

Impact of Chronic Stress & Nutrition on Vigor

Shawn M. Talbott, PhD, CNS, LDN, FAIS, FACSM, FACN



Vigor

3-tiered sustained mood state characterized by physical energy, mental acuity, and emotional well-being

Prevalence of Chronic Stress

- Studies show that 50-60% of all lost working days are related to stress
- Work-related stress costs the EU more than 265 billion Euros annually
- Chronic stress is a determinant of Depression, Heart Disease, Diabetes, & Syndrome X
- Stress contributes to half of all illnesses in the United States
- 70-80% of all doctor visits are for stress-related illnesses
- More than half of all deaths before age 65 result from stressful lifestyles
- Generalized anxiety disorder affects ~183 million people worldwide
- People with high anxiety are 4.5x more likely to die of a heart attack or stroke
- 80% of workers report feeling stress on the job
- 65% = American Psychological Association
- 70-80% = World Health Organization (WHO) & Centers for Disease Control (CDC)
- 90% = American Institute of Stress (AIS)

Sources: Working on Stress - European Agency for Safety and Health at Work (<http://agency.osha.eu.int>)

U.S. Center for Disease Control

World Health Organization; www.whmc.af.mil

2000 Gallup Poll "Attitudes in the American Workplace"

Stress-Related Conditions

Metabolic and Long-Term Health Effects of Elevated Stress (Cortisol Overexposure/Metabolic Imbalance)

- Increased appetite, Accelerated muscle catabolism, Suppressed fat oxidation, Enhanced fat storage (**Obesity - 2,694**)
- Elevated cholesterol and triglyceride levels; Elevated blood pressure (**Heart disease - 4,604**)
- Alterations in brain neurochemistry [dopamine/serotonin/norepinephrine] (**Depression/Anxiety/ADHD - 22,491**)
- Physical atrophy of brain cells (**Memory problems/Dementia - 3,169**)
- Insulin resistance and elevated blood-sugar levels (**Diabetes - 1,203**)
- Accelerated bone resorption (**Osteoporosis - 2,675**)
- Reduced levels of testosterone (**Suppressed libido - 1,439**)
- Suppression of immune-cell number/activity (**Frequent Colds/Flu/infection; Increased Cancer risk - 9,651**)

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...)
- Sources of Imbalance (stress) are:
 - Internal
 - External
 - Everywhere!
 - Unavoidable!!
- Athletes / Dieters / Short-Sleepers / Stressed
 - Share the SAME *biochemical* disruptions
 - Share the SAME *psychological* outcomes
 - Exhibit the SAME benefits to *restored biochemical balance*



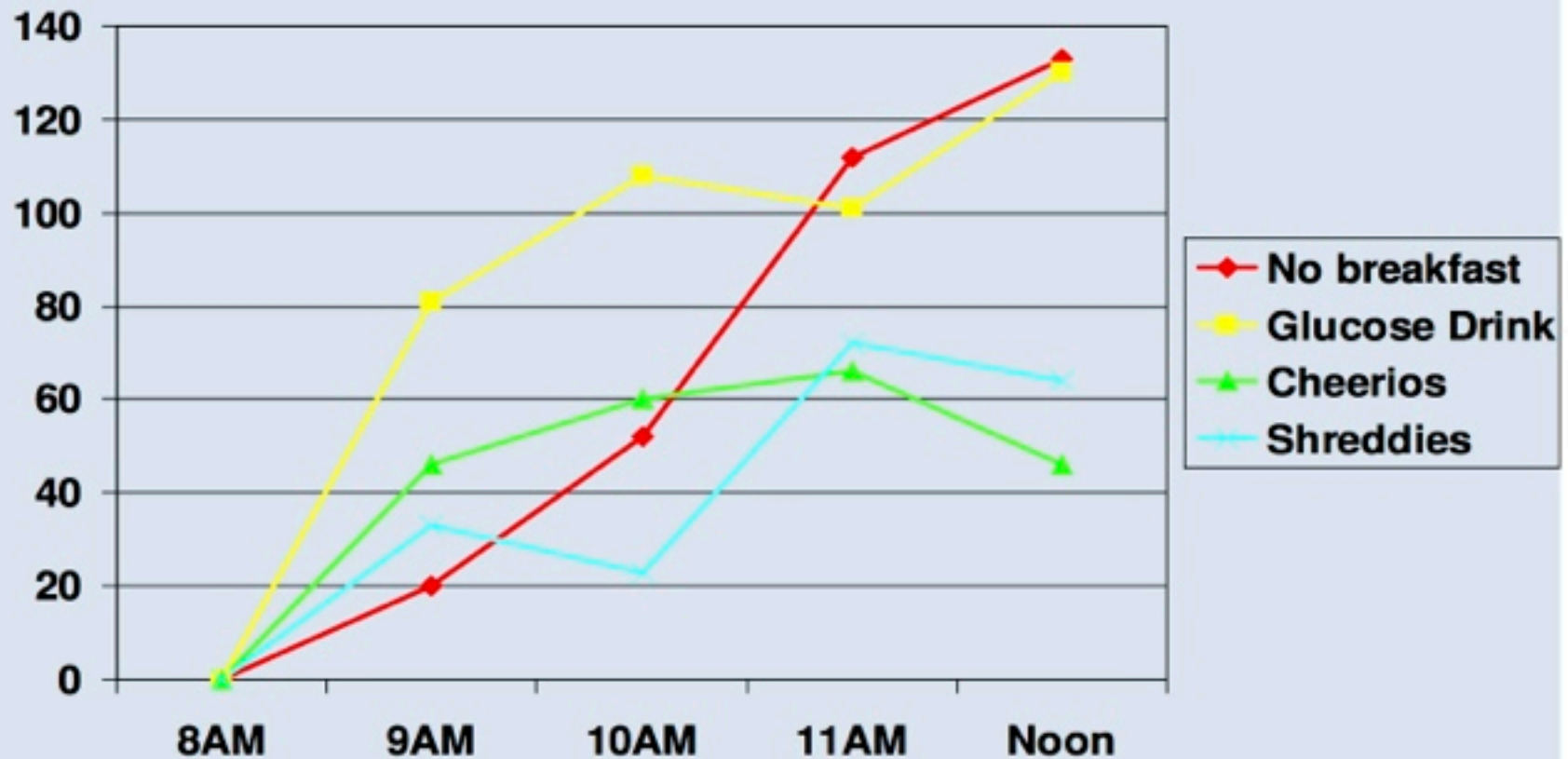


Tired, Stressed, Depressed

Diet / Vigor Relationship

- Mediterranean diet = Improved QOL
 - Henriquez-Sanchez et al. *Eur J Clin Nutr* 66(3): 360-8, 2012
- Omega3s = Reduced ADHD Sx / Improved QOL (cancer)
 - Van der Meij et al. *Eur J Clin Nutr* 66, 399-404, 2012
- Multivitamin = Increased Attention, Mood, Vigor
 - Kennedy et al. *Psychopharmacology* 211:55-68, 2010
- Overall Diet Quality = Reduced Depression / Improved QOL
 - Kuczmarski et al. *J Am Diet Assoc.* 110(3): 383-389, 2010
- Low Fat Diet (20%) = Lower Anxiety/Depression / Higher Vigor
 - Torres & Nowson CA. *Nutrition*. Sep;28(9):896-900. 2012
- Fast Food / Commercial baked Goods = Higher Depression Risk
 - Sanchez-Vilegas et al. *Public Health Nutr* 15(3), 424-432, 2011
- Diet/Exercise - 10% weight loss (overweight) = Increased Vitality
 - Imayama et al. *Int J Behav Nutr & Phys Activity* 8:18, 2011
- Food restriction (lightweight athletes) = Reduced Vigor
 - Filaire et al. *Int J Sports Med*. Aug;22(6):454-9. 2001
- Bonito (tuna) Broth (EAAs) = Reduced Fatigue / Improved Vigor
 - Kuroda & Nozawa. *Biomed Res* 29(4), 175-179, 2008
- Depressed Patients (cancer) = Lower use of CAM
 - Stein et al. *Cancer* Sept 15, pp 4397-4408, 2009
- Positive Psychological Well-Being = longer survival (healthy/diseased)
 - Chida & Steptoe. *Psychosomatic Med* 70:741-756, 2008

Breakfast Experiment Attention Deterioration from 8 AM (Higher Score Worse) --Normal Kids



Wesnes et al (2003) Breakfast reduces declines in attention and memory over the morning in schoolchildren. *Appetite*, 41, 329–331

