

**McGill Office
for Science
and Society**


SEPARATING SENSE FROM NONSENSE

NONSENSE: STATEMENTS, BELIEFS, PRACTICES AND PRODUCT CLAIMS THAT PURPORT TO BE FACTUAL BUT ARE INCOMPATIBLE WITH THE SCIENTIFIC METHOD

"HEALTH SUPPLEMENTS"-THE GOOD, THE BAD AND THE UGLY

OBJECTIVES

- IDENTIFY SOME DANGEROUS SUPPLEMENTS**
- DESCRIBE SUPPLEMENTS WITH QUESTIONNABLE EFFECTS**
- EXAMINE SUPPLEMENTS WITH POTENTIAL BENEFITS**



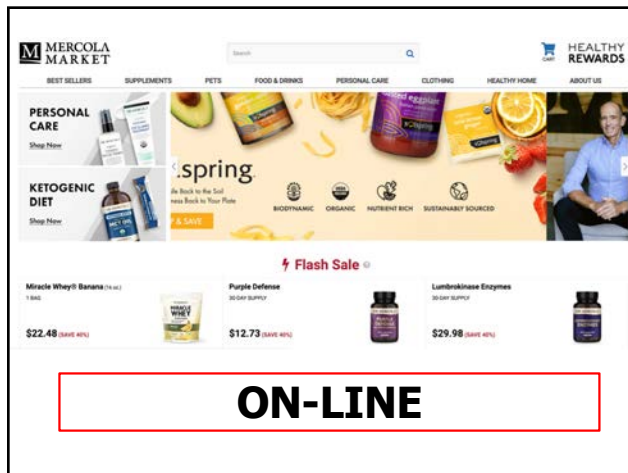
NO CONFLICT OF INTEREST



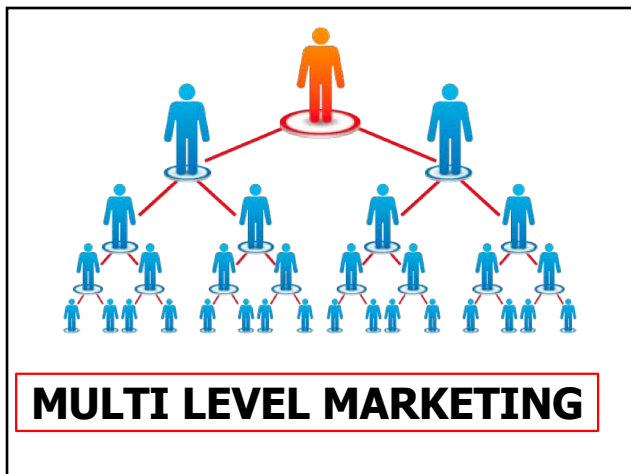
HEALTH SUPPLEMENTS



PHARMACIES AND HEALTH FOOD STORES

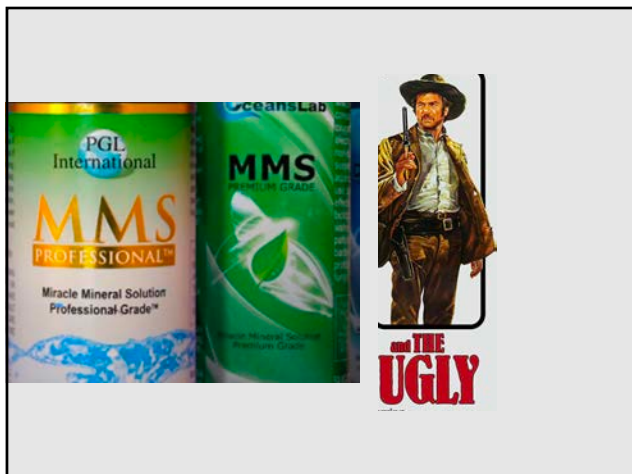
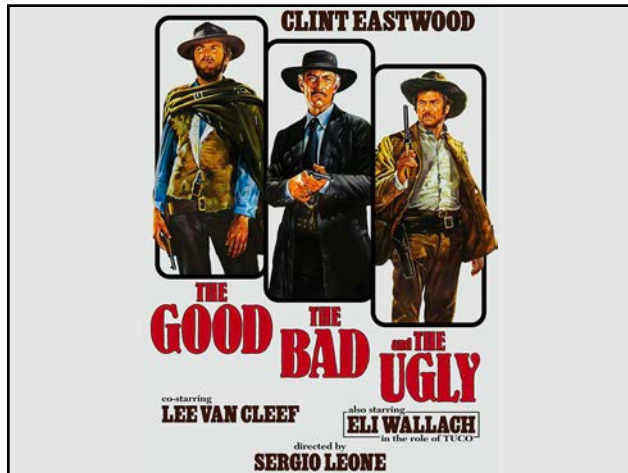


