreg. (A.G., B.V.); the Department of Medicine, University of Maryland, Baltimore (J.P.K.); and the Department of Medicine and Cancer Center, University of California at Invinz, Creage O[21:34, 101367]. Address reprint reperso to Dir Onean at the Fred Potentienes Canzer Research Center, Devision of Public listah Sciences, 1124 Calmids-MPUB, Search SA, SHOE, A. Construction, S. Santon, S. Santon, S. Santon, S. Santon, C. A. Santon, S. Santon

"Other contributing authors were Carl Andrew Brockin, M.D. (University of Wedneyton, Souther, Martin G. Cherniack, M.D. (Tale University, New Haves, Costs.), James E. Griazle, Ph.D. (Fed Hatchinan Catters Research Center, Seattlet, Mattorie Perloff, M.D. (National Cancer Institute, Bethevda, Md.), and Linda Rosenstock, M.D., M.F.H. (University of Washington, Seattle's

The New Expand Joints of Webland Devrivable from region January 20, 2015. For present Law off, No other uses official permission Concepts of 1000 Measurements Medical Society. No cycle reserved.

α-Tocopherol and β-Carotene Supplements and Lung Cancer Incidence in the Alpha-Tocopherol, Beta-Carotene Cancer Prevention Study: Effects of Base-line Characteristics and Study Compliance

Demetrius Albanes, Olli P. Heinonen, Philip R. Taylor, Jarmo Virtamo, Brenda K. Edwards, Matti Rautalahti, Anne M. Hartman, Juni Palmgren, Laurence S. Freedman, Jaason Haapakoski, Michael J. Barrett, Pirjo Pietinen, Nea Malila, Eero Tala, Kari Liippo, Eija-Riitta Salomaa, Joseph A. Tangrea, Lyly Teppo, Frederic B. Askin, Eero Taskinen, Yener Erozan, Peter Greenwald, Jussi K. Huttunen\*

> The Journal of Nutrition ASN Nutritional Epidemiology

### Antioxidant Supplementation Increases the Risk of Skin Cancers in Women but Not in Men<sup>1</sup>

Serge Hercherg,2,1\* Khaled Ezzedine,2,4 Christiane Guinot,3,4 Paul Preziosi,2 Pilar Galan,2 Sandrine Bertrais,<sup>2</sup> Carla Estaquio,<sup>2</sup> Serge Briangon,<sup>7</sup> Alain Favier,<sup>8</sup> Julie Latreille,<sup>1</sup> and Denis Malvy<sup>8</sup>

<sup>1</sup>UMR US57 Inserm/U1125 Insa/EA3200 Cnam/Univ Paris 13, Bobiger, France 93017, <sup>3</sup>Unité de Surveillance et d'Epidémiologie Natritionnelle; Centre de Rocherche en Natrition Humaine IIe-de-France UFR SMBH Paris 13, Bohiger, France 93017; "Department of Dermanology, University Hospital Erasme, Université Libre de Bruselles, Bruselles, Belgium 1070; "Biometrics and Epidemiology Unit, CE.R.LE.S., Neully sur Seine, France 92521, "Computer Science Laboratory, Ecole Polytechnique, Université de Tours, Tours, France 37200, "EA 3444, Ecole de Santé Publique, Epidémiologie clinique, Faculté de Médecine, CHU Nancy, France 54035; "Laboratoire Listons des Acides Nuclitiques, UMR CNRS-CEA-UJF 5046, Grenoble, France 38000; and \*EA 3677 and Gentre Reni-Labusquière (Tropical Medicine and International Health Branch), University Victor Segalon Bordesus 2 and Department of Internal Medicine and Iropical Diseases, University Hospital Centes, Bordeson, France 33076

### Abstract

Background

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This research aimed to test whether supplementation with a combination of antipaidant vitamins and minerals could reduce the risk of skin cancers (SC), it was performed within the framework of the Supplementation in Vitamins and Mineral Antioxidants study, a randomized, double-blinded, placebo-controlled, primary prevention trial testing the efficacy of nutritional doses of antioxidants in reducing incidence of cancer and ischemic heart disease in the general population. French adults (7876 women and 5141 meri) were randomized to take an oral daily capeule of antioxidants (120 mg/vitamin C, 30 mg vitamin E, 6 mg # carotene, 100 µg selenium, and 20 mg zincl or a matching placebo. The median time of follow up was 7.5 y. A total of 157 cases of all types of SC were reported, from which 25 were melanomas. Because the effect of antioxidants on SC incidence varied according to gender, men and women were analyzed separately. In women, the incidence of SC was higher in the antioxidant group ladjusted hazard ratio ladjusted HPB = 1.68; P = 0.03I. Conversely, in men, incidence did not differ between the 2 treatment groups ladjusted HR = 0.60; P = 0.11). Despite the small number of events, the incidence of melanoma was also higher in the antioxidant group for women ladiusted HR = 4.31; P = 0.02) The incidence of nonmelanoma SC did not differ between the antioxidant and placebo groups ladjusted HR = 1.37; P = 0.22 for women and adjusted HR = 0.72; P = 0.19 for men). Our findings suggest that antioxidant supplementation affects the incidence of SC differentially in men and women. J. Nutr. 137: 2098-2105, 2007.

### Introduction

2098

Melanoma and nonmelanoma skin cancers (SC),10 namely squamous cell carcinoma (SCC) and basal cell carcinoma (BCC), are the most common forms of malignancy in the Caucasian population (1) and sun exposure is thought to be the main established risk factor for all 3 types of tumor (2). An aging population, more intense exposure to UV rays due to depletion of the ozone layer, and sun exposure habits would appear to favor a higher incidence of skin malignancy (3).

Numerous studies have demonstrated the role of reactive oxygen species, also called free radicals, in skin carcinogenesis and the potential protective effect of antioxidants (4). Formation

<sup>9</sup> Abbreviations used: BCC, besai cell carcinoma; HR, hazard ratio; MSC. melanoma skin cancer; NMSC, nonmelanoma skin cancer; SC, skin cancer; SCC, squamous cell carcinoma: SUVI.MAX, Supplementation on Vitamines et Minéraux Antioxydents study.

\* To whom correspondence should be addressed. E-mail: hercherg@onam.fr.

### Annals of Internal Medicine

### The Efficacy and Safety of Multivitamin and Mineral Supplement Use To Prevent Cancer and Chronic Disease in Adults: A Systematic Review for a National Institutes of Health State-of-the-Science Conference

Background: Multivitamin and mineral supplements are the most commonly used dietary supplements in the United States.

Purpose: To synthesize studies on the efficacy and safety of multivitamin/mineral supplement use in primary prevention of cancer and chronic

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Methods: We assessed the use of vitamin and mineral supplements in relation to total mortality in 38 772 older women in the Iowa Women's Health Study; mean age was 61.6 years at baseline in 1986. Supplement use was selfreported in 1986, 1997, and 2004. Through December 31, 2008, a total of 15594 deaths (40.2%) were identified through the State Health Registry of Iowa and the National Death Index.

Results: In multivariable adjusted proportional hazards regression models, the use of multivitamins (hazard ratio, 1.06: 09% CI. 1.02-1.10; absolute risk increase, 2.4%), vitamin B. (1.10: 1.01-1.21: 4.1%). folic acid (1.15: 1.00-1.32; 5.9%), iron (1.10; 1.03-1.17; 3.9%), magnesium (1.08) 1.01-1.15; 3.6%), zinc (1.08; 1.01-1.15; 3.0%), and cop-

Annals

372 5 Super

cutaneous system has a very efficient interlinked defense system for counteracting UV-induced exis Downlanded From ht However, excessive exposure to sunlight or other st light can overwhelm the skin's antioxidant capacity. A potentially interesting strategy for preventing UV exposure damage could be to boost the endogenous antioxidant system by oral intake of antioxidant vitamins and minerals. Although clinical trials have showed contradictory findings (5-7), oral antioxidant pills have been recommended for the prevention of sunburns and for their supposed photoprotective properties.

of free radicals in the skin can be enhanced by UV ra

In particular, it has been suggested that nutrients such as B-carotene, ascorbic acid, vitamin E, selenium, and zinc may prevent such harmful effects of UV exposure because of their antioxidant ability (8). Clinical trials testing the impact of supplementation with high doses of antioxidants over long periods have, however, failed to reveal beneficial effects on the incidence of SC (9,10). For example, the Nutritional Prevention of Cancer trial, a double-blind, randomized clinical trial, was designed to test whether selenium (200 µg/d) could prevent nonmelanoma SC (NMSC) in 1312 individuals with an individual

0022-3166/07 \$8.00 @ 2007 American Society for Nutrition Manuscript received 28 February 2007. Initial review completed 21 March 2007. Revision accepted 22 June 2007

Author Alliliations Department of Health Sciences, Institute of Public Health and Clinical Nutrition, University of Eastern Finland, Kuopio Campus, Kuopio, Finland (Dr Marsu); Division of Epidemiology and Commu Health, School of Public Health University of Minnesota Minneapolis (Drs Mursu Robten, Harmack, and Jacobs) Department of Food and Nutrition, Yeungnam University, Gyeongbulk Republic of Korea (Dr Park): and Department of Nutrition. School of Medicine, University of Oslo, Oslo, Norway

(Dr Jacobs).



