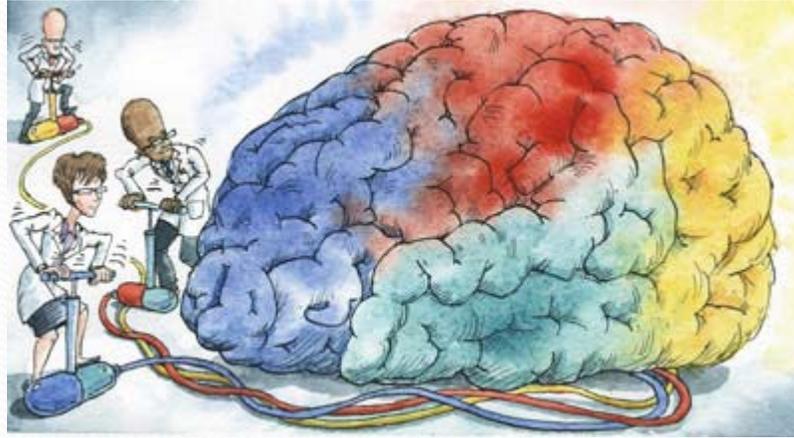


Can Holistic Strategies Prevent Addiction?

A personal perspective for non-
scientists

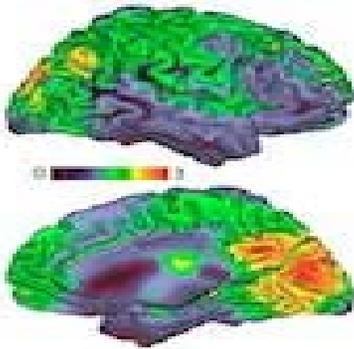
Naresh Chand, Ph.D

Addiction is a Brain Disease



**There's hope:
Drug abuse is a preventable behavior!
Addiction is a treatable disease!**

Scientists Study Addiction from Many Perspectives



- ✓ Causes
- ✓ Effects
- ✓ Impacts
- ✓ Prevention
- ✓ Treatments
- Etc.



Why Do People Become Addicted?

- **Pleasure seeking-** feel cool and relaxed
- **Sensation and novelty seeking**
- **Peer pressure**
- **To relieve low moods, pain, anxiety and stress**

Why Worry About Drug Addiction?

- **The loss of productivity and poor quality of life**
- **Multi-drug abuse disorders**
- **Social stigma and tremendous cost to self, family, society and the nation**
- **Too many emergency visits and tremendous health care cost**

Addiction- A personal story

- 1962 (age 18; experimented, smoked one cigarette)- thanks to God, I did not become a smoker!
- 1973-1999: Excessive love for tasty fast foods, sodas, fruit juice, dairy- cheese, chocolate etc
 - Effect- abdominal obesity, borderline hypertension, pre-diabetes, tiredness/fatigue, osteopenia/osteoporosis, stroke
- 1994 (age 50) and 1999 (age 55)- loss of job (lay offs) and 2000 (poor financial advice- loss of financial health)
 - Loss of income, self image and pride
 - Excessive stress, depression (mood disorder), anhedonia, and despair becoming alcoholic and needed sleep medications etc
 - Was not able to derive pleasures from little things- gardening, car washing, walking or consuming functional foods, etc.

Addiction- A personal story

Holistic approach - Solutions

- ❖ I was fortunate to utilize holistic approaches to improve and to manage my addiction and my life in despair from mind boggling loss of job.
 - Exercise
 - Omega-3 (DHA, fish oil)
 - Yoga, meditation, prayers, exercise, healing music (chanting, singing and dancing)
 - Constantly sipping tea, warm lime or lemon water
 - Functional foods and herbs for reducing brain inflammation and healing the mind and body!
 - This holistic approach helped me in gaining resiliency, the alcohol cravings began to fade and in fact drinking made me sicker.
- ❖ Today we will discuss whether there is any scientific rationale for this approach.