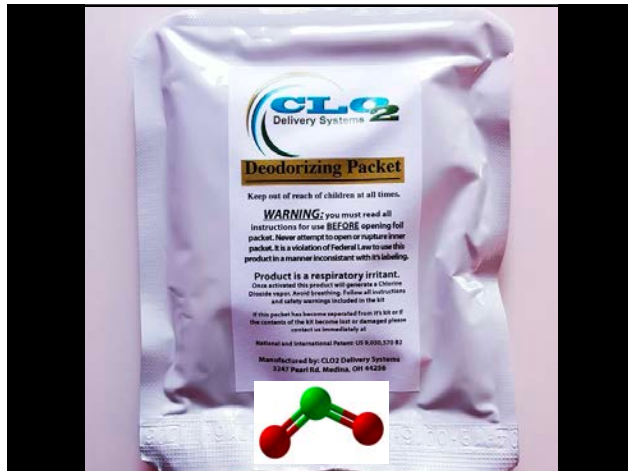
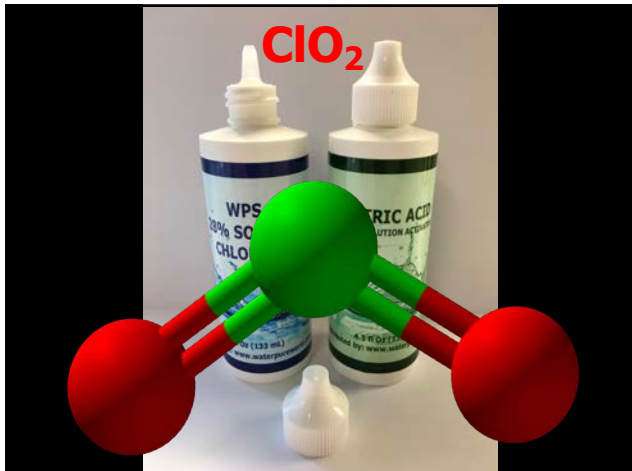
ON-LINE



MULTI LEVEL MARKETING







Colombia arrests U.S. men accused of selling fake COVID-19 cure

The Associated Press Staff
 Content
 Published 11/16/2020, August 13, 2020 12:59PM EDT
 Last Updated Thursday, August 13, 2020 9:54AM EDT

FRANKLIN TEMPLETON
REBUILDING WITH CONFIDENCE. QUALITY COUNTS.
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In this photo released by Colombia's Prosecutor's Press Office, a police officer and a soldier flank Mark Gormon, second left, and his son, Joseph Gormon, during a raid in Santa Marta, Colombia, Tuesday, Aug. 11, 2020. (Colombia's Prosecutor's Press Office)

Unapproved Pharmaceutical Ingredients Included in Dietary Supplements Associated With US Food and Drug Administration Warnings

Jenna Turkin, MPH; Tessa Fischer, DVM, MPH; Laurance Uggish, PharmD; David Mazzoni, PhD; Madhur Kumar, MS, PhD

776 products
 marketed as dietary supplements contained hidden active ingredients that are unsafe or unstudied.

Key Points

Question: What are the trends across adulterated dietary supplements associated with a warning released by the US Food and Drug Administration from 2007 through 2016?

Findings: In this quality improvement study, analysis of the US Food and Drug Administration warnings from 2007 through 2016 showed that unapproved pharmaceutical ingredients were identified in 776 dietary supplements, and these products were commonly marketed for sexual enhancement, weight loss, or muscle building. The most common adulterants were sildenafil for sexual enhancement supplements, substances for weight loss supplements, and synthetic steroids or steroid like ingredients for muscle building supplements, with 157 products (20.2%) containing more than 1 unapproved ingredient.


Meaning: Potentially harmful active pharmaceuticals continue to be identified in over the counter dietary supplements.

Five unapproved drugs found in cognitive enhancement supplements

Abstract
Objective
 To identify the presence of unapproved pharmaceutical drugs in over-the-counter dietary supplements marketed to improve memory and cognitive function.

Methods
 Supplements were analyzed for unapproved pharmaceutical ingredients by performing infrared, scanning electron microscopy, gas chromatography-mass spectrometry, or high-resolution liquid chromatography-mass spectrometry. Products were purchased online and analyzed using unapproved liquid chromatography-mass spectrometry, size of light mass spectrometry methods.

