

## The Medicalization of Life



Tieraona Low Dog, MD

Author of "Fortify Your Life"  
"Healthy At Home" and  
"Life Is Your Best Medicine"

www.DrLowDog.com

Tieraona Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

www.DrLowDog.com/Resources

Helpful Health Resources

Medicine Lodge Ranch

Dr. Low Dog has created a new **online classroom** called [Medicine Lodge Ranch](#) to expand the reach of her natural medicine school located at her ranch in the heart of New Mexico's Santa Fe National Forest.

Through our **online courses**, **digital educational tools**, and **hands-on intensive classes** at our ranch, you will have access to the resources to make yourself & your family both healthier and more whole. [Learn more](#)

Conference Handouts

**Nano Society for Dental Excellence** - Presentation handouts  
[Dental Excellence](#)  
[Dental Excellence](#)

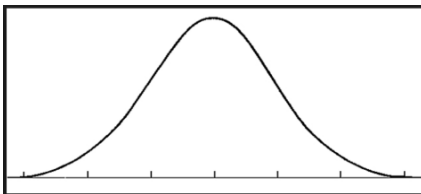
**Balance State Dental Society** - Presentation handout  
[Balance State Dental Society](#)  
[Life Is Your Best Medicine](#)

**American Dental Association** - Presentation handouts  
[American Dental Association](#)  
[American Dental Association](#)

Tieraona Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

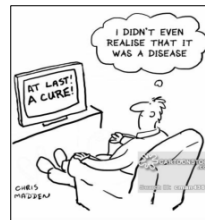
Bell Curve



Tieraona Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

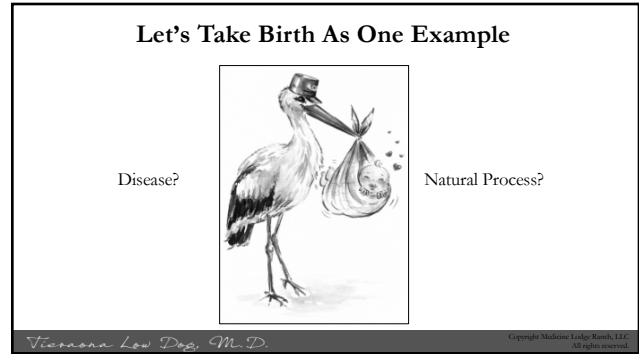
## Medicalization: Definition



- Process by which **human conditions and problems** come to be **defined and treated as medical conditions**, and become the subject of **medical study, diagnosis, prevention, or treatment**.
- The idea of birth, aging and dying as medical illnesses, leaves individuals and societies **less able to deal with these "natural" processes**.

Tieraona Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.



YES, IT WAS A C-SECTION.  
HOW DO YOU KNOW?

GLASBERGEN

### Delivery Method

- C-sections have risen exponentially in the US – it was 5% in 1970, it was 32% in 2015.
- A necessary medical procedure in some cases, but **elective** C-sections account for 10% of all scheduled procedures.
- Scheduling a C-section birth for convenience may be common but is not without risk.

*Vernon Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### C-Section Birth

- Children born by C-section are at **increased risk** for **respiratory allergies**, **cow's milk allergies**, **asthma**, **juvenile arthritis**, **inflammatory bowel disease** and **leukemia**.
- Colonization of GI tract of infants **born vaginally** similar to mother's vaginal microbiota; **C-section** infants GI tract colonized by **skin bacteria**.

Rucioni F, et al. Mode of Delivery and Asthma at School Age in 9 European Birth Cohorts. *Am J Epidemiol* 2017 Mar 15;185(5):465-473.  
Sevelsted A, et al. Cesarean section and chronic immune disorders. *Pediatrics* 2015 Jan;135(1):e92-8.

*Vernon Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

## Midwife-Led Care

Women who receive midwife-led care are:

- Significantly more likely to have a spontaneous vaginal birth, initiate breastfeeding, feel in control
- 23% less likely to have fetal loss before 24 weeks' gestation
- 17% less likely to have regional analgesia
- 14% less likely to have instrumental birth
- 16% less likely to have an episiotomy

*"Women should be offered midwife-led models of care and women should be encouraged to ask for this option."*

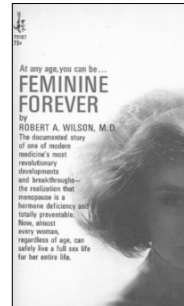


Sundall J, et al. *Cochrane Database Syst Rev*. 2015 Aug 21;8:CD010467.

Copyright Midwifery Lodge, LLC.  
All rights reserved.

Vivianne Low Dog, M.D.

## Menopause



- Menopause medicalized since 1930s as an “estrogen deficiency disease,” often with the recommendation of hormone therapy.
- Keeping women “feminine forever” was the claim, along with the promise of preventing heart disease, osteoporosis, and memory loss.
- Estrogen became one of the most frequently prescribed drugs in the U.S.

Copyright Midwifery Lodge, LLC.  
All rights reserved.

Vivianne Low Dog, M.D.



Copyright Midwifery Lodge, LLC.  
All rights reserved.

Vivianne Low Dog, M.D.