### NIH CONFERENCE

Han-Yao Huang, PhD, MIPH: Benjamin Cabaliero, MD, PhD: Stephanie Chang, MD: Anthony J. Alberg, PhD, MIPH: Richard D. Semba, MD, MPH; Christine R. Schneyer, MD; Renee F. Wilson, MSc; Ting-Yuan Cheng, MSc; Jason Vasoy, MPH; Gregory Prokopowicz, MD, MPH: George J, Barnes II, BA: and Eric R, Bass, MD, MPH

gastric cancer and the overall mortality rate from cancer by 13% to 21%, in a French trial, combined supplementation with vitamin C. vitamin E, p-carotene, selenium, and zinc reduced the rate of cancer by 31% in men but not in women. Multivitamin and mineral supplements had no significant effect on cardiovascular disease

ORIGINAL INVESTIGATION

### S MORE tary Supplements and Mortality Rate in Older Women

The Iowa Women's Health Study

Jaakko Mursu, PhD; Kim Robien, PhD; Lisa J. Harnack, DrPH, MPH; Kyong Park, PhD; David R. Jacobs Jr, PhD

Buckground: Although dietary supplements are commonly taken to prevent chronic disease, the long-term health consequences of many compounds are unknown.

per (1.45; 1.20-1.75; 18.0%) were associated with increased risk of total mortality when compared with corresponding nonuse. Use of calcium was inversely related (hazard ratio, 0.91; 95% confidence interval, 0.88-0.94; absolute risk reduction, 3.8%). Findings for iron and calcium were replicated in separate, shorter-term analyses (10year, 6-year, and 4-year follow-up), each with approximately 15%-of the original participants having died, starting in 1986, 1997, and 2004.

Conclusions: In older women, several commonly used dietary vitamin and mineral supplements may be associated with increased total mortality risk; this association is strongest with supplemental iron. In contrast to the findings of many studies, calcium is associated with decreased risk

Arch Intern Med. 2011;171(18):1625-1633

N THE UNITED STATES, THE USE OF dietary supplements has increased substantially during the past several decades,13 reaching approximately one-half of adults in 2000, with annual sales of more than \$20 billion.13 Sixty-six percent of women participating in the Iowa Women's Health Study<sup>1</sup> used at least 1 dietary supplement daily in 1986 at an average age of 62 years; in 2004, the proportion increased to 85%. Moreover, 27% of women reported using 4 or more supplemental products in 2004. At the population level, dietary supplements contributed substantially to the total intake of several nutrients, particularly in elderly individuals.13

Supplemental nutrient intake clearly is beneficial in deficiency conditions.4 However, in well-nourished populations, supplements often are intended to yield benefit by preventing chronic diseases. Results of epidemiologic studies5\* assessing supple ment use and total mortality risk have been inconsistent. Several randomized controlled trials (RCTs),<sup>20,11</sup> concentrating mainly on calcium and vitamins B, C, D, and E, have not shown beneficial effects of

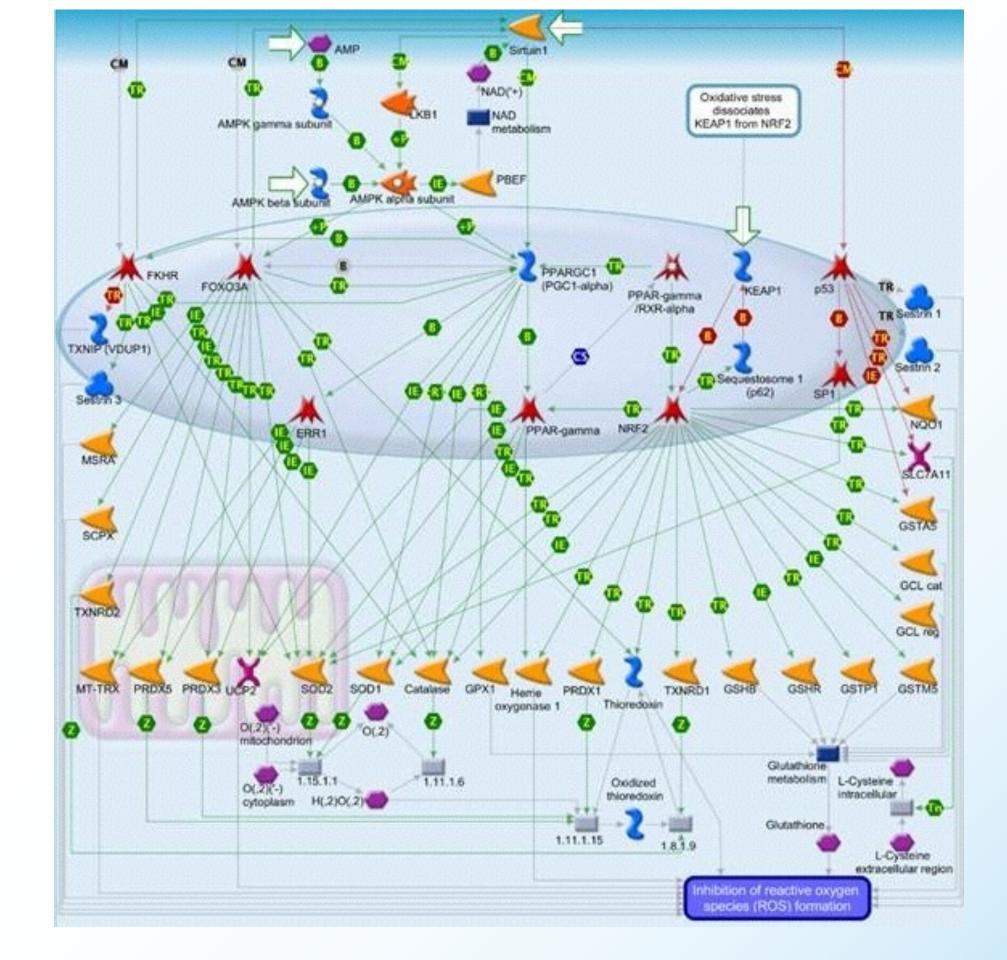
### See Invited Commentary and Editor's Note at end of article

dietary supplements on total mortality rate; in contrast, some<sup>12,13</sup> have suggested the possibility of harm. Meta-analyses14,19 concur in finding no decreased risk and potential harm. Supplements are widely used, and further studies regarding their health effects are needed. Also, little is known about the long-term effects of multivitamin use and less commonly used supple ments, such as iron and other minerals.

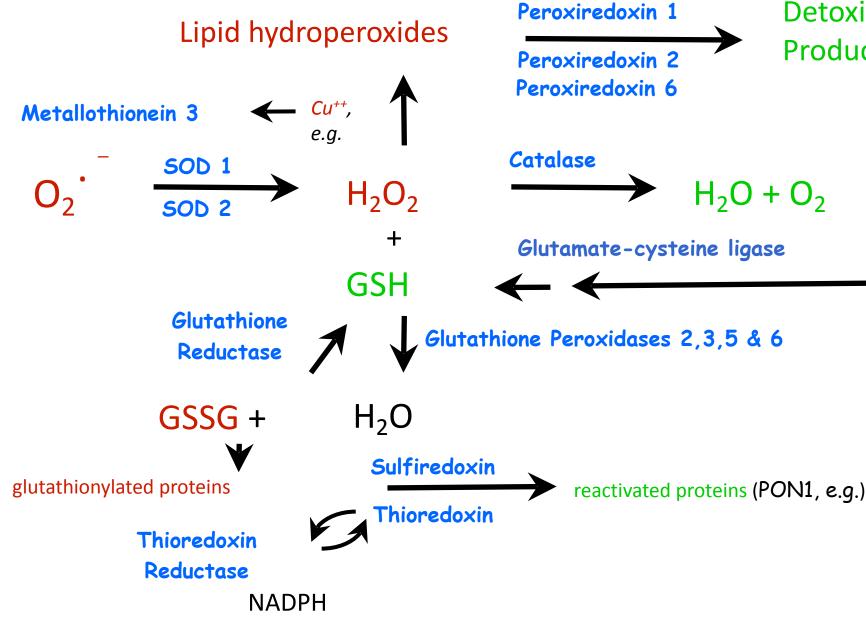
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**G2011** American Medical Association. All rights reserved.