Results



- Aniracetam
- Omberacetam
- Phenibut
- Picamilon
- Vinpocetine

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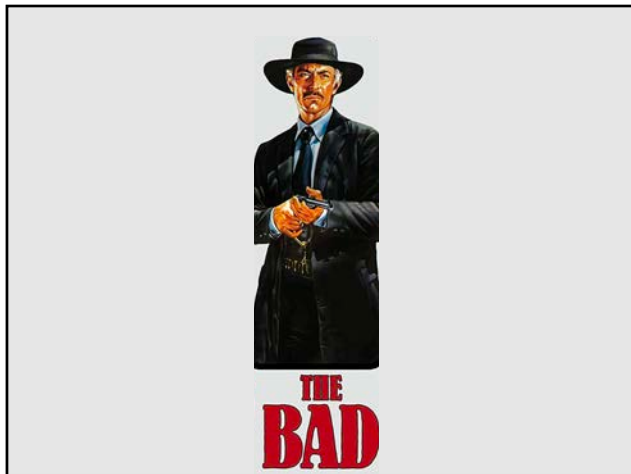
Hepatology. 2014 Oct; 69(4): 1399-1408. PMID: 25043597
 Published online 2014 Aug 25. doi: 10.1002/hep.27317

Liver injury from Herbs and Dietary Supplements in the US Drug Induced Liver Injury Network

Victor J. Navarro, MD,¹ Hujman Bamrah, PhD,² Herbert L. Rookovsky, MD,³ Timothy Davern, MD,⁴ Robert J. Fontana, MD,⁵ Lafaine Grant, MD,⁶ K. Rajender Reddy, MD,⁷ Leonard B. Seeff, MD,¹ Jose Serrano, MD, PhD,⁸ Avneel H. Sherker, MD,⁹ Andrew Stolz, MD,⁹ Jayant Talwalkar, MD,¹⁰ Maricruz Vega, MPH,¹ and Raj Vuppalanchi, MD¹¹

Conclusions

The proportion of liver injury cases attributed to HDS in DILIN has increased significantly. Liver injury from non-bodybuilding HDS is more severe than from bodybuilding HDS or medications, as evidenced by differences in unfavorable outcomes, death and transplantation.




Prevagen® Improves Memory*

Prevagen is a dietary supplement that has been clinically shown to help with mild memory problems associated with aging.*

Prevagen contains apoaequorin, which is safe and uniquely supports brain function.*

LEARN MORE



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*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.



Randomized Controlled Trial > Adv Mind Body Med. Winter 2016;30(1):4-11.

Effects of a Supplement Containing Apoeaquorin on Verbal Learning in Older Adults in the Community

Daniel L Moran, Mark Y Underwood, Taylor A Gabourie, Kenneth C Lerner
PMID: 26878676

Abstract

Context: The changes in verbal learning and working memory that often occur with aging may result in reduced social and intellectual interactions. These changes significantly affect an individual's quality of life. As humans age, the body's ability to regulate and maintain calcium levels is diminished. Pharmacological manipulation of the entry of free calcium (Ca²⁺) has been shown to be effective in increasing some aspects of cognitive function in the aged brain. Apoeaquorin has been shown in laboratory studies to regulate levels of intracellular calcium in neuronal cells and to provide protection against ischemic cell death.

Prevagen: How Can This Memory Supplement Flunk Its One Trial and Still Be Advertised as Effective?
November 20, 2017

POST-HOC ANALYSIS:




QUINCY BIOSCIENCE WENT BACK AND SLICED AND DICED THE RESULTS, PERFORMING MORE THAN 30 ADDITIONAL ANALYSES OF THE DATA, AND CAME UP WITH THREE RESULTS THAT WERE STATISTICALLY SIGNIFICANT (AND MORE THAN 27 RESULTS THAT WEREN'T).

ONE CAPSULE DAILY
Dietary Supplement
30 Capsules

FTC, New York State Charge the Marketers of Prevacen With Making Deceptive Memory, Cognitive Improvement Claims

January 9, 2017

Widely advertised supplement touted to improve memory in 90 days

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FOR RELEASE

TAGS: Bureau of Consumer Protection | Consumer Protection | Advertising and Marketing | Health Claims

The Federal Trade Commission and New York State Attorney General have charged the marketers of the dietary supplement Prevacen with making false and unsubstantiated claims that the product improves memory, provides cognitive benefits, and is "clinically shown" to work.


The extensive national advertising campaign for Prevacen, including TV spots on national broadcast and cable networks such as CNN, Fox News, and NBC, featured charts depicting rapid and dramatic improvement in memory for users of the product. In fact, the complaint alleges, the marketers relied on a study that failed to show that Prevacen works better than a placebo on any measure of cognitive function.

TOP CLASS ACTIONS
HELPING RIGHT CONSUMER WRONGS™

Settlements Open Lawsuits

This settlement is closed!

Please see what other class action settlements you might qualify to claim cash from in our Open Settlements directory!



UPDATE 2: Claimants in the Prevacen brain health supplement class action lawsuit reported receiving checks for \$12 as of early February 2021. Congratulations to everyone who filed a claim and got paid!

UPDATE: The Prevacen Brain Health Supplement Class Action Settlement was granted final approval on November 18, 2020. Let Top Class Actions know when you receive a check in the comments section below or on our Facebook page.

Quincy Bioscience has agreed to resolve the claims that it misrepresented its Prevacen products as supporting brain health and helping with memory loss. Under the terms of the settlement, eligible purchasers can recover refunds of up to \$70.