Holistic Approaches for Overcoming Addiction

- **Early recognition- Seek help sooner**
- **Do not consume alcohol with opiate pain killers, marijuana, sleep medications, etc.**
- **Holistic approaches**
 - **Exercise**
 - **Yoga and meditation**
 - **Fish or fish oil (Omega-3; DHA)**
 - **Functional satiety enhancing and anti-inflammatory foods seeds, spices (herbs), etc.**
 - **Hydrate body**
 - **Keeping good company**

Exercise

- **Is exercise an affordable and practical medicine for addiction?**
- **Can it be prescribed as a medicine?**

Exercise reduces cocaine addiction



Physical Activity Reduces Cocaine Seeking in Animal Tests

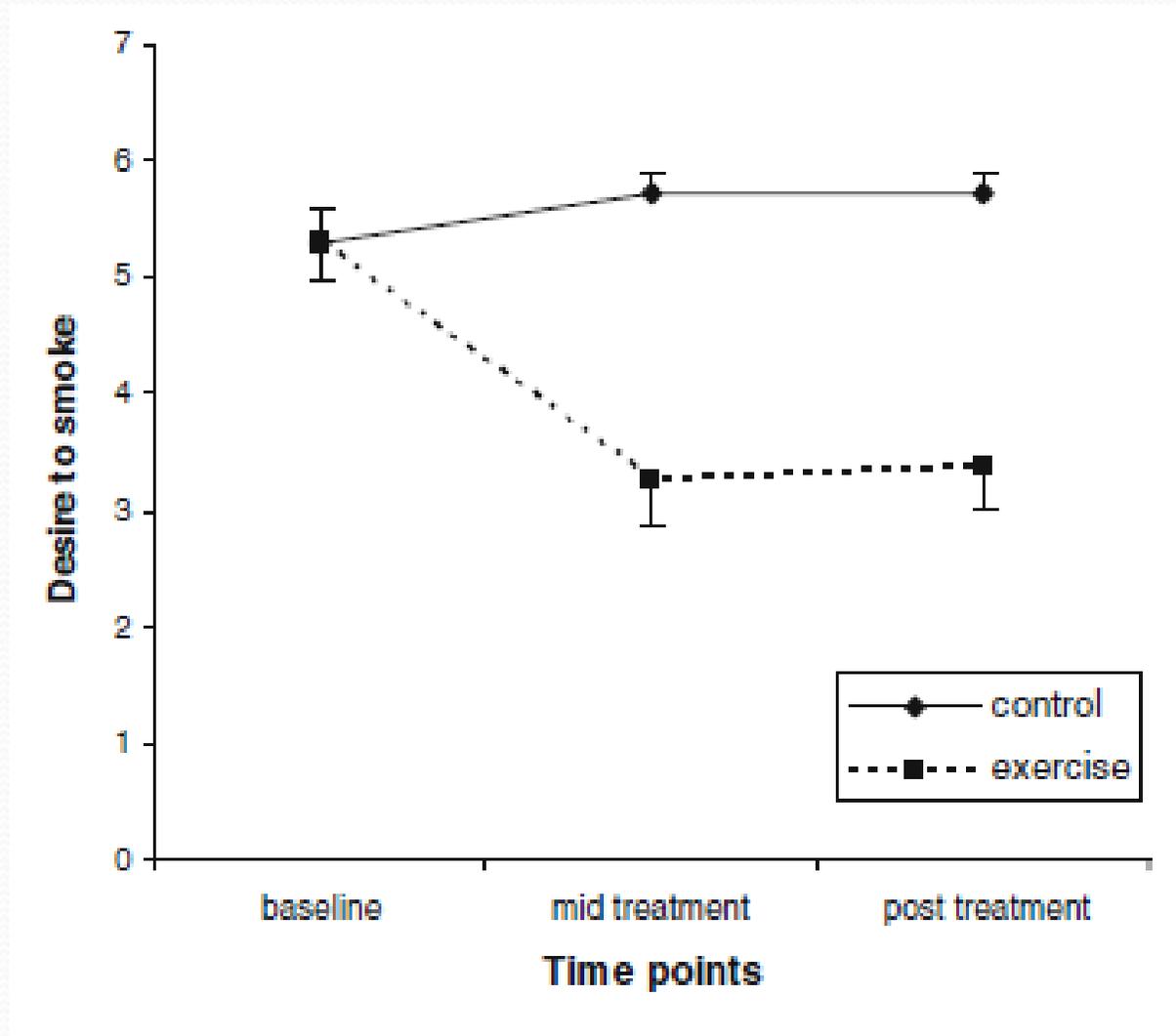
- Running on an exercise wheel reduced cocaine seeking in rats.
- Exercise also decreases neural change linked with drug seeking during abstinence.
- Exercise may produce these effects in part by lowering brain levels of a protein that has been linked to drug craving.
- Exercise may compete with cocaine as a source of pleasurable sensations.
- Exercise functions as an alternative, nondrug reinforcer that decreases reinstatement.
- Exercise mitigates the neurobiological consequences of cocaine self-administration that contribute to relapse.
- Aerobic exercise might help cocaine abusers establish and maintain abstinence.