PROZAC



Lexapro



Lunesta



Celexa



\$80B+

PAX

Red Bull

Zoloft

W... XL



AMBIEN



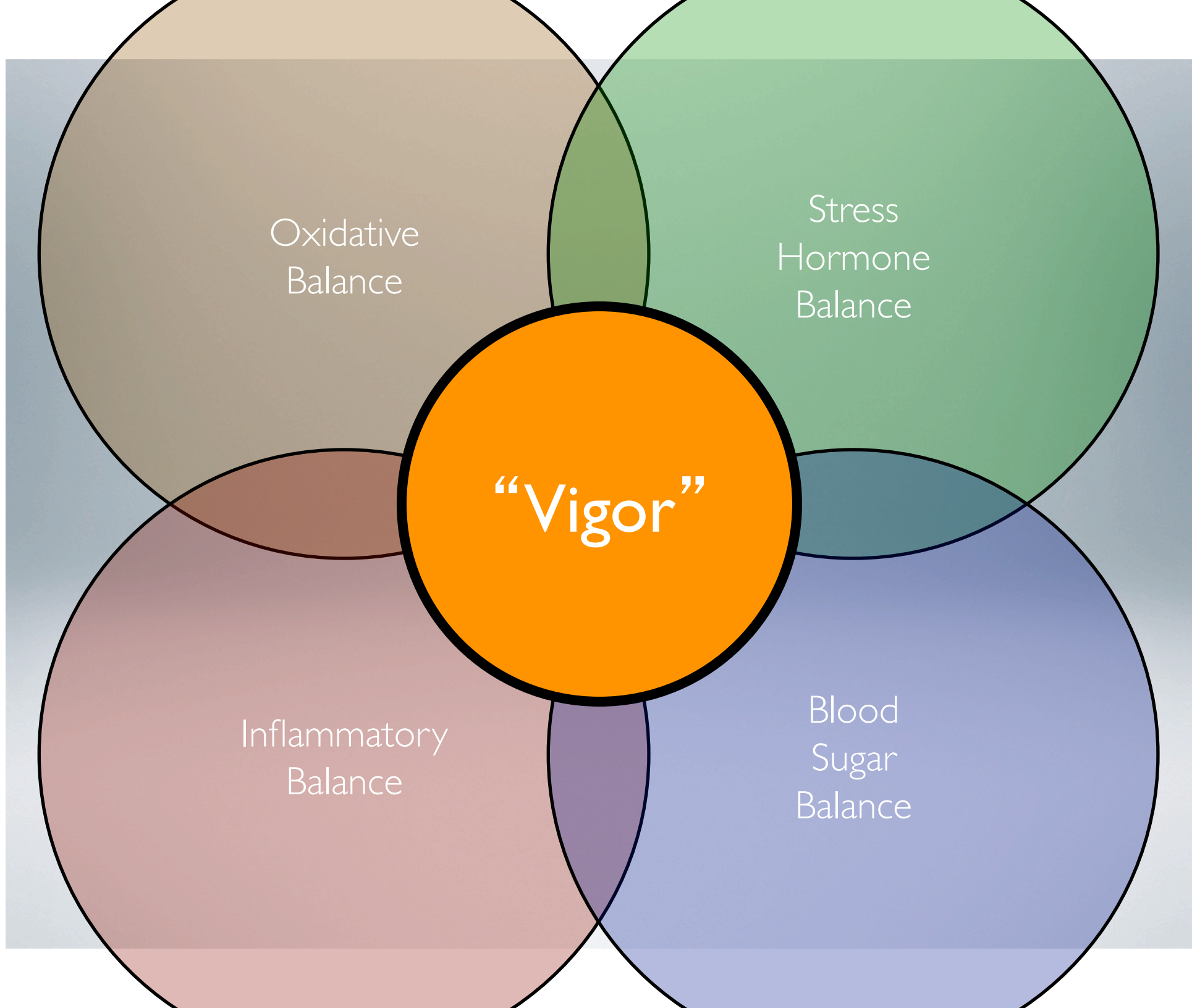
EFFEXOR XR

LUVOX



Cymbalta





Oxidative
Balance

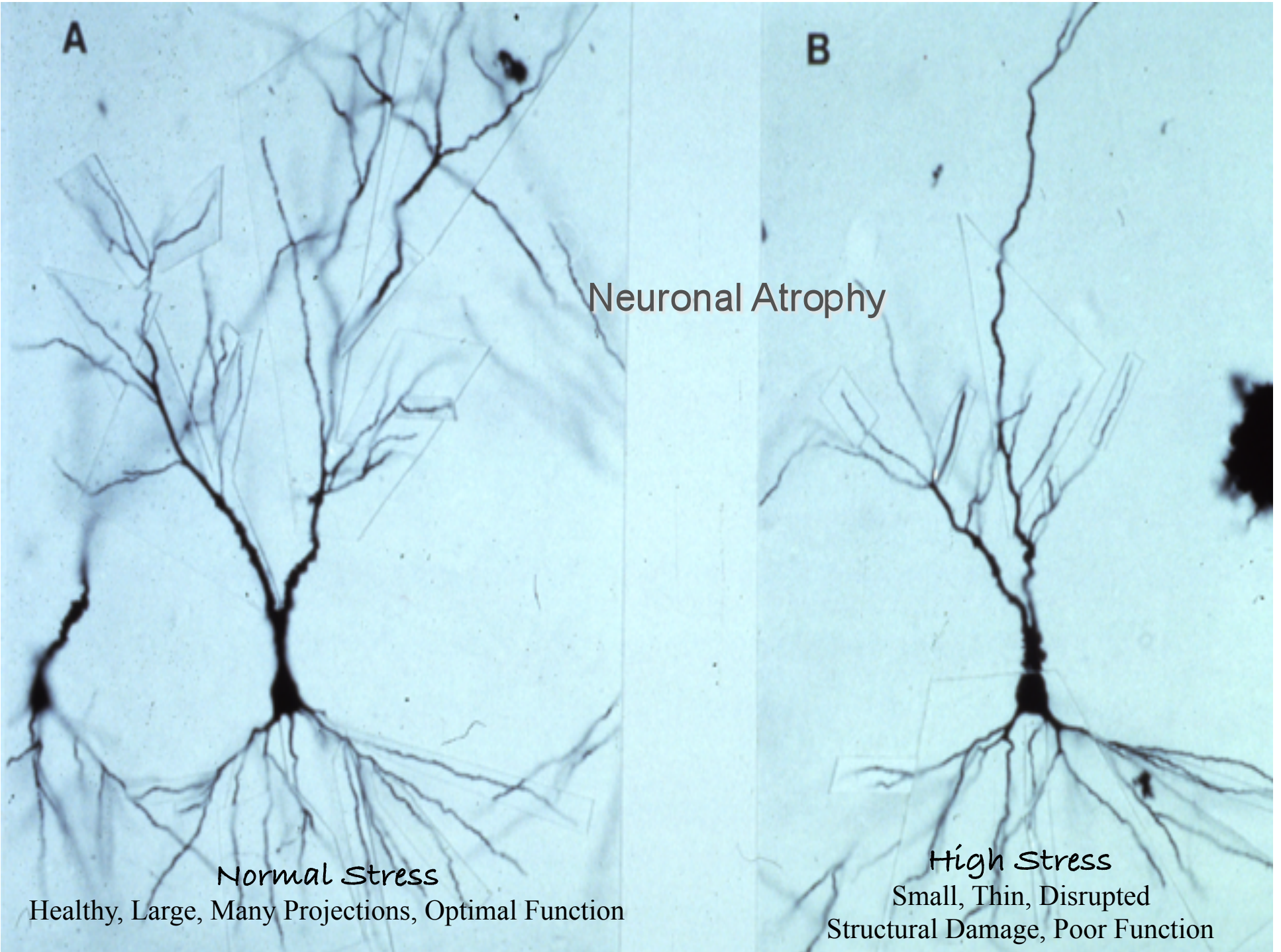
Stress
Hormone
Balance

“Vigor”