The New England Journal of Medicine

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Volume 323 JULY 5, 1990 Number 1

EFFECTS OF HUMAN GROWTH HORMONE IN MEN OVER 60 YEARS OLD

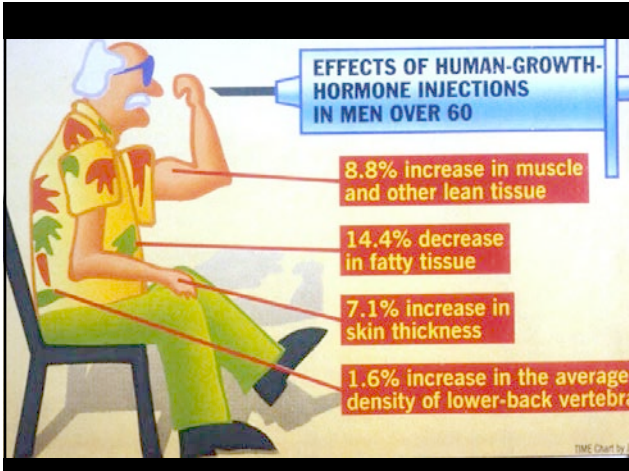
DANIEL RUDMAN, M.D., AXEL G. FELLNER, M.D., HOSKOTE S. NAGRAJ, M.D., GREGORY A. GERGANS, M.D., PARDEE Y. LALITHA, M.D., ALLEN F. GOLDBERG, D.D.S., ROBERT A. SCHLENKER, PH.D., LESTER COHN, M.D., INGE W. RUDMAN, B.S., AND DALE E. MATTSOJ, PH.D.

Abstract Background. The declining activity of the growth hormone–insulin-like growth factor I (IGF-I) axis with advancing age may contribute to the decrease in lean body mass and the increase in mass of adipose tissue that occur with aging.

Methods. To test this hypothesis, we studied 21 healthy men from 61 to 81 years old who had plasma IGF-I concentrations of less than 350 U per liter during a six-month base-line period and a six-month treatment period that followed. During the treatment period, 12 men (group 1) received approximately 0.03 mg of bi-synthetic human growth hormone per kilogram of body weight subcutaneously three times a week, and 9 men (group 2) received no treatment. Plasma IGF-I levels were measured monthly. At the end of each period we measured lean body mass, the mass of adipose tissue, skin thickness (epidermis plus dermis), and bone density at

Results. In group 1, the mean plasma IGF-I level rose into the youthful range of 500 to 1500 U per liter during treatment, whereas in group 2 it remained below 350 U per liter. The administration of human growth hormone for six months in group 1 was accompanied by an 8.8 percent increase in lean body mass, a 14.4 percent decrease in adipose-tissue mass, and a 1.6 percent increase in average lumbar vertebral bone density (P<0.05 in each instance). Skin thickness increased 7.1 percent (P = 0.07). There was no significant change in the bone density of the radius or proximal femur. In group 2 there was no significant change in lean body mass, the mass of adipose tissue, skin thickness, or bone density during treatment.

Conclusions. Diminished secretion of growth hormone is responsible in part for the decrease of lean body mass, the expansion of adipose-tissue mass, and the thinning of the skin that occur in old age. (N Engl J Med 1990;



Growth Hormone Therapy for the Elderly: The Fountain of Youth Proves Toxic

To the Editor.—We¹ and others^{2,3} have proposed the use of recombinant human growth hormone (GH) therapy for the elderly in an attempt to retard the undesirable changes in muscle mass and function, body fat, and bone mineral content associated with advancing age, and the subsequent impact these have on health care costs. Our initial enthusiasm for this idea has declined as the result of an unexpectedly high incidence of side effects of GH therapy in this population.

In 12 healthy older men (63 to 76 years of age) and two women (68 and 73 years of age) who received daily GH (12.5

1694 JAMA, October 13, 1993—Vol 270, No. 14

MHP
MAXIMIZE HUMAN PERFORMANCE

SECRETAGOGUE-ONE
HUMAN GROWTH FACTORS AND IGF-1 PRECURSORS

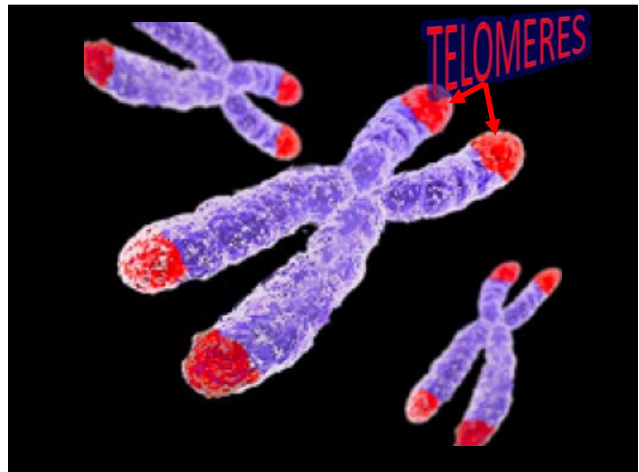
Supplement Facts
Serving Size: 1 Packet (12 g)
Servings Per Container: 30