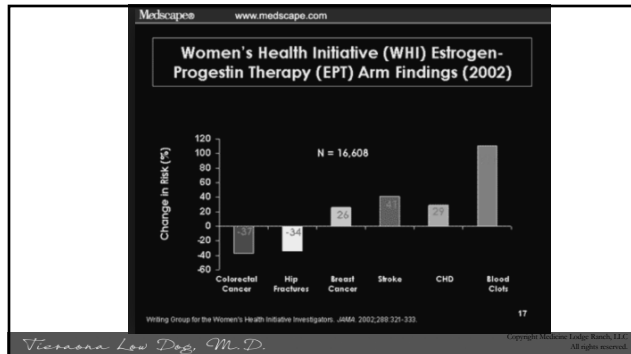
## Menopause: The Disease



- Menopause **no longer a natural transition**: it was a **a disease to be managed**.
- Positioned as **gateway to disaster** - thinning of skin, sagging of breasts, brittling of bones, fogging of mind, onset of heart disease, the loss of sexuality.
- **Hormones were the answer**, until the Women's Health Initiative in 2001 was suddenly discontinued **due to increased incidence of blood clots and breast cancer** in women taking Premarin and Provera (estrogen and synthetic progestin).


Copyright Midwifery Lodge, LLC.  
All rights reserved.

Vivianne Low Dog, M.D.



### Hormone Therapy

- Guiding principal: use **lowest dose of HT** to relieve symptoms.
- HT unsuitable for some women, e.g., increased risk of **cardiovascular disease**, increased risk of **thromboembolic disease** (e.g., obesity or history of **venous thrombosis**) or increased risk of **breast cancer**.
- When balancing benefits and risks of HT, **transdermal estrogen and natural progesterone** (if have uterus) seem to be optimal form and delivery.




deVilliers TJ, et al. Global Consensus Statement on menopausal hormone therapy. *Maturitas* 2013;39:1-2  
 Maryellenbanks J, et al. Long-term hormone therapy for perimenopausal and postmenopausal women. *Cochrane Database Syst Rev* 2017; Jan 17;3:CD004143.

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Timmann Low Dog, M.D.

### Bioidentical Hormones

- Chemical structure** of hormone, **not source**, that determines if **bioidentical** or not.
- Compounded bioidentical hormones** not FDA regulated and are exempt from labeling requirements including FDA contraindications and warnings.
- Many prescription **bioidentical hormones** approved by the FDA
  - Estrace (vaginal and oral)
  - Climara
  - Estraderm
  - Estragel
  - Estrasorb
  - Estring
  - Femring
  - Vagifem
  - Prometrium (natural progesterone)



Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Timmann Low Dog, M.D.

### Genitourinary Syndrome of Menopause

- GSM symptoms/signs associated with decrease in sex steroids involving changes to the labia majora/minora, clitoris, vestibule/introitus, vagina, urethra and bladder.
- Dryness, burning, and irritation**; sexual symptoms of **lack of lubrication**, discomfort or pain, and impaired function; and **urinary symptoms of urgency, dysuria and recurrent urinary tract infections**.
- Vaginal estrogen** can be used when systemic estrogen is contraindicated.
- Vaginal lubricants/moisturizers** can be used alone or with vaginal estrogen.
  - Yes Vaginal Moisturizers** are one of few with correct pH and osmolality.

Neves-e-Castro M, et al. EMAS position statement: The ten point guide to the integral management of menopausal health. *Maturitas* 2015; 81(1): 88-92  
 Edwards D, et al. *Climacteric* 2016; 19(2):151-61

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Timmann Low Dog, M.D.

## Hypnosis and Cognitive Behavioral Therapy

- Significant improvement in **hot flashes** with **cognitive behavioral therapy** and **hypnosis**.
- Single blinded study **187 menopausal women** with **minimum of 7 hot flashes/day** randomized to **5 weekly hypnosis sessions or structured control**.
- At 12 weeks: **mean reduction** in physiologically monitored hot flashes was **5.92 (56.86%)** for clinical hypnosis and **0.88 (9.94%)** for controls ( $P < 0.001$ ).
- Also significant **improvement in sleep quality** and treatment satisfaction as compared to controls.



Elkann GR, et al. *Menopause* 2013; 20(5):291-8

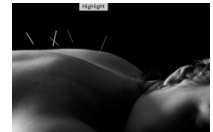
*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Acupuncture and Menopause

- Numerous studies found acupuncture beneficial for **relieving hot flashes and improving quality of life**,
- Systematic review and meta-analysis of **31 randomized controlled trials** found acupuncture **significantly reduced sleep disturbances** in women transitioning through menopause.
- Acupuncture should be **encouraged for women** interested in exploring this option.

