

Love Potions, Witches Brews and the Medicine Bag - An Update on Herbal Medicine

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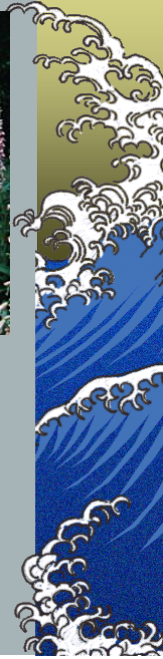


Disclosure

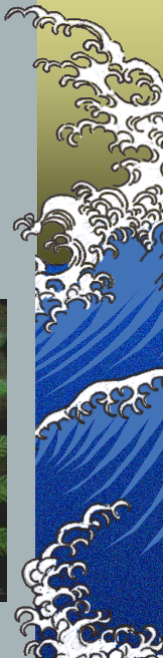
- ▶ *The presenter **DOES NOT** have an interest in selling a technology, program, product, and/or service to CME/CE professionals*



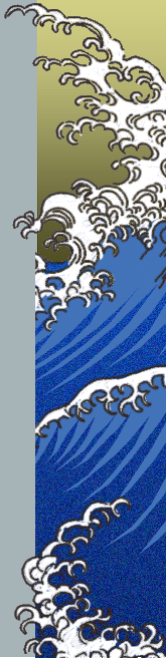
Drugs from Nature



Drugs from Nature

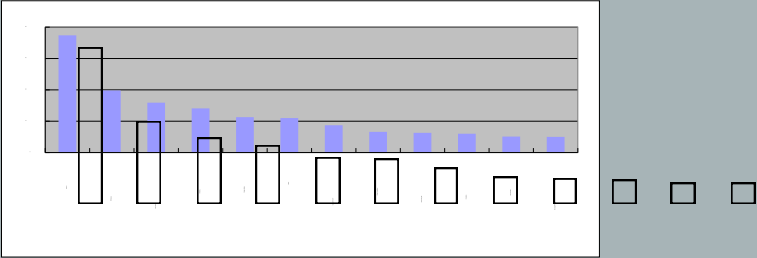


What herbs are being used today?

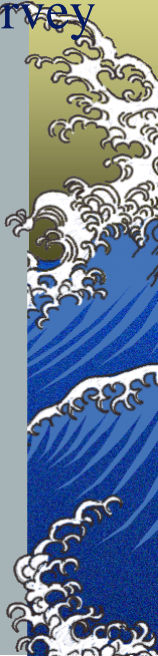


2007 National Health Interview Survey

▲ 17.7% of US adults had used natural products in the past year



▲ Rate of use among adults using natural products



Herbal Drug Use Today

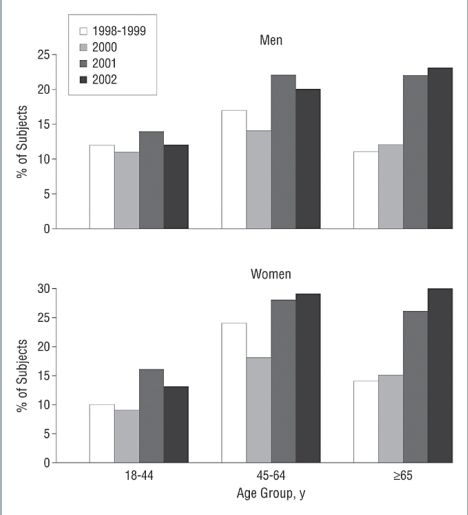
ORIGINAL INVESTIGATION

Recent Trends in Use of Herbal and Other Natural Products

Judith P. Kelly, MS; David W. Kaufman, ScD; Katherine Kelley, RPh; Lynn Rosenberg, ScD; Theresa E. Anderson, RN; Allen A. Mitchell, MD

Arch Intern Med. 2005;165:281-286

Use of herbal products according to year of interview and age of subject



Kelly, J. P. et al. Arch Intern Med 2005;165:281-286.

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INTERNAL MEDICINE

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Weekly Prevalence of Use of Most Commonly Reported Herbal and Other Natural Dietary Supplements in 1998-1999 and 2002 According to Age Among Men*

Table 3. Weekly Prevalence of Use of Most Commonly Reported Herbal and Other Natural Dietary Supplements in 1998-1999 and 2002 According to Age Among Men*

Age Group, y											
18-44			45-64			≥65					
1998-1999		2002	1998-1999		2002	1998-1999		2002			
<i>Panax ginseng</i>	4.1	Lutein	3.5	<i>Ginkgo biloba</i>	3.9	Lutein	5.7	Saw palmetto	4.4	Lutein	13.4
Creatine	3.6	<i>Panax ginseng</i>	2.1	Garlic	3.8	Saw palmetto	5.2	Glucosamine	4.2	Glucosamine	4.3
Saw palmetto	1.5	<i>Ginkgo biloba</i>	1.9	<i>Panax ginseng</i>	2.6	Garlic	3.8	Garlic	3.6	Chondroitin	3.9
L-Methionine	1.4	Glucosamine	1.6	St Johns wort	2.3	Glucosamine	3.4	<i>Pygeum africanum</i>	1.1	Saw palmetto	2.6
Lycopene	1.4	Lecithin	1.5	Glucosamine	2.2	Chondroitin	2.3	Lecithin	1.1	Ginger	2.6
L-Cysteine	1.4	Guarana	1.2	Siberian ginseng	1.4	<i>Panax ginseng</i>	2.1	Chondroitin	1.1	<i>Ginkgo biloba</i>	2.2
<i>Damiana folia</i>	1.3	L-Methionine	1.2	Saw palmetto	1.2	<i>Ginkgo biloba</i>	1.5	Melatonin	1.1	Siberian ginseng	1.7
Garlic	1.3	L-Cysteine	1.2	Lutein	1.2	Lycopene	1.5	Parsley	1.1	Melatonin	1.7

*Data are given as percentages and are weighted according to household size.