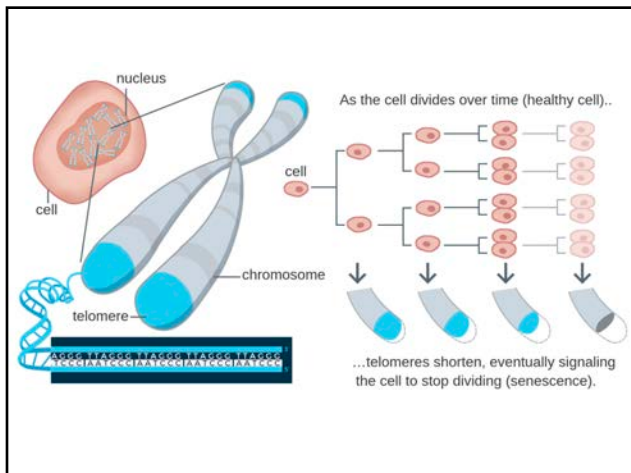
	Amount Per Serving	% Daily Value
Calories	45	
Total Carbohydrate	6 g	2%
Sugars	4 g	8%
Sodium (from sodium bicarbonate)	55 mg	2%
Potassium (from potassium bicarbonate)	200 mg	6%
Secretagogue One:	11,100 mg	100%
Proprietary Amino Acid Blend and Secretagogue Factors:	5,100 mg	
Glycine, L-glutamine, L-tyrosine, anterior pituitary substrates (sourced from porcine), gamma-aminobutyric acid (GABA), L-arginine (as L-arginine HCl), L-histidine (as L-histidine HCl), broad bean (wheat-free plant), pyroglutamic acid		
Polymer Carrier Matrix:	6,000 mg	
Glycosaminoglycan-acid-glucose complex, novel polysaccharide complex (glucose polymers)		

Directions: Take one packet mixed with 4-6 fl. oz. of water at bedtime on an empty stomach.

Other ingredients: Citric acid, potassium bicarbonate, sodium bicarbonate, acesulfame potassium, natural flavor, silica and beta-carotene (color).

1 Percent Daily Values are based on a 2,500 calorie diet
2 Daily Value not established



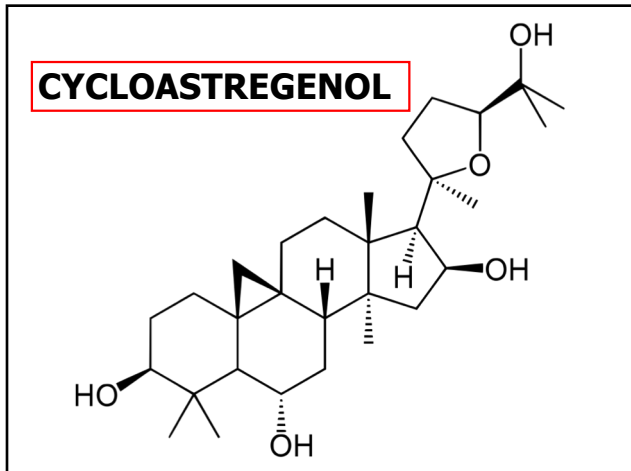


 **The Nobel Prize in Physiology or Medicine 2009**

"for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase"

 <small>Photo: Gerbil, Licensed by Attribution Share Alike 3.0</small>	 <small>Photo: Gerbil, Licensed by Attribution Share Alike 3.0</small>	 <small>Photo © Harvard Medical School</small>
Elizabeth H. Blackburn	Carol W. Greider	Jack W. Szostak





TA65
THE MOLECULE THAT MAKES YOUR CELLS YOUNG AGAIN!

The First and Only Supplement Clinically Proven to Add Length to Your Telomeres!
Click Here to find out more. **TA65**
CHROMOSOMES ARE PAIRED STRANDS OF DNA FORMED AS THE DOUBLE HELIX
Telomeres (protective tips) Paired Strands of DNA Telomeres

New York-based Supplement Seller Barred from False and Unsupported Health Claims
February 21, 2018
Telomerase Activation Sciences, CEO claimed two products could treat or prevent a range of age-related conditions

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FOR RELEASE
TAGS: Bureau of Consumer Protection | Consumer Protection | Advertising and Marketing | Health

A company and its CEO who allegedly advertised and sold two "anti-aging" products using false or unsubstantiated claims have agreed to stop making the claims under a Federal Trade Commission settlement order. The FTC charged Telomerase Activation Sciences, Inc. and Noel Patton (collectively, TA Sciences) with lacking the scientific evidence to support claims that their capsules, powders, and creams could provide a broad range of anti-aging and other health benefits.