Chiu HY, et al. *Obstet Gynecol* 2016; 127(3): 507-15

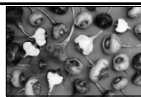


*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Botanicals Used in Menopause

- **Black cohosh** (some effect on hot flashes, anxiety, joint pain)
- **Soy isoflavones** (min 40%) reduce severity/frequency of hot flashes\*
- **Kava** found effective for menopause related anxiety.
- **St. John's wort** found effective for hot flashes, moodiness, etc.
- **Maca** for sexual dysfunction and low libido
- **Siberian rhubarb** for hot flashes and libido (all research done on one cohort by one research team.
- **Ginseng (*Panax ginseng*)** improved quality of life



Position Statement NAMS: *Menopause* 2015 Nov; 22(11):1155-72

*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Soy and Cancer

- **European Food Safety Authority** concluded **after a multi-year investigation** that in **postmenopausal women**, **soy isoflavones** *do not* **adversely affect the breast, thyroid or uterus**.
- **North American Menopause Society** concluded that **soy isoflavones** *do not* **increase risk of breast or endometrial cancer**.
- **American Cancer Society** and **American Institute for Cancer Research** confirm **soy foods** can be **safely** consumed by women with **breast cancer**.

Panel on Food Additives and Nutrient Sources added to Food Scientific opinion on the risk assessment for peri- and post-menopausal women taking food supplements containing isolated isoflavones. *EFSA J.* 2015;13:4246.

Messina M. *Nutrients* 2016; 8(12): 754

*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Osteoporosis

- Literally "**porous bones**," a skeletal disorder characterized by **low bone mass and structural deterioration of bone tissue**, with a consequent increase in susceptibility to **fragility fracture**.
- Multifactorial disease arising from **genetic, hormonal, metabolic, mechanical and immunological factors**.
- **75% hip, spine and distal forearm fractures occur in those 65 years or older**
- Roughly **30% of people over age 65 fall annually, with 10-15% of these falls resulting in fracture**.

[https://www.cdc.gov/nchs/data/hestat/osteoporosis/osteoporosis2005\\_2010.htm](https://www.cdc.gov/nchs/data/hestat/osteoporosis/osteoporosis2005_2010.htm)



*Timmann Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

## DXA Scan

Table 1. World Health Organization Classification of T Score

Normal	BMD $\geq -1.0$
Low bone mass (osteopenia)	BMD $> -2.5$ and $< -1.0$
Osteoporosis	BMD $\leq -2.5$
Severe (established) osteoporosis	BMD $\leq -2.5$ with history of fragility fracture

T-scores are based on the NHANES reference values for women aged 20-29 years. The same absolute values are used in men.

*Timmann Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

## Over Treatment?

- **New definition of osteoporosis in 1994 based on low bone mineral density, expanded indications for pharmacotherapy.**
- Under US guidelines **~75% of white women over 65 years are now candidates for drug treatment.**
- **Heightened fear** has led physicians to prescribe bisphosphonate drugs to **prevent women with osteopenia from developing osteoporosis**. Despite being at very low risk of experiencing a fracture, **many women have been prescribed drugs with serious side effects for years.**

Jarvinen T, et al. *BMJ* 2015;350:h2088

*Timmann Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

<http://www.shef.ac.uk/FRAX/>

One of best predictive tools for evaluating fracture risk is FRAX

*Timmann Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Bisphosphonates for Fracture Prevention in Post-Menopausal Women With Prior Fractures or With Very Low Bone Density (NNT = 100)

In Summary, for those who took the bisphosphonates:

#### Benefits in NNT

- 1 in 20 were helped (vertebral fracture prevented)
- 1 in 100 were helped (hip fracture prevented)

#### Harms in NNT

- A small number were harmed

#### Benefits in Percentage

- 94% saw no benefit after 3 years of treatment
- 5% avoided a vertebral fracture
- 2% avoided a hip fracture

#### Harms in Percentage

- A small percentage were harmed

[www.thornt.com/nnt/bisphosphonates-for-fracture-prevention-in-post-menopausal-women-with-prior-fractures-or-very-low-bone-density/](http://www.thornt.com/nnt/bisphosphonates-for-fracture-prevention-in-post-menopausal-women-with-prior-fractures-or-very-low-bone-density/)

Vincent Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Bisphosphonates for Fracture Prevention in Post-Menopausal Women Without Prior Fractures

In Summary, for those who took the bisphosphonates:

#### Benefits in NNT

- None were helped (fracture prevented after 3 years of medicine)

#### Harms in NNT

- A small number were harmed

#### Benefits in Percentage

- 100% saw no benefit after 3 years of treatment

#### Harms in Percentage

- A small percentage were harmed

Vincent Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Impact on Bone and Healing

- Bisphosphonates **suppress bone resorption** that occurs during normal healing process, delaying bone healing. **Osteonecrosis of jaw** is serious adverse event associated with use.
  - 1) Exposed bone in maxillofacial region present for 8 weeks or more, 2) current or previous bisphosphonate use, and 3) no history of radiation therapy to the jaws.
- Risk factors: **older than 65 years, periodontitis, prolonged use of bisphosphonates (for more than 2 years), smoking, wearing dentures, and diabetes.**
- Clinical records of **320 osteoporotic patients** who underwent tooth extraction while receiving oral bisphosphonates were reviewed. **All patients had a healing period of more than 6 months following the extractions.**

*J Am Dental Assoc.* 2011;142:1243-1251.