Kelly, J. P. et al. Arch Intern Med 2005;165:281-286.

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Weekly Prevalence of Use of Most Commonly Reported Herbal and Other Natural Supplements in 1998-1999 and 2002 According to Age Among Women*

Table 4. Weekly Prevalence of Use of Most Commonly Reported Herbal and Other Natural Supplements in 1998-1999 and 2002 According to Age Among Women*

Age Group, y											
18-44			45-64			≥65					
1998-1999		2002	1998-1999		2002	1998-1999		2002			
St Johns wort	1.9	Lutein	4.0	Glucosamine	4.7	Lutein	9.0	Glucosamine	5.2	Lutein	15.0
<i>Panax ginseng</i>	1.8	Lecithin	1.9	<i>Ginkgo biloba</i>	4.6	Glucosamine	8.6	<i>Ginkgo biloba</i>	4.6	Glucosamine	9.8
Garlic	1.2	Guarana	1.8	<i>Panax ginseng</i>	4.4	Chondroitin	6.8	Garlic	2.6	Chondroitin	7.0
Echinacea	1.2	Ephedra	1.8	Garlic	3.0	<i>Ginkgo biloba</i>	3.5	Chondroitin	2.2	<i>Ginkgo biloba</i>	4.0
Royal jelly	1.1	Kelp	1.2	Chondroitin	2.9	<i>Panax ginseng</i>	2.6	<i>Panax ginseng</i>	2.0	Lecithin	2.0
<i>Ginkgo biloba</i>	1.1	<i>Ginkgo biloba</i>	1.2	Lecithin	2.8	Garlic	2.1	Alfalfa	1.1	<i>Panax ginseng</i>	1.3
Licorice	1.0	Bee pollen	1.2	Echinacea	2.7	<i>Fructus cynosbati</i>	2.1	Bilberry	1.1	L-Carnitine	1.3
Lecithin	0.9	Royal jelly	1.2	St Johns wort	2.5	<i>Cimicifuga racemosa</i>	1.9	Lecithin	0.9	Lysine	1.3

*Data are given as percentages and are weighted according to household size.

Kelly, J. P. et al. Arch Intern Med 2005;165:281-286.

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Reasons for Use of Products Containing Herbal and Other Natural Supplements Among Subjects Interviewed in 2002

Kelly, J. P. et al. Arch Intern Med 2005;165:281-286.

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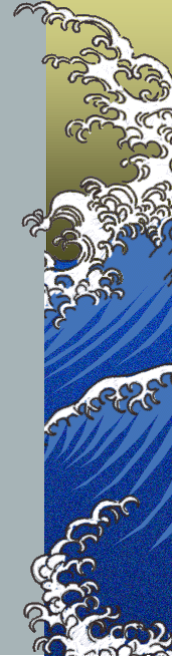
Table 5. Reasons for Use of Products Containing Herbal and Other Natural Supplements Among Subjects Interviewed in 2002

Men (n = 736)		Women (n = 998)	
	No. (%)		No. (%)
Vitamin	38 (20.5)	Vitamin	67 (21.0)
Supplement diet	22 (11.9)	Supplement diet	37 (11.6)
Energy	13 (7.0)	Health	23 (7.2)
Prevention, not otherwise specified	12 (6.4)	Physician recommended	15 (4.7)
Physician recommended	11 (5.9)	Energy	13 (4.1)
Health	11 (5.9)	Menopausal symptoms	13 (4.1)
Heart	9 (4.9)	Immune booster	12 (3.8)
Cholesterol	9 (4.9)	Prevention, not otherwise specified	10 (3.1)
Prostate	7 (3.8)	"It is good for you"	9 (2.8)
Mineral supplement	6 (3.2)	Memory improvement	9 (2.8)
Prevent colds	4 (2.2)	Weight loss	8 (2.5)
Do not know	4 (2.2)	Recommended by friend or family	8 (2.5)
Organ health	4 (2.2)	Aging	8 (2.5)
Bodybuilding	4 (2.2)	Mineral supplement	7 (2.2)
Hypertension	4 (2.2)	Digestive	6 (1.9)
Nutrition	3 (1.6)	Organ health	6 (1.9)
Aging	3 (1.6)	Hormone therapy	6 (1.9)
Weight loss	3 (1.6)	Eyes	6 (1.9)
Mental alertness	3 (1.6)	Detoxify	5 (1.6)
Family history	3 (1.6)	Insomnia	5 (1.6)
Antioxidant	3 (1.6)	News report, magazine, or television	4 (1.2)
"It is good for you"	3 (1.6)	Heart	4 (1.2)
Sickness	3 (1.6)	Osteoporosis prophylaxis	4 (1.2)
"I need it"	3 (1.6)	Mood alteration	4 (1.2)
All others	47 (25.4)	Sinus	4 (1.2)
		Antioxidant	4 (1.2)
		Cholesterol	4 (1.2)
		All others	89 (27.9)