Author disclosures: S. Hercherg, K. Ezzedine, P. Prozicel, P. Galan, S. Bertrais, Estaguio, S. Briangon, A. Favier, and D. Malvy, no conflicts of interest, C. Guinot and J. Latreille, the CE.R.I.E.S. is a research center on human skin founded by CHANEL

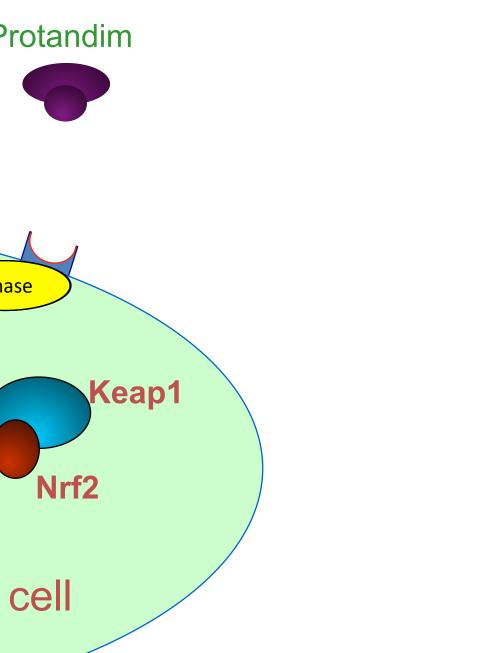


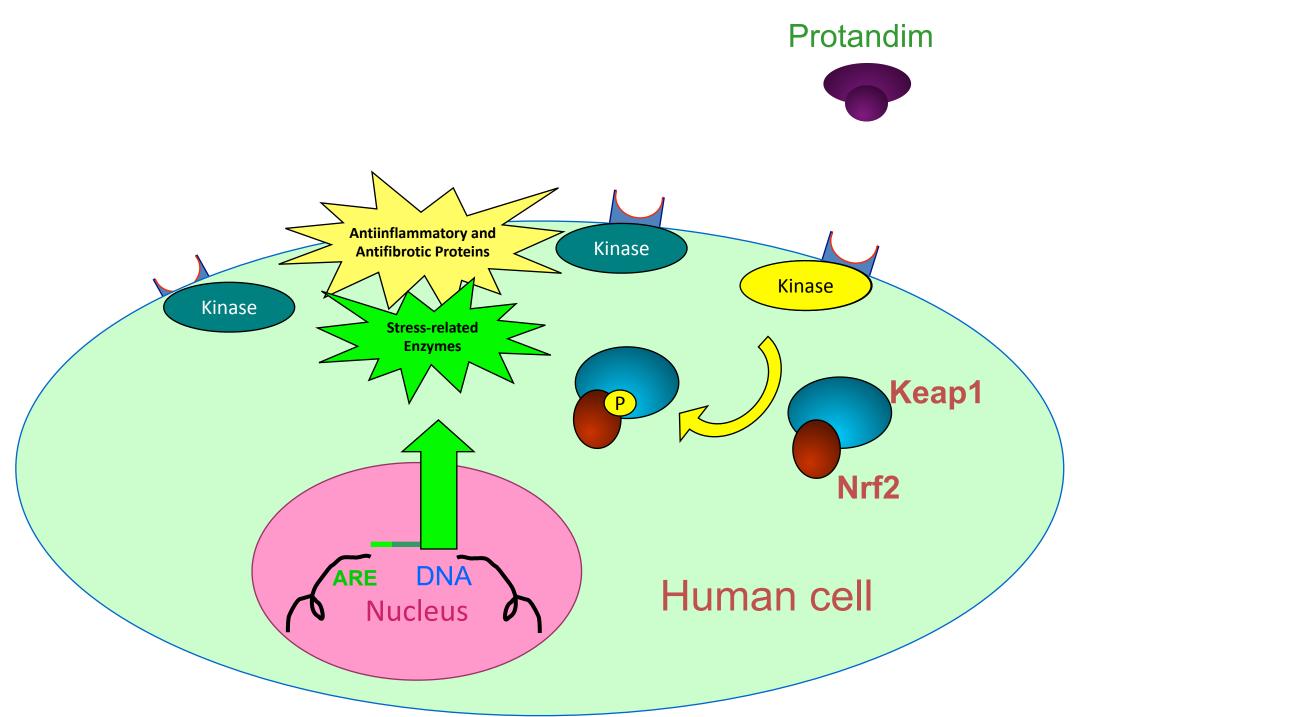
# The Internal System of Protective Antioxidant Enzymes Activated/Triggered by Nr2 Pathway



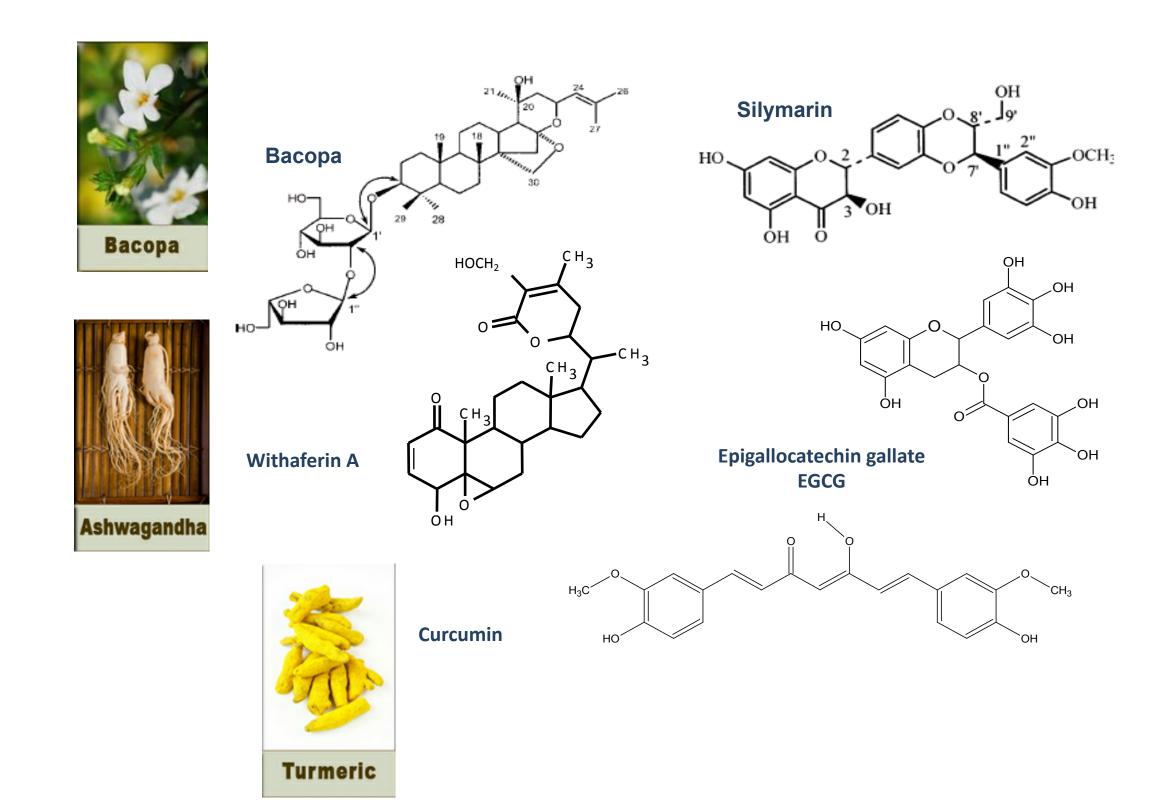
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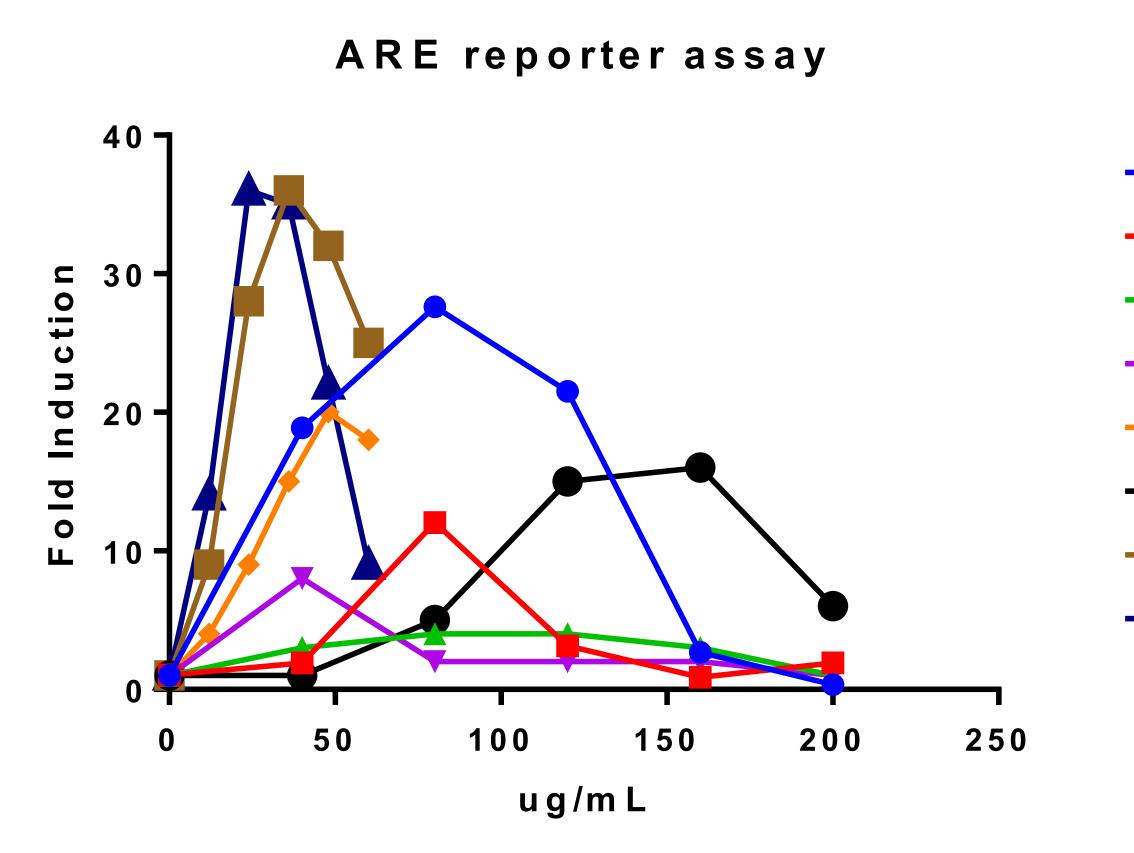