Ho-Gul Jeong, et al. *Imaging Sci Dent* 2017; Mar; 47(1): 45-5

Vincent Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Atypical Femur Fractures

- **Atypical femur fractures** are *rare* serious condition associated with bisphosphonate use. American Society for Bone and Mineral Research task force reported that **of 310 cases of atypical femur fractures under study, 94% of the patients had been taking bisphosphonates, most for > 5 years.**
- **FDA in 2010** warned about potential side effects to label of all bisphosphonate drugs and **recommended consecutive treatment stop after five years.**
- **Bisphosphonates must be discontinued but ongoing metabolic management in the form of calcium and/or vitamin D supplements is advisable.** Teriparatide (Forteo – parathyroid recombinant) or Denosumab (Prolia, Xgeva) alternatives.

Park-Wyllie, et al. *JAMA* 2011; 305(8):783-9

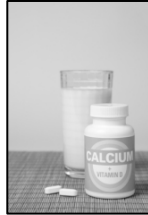
Koh A, et al. *Bone Joint J* 2017;99-B:295-302

Vincent Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Calcium and Vitamin D: Fracture

- Meta-analysis by **National Osteoporosis Foundation**: eight studies (n= 30,970 participants) found that ***all studies showed calcium plus vitamin D supplementation produced a statistically significant 15 % reduced risk of total fractures and 30% reduced risk of hip fractures.***



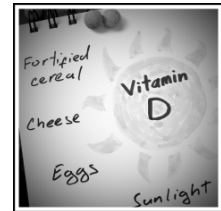
Werner CM, et al. *Osteoporos Int* 2010; 27: 367–376

*Timonana Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Vitamin D in Elders

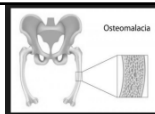
- Deficiency often **more severe** in elders due to environmental/biological factors.
- **Decreased synthesis of vitamin D** in skin makes it difficult to maintain adequate levels **even with sun exposure**.
- As aging advances, **intestinal resistance to 1,25(OH)2D** impairs the uptake of calcium and a decline in renal function reduces activation of vitamin D.



*Timonana Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Osteomalacia



- In adults, vitamin D deficiency can cause osteomalacia, leading to **musculoskeletal pain in pelvis, shoulders, proximal muscles**.
- Pain increased by **mild pressure on the sternum or anterior tibial bone** are typical or suspected symptoms.
- **Vitamin D** has been shown to **positively affect muscle strength, muscle size and neuromuscular performance**.

Wintermeyer E, et al. Crucial Role of Vitamin D in the Musculoskeletal System. *Nutrients* 2016; Jun 1;8(6), pii: E319.

*Timonana Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.

### Fragility Fractures

- Fragility fractures associated with **decreased quality of life, increased disability, more frequent hospital admission and an increased risk of mortality**.
- Multimodal approach important for fall protection, **vitamin D supplementation alone, or in combination with calcium, shown to significantly reduce the risk of falling in elders.**



WHO. Nutrition for Older Persons.  
<http://www.who.int/nutrition/topics/aging/en/index.html> Accessed January 3, 2018

*Timonana Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC  
All rights reserved.



## Endocrine Society Clinical Practice Guidelines for Vitamin D

- 90 million Americans have vitamin D levels less than 20 ng/mL.
- Serum 25(OH)D level used to evaluate high-risk folks
  - Insufficiency defined as 21-29 ng/mL
  - Deficiency defined as <20 ng/mL
- Maximum tolerable limits for vitamin D (*without supervision*):
  - 1,000 IU/day for infants to age 6 months
  - 1,500 IU/day for ages 6 months to 1 year
  - 2,500 IU/day ages 1 to 3 years
  - 3,000 IU/day for ages 4 to 8 years
  - 4,000 IU/day anyone older than 8 years

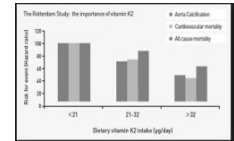
Holick MF, et al. Evaluation, treatment, and prevention of vitamin D deficiency: an Endocrine Society clinical practice guideline. *J Clin Endocrinol Metab* 2011; 96(7):1911-30

Vivian Low Dog, M.D.

Copyright Medscape Lodge Ranch, LLC. All rights reserved.

## Other Nutrients

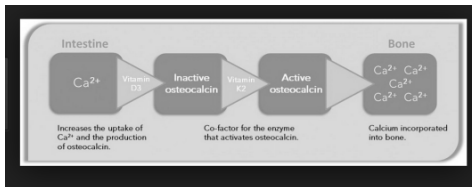
- Calcium, magnesium, vitamins D and K contribute independently and collectively to bone health.
- Beneficial role of vitamin K, particularly vitamin K2 as MK-7, in bone and cardiovascular health is reasonably well supported scientifically, with several preclinical, epidemiological, and clinical studies published over the last decade.



Karpinski M, et al. Roles of Vitamins D and K, Nutrition, and Lifestyle in Low-Energy Bone Fractures in Children and Young Adults. *J Am Coll Nutr* 2017 Jul;36(5):399-412.