Exercise reduces craving for smoking

- Exercise reduces
 - desire (craving) to smoke
 - withdrawal symptoms (stress, anxiety, tension, irritability, restlessness) and negative mood
 - anticipation of smoking being rewarding and pleasurable

Elisabeth Zschucke, Andreas Heinz, and Andreas Ströhle (2012): Exercise and physical activity in the therapy of substance use disorders. *ScientificWorldJournal*. 901741. Published online 2012 May 3

Exercise Prevents Craving for Smoking



Exercise

- Potential underlying mechanism for the positive effects of exercise, yoga and tai chi:
 - Decreased stress hormones
 - Increased production of anti-pain and anti-depressant neurotransmitters such as serotonin, GABA etc

Field T (2012): Exercise research on children and adolescents. Complement .Ther Clin Pract. 18(1):54-59

Yoga- Ancient Ayurvedic practice for modern day use



Reduces:

- Brain excitation
- Stress hormones
- Anxiety
- ADHD
- Pain
- Low moods



Improves
✓ Blood flow to brain and
✓ Produces calmness
✓ Sleep
(GABA, Serotonin)

Bull Menninger Clin. 2009 Winter;73(1):34-43.

<http://www.clearviewtreatment.com/substance-abuse-treatment-yoga-therapy.html>

<http://www.sciencedirect.com/science/article/pii/S1744388110000794>

Yoga postures



Yoga- Ancient Ayurvedic Practice for Modern Day Use

- There are many types of yoga practices, yoga typically combines stretching exercises and different poses with deep breathing and meditation.
- Yoga is designed to stretch and tone the muscles and to keep the spine and joints flexible.
- The bending, twisting and stretching movements also massage the internal organs and glands.
- Yoga poses are generally done with deep, diaphragmatic breathing that is thought to increase oxygen flow to the brain.

<http://www.sciencedirect.com/science/article/pii/S1744388110000794>

Yoga from a Pharmacologist's Perspective

- ❖ **Ancient Ayurvedic practice may help**
 - restoring the functioning of the pleasure centers
 - calming the brain
 - reducing inflammation
 - resorting resiliency
 - preventing addictive behaviors.
- **Recommendation: Yoga and Tai Chi should be regularly taught and practiced in all houses of worship, educational centers, community settings, health clubs and hospitals.**
- **Technology and media should encourage the use of yoga in daily living and for improving overall health.**

Navigating Addiction Through the Practice of Yoga

- **Yoga can be an affordable and practical medicine for addiction.**
- **Yoga should be a mandatory in schools, colleges and universities, hospitals and senior citizen centers and work places.**
- **Yoga should be prescribed as a medicine for addiction therapy.**

<http://www.best-holistic-addiction-treatment.com/yoga.html>

<http://www.yogajournal.com/practice/679>

Exercise

Pharmacologist's perspective

- **Exercise**

- **REDUCES**

- Anxiety
- Mood disorders
- Pain
- Brain inflammation

- **Restores**

- Resiliency
- Satiety
- Sleep
- Normalizes the functioning of the pleasure centers

- It is the best, most effective, safest, affordable and practical medicine for life long illnesses such as addiction and co-morbidities.
- Recommendation- Enjoyable physical activity (such as variety of dancing and yoga) should be a mandatory in schools, colleges and universities, homes, hospitals and senior citizen centers and work places.
- It should be prescribed as a medicine for addiction therapy.