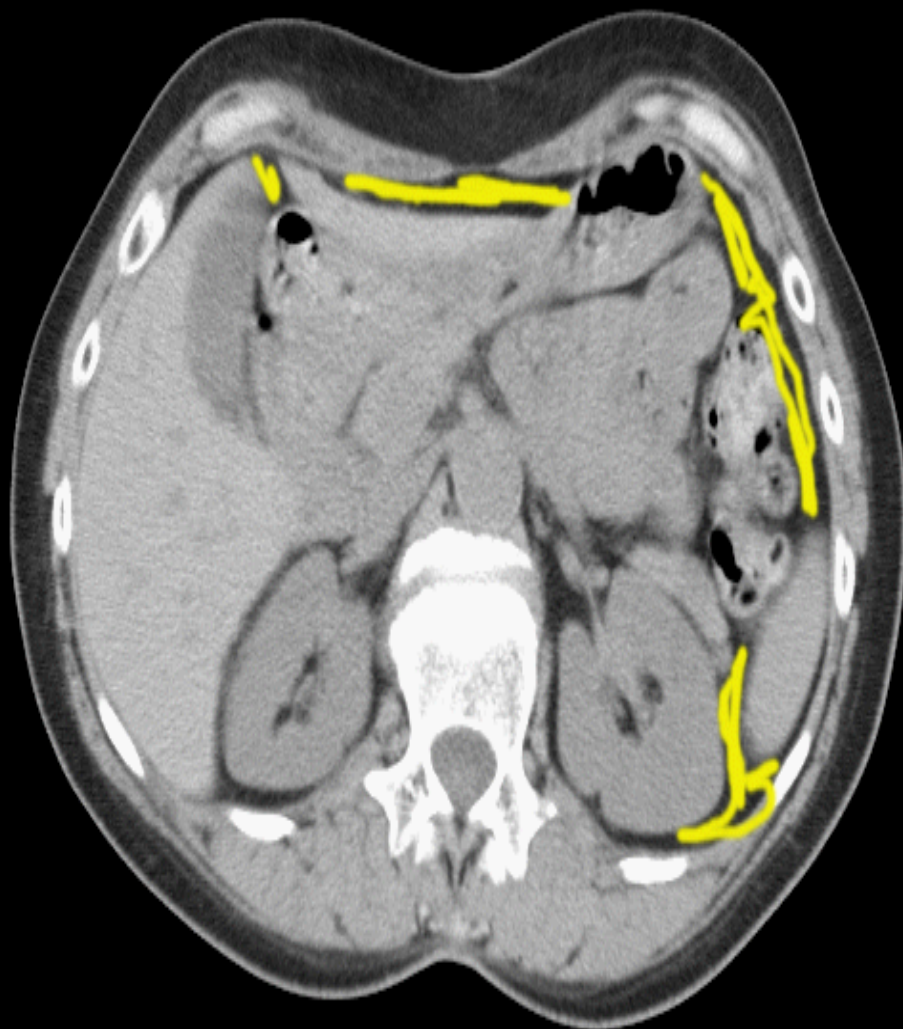
Inflammatory
Balance

Blood
Sugar
Balance





ABDOMINAL FAT ACCUMULATION

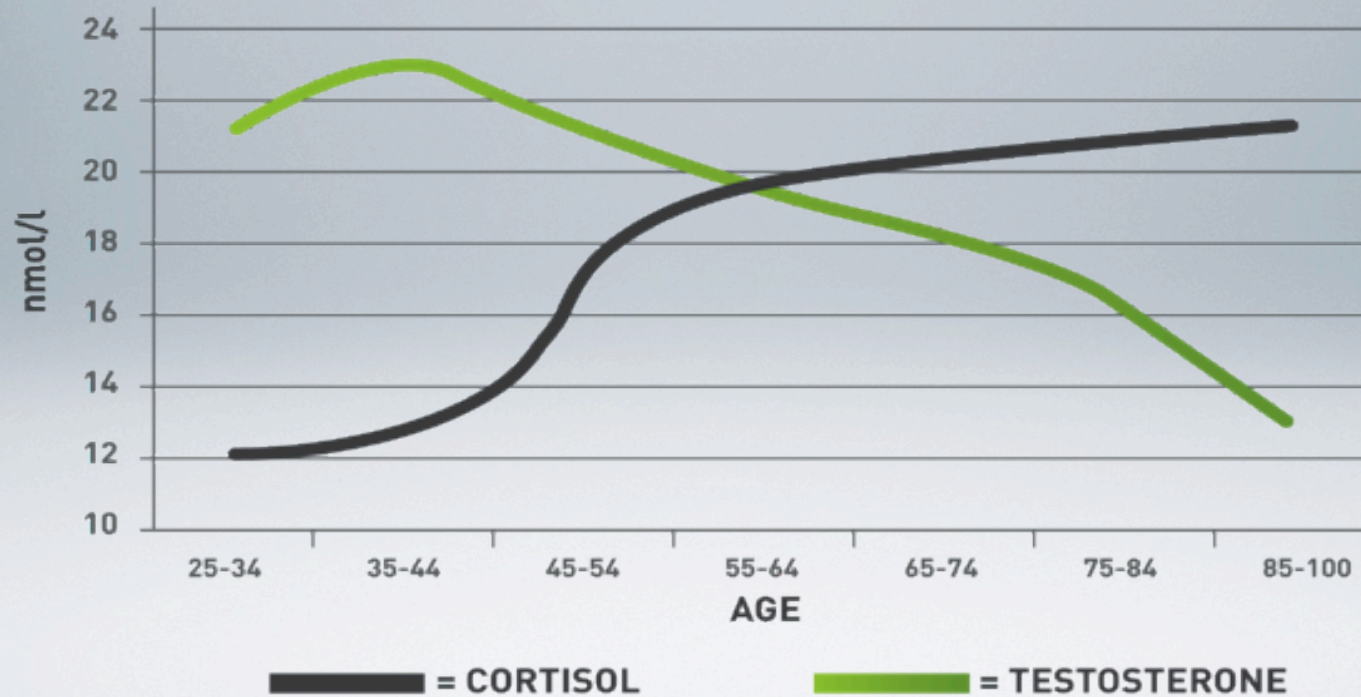


Normal Stress



High Stress

Effects of Aging



Elevated Cortisol and Appetite

- Women with high cortisol response (compared to women with low cortisol response):

- consumed more calories
- ate significantly more sweet foods
- had more negative moods



- High **dietary restraint** is associated with high urinary cortisol excretion

- Dietary Restraint = Consciously trying to limit food intake to achieve or maintain a desired body weight

“Healthy-Stressed” Subjects

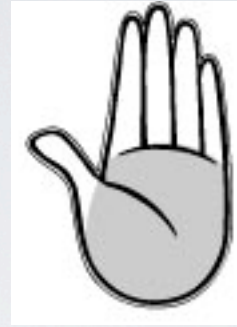
- N=50 (8 men, 42 women)
- Screened for “moderate” levels of psychological stress
- Followed for 8 weeks...
 - **S**tress Management
 - **E**xercise
 - **N**utrition
 - **S**upplementation
 - **E**valuation



The Helping Hand



Fruits & Veggies



Lean Protein



Concentrated Carbs



Added Fat



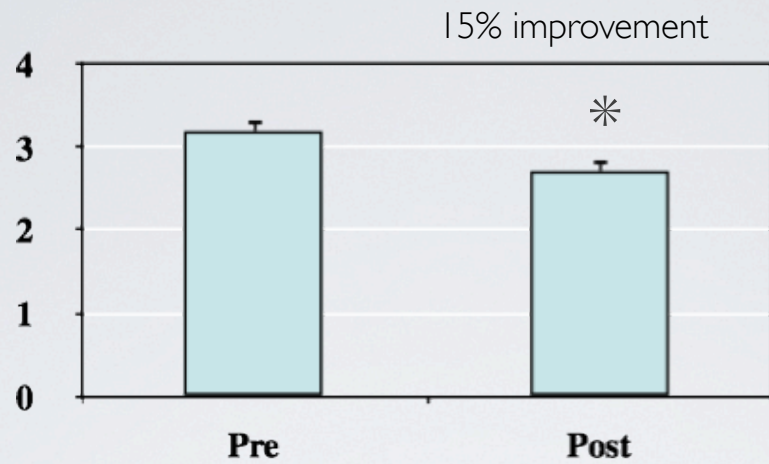
Metabolic Controllers

Hormone Balance Supplements

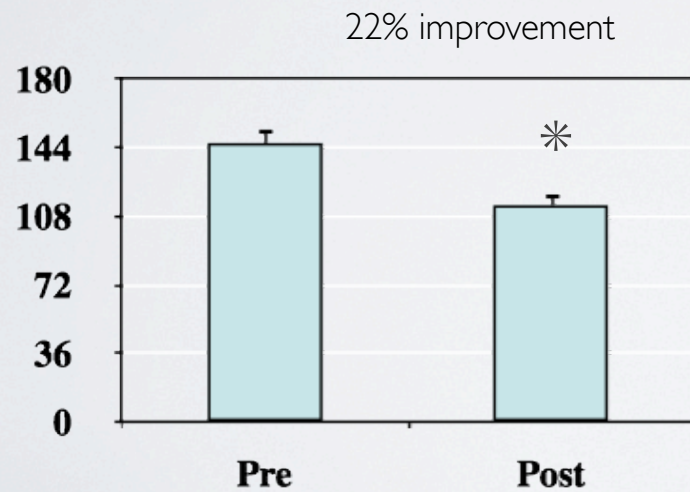


- *Eurycoma longifolia* root extract (Eurypeptides)
 - *Citrus sinensis* peel extract (PMFs)
 - *Camellia sinensis* leaf extract (Catechins)
 - L-Theanine (pure amino acid)
 - *Cordyceps sinensis* mycelia extract (Cordycepic acid)
 - *Rhodiola rosea* root extract (Rosavin)
 - *Eleutherococcus senticosus* root extract (Eleutherosides)
 - *Withania somnifera* root extract (Withanolides)
 - *Magnolia officinalis* root extract (Honokiol)
-
- Intended to:
 - Maintain “Metabolic Hormone Balance”
 - Cortisol:Testosterone, Dopamine:Norepinephrine, Serotonin, etc...
 - Deliver Healthy Energy (VIGOR)
 - Enhance Mood

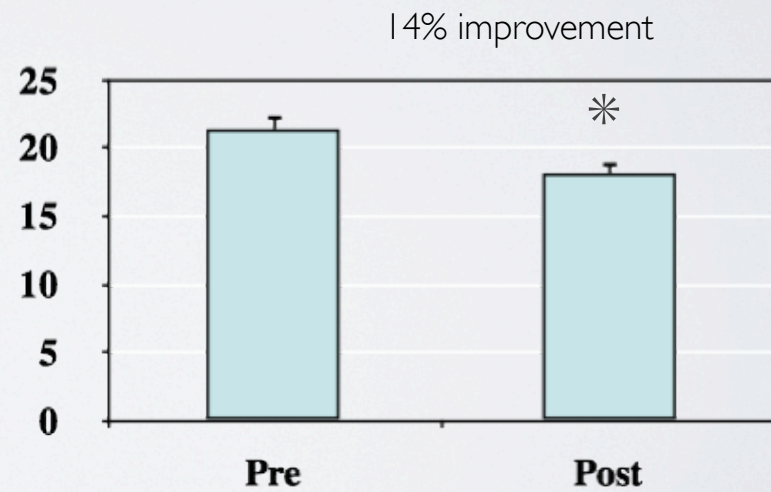
C:T Ratio (x1000)



Global Mood State (POMS)