## Nrf2 = a powerful "master regulator" of antioxidant enzymes and survival genes







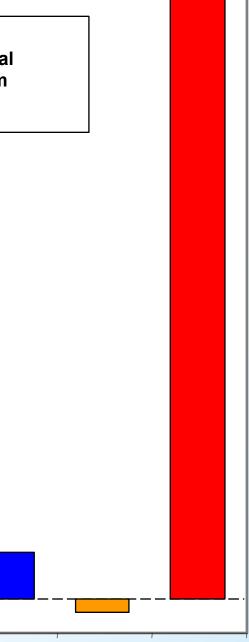


### Ashwaghanda

- Black Pepper
- Milk Thistle
- Tumeric
- Green Tea
- Bacopa
- Protandim US
- + Protandim Japan

# SYNERGY = Action greater than the sum of the parts

18 Alcohol extract from 30 ug protandim or individual 16 components per ml medium 14 Heme Oxygenase mRNA All five ingredients Fold Induction 12 together produced an **18-fold increase** in 10 the expression of this 8 antioxidant gene. 6 **Protandim** BLEND 4 works 18 times more 2 effectively than the sum of its parts. 0 control Ashwagantha







### **United States Patent** Myhill et al.

(54) COMPOSITIONS FOR ALLEVIATING INFLAMMATION AND OXIDATIVE STRESS IN A MAMMAL

(25) Inventors: Paul R. Myhill, Castle Rock, CO (US); William J. Driscoll. Englewood, CO (US)

[73] Assignce: Lifeline Nutracenticals Corporation Englewood, CO (US) Subject to any disclaimer, the term of this (\*) Notice:

2004, vol. 291, No. 23, pp. 2818-2 Anderson, et al., "Differential Rosp ells to Induction of Apoptosis by E Analogue, or TEA," Conver Rev. Baket, et al., "Reduced RBC Very Due to Endotonin," Circul Shock, rbosa, et al., "Decreased Oxidat ative Colitis Supplemented with Fi tion, 2003; vol. 19: pp. 837-842. Battacharya, et al., "Antioxidant

(10) Patent No.:

(45) Date of Patent:

Al-Shart, "C-Reactive Protein and

from Withania somigira," Ind. J. Exper. Biol., 1997; vol. 35: pp.

antioxidant enzymes, such as manganese superoxide dismutase (MnSOD). Our previous studies have shown through the induction of various antioxidant enzymes, products of oxidative damage can be decreased. In addition, we have shown that tumor multiplicity and incidence can be decreased through the dietary administration of Protandim in the two-stage skin carcinogenesis mouse model. It has been demonstrated that cell proliferation is accommodated by cell death during DMBA/ TPA treatment in the two-stage skin carcinogenesis model. Therefore, we investigated the effects of the Protandim diet on apoptosis; and proposed a novel mechanism of chemoprevention utilized by the Protandim dietary combination. Interestingly, Protandim suppressed DMBA/TPA induced cutaneous apoptosis. Recently, more attention has been focused on transcription-independent mechanisms of the tumor suppressor, p53, that mediate apoptosis. It is known that cytoplasmic p53 rapidly translocates to the mitochondria in response to pro-apoptotic stress. Our results showed that used the mitochondrial translocation of p53 and mitochondrial outer membrane proteins such as Bax. We examined the levels of p53 and MnSOD expression/activity in murine skin JB6 promotion sensitive (P+) and promotion resistant (P-) epidermal cells. Interestingly, p53 was induced only in P+ cells, not P- cells; whereas MnSOD is highly expressed in P- cells when compared to P+ cells. In addition, wild-type p53 was transfected into J86 P- cells. We found that the introduction of wild type p53 promoted transformation in JB6 P- cells. Our results suggest that suppression of p53 and induction of MrSOD may play an important role in the tumor suppressive activity of Protandim

journal homepage: www.elsevier.com/locate/mam

### Oxidative Stress in Health and Disease: The Therapeutic Potential of Nrf2 Activation

Department of Medicine, Division of Pulmonary Science and Critical Care Medicine, University of Colorado at Denver, Aurora, CO 80045 \*LifeVantage Corporation, 10813 S. Riverfront Parkway, South Jordan, UT 84095



Free Radical Biology & Medicine

journal homepage: www.elsevier.com/locate/freeradbiomed

### Synergistic induction of heme oxygenase-1 by the components of the antioxidant

Kalpana Velmurugan a,b, Jawed Alam <sup>c</sup>, Joe M. McCord <sup>d</sup>, Subbiah Pugazhenthi a,b,\*

Available online at www.sciencedirect.com

\*CIENCE 
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 direct.

Free Radical Biology & Medicine 40 (2006) 341 - 347

www.elsevier.com/locate

Original Contribution

### The induction of human superoxide dismutase and catalase in vivo: A fundamentally new approach to antioxidant therapy

Sally K. Nelson a,b, Swapan K. Bose a, Gary K. Grunwald C, Paul Myhill d, Joe M. McCord a,b,d,#

<sup>1</sup> Webb-Waring Institute for Cancer, Aging and Antioxidant Research, University of Colorado Denver Health Sciences Conter, Denver, CO 80262, USA <sup>b</sup> Department of Medicine, University of Colorado Denver Health Sciences Center, Denver, CO 80262, US4

Department of Preventive Medicine and Biometrics, University of Colorado Denver Health Sciences Center, Denver, CO 80262, USA

4 Lifeline Therapeutics, Donver, CO, USA

Received 22 June 2005; revised 24 August 2005; accepted 28 August 2005

A composition consisting of extracts of five widely studied medicinal plants (Protandim) was administered to healthy human subjects ranging in age from 20 to 78 years. Individual ingredients were selected on the basis of published findings of induction of superoxide dismutase (SOD) and/or catalase in rodents in vivo, combined with evidence of decreasing lipid peroxidation. Each ingredient was present at a dosage sufficiently low to avoid any accompanying unwanted pharmacological effects. Blood was analyzed before supplementation and after 30 and 120 days of supplementation (675 mg/day). Frythrocytes were assayed for SOD and catalase, and plasma was assayed for lipid peroxidation products as thiobarbitaric acid-reacting substances (TBARS), as well as uric acid, C-reactive protein, and cholesterol (total, LDL, and HDL). Before

Contents lists available at SciVerse ScienceDirect

### Molecular Aspects of Medicine

### Brooks M. Hybertson,<sup>a,b</sup> Bifeng Gao,<sup>a</sup> Swapan K. Bose<sup>a</sup> and Joe M. McCord<sup>a,b</sup>