Omega-3

Any relevance to addiction?

- **Over the past 50 years, we are consuming too much of vegetable oils (rich source of omega-6)**
- **Omega-3 deficiency may be the leading cause of brain inflammation, as well as for the loss of satiety and resiliency**
- **Can DHA (omega-3; fish oil) serve as medicine for addictive behaviors?**

Fish Oil: omega-3 (DHA)

- Fish Oil have positive effects on Mood, Alcohol Craving
 - ❖ bipolar mice, like some bipolar patients, love alcohol. The mice on DHA drank much less; it curtailed their alcohol abusive behavior
- The genes that are known targets of psychiatric medications were modulated and normalized by DHA in mice

<http://www.sciencedaily.com/releases/2011/05/110526091758.htm>

Additional review: Hibbeln JR (2009): Depression, suicide and deficiencies of omega-3 essential fatty acids in modern diets. World Rev Nutr Diet. 2009;99:17-30

National Institutes Alcohol Abuse and Alcoholism, NIH, Bethesda, MD 20892, USA.

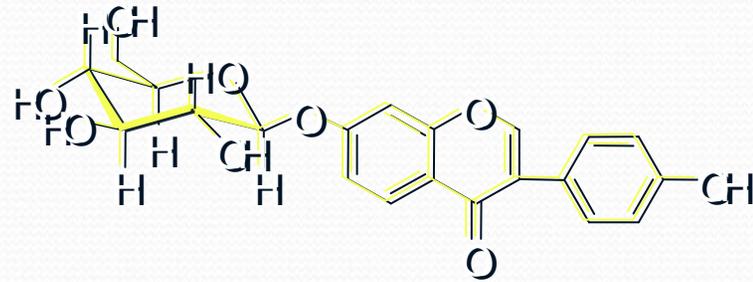
Food sources of omega-3 fatty acids

- Sardines, salmon, flax seeds and walnuts
- Vegan omega-3 (DHA) may be used as an supplement
 - Efficacy studies are needed for short and long-term (double blind clinical trials) in drug addiction and co-morbidities
- Recommendation:
 - Use of 1-2 oz of salmon or other fatty fish or/and 0.5-1 oz of nuts everyday may be effective prevention strategy for many diseases including addiction and its co-morbidities.