GENERAL CONSIDERATIONS

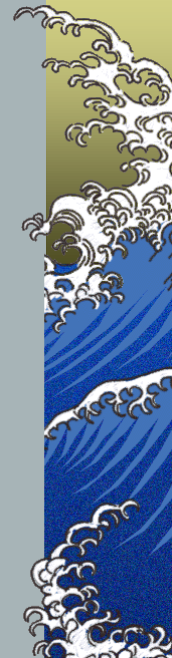
- ▲ *Herbs are drugs*
 - ▲ *Side effects*
 - ▲ *Drug-drug interactions*
 - ▲ *Un-regulated*
 - ▲ *Variability in preparations*
 - ▲ *Testing of brands*
 - ▲ *<http://www.consumerlab.com/>*

Regulation



DSHEA Act of 1994

- ▲ *Definition of dietary supplement:*
 - ▲ *A product intended to supplement the diet that contains a vitamin, mineral, an herb or other botanical, an amino acid, ...a dietary substance for use by man to supplement the diet by increasing the total dietary intake; (or a concentrate, metabolite, constituent, extract or combination of any ingredient described above)*



DSHEA Act of 1994

- ▲ *Supplements are not 'food additives'*
- ▲ *Statements of nutritional support allowed*
 - ▲ “ This statement has not been evaluated by the FDA. This product is not intended to diagnose, treat, cure or prevent any disease.”
- ▲ *The burden of proof that a product is unsafe or adulterated lies with the FDA*
 - ▲ *Examples – tryptophan, ephedra (Ma Huang)*

Supplement Labeling

- ▲ *What must it tell you?*
- ▲ *What can it tell you?*
- ▲ *What it doesn't tell you?*

What *must* it tell you?

- ▲ *Statement of identity*
- ▲ *Net contents*
- ▲ *Manufacturer name and address*
- ▲ *Supplement Facts panel*
 - ▲ *Serving size*
 - ▲ *Ingredient listing (name/part/herb or extract)*
 - ▲ *Amount per serving (herbs or “Proprietary blend”)*



What *can* it tell you?

- ▲ *Structure-function claim (w/ FDA disclaimer)*
- ▲ *Expiration date*
- ▲ *Relevant precautions*
- ▲ *“Standardized” or “Full spectrum”*
 - ▲ *Neither of these terms has a definition in the U.S.*



What it doesn't tell you?

- ▲ *Preparation of the herb*
 - ▲ *Agricultural history of extract*
 - ▲ *Preparation of extract*
- ▲ *Standardization (in U.S.)*
 - ▲ *Contact manufacturer FMI*
- ▲ *Indications*
- ▲ *Dose*



Why standardize?

- ▲ *Assure consistent quality*
- ▲ *Avoid adulteration or substitution*
- ▲ *“Define” the extract for clinical trials and/or patent protection*



2007 – FDA ruling

- ▲ *New June 2007 FDA ruling: to require “current good manufacturing practices” (cGMPs) for dietary supplements.*
 - ▲ *This rule to take effect in June 2008 for large companies.*
 - ▲ *Smaller companies - 2010 to comply.*
- ▲ *GMP ensures*
 - ▲ *Production in a quality manner without contaminants and with accurate labeling, so product contains what the label states!*



2007 – FDA ruling

- ▲ *To try to get accurately labeled herbals advise patients to look for the following symbols on labels*
 - ▲ *GMP (Good Manufacturing Practices)*
 - ▲ *NSF (National Safety Foundations)*
 - ▲ *USP (United States Pharmacopeia)*
- ▲ *Note: This does not mandate proof of clinical efficacy or mandatory reporting of side-effects.*



Resources

- ▲ *Natural Standard*
 - ▲ *Naturalstandard.com*
- ▲ *Consumer Lab*
 - ▲ *Consumerlab.com*
- ▲ *Natural Medicine Comprehensive Database*
 - ▲ *naturaldatabase.therapeuticresearch.com*

Natural Standard - Ginkgo biloba

University of New England | Natural Standard - Ginkgo

tandard.com.une.idm.oclc.org/databases/herbssupplements/ginkgo.asp?

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Natural Standard
The Authority on Integrative Medicine
provided by

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Evidence Grades
Dosing/Toxicology
Precautions/Contraindications
Pregnancy & Lactation
Interactions
Mechanism of Action
History
Evidence Table
Evidence Discussion
Products Studied
Author Information
References

Scientific Evidence for Common Studied Uses:

Indication	Evidence Grade
Cerebral insufficiency	B
Dementia	B
Generalized anxiety disorder	B
Schizophrenia	B
Acute hemorrhoidal attacks	C
Acute ischemic stroke	C
Altitude (mountain) sickness	C
Asthma	C
Attention-deficit hyperactivity disorder (ADHD)	C
Autism	C
Blood pressure control	C
Cancer prevention	C
Cardiovascular disease	C
Chemotherapy adjunct (reduction of adverse vascular effects)	C
Chronic cochleovestibular disorders	C
Chronic venous insufficiency	C
Claudication (peripheral vascular disease)	C
Cocaine dependence	C
Cognitive performance	C

Consumer Lab

Product Review: Ginkgo (Ginkgo Biloba) Supplements Review

Initial Posting: 7/8/2012 [Update: 3/1/13](#)

Sections: Jump to a section by clicking on its name.