Available online at www.sciencedirect.com



Free Radical Biology & Medicine 40 (2006) 341-347

Original Contribution

### The induction of human superoxide dismutase and catalase in vivo: A fundamentally new approach to antioxidant therapy

Sally K. Nelson<sup>a,b</sup>, Swapan K. Bose<sup>a</sup>, Gary K. Grunwald<sup>c</sup>, Paul Myhill<sup>d</sup>, Joe M. McCord<sup>a,b,d,\*</sup>

<sup>a</sup> Webb-Waring Institute for Cancer, Aging and Antioxidant Research, University of Colorado Denver Health Sciences Center, Denver, CO 80262, USA <sup>b</sup> Department of Medicine, University of Colorado Denver Health Sciences Center, Denver, CO 80262, USA <sup>c</sup> Department of Preventive Medicine and Biometrics, University of Colorado Denver Health Sciences Center, Denver, CO 80262, USA <sup>d</sup> Lifeline Therapeutics, Denver, CO, USA

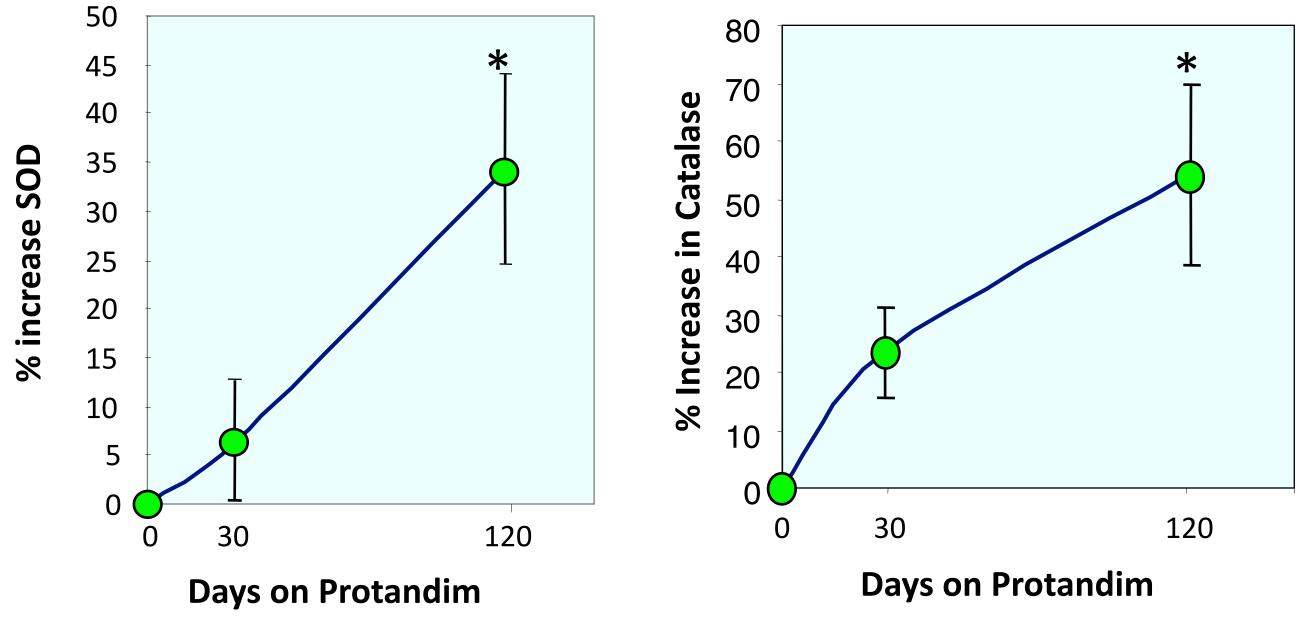
Received 22 June 2005; revised 24 August 2005; accepted 28 August 2005

### Abstract

A composition consisting of extracts of five widely studied medicinal plants (Protandim) was administered to healthy human subjects ranging in age from 20 to 78 years. Individual ingredients were selected on the basis of published findings of induction of superoxide dismutase (SOD) and/or catalase in rodents in vivo, combined with evidence of decreasing lipid peroxidation. Each ingredient was present at a dosage sufficiently low to avoid any accompanying unwanted pharmacological effects. Blood was analyzed before supplementation and after 30 and 120 days of supplementation (675 mg/day). Erythrocytes were assayed for SOD and catalase, and plasma was assayed for lipid peroxidation products as thiobarbituric acid-reacting substances (TBARS), as well as uric acid, C-reactive protein, and cholesterol (total, LDL, and HDL). Before supplementation, TBARS showed a strong age-dependent increase. After 30 days of supplementation, TBARS declined by an average of 40% (p = 0.0001) and the age-dependent increase was eliminated. By 120 days, erythrocyte SOD increased by 30% (p < 0.01) and catalase by 54% (p < 0.002). We conclude that modest induction of the catalytic antioxidants SOD and catalase may be a much more effective approach than supplementation with antioxidants (such as vitamins C and E) that can, at best, stoichiometrically scavenge a very small fraction of total oxidant production.