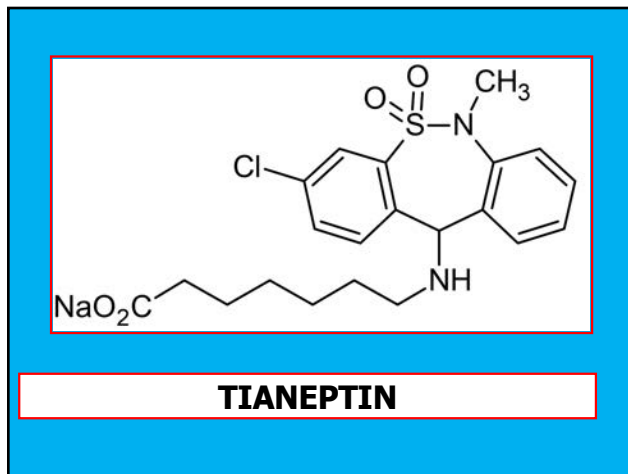
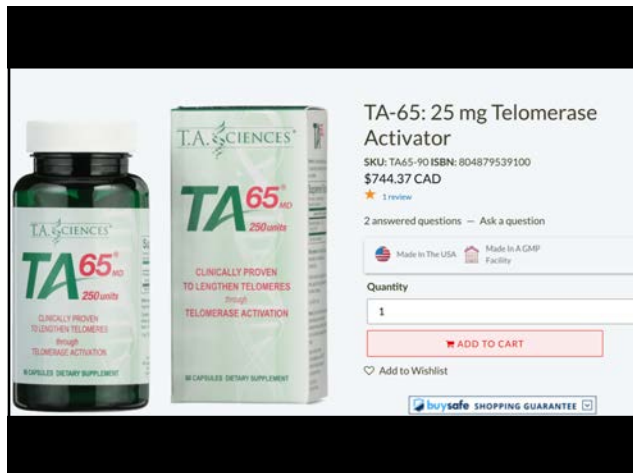
According to the FTC's administrative complaint, TA Sciences falsely advertised the efficacy and health benefits of two products, TA-65MD, which comes in capsule and powder forms, and TA-65 for Skin (TA-65 Skin), a topical cream.

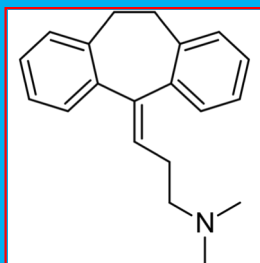
Specifically, the FTC charged that TA Sciences falsely advertised that both TA-65MD and TA-65 Skin reverse aging and that TA-65MD prevents and repairs DNA damage, restores aging immune systems, increases bone density, reverses the effects of aging skin and eyes, and prevents or reduces the risk of cancer. TA Sciences also allegedly misrepresented that TA-65 Skin decreases the time needed for skin to recover after medical procedures.

In addition to falsely claiming that some of these supposed results were supported by scientific evidence, TA Sciences allegedly misrepresented that a 2012 segment it paid for on *The Suzanne Show* was independent, educational programming instead of advertising for TA-65MD. Also, the FTC charged that TA Sciences deceptively represented that consumers in its ads were independent users, expressing impartial opinions of the product. In fact, they received free bottles of TA-65MD, worth up to \$4,000, in exchange for their endorsement.

Company that says products affect telomere length bows to FTC demand to dial back claims

By Hank Schultz
Feb 2018 Last updated on 22-Feb-2018 at 17:09 GMT





AMITRIPTYLINE



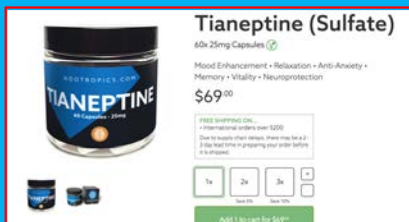
DEPRESSION

ANXIETY

PAIN

COGNITIVE DISORDER

OPIATE AGONIST!



IT IS A WAY TO SCRATCH THE OPIOID ITCH WITHOUT GETTING CAUGHT

Tianeptine Sulfate Description

Tianeptine is a potent mood brightener and nootropic supplement, celebrated for its effects on wellbeing and cognition, providing immediate and also long term benefits. Within an hour of use, it provides mental stability and clarity, functioning as a medium duration productivity tool. Additionally, its beneficial effects compound over extended use, resulting in a long-term effect which reduces feelings of stress, sadness and anxiety.