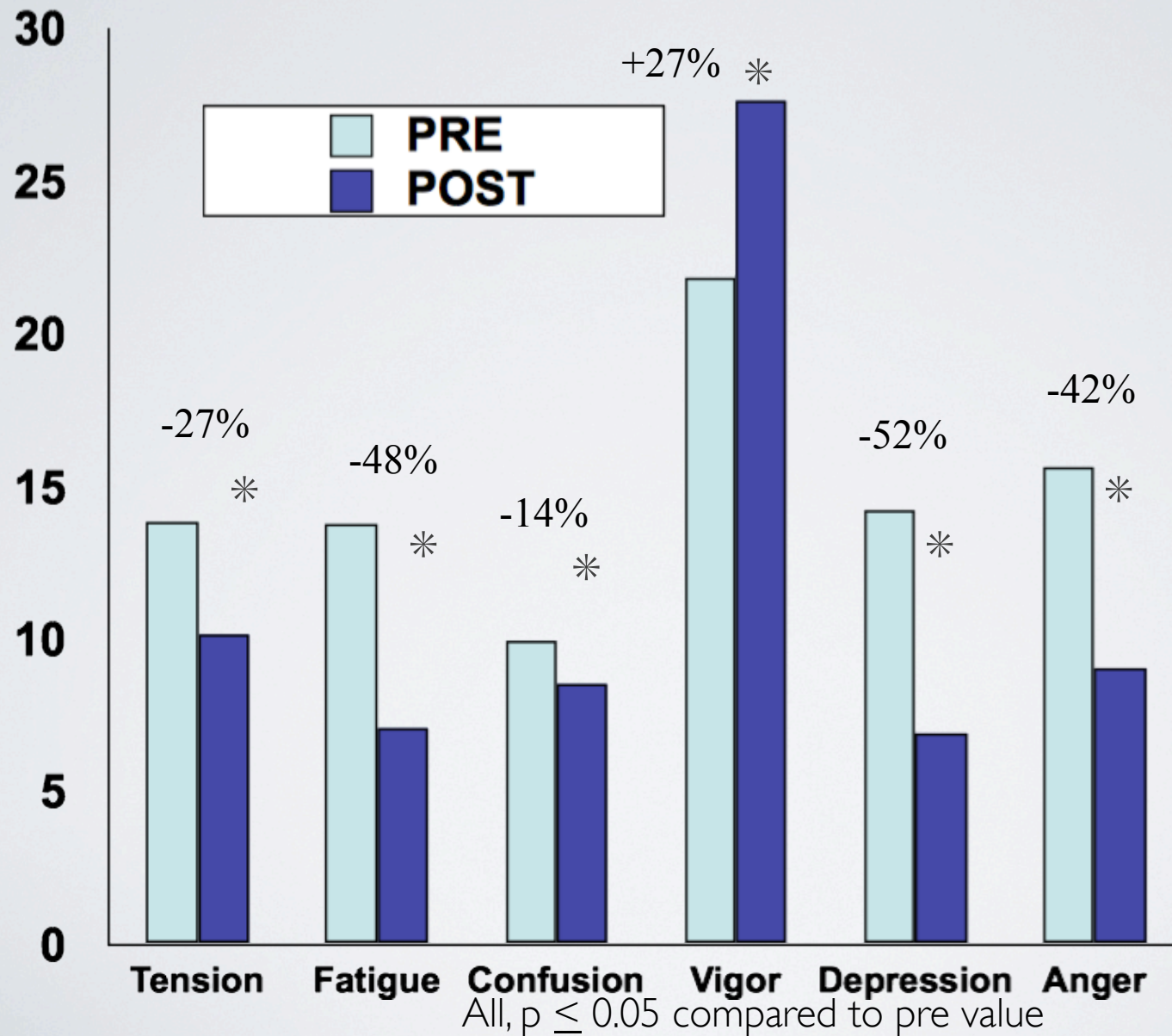


Subjective Stress



All, $p \leq 0.05$ compared to pre value

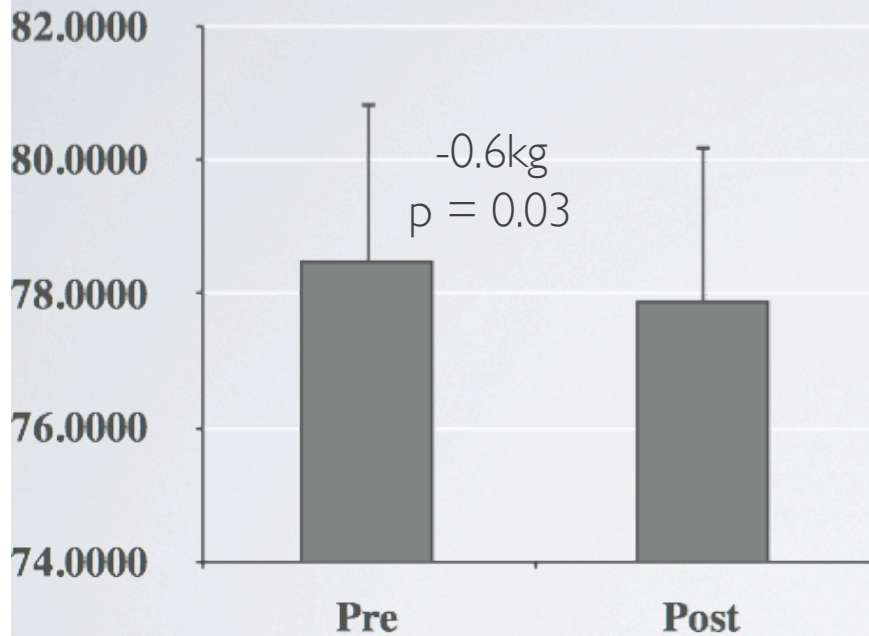
Profile of Mood States (POMS)



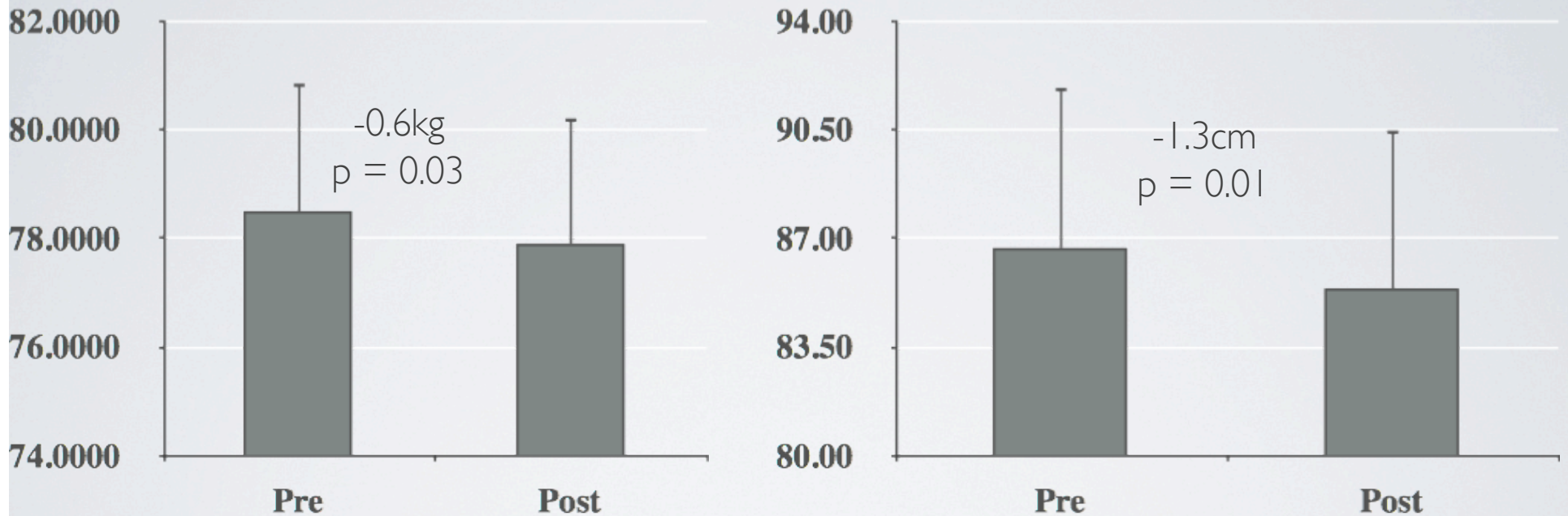
RESULTS

Body Weight & Waist Circumference

Body Weight (kg)



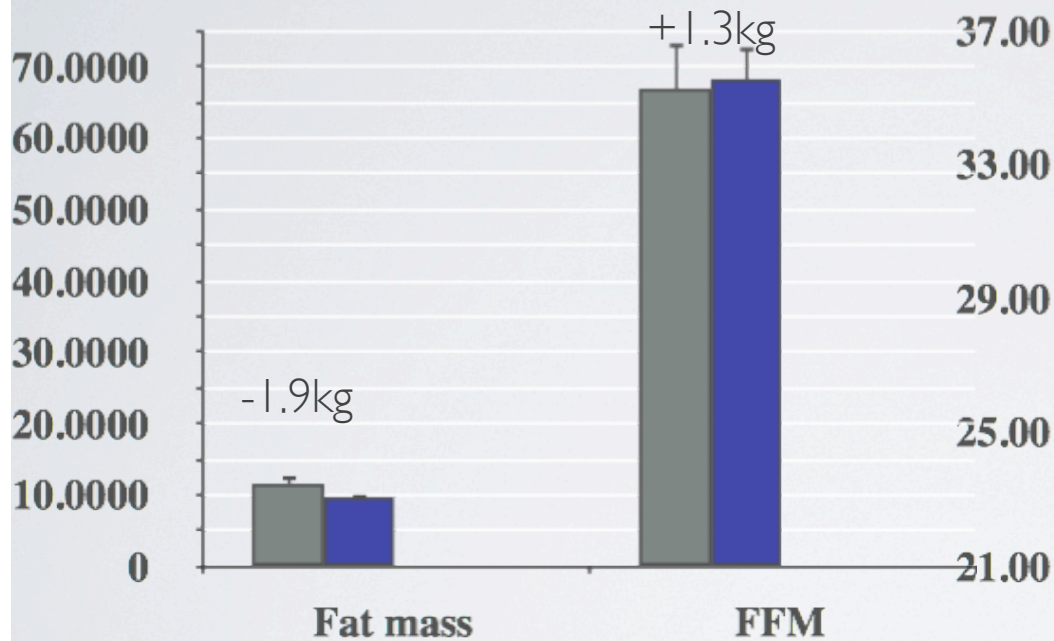
Waist Circumference (cm)



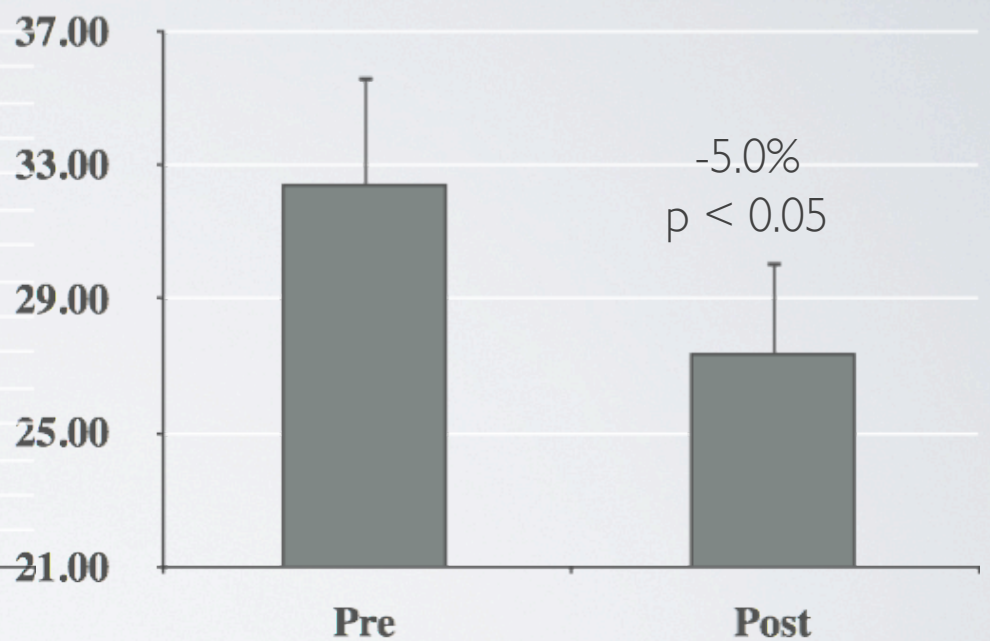
RESULTS

Body Composition

Fat Mass & Lean Mass (kg)