- What it is
- What it Does
- Quality Concerns and What CL Tested For
- What CL Found
- Test Results by Product
- What to Consider When Buying
- What to Consider When Using
- Concerns and Cautions
- Full List of Ingredients by Product
- How Products Were Evaluated

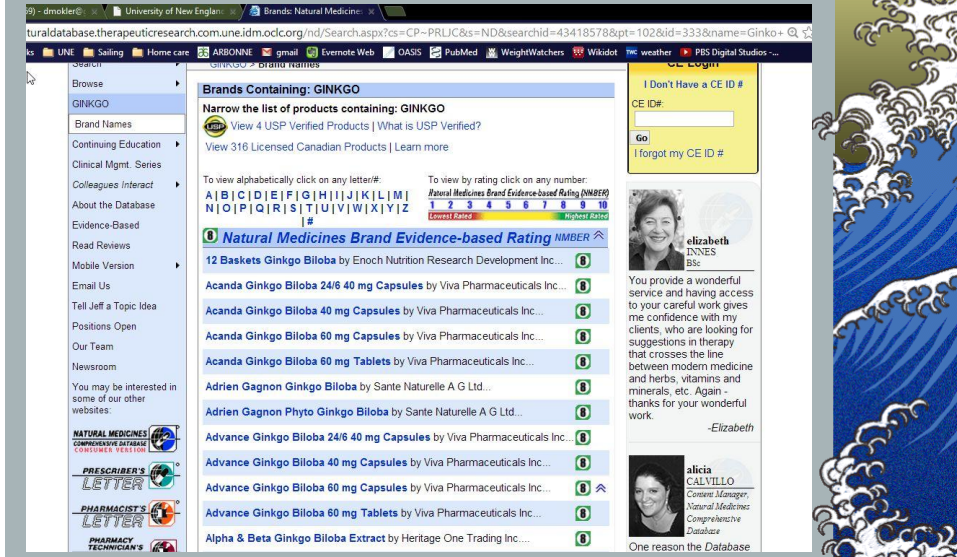
What it is: Ginkgo is dietary supplements is made from leaves of the Ginkgo biloba tree and contain a variety of phytochemicals including flavonol glycosides and terpenic lactones. Sometimes the dried, powdered leaves are used in supplements, although clinical studies exclusively used extracts.

What it Does: Ginkgo is one of many dietary supplement ingredients that have been used to help prevent or treat memory disorders. Other ingredients tested and reviewed by ConsumerLab.com include acetyl-L-carnitine, huperzine A, ginseng, macranamide, and fish/marine oils. Additional clinical information about these and other ingredients, including phosphatidylserine, Bacopa monnieri, and vinpocetine is found in the article "Enhancing Memory and Mental Function" in the Encyclopedia on this site.

Consumer Lab

Product Name	Strength / Ingredients	Status	Notes	Price
Finest Natural® (Walgreen) Ginkgo Biloba (1 capsule daily)*	120 mg extract 28 mg (24%) flavonol glycosides No terpenic lactones claimed	APPROVED	✓	N/A \$0.99 Gluten free \$8.99/100 capsules
Gaia® Herbs Ginkgo Leaf (3 vegetarian liquid capsules, two in the morning, one in the evening)	2,070 mg extract 30 mg (1.45%) flavonol glycosides No terpenic lactones claimed	NOT APPROVED	Contains listed amount of flavonol glycosides but at a much lower concentration (1.45%) than other clinically-tested extracts (24%)	N/A ✓ \$0.97 Vegetarian and Gluten free \$19.49/60 vegetarian liquid phyt-coats
Ginkgo-Goth (1 capsule daily)	120 mg extract	APPROVED	✓	✓ \$0.27
Ginkgo® Memory (1 tablet, three times daily)	28.8 mg (24%) flavonol glycosides 7.2 mg (6%) terpenic lactones	APPROVED	✓	✓ \$0.33 Gluten free \$15.99/60 capsules
Ginkgo® Memory (1 tablet, three times daily)	120 mg extract 28.8 mg (24%) flavonol glycosides 7.2 mg (6%) terpenic lactones	APPROVED	✓	✓ \$0.33 \$9.99/60 tablets

Natural Medicine Comprehensive Database



University of New England | Brands: Natural Medicine

Search: GINKGO

Brands Containing: GINKGO

Narrow the list of products containing: **GINKGO**

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View 316 Licensed Canadian Products | Learn more

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To view by rating click on any number: 1 2 3 4 5 6 7 8 9 10