The unapproved antidepressant that's poisoning people

By Susan Scott, CNN
Published 4:01 PM EDT, Fri August 3, 2018



LETTERS TO THE EDITOR

Tianeptine Sodium: Potentially Lethal? | Psychiatrist.com

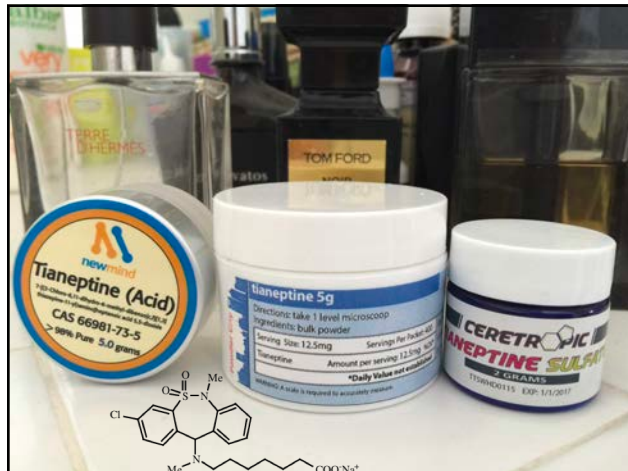
Simon Lucaj, MD, and Raphael J. Leo, MA, MD

Tianeptine Sodium: A Nootropic With Potentially Lethal Consequences

To the Editor: In recent years, "nootropics" have become increasingly popular drugs and supplements accessible from internet resources and used to enhance mood and cognitive functioning, often without medical consultation.¹ Some nootropics, eg, tianeptine sodium, are medications prescribed in other countries but have not received US Food and Drug Administration approval for use in the United States. The international sale of nootropic agents is growing; estimated sales approach 1 billion US dollars annually.² We describe a patient whose use of tianeptine led to unintended life-threatening consequences.

Case report. A 42-year-old man displayed shallow and variable breathing; he was unresponsive to his wife's attempts at arousal. In the ambulance, he was administered naloxone 0.8 mg intravenously, to which he responded with arousal and improved respiration. A second dose was administered, resulting in improved alertness and spontaneous respirations. He was admitted to the hospital and treated for aspiration pneumonia; his toxicology screen was positive for opioids and benzodiazepines.

He reported taking tianeptine for chronic back pain but acknowledged using more than he customarily would. He had done so unwittingly in combination with his usual alprazolam dose. He indicated, and his wife corroborated, that he had not intended to end his life but to manage pain.



Zinc as a Gatekeeper of Immune Function

ZINC DEFICIENCY	ZINC HOMEOSTASIS	ZINC EXCESS
<ul style="list-style-type: none"> • overproduction of pro-inflammatory cytokines & reactive mediators • Thymus atrophy • T_H1/T_H2 dysbalance • less naive B cells • less T_{reg} • more T_H17 	<ul style="list-style-type: none"> • balanced immune cell numbers & functions • balance between tolerance and defense mechanisms 	<ul style="list-style-type: none"> • suppression of T & B cell function • overload of T_{reg} • direct activation of macrophages

Zinc concentration

Lower zinc levels in the blood are associated with an increased risk of death in patients with COVID-19

EUROPEAN SOCIETY OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES

Research News

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New research presented at this week's ESCMID Conference on Coronavirus Disease (ECCVID, held online from 23-25 September) shows that having a lower level of zinc in the blood is associated with a poorer outcome in patients with COVID-19. The study is by Dr Roberto Güerri-Fernández, Hospital Del Mar, Barcelona, Spain, and colleagues.

Increased intracellular zinc concentrations efficiently impair replication/reproduction of a number of viruses. However, the effect of plasma zinc levels on SARS-COV-2 is not yet understood. In this study, the authors explored whether plasma zinc levels at admission are associated with disease outcome in COVID-19 patients.

VITAMIN D

Original Investigation | Infectious Diseases

September 3, 2020

Association of Vitamin D Status and Other Clinical Characteristics With COVID-19 Test Results

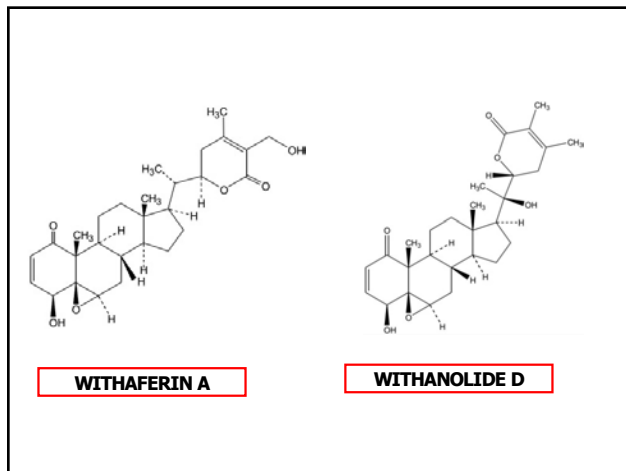
David O. Meltzer, MD, PhD¹; Thomas J. Best, PhD²; Hui Zhang, PhD²; 魏斌

IN 489 PATIENTS WHO HAD A VITAMIN D LEVEL MEASURED IN THE YEAR BEFORE COVID-19 TESTING, THE RELATIVE RISK OF TESTING POSITIVE WAS 1.77 TIMES GREATER FOR PATIENTS WITH DEFICIENT VITAMIN D STATUS

Key Point In this cohort study of 489 patients who had a vitamin D level measured in the year before COVID-19 testing, the relative risk of testing positive for COVID-19 was 1.77 times greater for patients with likely deficient vitamin D status compared with patients with likely sufficient vitamin D status, a difference that was statistically significant.