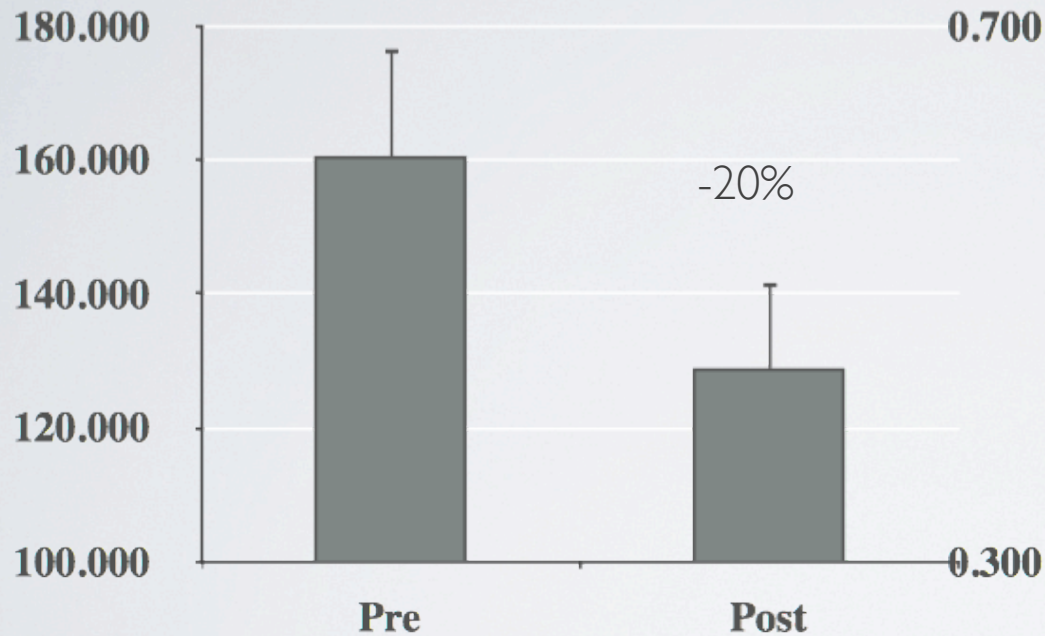
Body Fat (%)



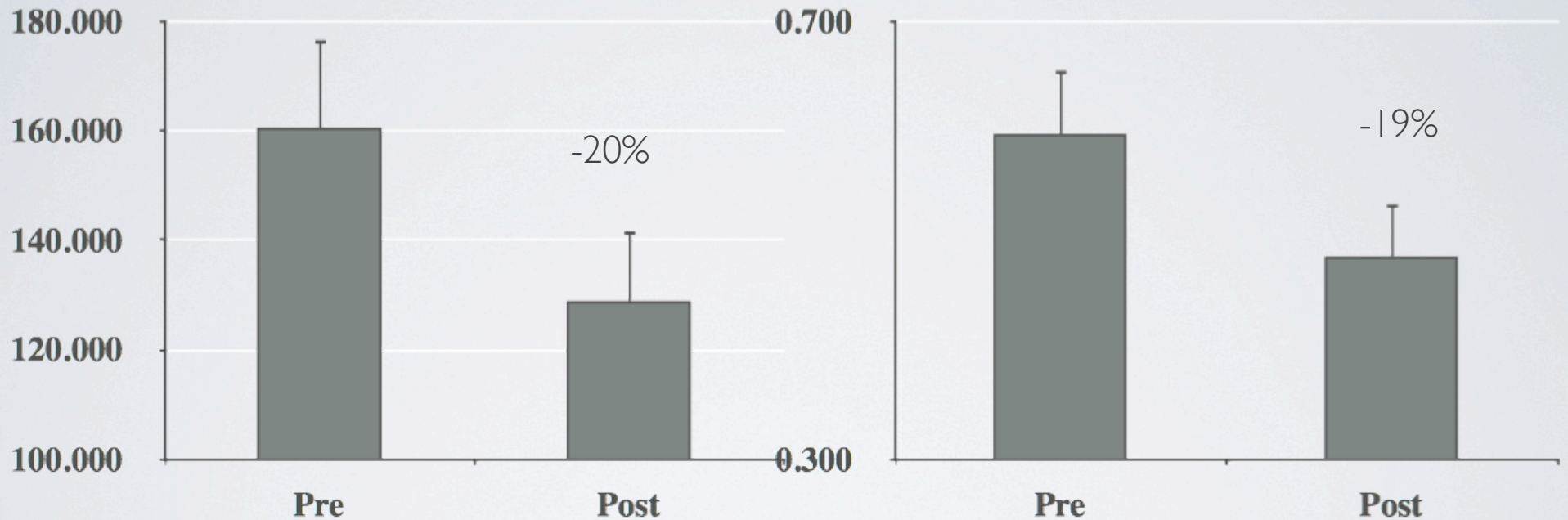
RESULTS

Global Mood State & Salivary Cortisol

Global Mood State (POMS)



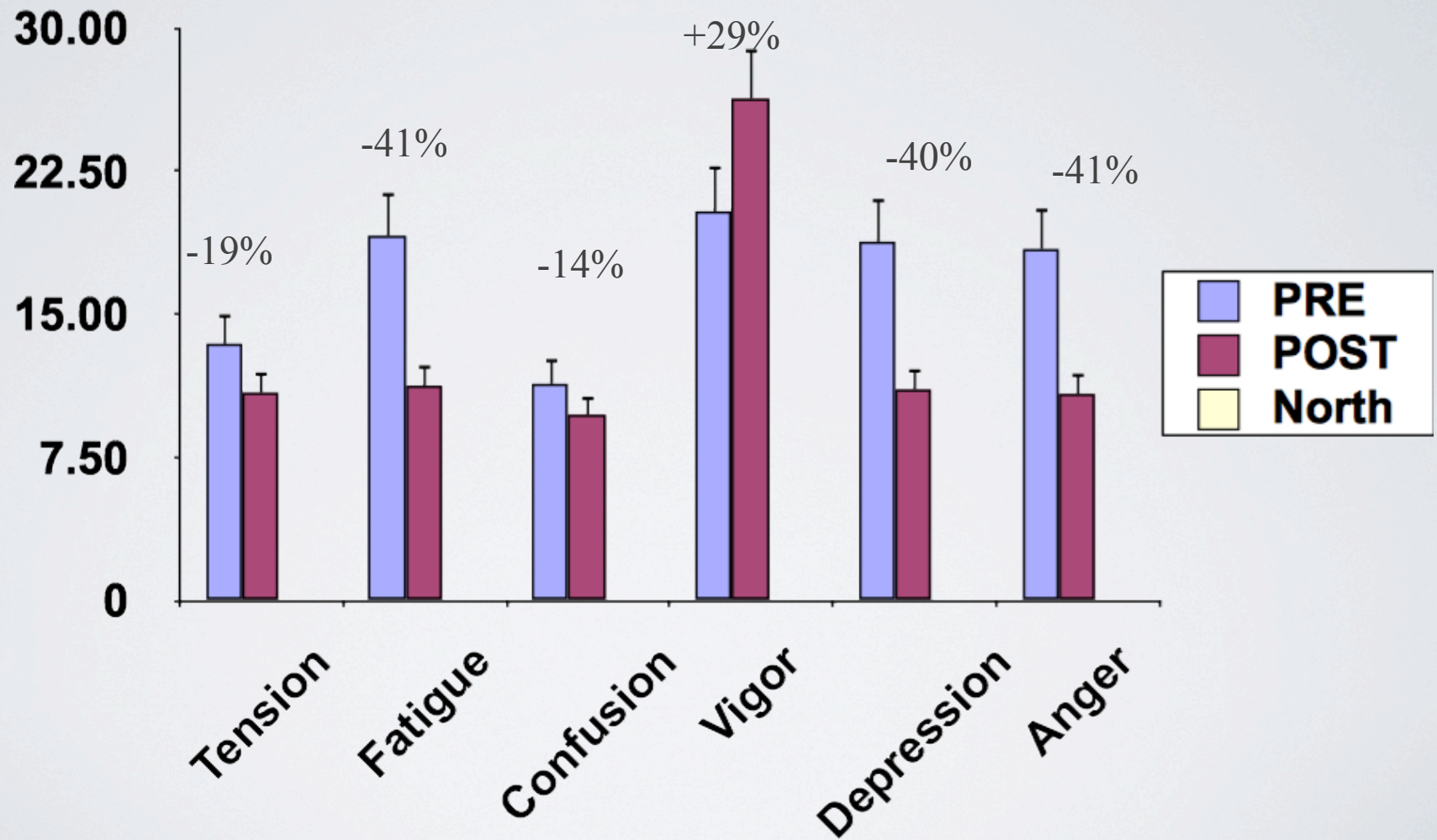
Salivary Cortisol (ug/dL)



Both, $p \leq 0.05$ compared to pre value

RESULTS

Profile of Mood States (POMS)



Dietary Supplement Combination Reduces Inflammation and Improves Mood State in Stressed Subjects