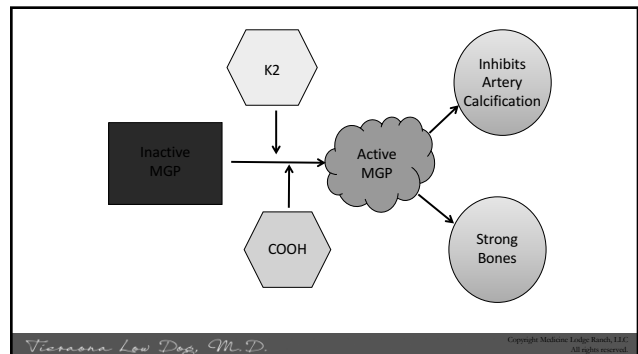
Vivian Low Dog, M.D.

Copyright Medscape Lodge Ranch, LLC. All rights reserved.



Vivian Low Dog, M.D.

Copyright Medscape Lodge Ranch, LLC. All rights reserved.



Vivian Low Dog, M.D.

Copyright Medscape Lodge Ranch, LLC. All rights reserved.

## Exercise



- Physical activity/mechanical loading **builds peak bone mass in youth.**
- Exercise consistently shown to **prevent or reverse bone loss in the lumbar spine and femoral neck.**
- Bone Estrogen Strength Training Study** 800 mg/d calcium citrate + structured exercise, increased muscle mass by 11-21% and BMD by ~2% in postmenopausal women.
- Review 37 studies found physical exercise has a positive impact on **muscle mass and function** in those aged 60 years and older.

Readhead C, et al. Nutrition and physical activity in the prevention and treatment of osteoporosis: systematic review. *Osteoporosis Int* 2017 Jan28(6):1817-1833.

*Vivian Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Tai Chi



- Multiple studies show tai chi reduces the **risk of falls** in elders, post-stroke, and Parkinson's.
- Systematic review found effective for **relieving pain and improving physical function** in those with osteoarthritis.

Sun Z, et al. Effects of tai chi exercise on bone health in perimenopausal and postmenopausal women: a systematic review and meta-analysis. *Osteoporosis Int*. 2016 Dec27(10):2901-11.

*Vivian Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Strength and Balance Training Programs for Preventing Falls in the Elderly (NNT=11)

In summary, for at-risk elderly community dwellers who used balance and strength training:

Benefits in NNT	Harms in NNT
<ul style="list-style-type: none"> <li>1 in 11 at-risk elderly were helped (avoid suffering a fall over a one year period)</li> </ul>	<ul style="list-style-type: none"> <li>None were harmed</li> </ul>
Benefits in Percentage	Harms in Percentage
<ul style="list-style-type: none"> <li>91% saw no benefit</li> <li>9% were helped by preventing a fall over a 1 year period</li> </ul>	<ul style="list-style-type: none"> <li>0% were harmed</li> </ul>

<http://www.thcmi.com/nnt/strength-and-balance-programs-for-elderly-falls/>

*Vivian Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Summary

- Maintenance of healthy bones and muscles requires a lifetime of being physically active, consuming adequate amounts of protein, calcium, vitamins D and K, magnesium, and a host of other micronutrients.
- Minimizing the risk of falls, particular as we age is a key strategy (e.g., lights in bathroom at night, removal of throw rugs, use of cane, etc.)
- Medications should be considered for those with a FRAX that indicates *high risk for fracture*.



*Vivian Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.



*Viannan Low Dog, M.D.*

### CDC Guidance for Influenza 2017-18

- Caused by RNA viruses **resulting in fever/myalgia** in infected people.
- Seasonal influenza leads to **three to five million severe illness cases** and **around 250,000 to 500,000 deaths** in the world yearly.
- Flu viruses most common in US during **fall/winter months**, increasing in Oct/Nov, **peaking between December and February** and can last until May.
- CDC recommends **annual flu vaccine for everyone 6 months and older**. **Optimal timing is October** but recommend through end of January. ~2 weeks for antibodies to develop.

<https://www.cdc.gov/flu/about/season/flu-season-2017-2018.htm> Accessed January 2, 2018

Wei Te Lin, et al. *Nutrients* 2017 Nov; 9(11):1175

*Viannan Low Dog, M.D.*

### Flu Vaccine Effectiveness

- Frequent alterations in antigenic structures of respiratory viruses, pose difficulties in production of effective vaccines. Estimates range from 10% (early data from Australia) to 38% efficacy for 2017-18 flu vaccine.

2010-11	Truax 2011	WI, MI, WI, TN	4757	60	53, 66
2011-12	Ortiz 2014	WI, MI, PA, TX, WA	4771	47	36, 56
2012-13	Milner 2014	WI, MI, PA, TX, WA	5452	49	41, 55
2013-14	Gaerem 2016	WI, MI, PA, TX, WA	3999	52	44, 59
2014-15	Zimmerman 2016	WI, MI, PA, TX, WA	9311	19	10, 27
2015-16*	Hickman 2017	WI, MI, PA, TX, WA	6879	48*	41, 55*
2016-17**	ACIP presentation, testsearch (243 KB, 12 pages)	WI, MI, PA, TX, WA	7430	39**	32, 46

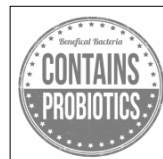
\*Estimate from Nov 2, 2015-April 12, 2016.