Natural Medicines Brand Evidence-based Rating NUMBER

12 Baskets Ginkgo Biloba by Enoch Nutrition Research Development Inc... 0

Acanda Ginkgo Biloba 24/6 40 mg Capsules by Viva Pharmaceuticals Inc... 0

Acanda Ginkgo Biloba 40 mg Capsules by Viva Pharmaceuticals Inc... 0

Acanda Ginkgo Biloba 60 mg Capsules by Viva Pharmaceuticals Inc... 0

Acanda Ginkgo Biloba 60 mg Tablets by Viva Pharmaceuticals Inc... 0

Adrien Gagnon Ginkgo Biloba by Sante Naturelle A G Ltd... 0

Adrien Gagnon Phyto Ginkgo Biloba by Sante Naturelle A G Ltd... 0

Advance Ginkgo Biloba 24/6 40 mg Capsules by Viva Pharmaceuticals Inc... 0

Advance Ginkgo Biloba 40 mg Capsules by Viva Pharmaceuticals Inc... 0

Advance Ginkgo Biloba 60 mg Capsules by Viva Pharmaceuticals Inc... 0

Advance Ginkgo Biloba 60 mg Tablets by Viva Pharmaceuticals Inc... 0

Alpha & Beta Ginkgo Biloba Extract by Heritage One Trading Inc... 0

elizabeth INNES BSc
You provide a wonderful service and having access to your careful work gives me confidence with my clients, who are looking for suggestions in therapy that crosses the line between modern medicine and herbs, vitamins and minerals, etc. Again, thanks for your wonderful work.
-Elizabeth

alicia CALVILLO
Content Manager, Natural Medicines Comprehensive Database
One reason the Database

St. John's Wort (*Hypericum perforatum*)





St. John's Wort

- ▲ *Blooms on St. John the Baptist's birthday and is said to bleed red on the day in August he was beheaded*



St. John's Wort - Then



- ▲ *Used to protect against wounds in battle*
- ▲ *Used to ward off evil spirits*
- ▲ *Used to reveal witches and to make them speak the truth*



St. John's Wort - Then

- ▲ *Medicinally*
 - ▲ *Antiseptic (used in the crusades??)*
 - ▲ *Anti-viral*
 - ▲ *Nerve tonic*
 - ▲ *Anti-depressant*
- ▲ *St Johns Wort is good in tertian and quartan agues (Malaria) and is also used to destroy worms.*
- ▲ *" A tincture of its flowers in spirit of wine is commended against Melancholy and Madness".*
Blackwell's Curious Herbal, 1735



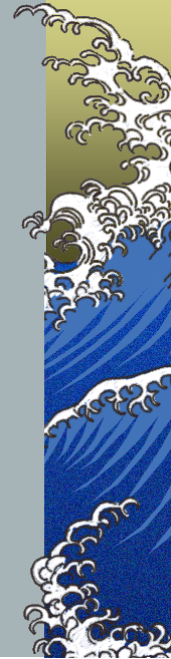
St. John's Wort - Today

- ▲ *One of most widely used - \$48,000,000 in U.S. in 1997*
- ▲ *Standardized to hypericin*
- ▲ *Many studies use an extract of SJW – hypericum extract*
- ▲ *Hypericum may work as re-uptake inhibitor for serotonin and norepinephrine*

St. John's Wort Clinical Trials

- ▲ *Systematic review showed 8 trials with almost 1000 patients*
- ▲ *Against placebo or TCA*
- ▲ *Significantly better than placebo (4 trials)*
- ▲ *Equivalent to low dose TCA (4 trials)*

- ▲ *Gaster and Holroyd, Arch. Intern. Med., 2000*



St. John's Wort Clinical Trials

- ▲ *Imipramine (75 mg bid) vs STJ (hypericum extract ZE117 bid)*
- ▲ *324 patients, mild to moderate depression*
- ▲ *Randomized, DB, 6 weeks*
- ▲ *Comparable decrease in depression scores for imipramine and SJW*
- ▲ *Adverse side effects – 39% for SJW and 63% for imipramine*
- ▲ *Woelk et al., BMJ, 2000*



St. John's Wort

Clinical Trials

- ▲ Hypericum (900 mg LI 160) vs sertraline (75 mg/d)
- ▲ 30 patients, mild to moderate depression
- ▲ DB, randomized
- ▲ 47% of patients improved on SJW and 40% improved on sertraline
- ▲ Small group, small effect size
- ▲ Brenner et al., *Clin. Ther.*, 2000



St. John's Wort

Clinical Trials

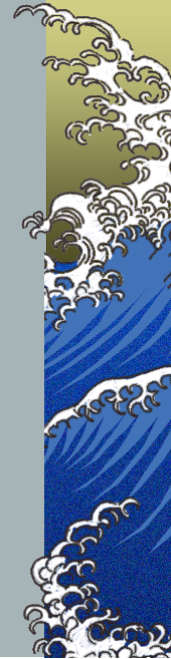
- ▲ SJW vs. placebo
- ▲ 300 pts, major depression, 8 weeks
- ▲ No differences in depression scores
- ▲ Greater number of patients reaching remission – 14.3% vs 4.9%
- ▲ Shelton et al., *JAMA*, 2001



St. John's Wort Clinical Trials

▲ *Adverse side effects*

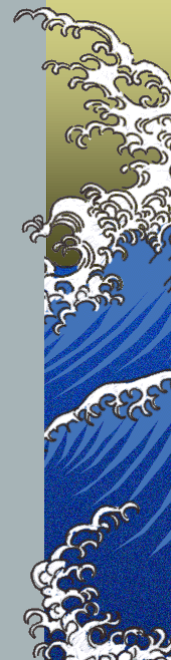
- ▲ *Dry mouth*
- ▲ *GI disturbances*
- ▲ *Photosensitivity*
- ▲ *Sedation*