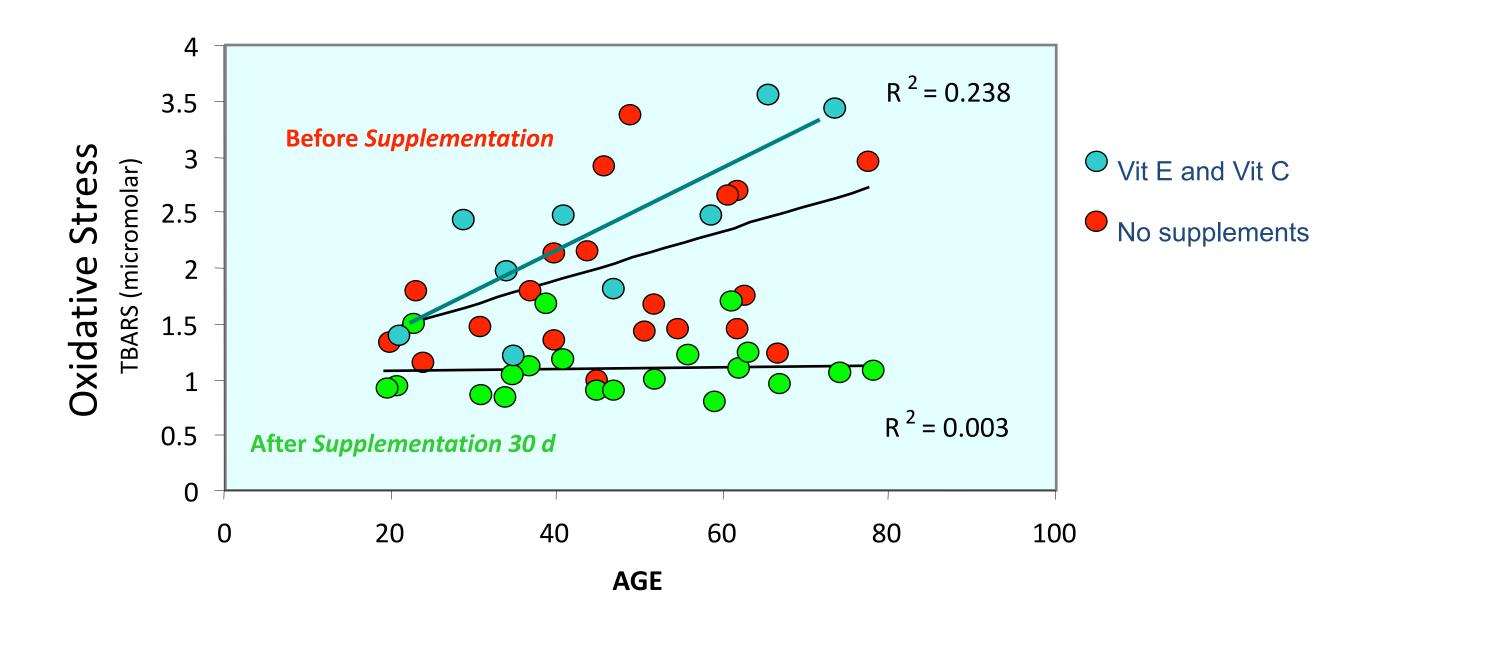


www.elsevier.com/locate/freeradbiomed



After 120 days... SOD increased by 34% Catalase increased by 54%

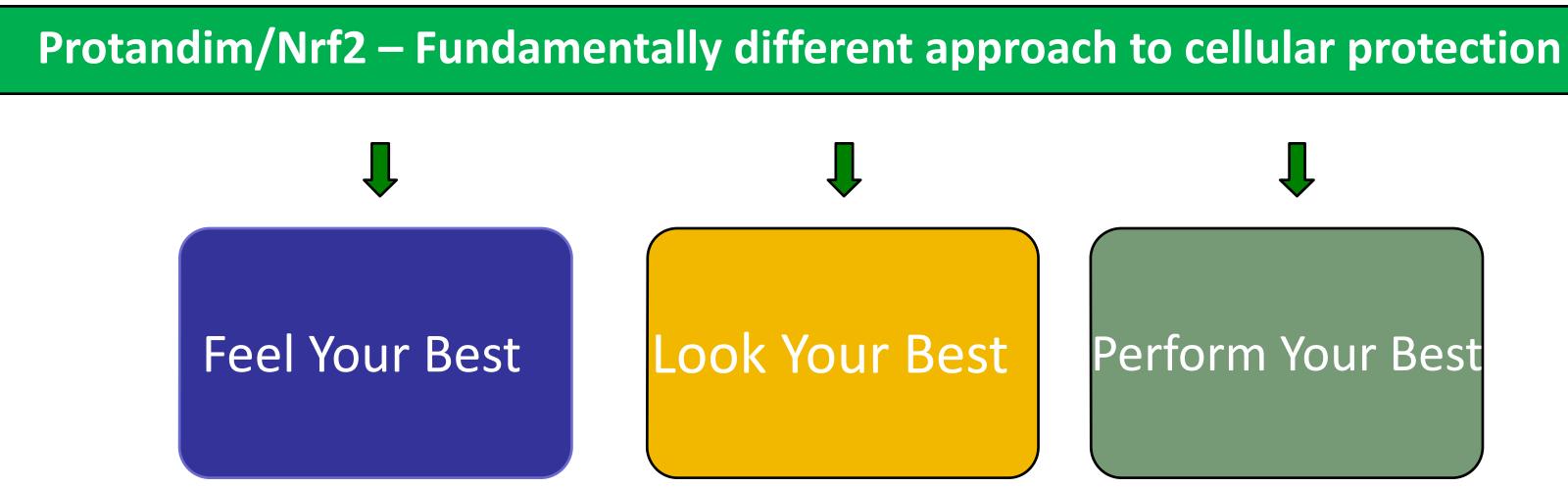




After 30 days...

"Remarkably, this age-dependent increase in TBARS was almost completely abolished by Protandim treatment (Fig. 1D), with an overall average reduction of the oxidative stress marker by 40%."

## **Exotic Ingredients + Proven Science + Exclusive IP =** World's finest products that help you Feel / Look / Perform Your Best



# **Coordinated Product Platform**



## Perform Your Best

# LOOK Your Best...

## **TrueScience** Regimen is equal/better compared to top "prestige" brands

Competitor		28 Days	56 Days
89% Perricone MD Cold Plasma at 4 weeks 75% Jeunesse Global Luminesce Cellular Rejuvenation at 8 weeks	Smoother looking skin	89%	94%
80% Nu Skin TruFace at 3 months	Firmer looking skin	81%	85%
78% L'Oreal Youth Code at 8 weeks	Younger looking skin		87%
70% Lancôme Dream Tone at 8 weeks 79% SkinMedica Lytera at 12 weeks	More even skin tone		83%
79% Clarins Double Serum at 4 weeks [Hydric + Lipidic System] 80% Nu skin 180°System at 8 weeks	Less noticeable fine lines and wrinkles	78%	82%

Cold Plasma is a trademark of Perricone MD Youth Code is a trademark of L'Oreal Dream Tone is a trademark of Lancôme Lytera is a trademark of SkinMedica Double Serum [Hydric + Lipidic System] is a trademark of Clarins

\*Competitive advertising details available upon request

### Versus Select Competitive Ads\*





# Clinical Study: What Users Said\*

	-	
28 Days		56 D
94%	Loved the fragrance	99
90%	More hydrated skin	95
89%	Will buy the regimen	91
89%	Smoother looking skin	94
88%	Softer skin	90
84%	More luminous skin	88
83%	Younger looking skin	87
81%	More even skin tone	83
81%	Firmer looking skin	85
78%	Less noticeable fine lines and wrinkles	82
74%	Felt younger-looking	80
74%	Better than what I usually use	80

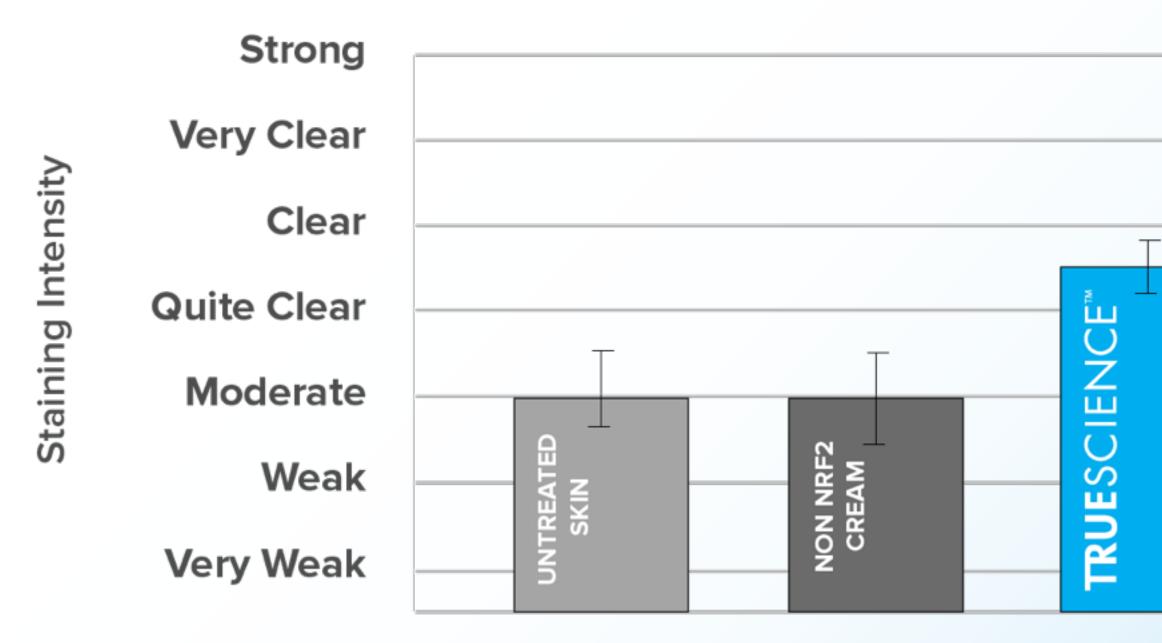
\*Satisfaction test, 86 women self-reported, 4 weeks and 8 weeks





# Nrf2 Staining Intensity 24 hours after UV Exposure

TrueScience<sup>™</sup> Facial Cream results in more Nrf2 in skin, thus more protection!

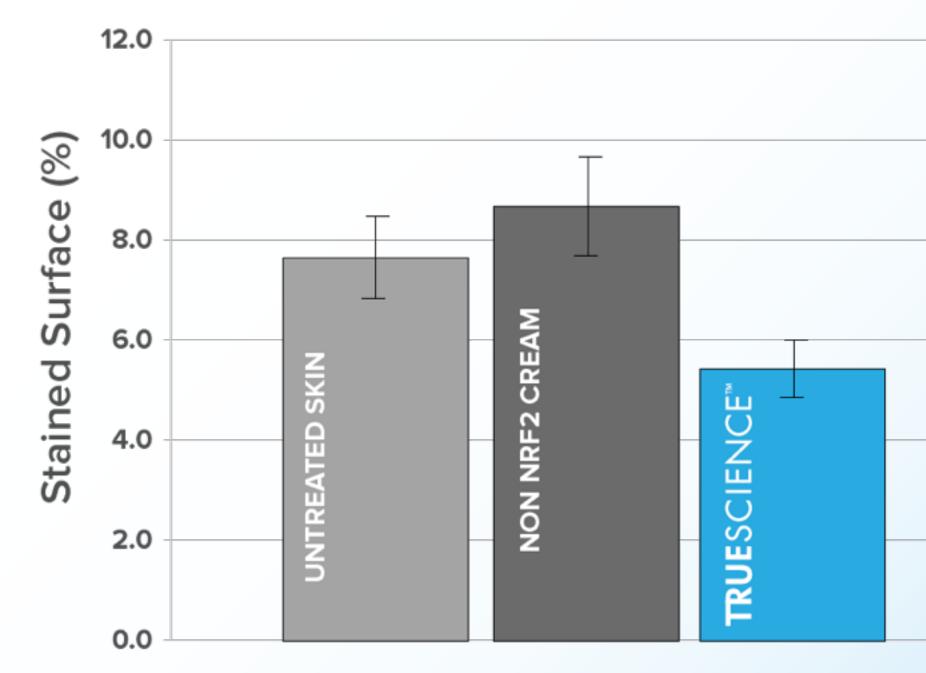


DAY 6



# Less Thymine Dimers with TrueScience

TrueScience<sup>™</sup> Facial Cream with Nrf2 protects the cell DNA!