S. Talbott¹, J. Talbott¹, M. Vosti², & J. Anderson²

¹*SupplementWatch* & ²*South Mountain Chiropractic, Salt Lake City (Draper), UT*

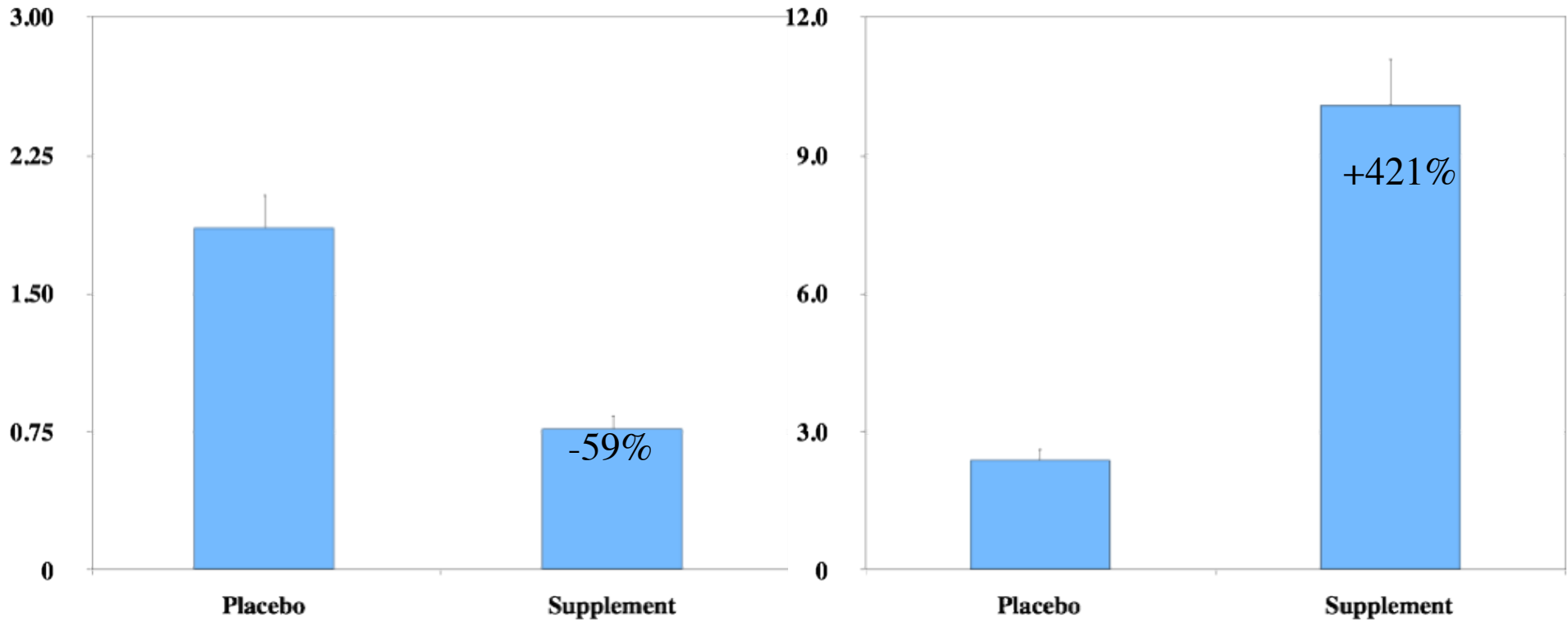


RESULTS (week 4)

Inflammation & Metabolic Balance

hs-CRP

FAI/24h-Cortisol

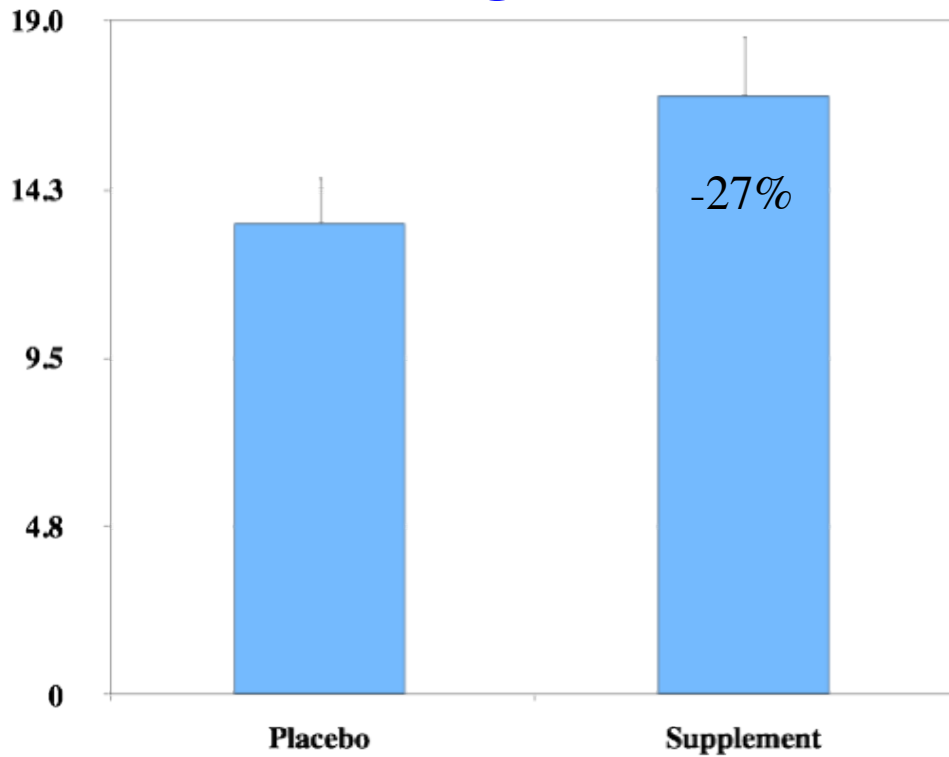


Both, $p \leq 0.05$ compared to Placebo

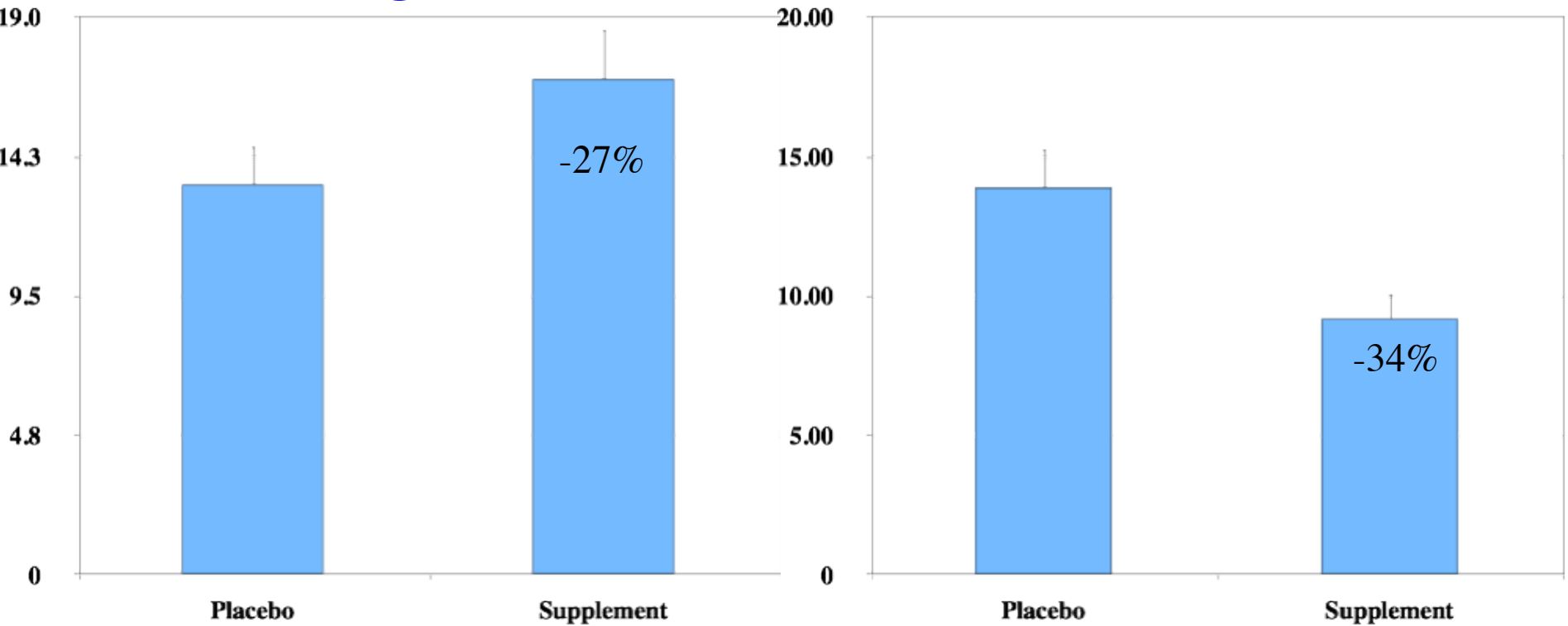
RESULTS (week 4)

Profile of Mood States (POMS)

Vigor



Tension



Both, $p \leq 0.05$ compared to Placebo

Effect of *Eurycoma longifolia* Extract on Anabolic Balance During Endurance Exercise