St. John's Wort Clinical Trials

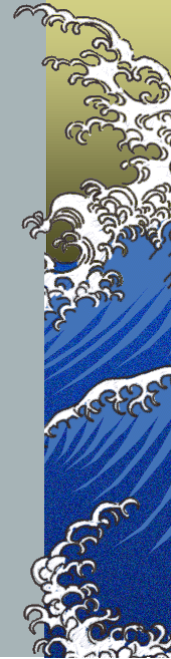
▲ *Drug-drug interactions*

- ▲ *Serotonin syndrome*
 - ▲ *When combined with other anti-depressants*
 - ▲ *Restlessness, muscle twitches, myoclonus, sweating, hypertension, may lead to coma*



St. John's Wort Clinical Trials

- ▲ *Drug-drug interactions*
- ▲ *Induces CYP450-3A4*
 - ▲ *Major liver enzyme*
 - ▲ *Decreases serum concentration of other drugs*
 - ▲ *Cyclosporin*
 - ▲ *Oral contraceptives*
 - ▲ *HIV anti-viral drugs*
 - ▲ *Digoxin*



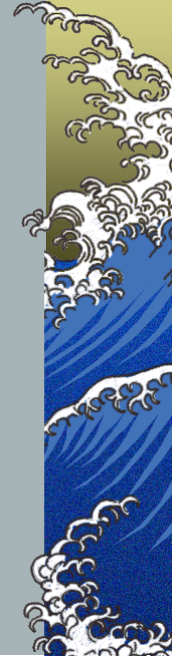
St. John's Wort Clinical Trials

- ▲ *Proposed trials*
 - ▲ *Anxiety and social phobia*
 - ▲ *Minor depression*
 - ▲ *Obsessive-compulsive disorder*

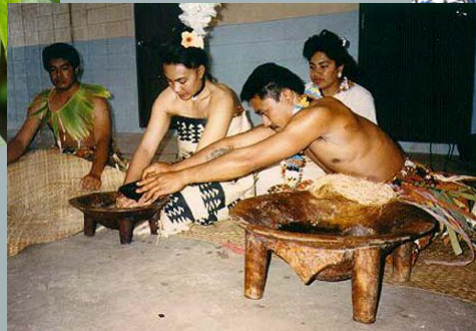


St. John's Wort

- ▶ *Useful in mild to moderate depression*
- ▶ *Ineffective in major depression*
- ▶ *Well tolerated with few adverse side effects*
- ▶ *Significant drug-drug interactions*



Kava Kava



Kava kava

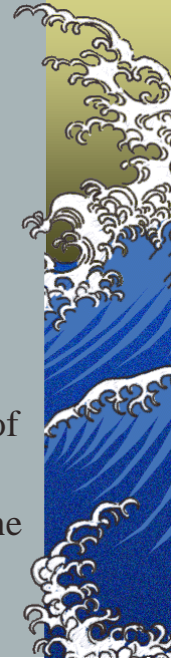
- ▲ Piper Wichmanii
- ▲ Piper Methysticum



- ▲ *“I drink kava each Friday evening, after a week's worth of teaching high schoolers. Ordinarily on Fridays, the events of the week loop repeatedly yet pointlessly through my mind. Kava's relaxing properties allow me to drop this loop, and concentrate on whatever I like. Nicest of all is the way kava affects my dreams. On kava nights, my dreams involve long, epic voyages through blue-green seas, populated by strange, friendly water animals. Like last night - my travel and conversation partner was a manatee with violet eyes. These are more like the dreams I remember having as a child, and a total departure from my usual stress-induced dreams of grading papers, running out of chalk” - J. Prince (Seattle, WA)*

Kava Kava

- ▲ *Natural valium??*
- ▲ *Mild stimulant*
- ▲ *Anti-Anxiety*
- ▲ *Anti-Fatigue*
- ▲ Active constituents – kavapyrones (4) and other kava alkaloids
- ▲ May increase GABA receptor
- ▲ May inhibit reuptake of norepinephrine
- ▲ May increase dopamine



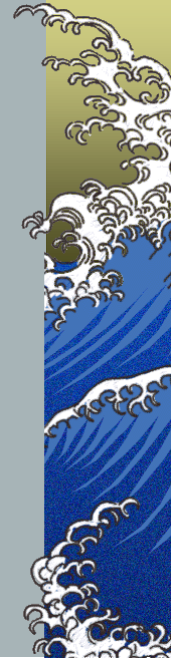
Kava kava

- ▲ *Clinical trials*
- ▲ *As effective as oxazepam (38 pts with anxiety)*
- ▲ *More effective than placebo (58 patients with anxiety)*
- ▲ *More effective than placebo for 8 weeks (101 patients with anxiety)*
- ▲ *Anxiety - Level of evidence - A*



Side Effects and Interactions

- ▲ *Liver toxicity (case reports)*
 - ▲ *Withdrawn in Europe and Canada*
- ▲ *Potentiate benzodiazepines and other sedatives*
- ▲ *May increase activity of anti-coagulants*
- ▲ *May worsen symptoms of Parkinson's disease*
- ▲ *May inhibit P450 metabolism*
- ▲ *Dependence*



Marijuana



Cannabis sativa



Cannabis indica



Cannabis Indica

- ▲ *Given in full dose to man, this drug causes exhilaration and periods of constant laughter arising from the slightest cause, the person seeming convulsed with merriment; in other cases the sensations are disagreeable, and even death may seem imminent to the deranged mind. – Practical Therapeutics, Hare, 1895.*