A Potent Anti-Drinking Principle of Kudzu (*Pueraria lobata*) is Daidzin



Root
Radix puerariae, RP

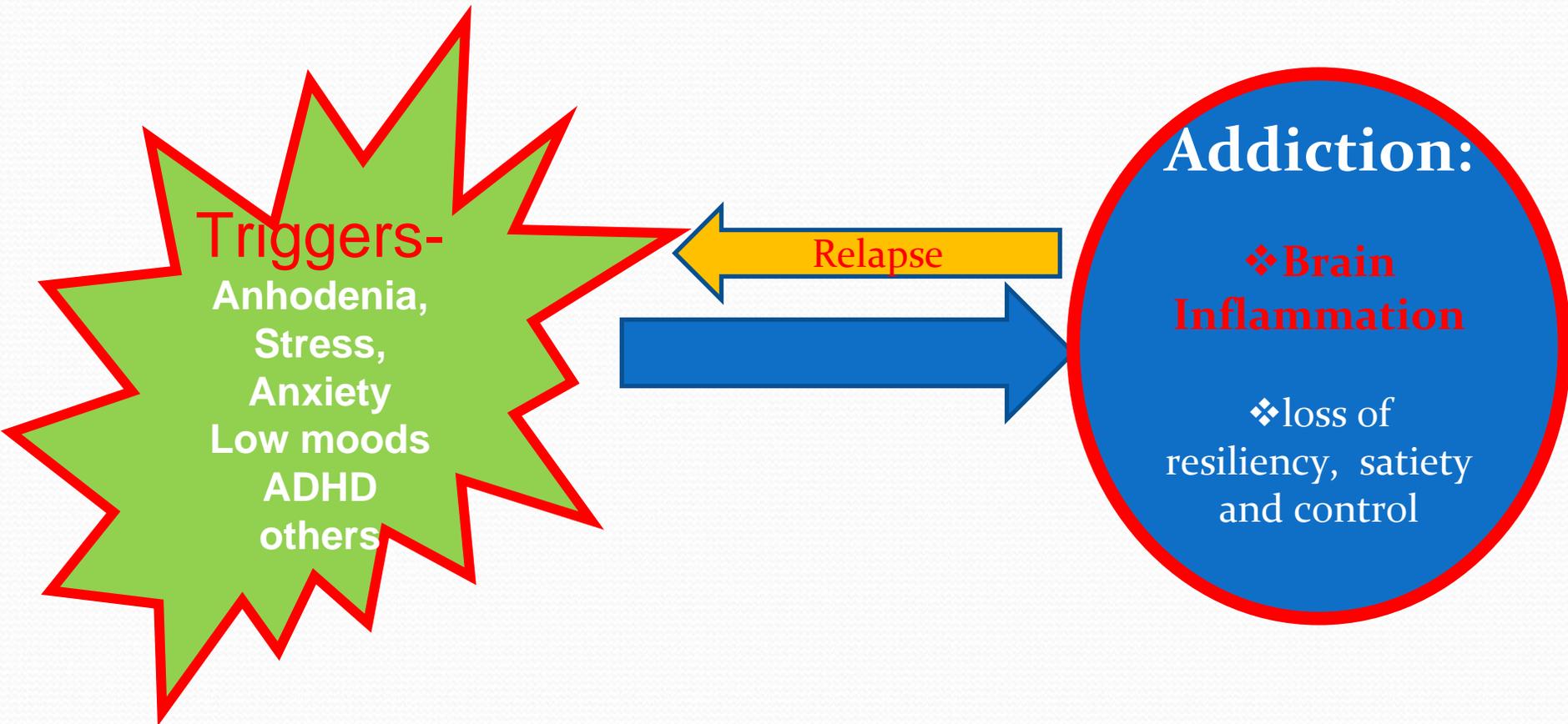


Daidzin

Satiety producing foods

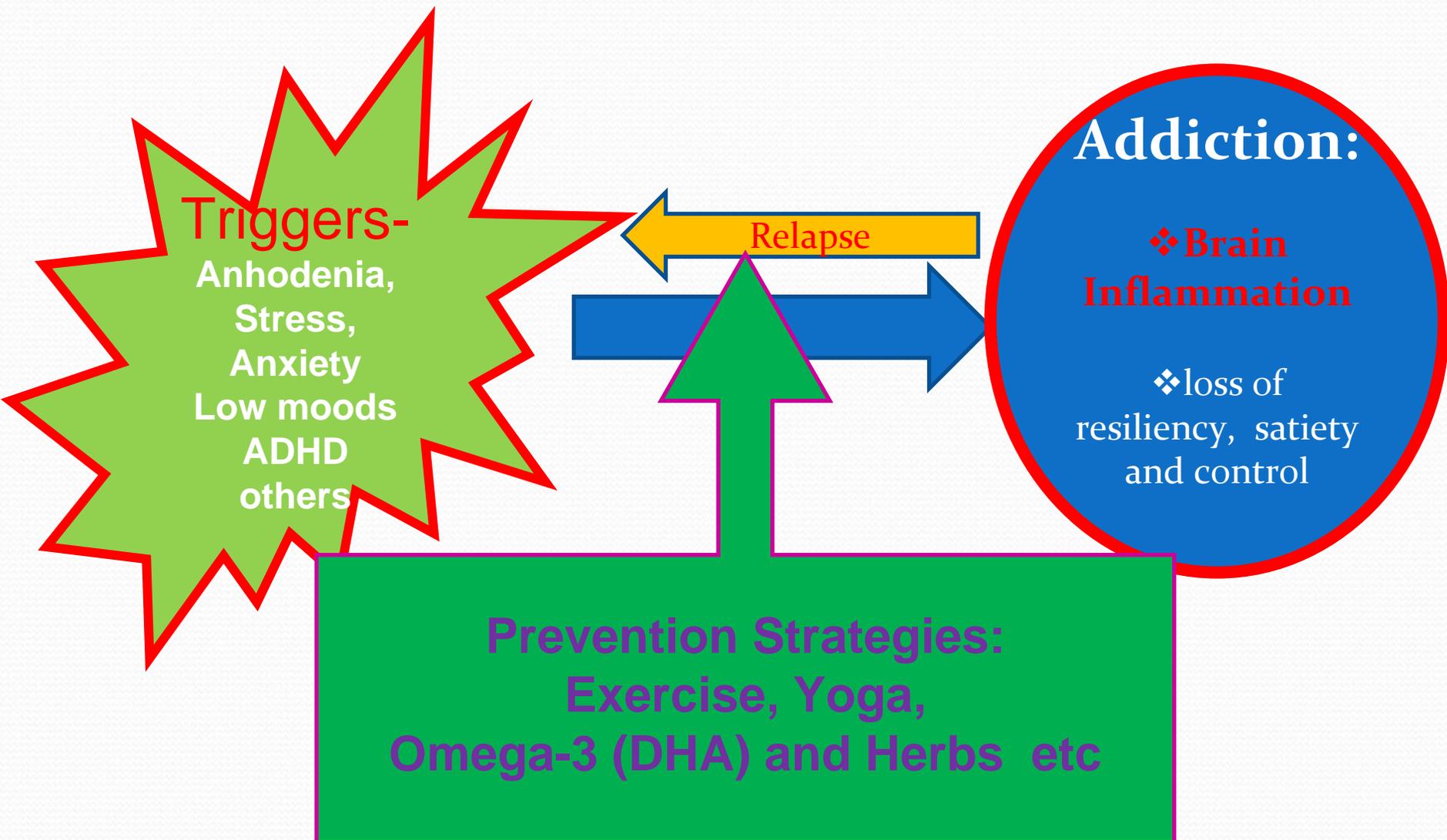
- **Salmon**
- **Chia seeds**
- **Multicolor vegetables- peppers, lettuce, coriander, collard, kale, Swiss chard, onions and mushrooms etc. (Note: add extra virgin olive oil after cooking)**
- **Beans, brown rice, yam and sweet potatoes**
- **Yogurts and butter milk**
- **Fruits- pears, apples, grapes and bananas etc.**
- **Popcorn**
- **Whole- Wheat Pasta**