Question Is (COVID-19): base 2019

Meaning These findings appear to support a role of vitamin D status in COVID-19 risk; randomized clinical trials are needed to determine whether broad population interventions and interventions among groups at increased risk of vitamin D deficiency and COVID-19 could reduce COVID-19 incidence.



- LOWERS LEVELS OF SERUM CORTISOL**
- REDUCES ANXIETY**
- IMPROVES SLEEP**
- IMPROVES COGNITIVE FUNCTION**
- INCREASES MUSCLE STRENGTH**
- REDUCES MUSCLE DAMAGE**
- IMPROVES IMMUNE FUNCTION**
- INCREASES TESTOSTERONE**
- IMPROVES SEXUAL SATISFACTION IN FEMALES**

Open Access Original Article
DOI: 10.7759/curus.6466

Adaptogenic and Anxiolytic Effects of Ashwagandha Root Extract in Healthy Adults: A Double-blind, Randomized, Placebo-controlled Clinical Study

Jeyasing Salve¹, Sucheta Pate², Khokan Debnath³, Deepak Langade⁴

¹: Internal Medicine, Rink Care Hospital/Prakruti Care Hospital/Jupiter Hospital, Thane, IND ²: Clinical Research, Clinsearch Healthcare Solutions Pvt Ltd, Thane, IND ³: Family Medicine, Prakruti Hospital, Mumbai, IND ⁴: Pharmacology, D.Y. Patil University School of Medicine, Navi Mumbai, IND

Results

Two participants (one each in 250 mg/day Ashwagandha and placebo) were lost to follow-up and 58 participants completed the study. A significant reduction in PSS scores was observed with Ashwagandha 250 mg/day (P < 0.05) and 600 mg/day (P < 0.001). Serum cortisol levels reduced with both Ashwagandha 250 mg/day (P < 0.05) and Ashwagandha 600 mg/day (P < 0.0001). Compared to the placebo group participants, the participants receiving Ashwagandha had significant improvement in sleep quality.

CONCLUSION: ASHWAGANDHA AQUEOUS ROOT EXTRACT WAS BENEFICIAL IN REDUCING STRESS AND ANXIETY

Efficacy and Safety of Ashwagandha (*Withania somnifera*) Root Extract in Improving Sexual Function in Women: A Pilot Study
 Swati Dongre,¹ Deepak Langade,^{2,*} and Sauvik Bhattacharyya³

Author information Article notes Copyright and License information Disclaimer

This article has been cited by other articles in PMC.

Abstract Go to: ☺

Background. Many women experience sexual dysfunction where there are orgasm disorders and sexual difficulties. Ashwagandha (*Withania somnifera*) is a herb known to improve the body's physical and psychological condition. *Objective.* The purpose of the study was to determine the efficacy and safety of a high-concentration ashwagandha root extract (HCARE) supplementation for improving sexual function in healthy females. *Methods.* In this pilot study, 50 study subjects were randomized to either (i) HCARE-treated group or (ii) placebo- (starch-) treated group. The subjects consumed either HCARE or placebo capsules of 300mg twice daily for 8 weeks. Sexual function was assessed using two psychometric scales, the Female Sexual Function Index (FSFI) Questionnaire and the Female Sexual Distress Scale (FSDS), and by the number of total and successful sexual encounters. *Results.* The analysis indicates that treatment with HCARE leads to significantly higher improvement, relative to placebo, in the FSFI Total score ($p < 0.001$), FSFI domain score for "arousal" ($p < 0.001$), "lubrication" ($p < 0.001$), "orgasm" ($p = 0.004$), and "satisfaction" ($p < 0.001$), and also FSDS score ($p < 0.001$) and the number of successful sexual encounters ($p < 0.001$) at the end of the treatment. *Conclusions.* This study demonstrated that oral administration of HCARE may improve sexual function in healthy women. The present study is registered in the Clinical Trial Registry, Government of India, with a number [CTRI/2015/07/006045](#).

RESVERATROL

RESVERATROL ACTIVATES A GENE THAT CODES FOR ENZYMES CALLED SIRTUINS THAT PLAY A ROLE IN DNA REPAIR, AGING, CELL DEATH, GENE EXPRESSION AND METABOLISM

**DR. DAVID SINCLAIR
HARVARD**

PHYSIOLOGY, LIFE EXPECTANCY, SIMILAR

REDUCED LIFE EXPECTANCY





POOR SOLUBILITY AND BIOAVAILABILITY AND POSSIBLE ESTROGENIC EFFECTS

SIRTUINS NEED THE COENZYME "NICOTINAMIDE ADENINE DINUCLEOTIDE (NAD⁺)" TO FUNCTION