\*\*Unpublished final estimates

<https://www.cdc.gov/flu/professionals/vaccination/effectiveness.shtml#hp-v-v>  
Accessed January 2, 2018

*Viannan Low Dog, M.D.*

### Probiotics and Prebiotics



Yao Q, Dong RH, Wu T. Probiotics for preventing acute upper respiratory tract infections. *Cochrane Database Syst Rev*. 2015 Feb 5;2015(2):CD006695.

- Probiotics **modulate innate and adaptive immunity** in elders and **reduce duration of respiratory/flu infection in children and adults**
- Review of **12 studies** with 3720 participants including children, adults, and elders not at high risk for upper respiratory tract infection (URTI).
  - Moderate-quality evidence **shows fewer people develop URTI when taking probiotics**
  - Moderate quality evidence probiotics probably **reduces duration of a URTI by approximately 2 days**.

Copyright 2015 Probiotics Research, Inc.

*Viannan Low Dog, M.D.*

### Vaccine Adjuvant



Lei WT, et al. Effect of Probiotics and Prebiotics on Immune Response to Influenza Vaccination in Adults: A Systematic Review and Meta-Analysis of Randomized Controlled Trials. *Nutrients*. 2017 Oct 27;9(11).

- 20 studies found “supplementation of influenza vaccines with **probiotics or prebiotics before vaccination** increased the immunogenicity to specific influenza viral strains, including the H1N1, H3N2, and B strains.”
- **Longer duration of pre-supplementation, the greater the response.** The older the adult, the more protection offered.
- Strains most active were *L. casei*, *L. paracasei*, and *B. longum*.

*Viannan Low Dog, M.D.*

### Vitamin D and Respiratory Infection



Shenstone JK, et al. Vitamin D supplementation to prevent acute respiratory tract infections: systematic review and meta-analysis of individual participant data. *BMJ* 2015; 350:g5855.

- Acute respiratory infection kills ~2.65 million people/year.
- 25 randomized controlled trials (n=10,933, aged 0-95 years).
- Vitamin D supplementation **reduced risk of acute respiratory infection among all participants and those who were vitamin D deficient** experienced the most benefit (NNT=4)

*Viannan Low Dog, M.D.*

### CDC Guidance, continued

- **Most people with the flu have mild illness and do not need medical care or antiviral drugs.** “If you get sick with flu symptoms, in most cases, you should stay home and avoid contact with other people except to get medical care.”
- Antiviral drugs can be used to treat flu illness in those at risk for serious flu complications (i.e., **children younger than 5, adults 65 and older, pregnant women, people with long-term medical conditions, residents of nursing homes/long-term care facilities**) and people who are hospitalized for flu.
- Three FDA approved antivirals: **oseltamivir (generic and Tamiflu®), zanamivir (Relenza®), and peramivir (Rapivab®).**

<https://www.cdc.gov/flu/about/care/treatment/2017-2018.htm> Accessed January 2, 2018

*Viannan Low Dog, M.D.*

### Tamiflu Derived from Star Anise



*Viannan Low Dog, M.D.*

## Tamiflu

- In 2009, widespread concern about flu pandemic, caused billions to be spent stockpiling Tamiflu. Sales that year hit \$3 billion.
- WHO recommends Tamiflu, but did not vet data.
- EMA approved Tamiflu, but did not review the full Tamiflu dataset.
- CDC and ECDC encourage the use and stockpiling of Tamiflu, but did not vet the Tamiflu data.
- The majority of Roche's Phase III treatment trials remain unpublished over a decade after completion.
- In 2009, scientists requested Roche to hand over data for evaluation.....

*Viannan Low Dog, M.D.*



Stacks of the antiviral drug Tamiflu at an undisclosed location in the United Kingdom.

Jefferson T, et al. *British Medical Journal* 2014; 348: g2545.

In October 2013, Cochrane reviewers received 107 full clinical study reports from Roche and GlaxoSmithKline.

- Reduction in time to **first alleviation of symptoms**: from 7 to 6.3 days compared to control group.
- No evidence oseltamivir reduces hospitalizations or complications of flu: pneumonia, bronchitis, sinusitis, ear infections in adults or kids
- In prophylaxis trials, **reduced flu-like symptoms in adults**; did not prevent person-to-person spread.
- Increased risk of vomiting, headaches, psychiatric syndromes and a statistically significant increase in adverse kidney events.

Copyright 2013 Cochrane Infection and Immunity Group

*Viannan Low Dog, M.D.*

## Concluding Thoughts in BMJ

- The stated intentions of governments to distribute Tamiflu to healthy people to prevent complications and interrupt transmission of influenza on the basis of a published evidence base that has been affected by reporting bias, ghost authorship, and poor methods is worrisome.
- *"We believe these findings provide reason to question the stockpiling of oseltamivir, its inclusion on the WHO list of essential drugs, and its use in clinical practice as an anti-influenza drug."*

Jefferson T, et al. *British Medical Journal* 2014; 348: g2545.

*Viannan Low Dog, M.D.*

## 2016 Meta-Analysis Update

- Oseltamivir and zanamivir cause small reductions in time to first alleviation of influenza symptoms in adults.
- Oseltamivir increases risk of nausea, vomiting, psychiatric events in adults and vomiting in children and has no protective effect on mortality among patients with H1N1 influenza.
- Prophylaxis with either drug may reduce symptomatic influenza in individuals and in households.
- The balance between benefits and harms should be considered when making decisions about use of antiviral for either prophylaxis or treatment of influenza.