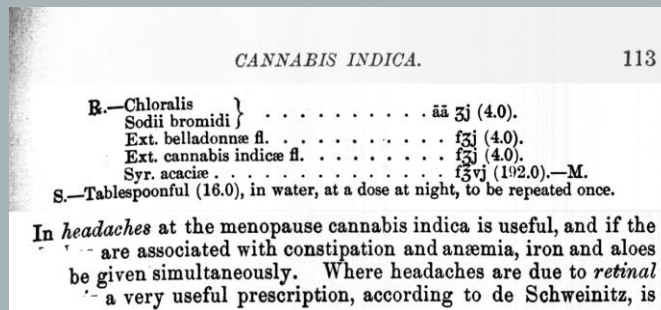
Marijuana

- ▲ *Common name for a tall annual herb (*Cannabis sativa*) of the family Cannabinaceae*
- ▲ *Native to Asia but now widespread because of its formerly large-scale cultivation for the bast fiber (also called hemp) and for the drug it yields*



Marijuana - Then

- ▲ *When a patient suffers from sleeplessness which is due in part to pain and in part to nervousness, the following prescription may be given:*



Marijuana - Then

- ▲ *Other uses (1895)*
- ▲ *Chronic inflammation*
 - ▲ *Gastralgia*
 - ▲ *Metorrhagia*
 - ▲ *Nervous and spasmodic dysmenorrhea*
 - ▲ *Gonorrhœa*
 - ▲ *Sexual stimulant*

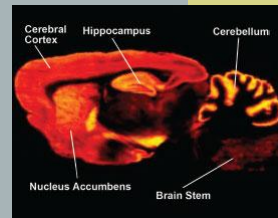
Marijuana - Then

▲ *The employment of this most valuable remedy is handicapped by its frequent lack of power – a fault which is largely dependent upon its preparation. The drug as prepared by Parke, Davis and Co. has proved efficacious in the author's hands for a number of years. The physician should always employ some preparation known by him to be active by personal trial before condemning the drug as a failure in a given case. – Practical Therapeutics, Hare, 1895.*



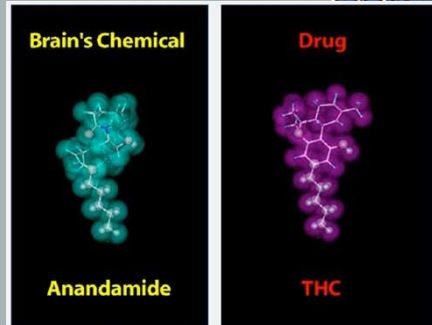
Marijuana - Today

- ▲ *Cannabinoid receptors*
- ▲ *Throughout the brain and spinal cord*
- ▲ *Endogenous cannabinoid*



Brain Structure	Repetitive	THC Effect on User
Amygdala	emotions, fear, anxiety	panic/paranoia
Basal Ganglia	planning/starting a movement	slowed reaction time
Brain Stem	information between brain and spinal column	antihypoxic effects
Cerebellum	motor coordination, balance	impaired coordination
Hippocampus	learning new information	impaired memory
Hypothalamus	eating, sexual behavior	increased appetite
Neocortex	complex thinking, feeling, and movement	altered thinking, judgment, and sensation
Nucleus Accumbens	motivation and reward	euphoria (feeling good)
Spinal Cord	transmission of information between body and brain	altered pain sensitivity

The brain structures listed above all contain high numbers of CB1 receptors.



Marijuana - Today

- ▲ *Nausea and vomiting (FDA approved as THC extract - Marinol)*
- ▲ *Glaucoma*
- ▲ *Wasting syndromes*
- ▲ *Pain - level of evidence - B*
- ▲ *Symptoms of MS - level of evidence B*



Marijuana - Today

- ▲ *Side effects and Toxicity*
 - ▲ *Psychoactive*
 - ▲ *Hypotension*
 - ▲ *Dependence*



Chondroitin Sulfate in Osteoarthritis



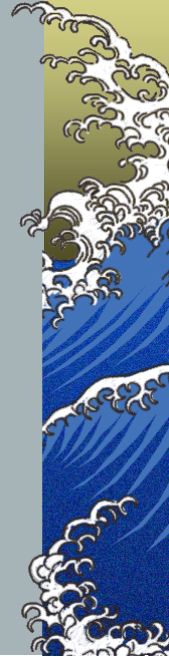
Chondroitin Sulfate in Osteoarthritis

- ▲ *Bourgeois P, et al.*
 - ▲ 127pts, 1,200 mg, effective at 3 months
- ▲ *Bucsi L, et al.*
 - ▲ 80pts, 800 mg, effective over 6 months
- ▲ *Conrozier T.*
 - ▲ 104 pts, 800 mg, effective after 1 year
- ▲ *Morreale P, et al.*
 - ▲ 146 pts, 1,200 mg, effective for 6 months
- ▲ *Uebelhart D, et al.*
 - ▲ 42 pts, 800 mg, effective over 1 year
- ▲ *Verbruggen G, et al.*
 - ▲ 119 pts, 1,200 mg, effective over 3 years