S. Talbott, J. Talbott, J. Negrete, M. Nichols, and J. Roza

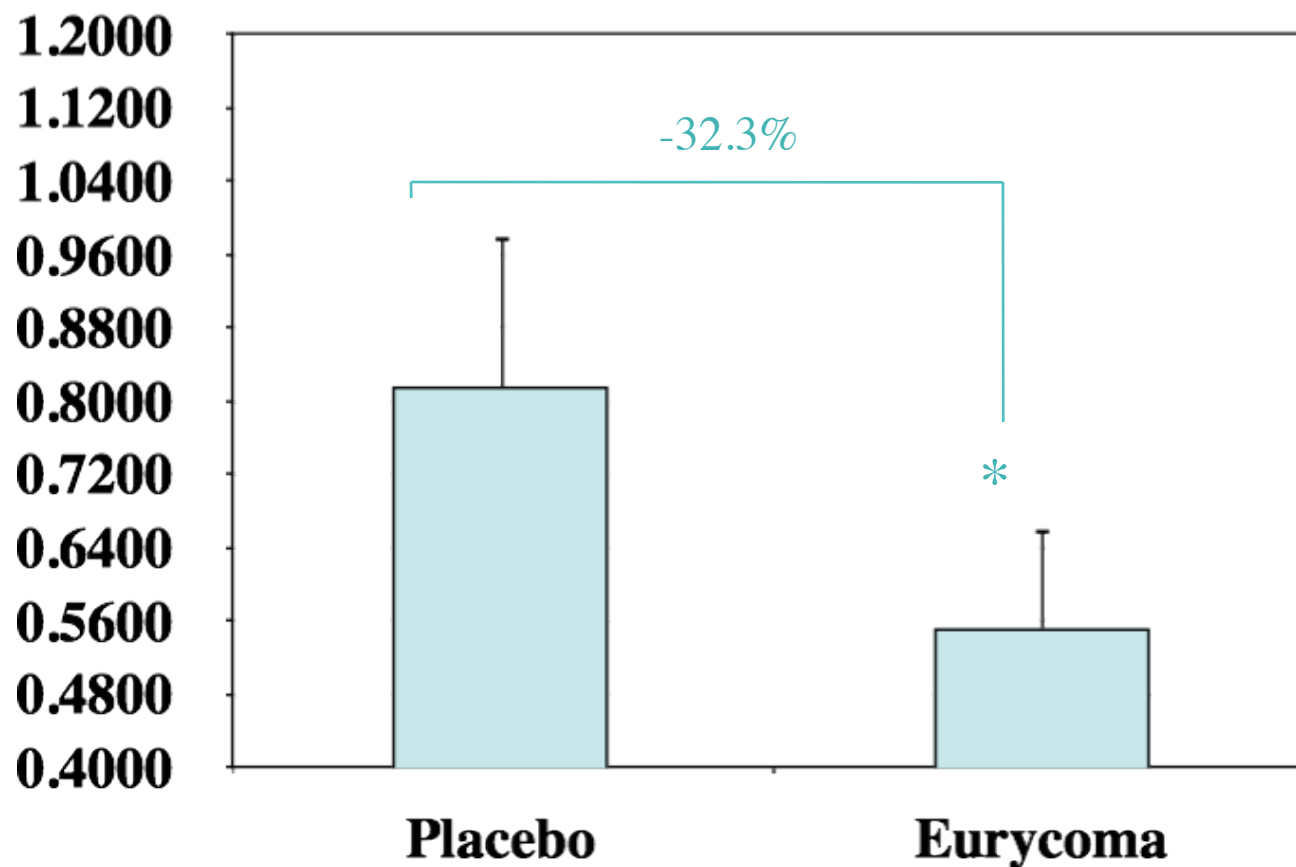
SupplementWatch, Inc., Salt Lake City (Draper), UT

& Source One Global, Chicago, IL



RESULTS

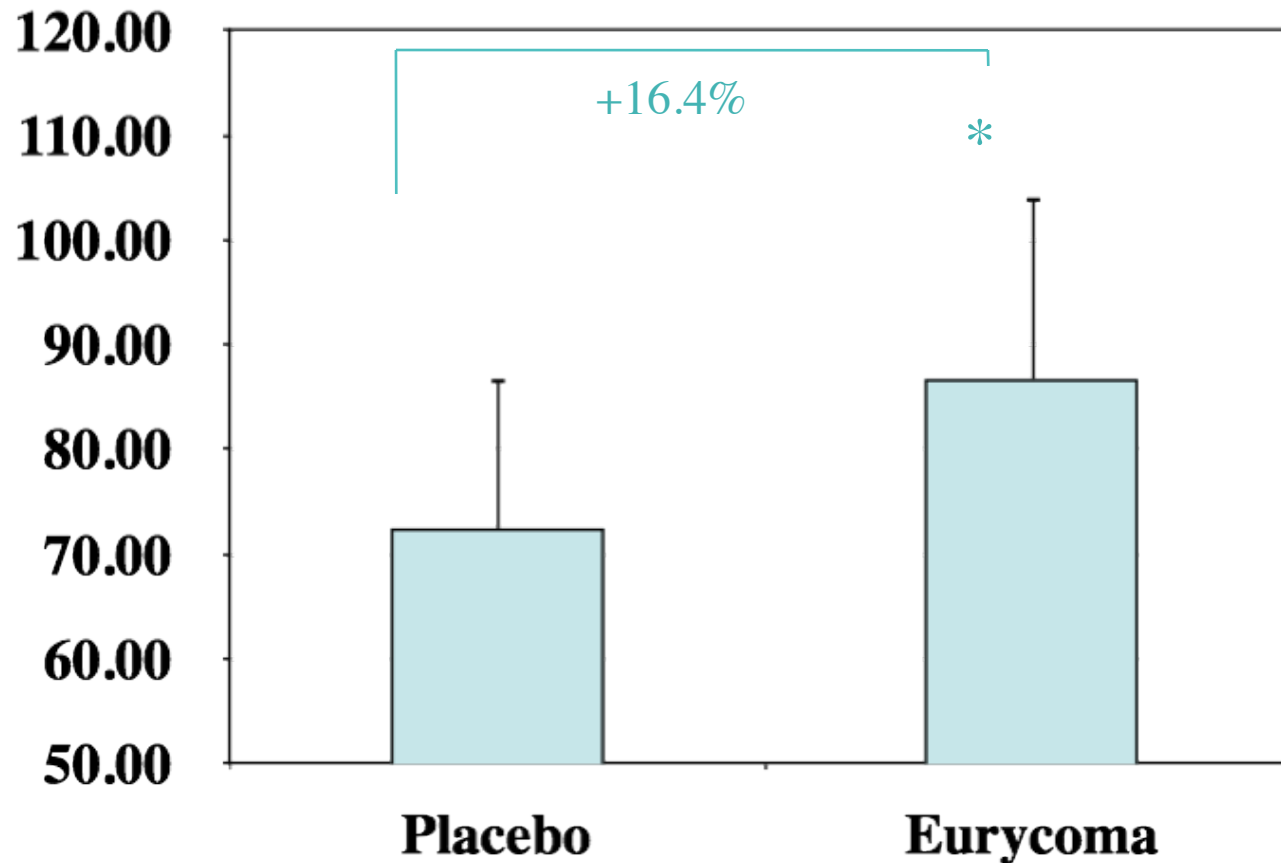
Salivary Cortisol (ug/dL)



* $p \leq 0.05$ compared to Placebo

RESULTS

Salivary Testosterone (pg/dL)



* $p \leq 0.05$ compared to Placebo

Effect of Branched Chain Amino Acids on Salivary Cortisol Levels During Endurance Exercise



S. Talbott, J. Talbott, J. Negrete, and M. Nichols

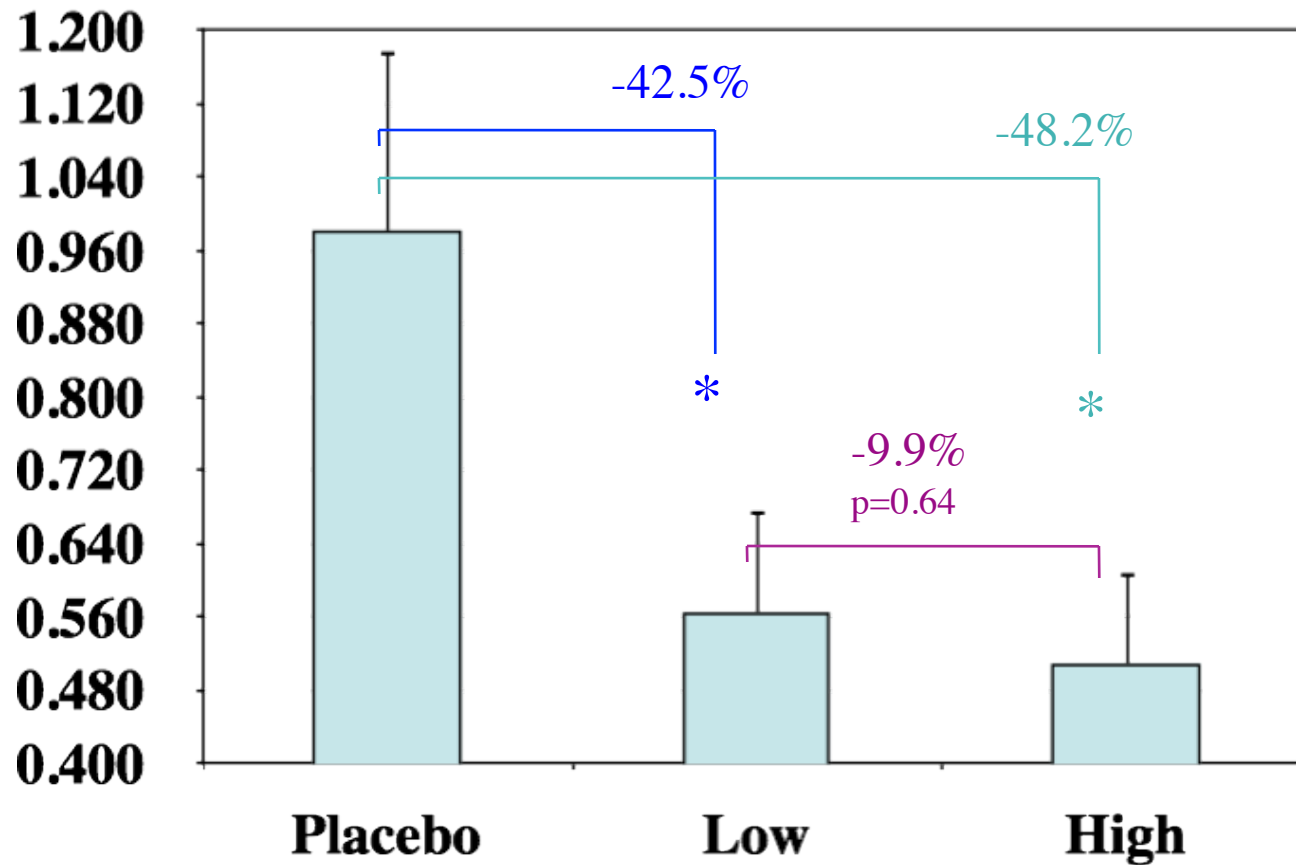
SupplementWatch, Inc.