Simplistic view of addiction

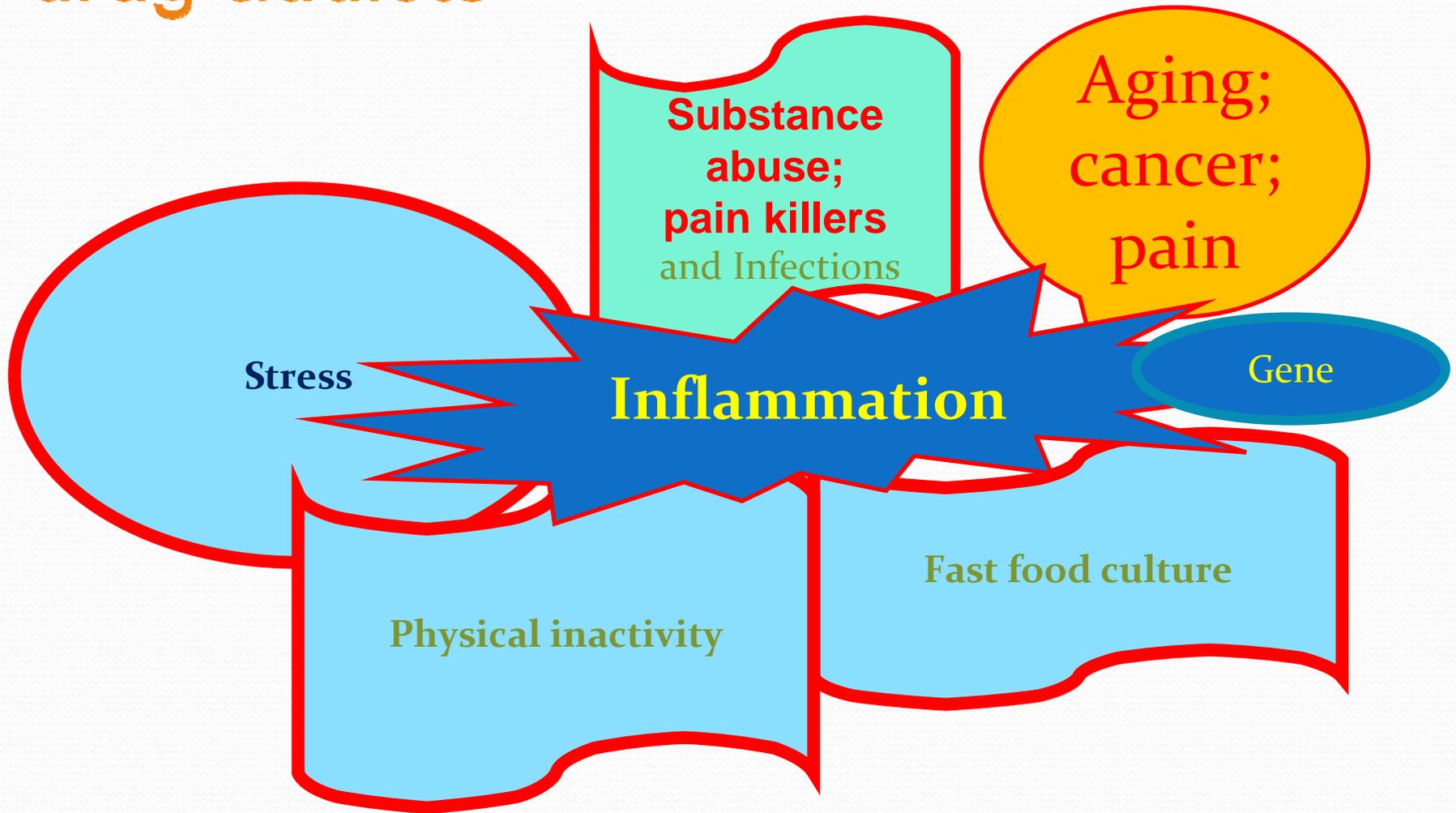


Simplistic view of addiction

Does inflammation play a role in addiction?



Accelerated Brain Inflammation in drug addicts



Is brain inflammation the cause or result of addiction?

- Addictive substances and their metabolites causing brain inflammation and pain
- Increase need for pain medications
- Can herbs reduce brain inflammation and reduce the use of pain medications?

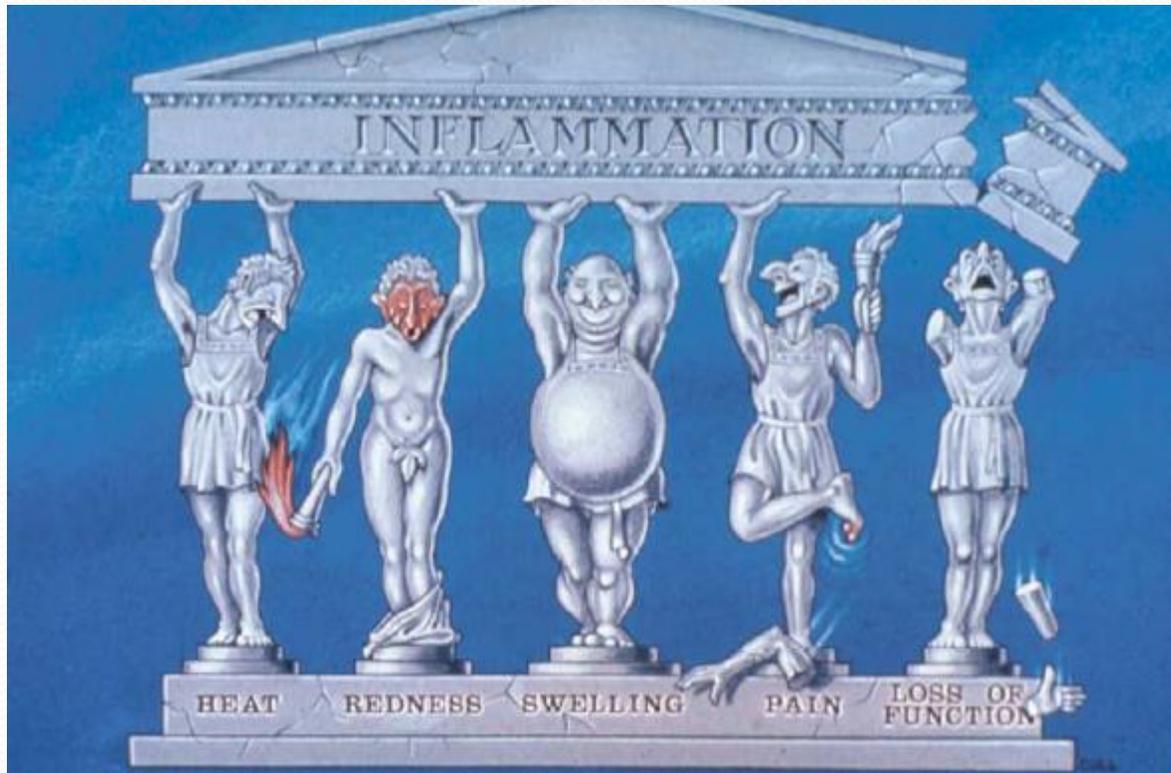
BUSH'S
MILITARY RECORDS
IS DISNEY MOUSETRAPPED?