Heneghan CJ, et al. *Health Technol Assess* 2016; 20(42):1-242.

Copyright 2016 Cochrane Infection and Immunity Group

*Viannan Low Dog, M.D.*

### Echinacea and Elderberry

- *Echinacea purpurea* has demonstrated strong activity against influenza virus strains.
- 473 patients with flu symptoms less than 48 hours randomized to 240 mg echinacea herb/root extract + elderberry fruit (Vogel Bioforce) or tamiflu.
- No difference between recovery rates, antibiotic use, intermediate doctor visits, use of over-the-counter medications for symptoms, "ability to return to normal daily activities," or physician- and patient-reported efficacy of the treatments.



Rais K, et al. *Curr Ther Res*. 2013 Dec; 77: 66-72.

Copyright © Medicine Lodge Ranch, LLC. All rights reserved.

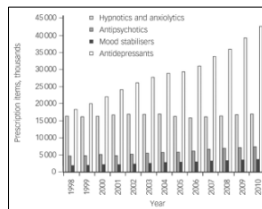
Vianna Low Dog, M.D.



Vianna Low Dog, M.D.

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Trends in prescriptions of major classes of psychiatric drugs 1998–2010



Stephen Byas, and Joanna Montecrief BJP  
2012;200:393-398

THE BRITISH JOURNAL  
OF PSYCHIATRY

- **400% increase** in anti-depressant prescriptions since 1980s. Rates of anxiety/depression in adolescents and young adults **skyrocketing**.
- JAMA review: For **severe depression**, benefit of medications over placebo is **substantial**; however, magnitude of benefit may be **minimal or nonexistent**, on average, for those with **mild or moderate** symptoms.

Fournier, et al. *JAMA*. 2010;303(1):47-53

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Vianna Low Dog, M.D.



- 74 FDA-registered studies, 31% not published. Published literature, **94% of trials** were positive. FDA analysis showed **only 51%** were positive.
- JAMA review: The magnitude of benefit for antidepressant medication compared with placebo may be **minimal or nonexistent**, on average, in patients with **mild or moderate** symptoms.
  - For patients with very **severe depression**, the **benefit** of medications over placebo is **substantial**

Turner, et al. *NEJM* 2008 Jun 17;358(25):252-60

Fournier, et al. *JAMA*. 2010;303(1):47-53

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

Vianna Low Dog, M.D.

### Grief as Major Depression



- Last draft of DSM 5 considered diagnosis of **Major Depression** even if person is **grieving immediately after the loss of a loved one**.
- Many people now considered to be experiencing a variation of normal grief would have received a mental disorder diagnosis.
- How many grieving individuals would have received the diagnosis, especially once pharmaceutical companies started marketing and raising awareness?  
<http://www.dsm5.org/Pages/Default.aspx>

*Vivianne Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC. All rights reserved.



Oh what to do, what to doooo???

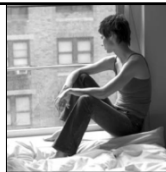
*Vivianne Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

### Many Factors at Play.... All Must be Addressed...



- Processed, **nutrient depleted** diet
- **Poor sleep** and inadequate rest
- Lack of **physical activity**
- Increased exposure to **environmental toxins**
- **Social isolation** and soul pain
- Strong focus on **image**, money, high achievement, having "stuff"
- Weaker personal and **community networks**



*Vivianne Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

### The World Today

- We strongly emphasize **biological explanation** for depression and anxiety, as evidenced by **extensive use of antidepressants and anxiolytics**.
- There remains **little** focus on **physiological, nutritional, societal, communal, familial and spiritual underpinnings**.
- "I take my Effexor and go to a **job I hate** and then home to a house full of **kids** that are **out of control** and a husband that **barely talks to me**. Is my depression better? **Yea, I guess.**"
- **Complex world**. We often have unrealistic expectations. **Isolation** is common, **financial problems**, **lack of purpose, meaning**, a sense of **despair, hopelessness** – the world has less color and texture.

*Vivianne Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC. All rights reserved.

## Movement is Life.....

- **80 million** Americans 6 years and older are **entirely inactive**
- Relationship between physical activity and **cardiovascular, metabolic, neurological, immunological and bone health** well-established.
- **Shown to reduce the harmful effects of stressors** when performed at moderate intensities.
- Meta-analysis of **398 studies** consistently shows **exercise benefits mood, depression and anxiety.**

DeLanda, et al. *Neuropsychobiology* 2009; 59(3):191-8  
Robert AL, et al. *Health Psychol Rev* 2015; Mar 5:1-78



*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Yoga

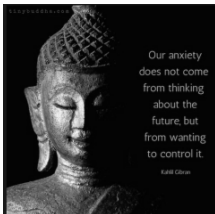
- The **“union of the divine,”** yoga practiced for thousands of years in India.
- Yoga incorporates **breathing exercises, different postures, stretches, and meditation** to help one gain **greater acceptance, compassion and centering.**
- Studies have found yoga to help **ease stress, anxiety, and pain, while improving mood.**



*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Self Soothing



- A good way to deal with **anxiety and high stress** is to **occasionally sidestep the analytical part of your brain** by practicing **relaxation, meditation and/or using guided imagery.**

*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.