# cience



## TrueScience<sup>tm</sup> Facial Cream with Advanced Nrf2 Technology has been shown to:

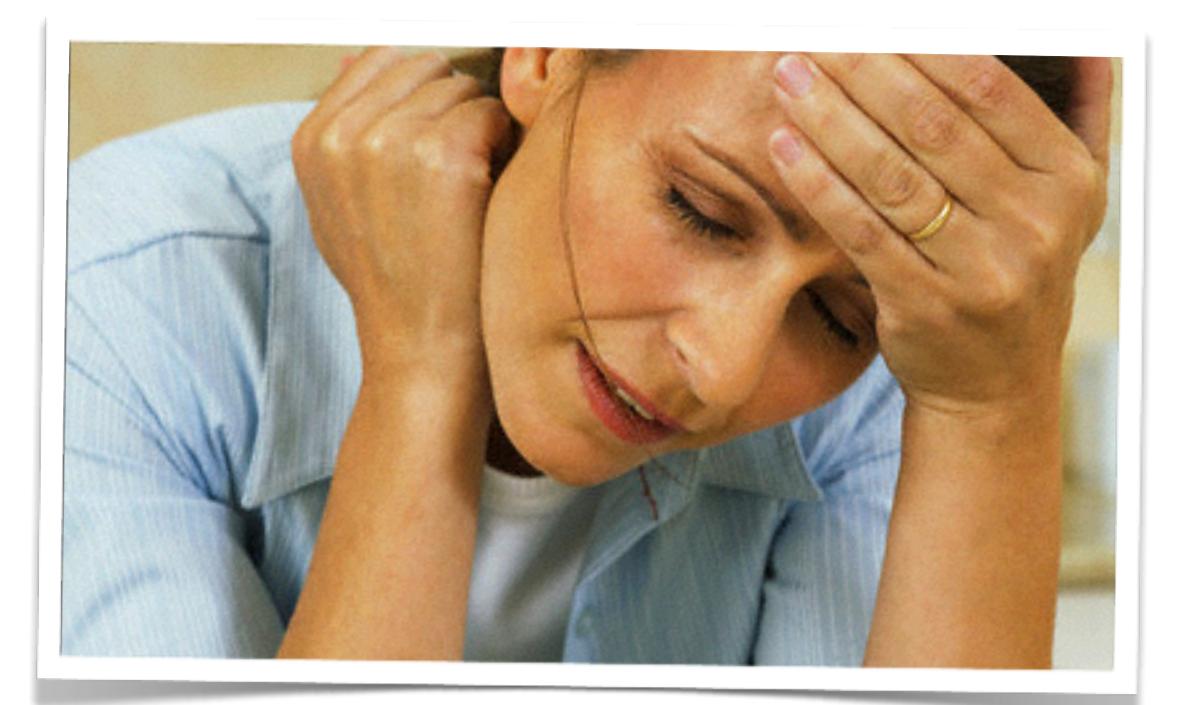
- Boost skin protection from UV exposure by reducing DNA damage
- Increase Nrf2 Protein amount, thus improve resistance to oxidative stress
- Fight the signs of aging though all layers of the skin







# FEEL Your Best...



## Tired, Stressed, Depressed... "Off"







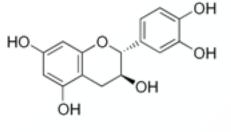
### SUPPLEMENT FACTS

Serving Size: 1 Packet Serving Per Pouch: 30

	Amount Per Serving	% DV
Calories	10	
Total Carbohydrate	2 g	<1%*
Niacin (as Nicotinic Acid)	24 mg	120%
Vitamin B6 (as Pyridoxine H	CL) 1.60 mg	80%
Vitamin B12 (as Methylcoba	lamin 6 mcg	100%
Magnesium (as Magnesium)	Aspartate) 10 mg	2%
Caffeine	100 mg	t
Proprietary Blend	500 mg	
DMAE Bitartrate		†
Green Tea Extract (Camellia sinensis) (Aerial)		†
Quercetin Dihydrate		+
Quercetin Dihydrate		
Quercetin Dihydrate Monterey Pine Extract (Pin	us radiata) (Bark)	ť

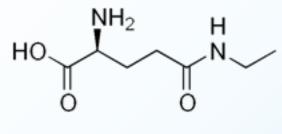
-	Serving Size: 1 Packet Serving Per Pouch: 30	
Calories Total Carl	An bohydrate	
Vitamin E Vitamin E	s Nicotinic Acid) 36 (as Pyridoxine HCL) 312 (as Methylcobalami um (as Magnesium Aspa	
	Fea Extract (Camellia sir rey Pine Extract (Pinus r	