How Chondroitin Sulfate Eases Osteoarthritis

- ▲ *Increasing levels of chondroitin sulfate available to articular cartilage.*
- ▲ *Increasing levels of other important proteoglycans available to the articular cartilage.*
- ▲ *Decreasing activity of elastase, thus decreasing the degradation of collagen.*
- ▲ *Decreasing inflammation*
- ▲ *Level of evidence - B*



Chondroitin Sulfate's Atherosclerotic Promise

- ▲ *Decreasing plasma levels of cholesterol and other lipids.*
- ▲ *Decreasing atherosclerotic plaque formation.*
- ▲ *Decreasing inflammation*
- ▲ *Level of evidence - D*



Panax Ginseng

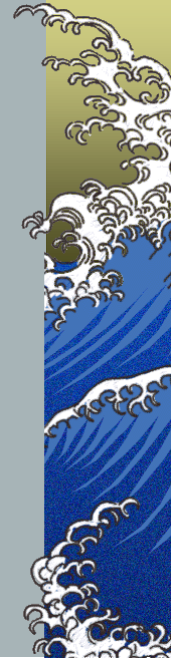


Panax Ginseng

- ▲ *Asian ginseng* (*Panax ginseng* C.A., Meyer)
 - ▲ *Panax, Chinese, or Korean ginseng.*
- ▲ *American ginseng* (*Panax quinquefolius* L.)
- ▲ *Siberian ginseng, also called eleuthero* (*Eleutherococcus senticosus* Rupr ex Maxim),

Panax Ginseng

- ▲ *Enhances immune system - Level of evidence B*
 - ▲ *Antiviral activity*
 - ▲ *Decreased colds and flu*
 - ▲ *Decreased recurrence of herpes simplex with eleuthero*
- ▲ *Enhances mental activity - Level of evidence B*
 - ▲ *Variable results – some positive*
- ▲ *Enhances general well-being*
 - ▲ *200 mg per day for 8 weeks*
 - ▲ *Energy, mood and vigor*



Panax Ginseng

- ▲ *Doses*
 - ▲ *200 mg daily of extract containing ginsenosides*
 - ▲ *300-400 mg of Siberian ginseng (eleuthero)*
- ▲ *Side effects - rare*
 - ▲ *Estrogen-like effects*
 - ▲ *Mania with anti-depressants*
 - ▲ *Reduced efficacy of coumadin*
 - ▲ *May interfere with tests for digoxin*
 - ▲ *May reduce insulin requirements*



Ginko Biloba



Ginko Biloba



- ▲ *Typically extract of leaves of Ginko biloba tree*
 - ▲ *Oldest surviving species of tree*
 - ▲ *Extinct in Europe but survived in Asia*
 - ▲ *Some trees cultivated for over 1,000 years*
 - ▲ *Original Chinese medicine used seeds*
- ▲ *Huperzine A is extract from leaves of Chinese toothed club moss (Huperzia serrata or synthetically manufactured).*

Ginkgo Biloba

- ▲ *Alzheimer's Disease*
 - ▲ *German Commission E*
 - ▲ *As effective as any approved medication for Alzheimer's disease*
 - ▲ *Mildly effective in elderly with memory loss*
 - ▲ *Weak in younger patients*
- ▲ *Intermittent claudication*



Ginkgo Biloba

- ▲ *Preliminary double-blind trials*
 - ▲ *PMS*
 - ▲ *altitude sickness*
 - ▲ *Glaucoma*
 - ▲ *macular degeneration*
 - ▲ *Vertigo*
 - ▲ *sudden hearing loss*
- ▲ *Increases blood flow*



Ginkgo Biloba



▲ Dosage

- ▲ *40-80 mg 3 times a day of 50:1 extract standardized to contain 24% ginkgo-flavone glycosides*

Ginkgo Biloba



▲ Side effects

- ▲ *Relatively safe*
 - ▲ *Not established in young children, pregnant women or in kidney or liver disease*
- ▲ *Anti-coagulant*
 - ▲ *Interactions with anti-coagulants*
- ▲ *Lowers seizure threshold*
- ▲ *Reduces efficacy of calcium channel blockers*
- ▲ *May increase efficacy of anti-psychotic drugs*

Garlic - *Allium sativum* L.



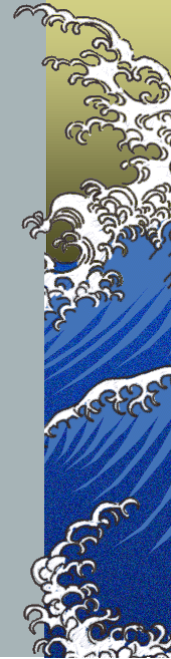
Garlic

- ▲ *Cardiovascular disease*
 - ▲ *Hyperlipidemia - Level of evidence A*
 - ▲ *Hypertension - Level of evidence A*
 - ▲ *Atherosclerosis - Level of evidence C*
 - ▲ *Decreases formation of atherosclerotic plaques*
 - ▲ *Decreases risk of 2nd heart attack*
- ▲ *Common cold - Evidence C*
- ▲ *Cancer (prevention) - Evidence C*
 - ▲ *Stomach and colon*
- ▲ *Mosquito repellent - Level of evidence C*

Chinese herbal medicine

A different approach

- ▲ 22,000 herbs
- ▲ 3000 years
- ▲ combinations of herbs individually prepared after patient history
- ▲ specialty medicine



References

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