Salt Lake City (Draper), UT



RESULTS

Salivary Cortisol (ug/dL)



*p ≤ 0.05 compared to Placebo

Effect of *Eurycoma longifolia* and *Magnolia officinalis* on Hormone Balance & Mood State in Stressed Subjects



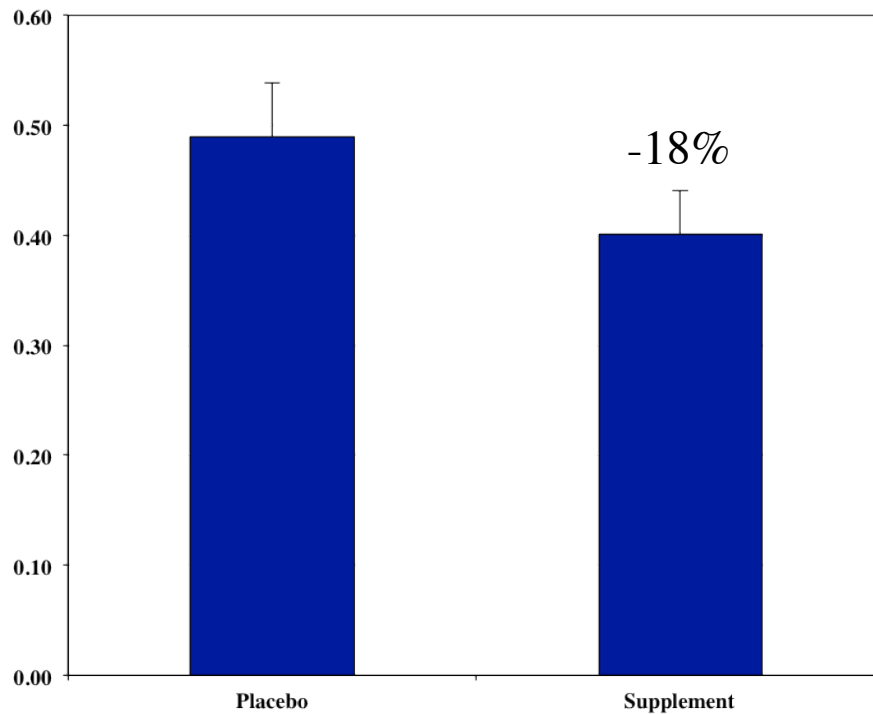
S. Talbott^{1,2}, J. Talbott¹, & M. Pugh²

¹*SupplementWatch* & ²*MonaVie*, Salt Lake City, UT

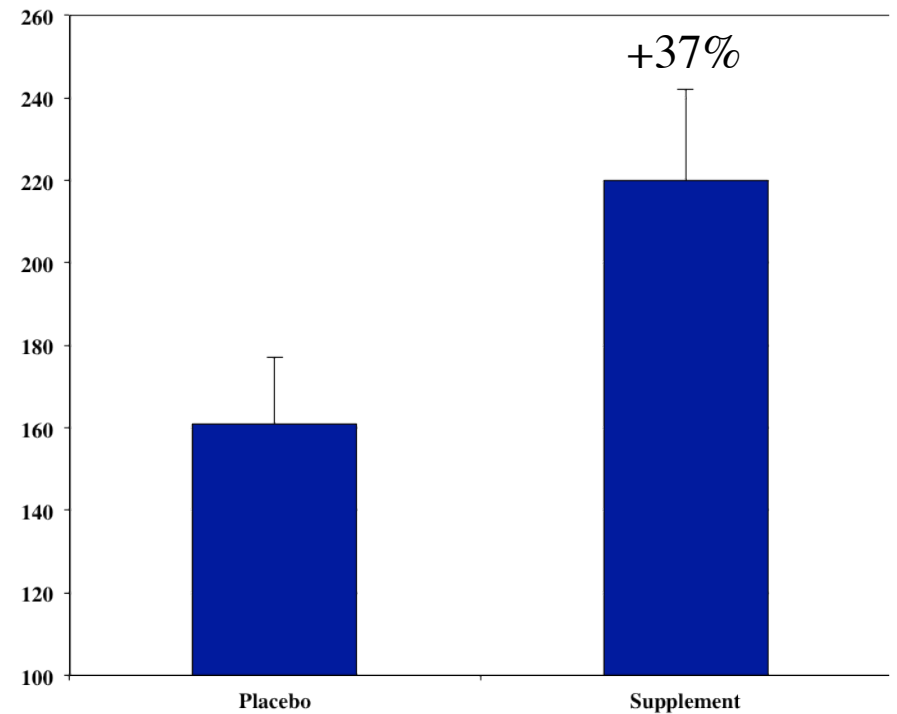
RESULTS (week 4)

Cortisol & Testosterone (% difference from Placebo)

Cortisol, ug/mL (Magnolia)



Testosterone, pg/mL (Eurycoma)



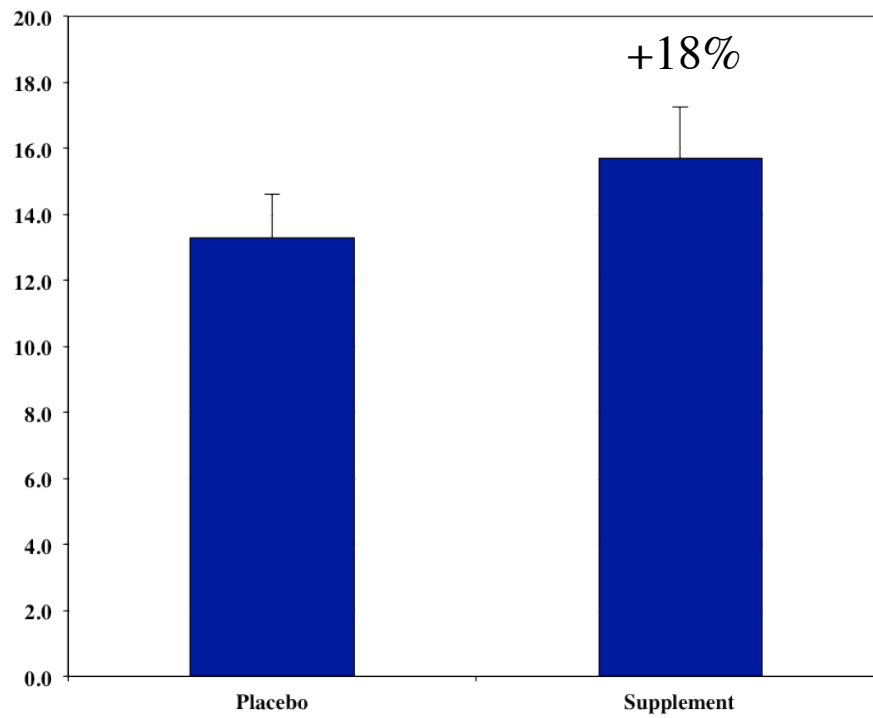
Both, $p \leq 0.05$ compared to Placebo



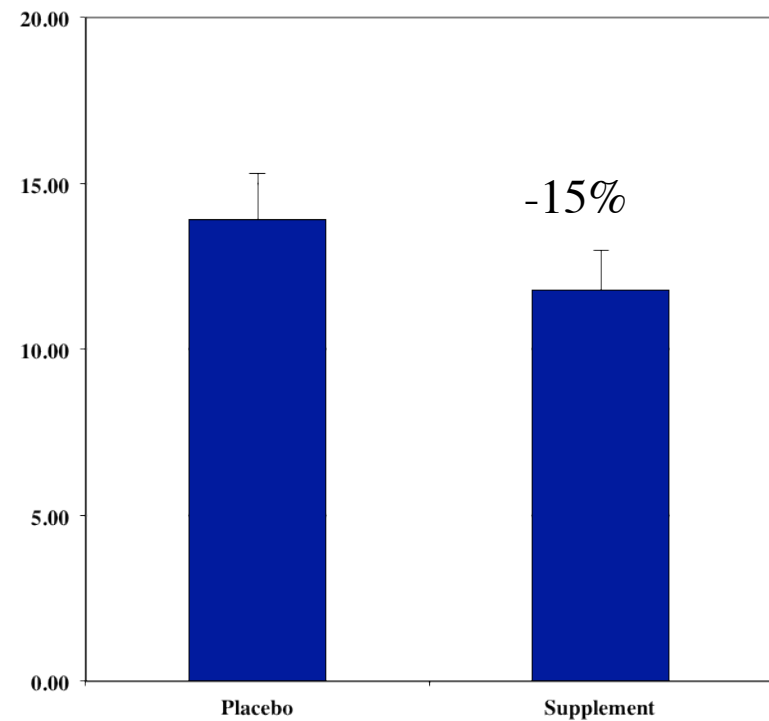
RESULTS (week 4)

Profile of Mood States (POMS)

Vigor (Magnolia)



Tension (Eurycoma)



Both, $p \leq 0.05$ compared to Placebo

Conclusions

- Top reasons for primary care visits involve Stress, Fatigue, Depression
- There is a strong scientific association between chronically elevated cortisol levels and stress-related diseases.
- The **magnitude** of effect (~20% Global Mood & Vigor) is equivalent to:
 - Pharmaceutical treatment (Prozac, Zoloft, Celexa, etc)
 - CBSM (cognitive behavioral stress management)
- Cortisol/Stress balance:
 - reduces appetite & enhances weight loss (metabolic effect)
 - improves diet / exercise compliance (behavioral effect)
 - enhances mood state & vigor (psychological effect)



Thank You!