H<sub>3</sub>C<sup>1</sup>

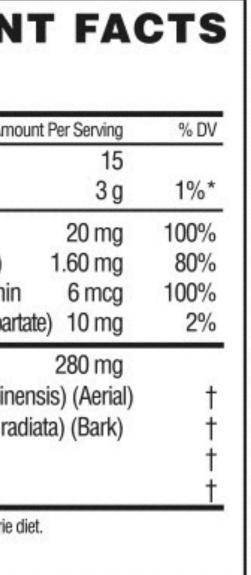


Catechin





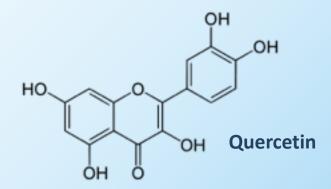
**L-Theanine** 



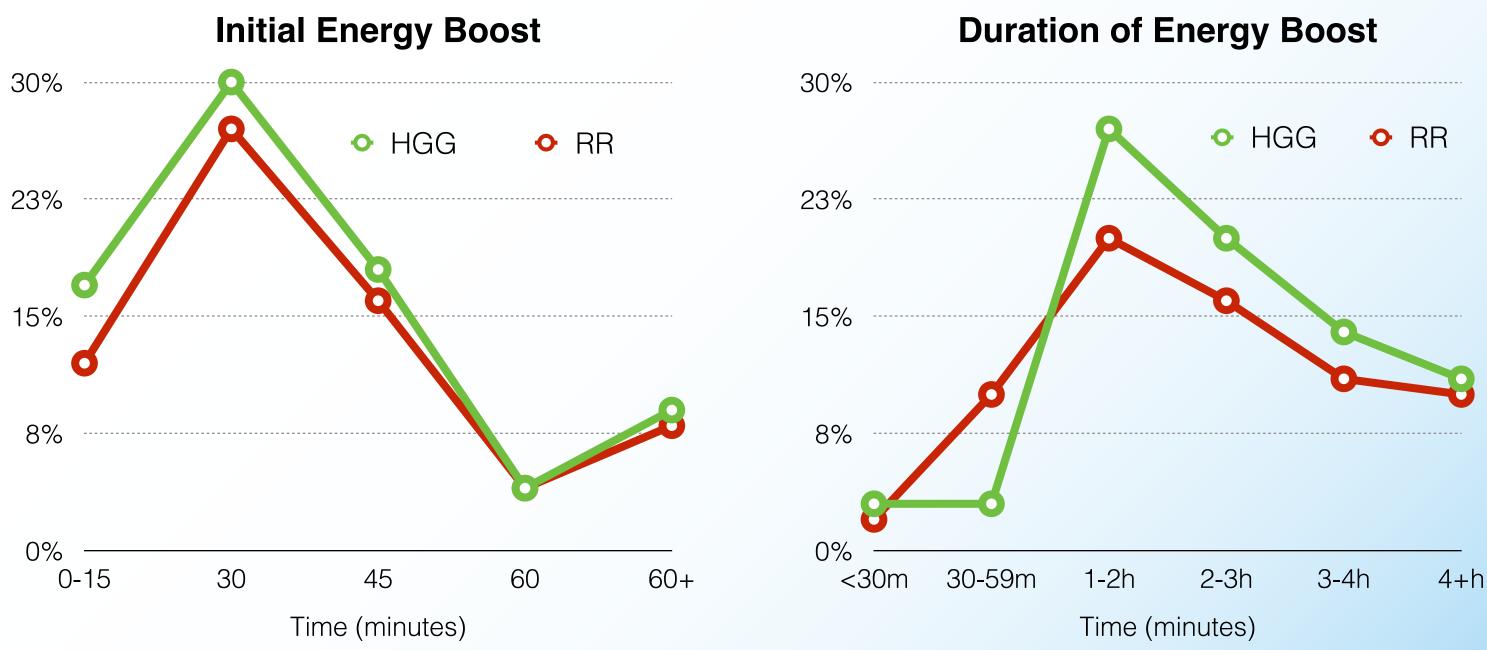




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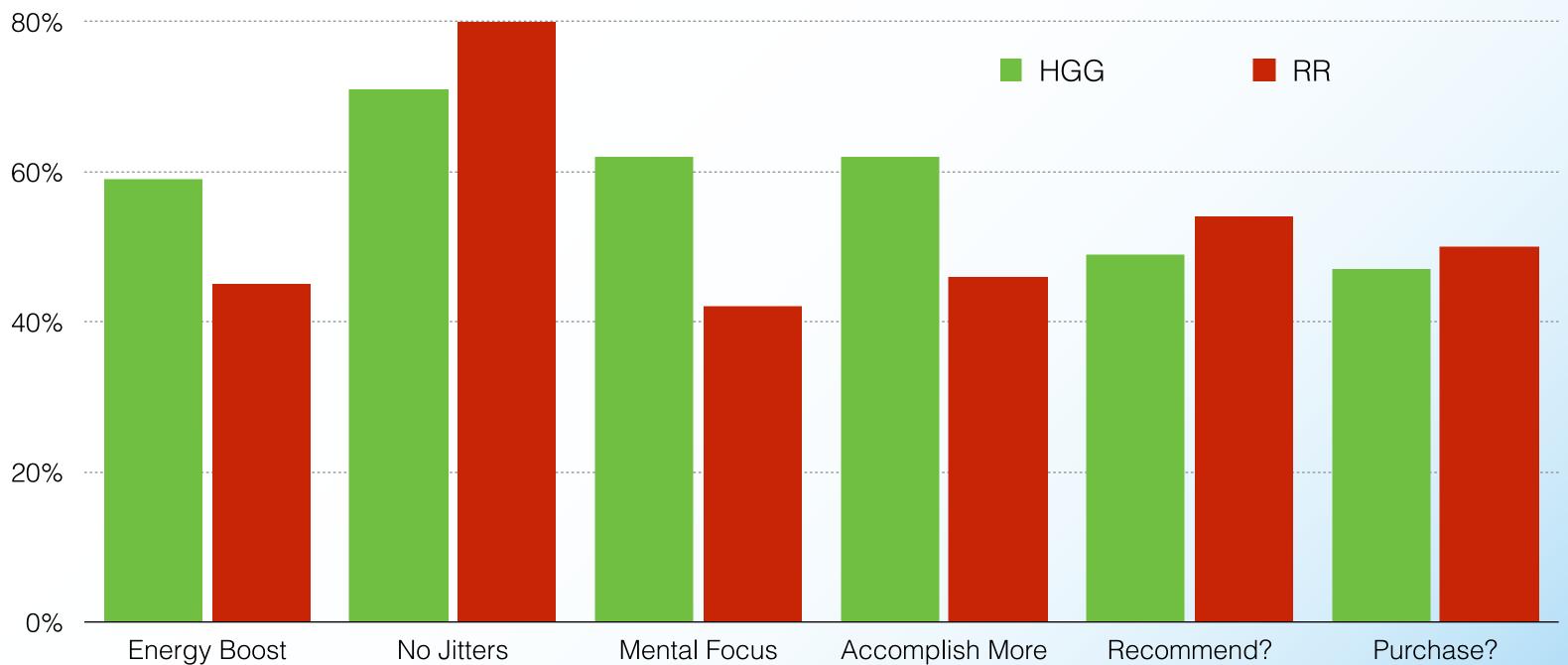


# Axio Usage Survey





# Axio Usage Survey



Recommend?





# Axio Usage Survey

- "It felt like a morning cup of coffee with the energy it gave me, but more than that it improved my focus."
- "I liked the energy that it gave me, I would say it lasted pretty good maybe 4 or 5 hours."
- "I was pleasantly surprised at this product's ability to keep me energized, awake and focused without harmful stimulants and without feeling nervous, jittery or having rapid heart rate. I would take this over caffeine any day."
- "It was a very subtle transition to having energy, just like I naturally had the energy. It was a good amount of energy too. Not too wired, not too draggy. The perfect amount. I didn't feel like it wore off halfway through the day or that I needed more energy. I also did not have a difficult time falling asleep at night because of it. I would definitely buy this instead of many other energy drinks or supplements."



# PERFORM Your Best...







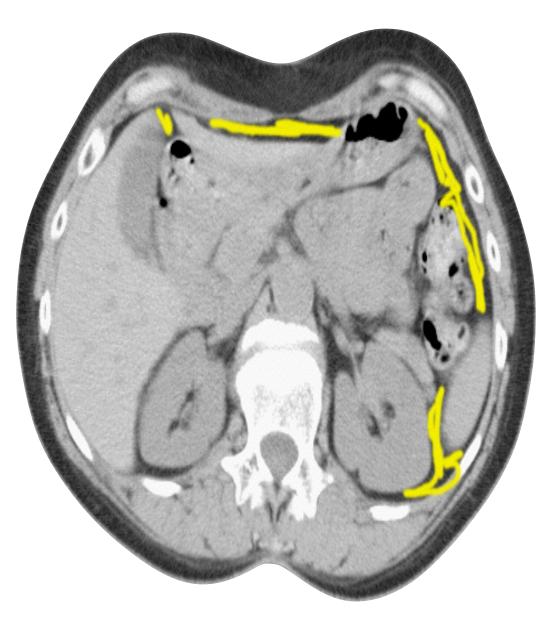
# NEURONAL ATROPHY

**NORMAL STRESS** Healthy, Large, Many Projections, Optimal Function HIGH STRESS Small, Thin, Disrupted, S

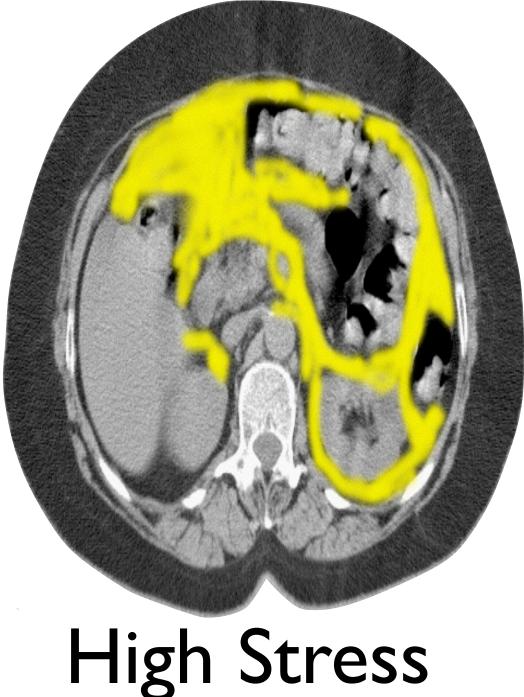


### Small, Thin, Disrupted, Structural Damage, Poor Function

# **ABDOMINAL FAT ACCUMULATION**



# Normal Stress



# **Research Study Update** Completed<sup>1</sup>, Ongoing<sup>2</sup>, Planned<sup>3</sup>

- 19 studies<sup>1</sup> (U Colorado, Ohio State U, Louisiana State U, Virginia Commonwealth U, Colorado State U, Texas Tech U...)
- "20th study" (Mayo Clinic, 2014)<sup>1</sup> anecdotal patient report prompts series of translational cell culture and rodent studies
  - Translational research = aims to make findings from basic science useful for practical applications that enhance human health and well-being
- Montreal, Canada (skin)<sup>1</sup>
- National Institutes of Health (longevity)<sup>2</sup>
- Nashville, TN (heart health)<sup>2</sup>
- Melbourne, Australia (brain function)<sup>3</sup>
- Okinawa, Japan (lung function)<sup>3</sup>
- Research Institutions<sup>3</sup> (Salt Lake, Miami, Louisville, Fort Collins, Boston, NYC...)
  - energy/mood/focus, performance, antioxidant metabolism, eye health...
  - canine health, periodontal health, blood sugar balance...





















ALL NEWS. ALL THE TIME.





























Why Your Daily Vitamins May Be Causing Cancer and Shortening Your Life and How Nrf2 Can Turn on Your Body's Own Antioxidants for Optimal Health

SHAWN TALBOTT, PH.D.



Safe and Natural Approaches to Eliminating Fatigue, Enhancing Mental Focus and Boosting Mood

SHAWN TALBOTT, PH.D.



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### Feel Your Best

# "Best Future You"

### Perform Your Best