## Meditation

- Meditation excellent for **reducing stress perception and pain intensity**, while **elevating mood.**
- Long-time meditators have greater activation of areas responsible for **sustaining attention, processing empathy, integrating emotion and cognition.**
- Review of **47 trials** found that meditation improves:
  - Anxiety
  - Depression
  - Pain



Goyal M, et al. *JAMA Intern Med* 2014; 174(3):357-68

*Viannan Low Dog, M.D.*

Copyright Medicine Lodge Ranch, LLC.  
All rights reserved.



## Meditation Resources

- **Guided Mindfulness Meditation:** *A Complete Guided Mindfulness Meditation Program* from Jon Kabat-Zinn
- **Insight Timer** - ~4,000 guided meditations from more than 1,000 teachers (self-compassion, nature, stress, podcasts and more). More than 750 meditation music tracks. Free.
- **Headspace** – very good for beginners with 10 minute meditations. Free.
- **The Mindfulness App** – nice 5 day guided meditation program to get you started. Can be personalized and integrated into other health apps. Free.

*Vivianne Low Dog, M.D.*

Copyright Medline Lodge Ranch, LLC  
All rights reserved.

## Loneliness, Social Isolation & Your Health

- Poor social relationships associated with **29% increase in risk of heart disease** and **32% increased risk of stroke**.
- **148 studies** on the effects of social isolation on health found it is:
  - As bad as **smoking** 15 cigarettes a day
  - As dangerous as being an **alcoholic**
  - As harmful as **never exercising**
  - Twice as dangerous as being **obese**



• Valtorta NK, et al Loneliness and social isolation as risk factors for coronary heart disease and stroke: systematic review and meta-analysis of longitudinal observational studies. *Heart*. 2016 Jul 1;102(13):1009-16.  
• Cacioppo JT, et al. *Ann N Y Acad Sci* 2011; 1231:17-22

*Vivianne Low Dog, M.D.*

Copyright Medline Lodge Ranch, LLC  
All rights reserved.

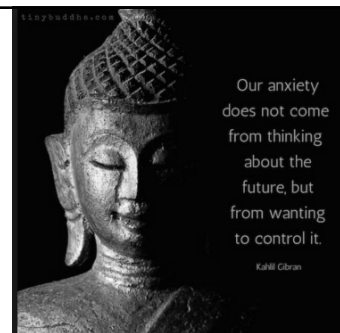
*Call it a clan, call it a network, call it a tribe, call it a family.  
Whatever you call it, whoever you are, you need one.*

*~ Jane Howard*



*Vivianne Low Dog, M.D.*

Copyright Medline Lodge Ranch, LLC  
All rights reserved.

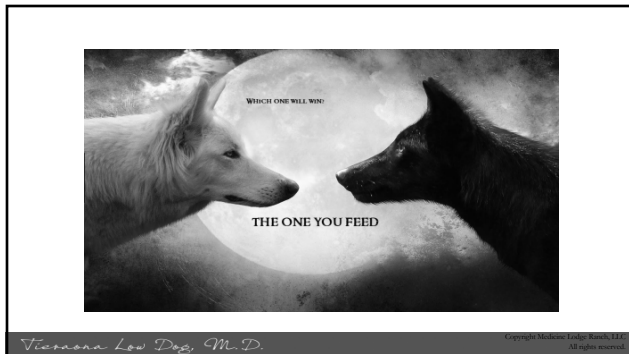


Our anxiety  
does not come  
from thinking  
about the  
future, but  
from wanting  
to control it.

*Kahlil Gibran*

*Vivianne Low Dog, M.D.*

Copyright Medline Lodge Ranch, LLC  
All rights reserved.



1. **Move more.** Whether it's the 7 minute workout, cycling, yoga, or taking long walks - one of the surest ways to maintain heart, brain, bone and muscle health is daily exercise. It's not optional. **Just do it.**
2. Eat food. Minimally processed, **low glycemic load**, diverse, and largely **plant** based diet. **Organic, local, and/or humanely raised** when possible.
3. **Meditate.** Meditation widens the gap between trigger and response, allowing you to feel a greater calm and awareness. It's a **game changer** for almost anyone.
4. **Stay connected.** Social isolation and loneliness is as dangerous as being an alcoholic or being obese. **Invest in your friends and family.**
5. **Take a multi.** Many lack when it comes to key micronutrients. A food based multi can be insurance against the gaps. **Age and gender** appropriate.
6. Be tech smart. Technology makes life easier and more complex. Use **blue light blocking glasses** at night, make one day each week **tech free** or tech "light", and **limit work email in the evening.**
7. **Nurture spirit.** The search for meaning and purpose is a fundamental part of being human. A **richly nourished inner life** is a source of strength during hard times. **Look inward. Honor mystery.**

*Vivanna Low Dog, M.D.* Copyright Madeline Lodge, Ranch, LLC All rights reserved.