TIME

THE SECRET KILLER

- The surprising link between **INFLAMMATION** and **HEART ATTACKS, CANCER, ALZHEIMER'S** and other diseases
- What you can do to fight it

Signs of Inflammation



Inflammation

- This secret killer has five characteristics:
 - calor (heat)
 - rubor (redness)
 - tumor (swelling)
 - dolor (pain)
 - Loss of function
- It is inherently good, but persistent, dysregulated and subtle inflammation is bad in the long run.
- Can herbs, omega-3 and exercise reduce brain inflammation in drug addicts?

Prevention Strategies for Dysregulated Inflammation in Drug Addicts should be

➤ **Safe**

➤ **Practical and flexible**

➤ **Cost effective for life**

➤ **Easy to adopt**

➤ **Community based**

➤ **Applicable to populations**

Managing Inflammatory processes in addiction

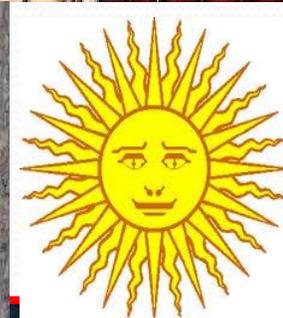
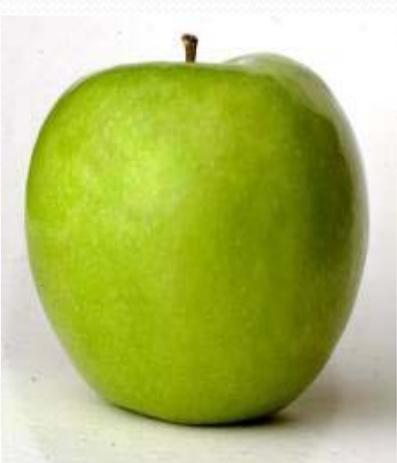
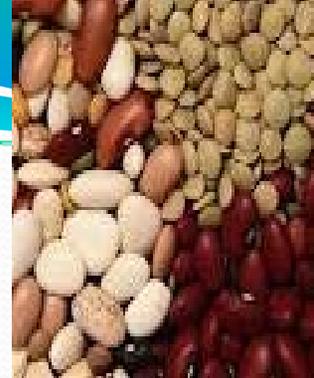
- Hydrate body
- Exercise/yoga/Meditation
- Fish oil (Omega-3; DHA)
- HERBS
 - Turmeric, black pepper and olive oil
 - Ginger
 - Others
- Natural functional Foods- berries, greens, nuts and beans, grains, chia seeds, brown rice, etc.
- Reduce or eliminate the consumption of processed comfort foods (starches- flour, sugars, salts, sweets, etc.)



Anti-inflammatory Herbs

Turmeric, ginger and black pepper and others





HERBS: turmeric, ginger, black pepper etc



Vegan omega-3 (DHA 500-800 mg daily)



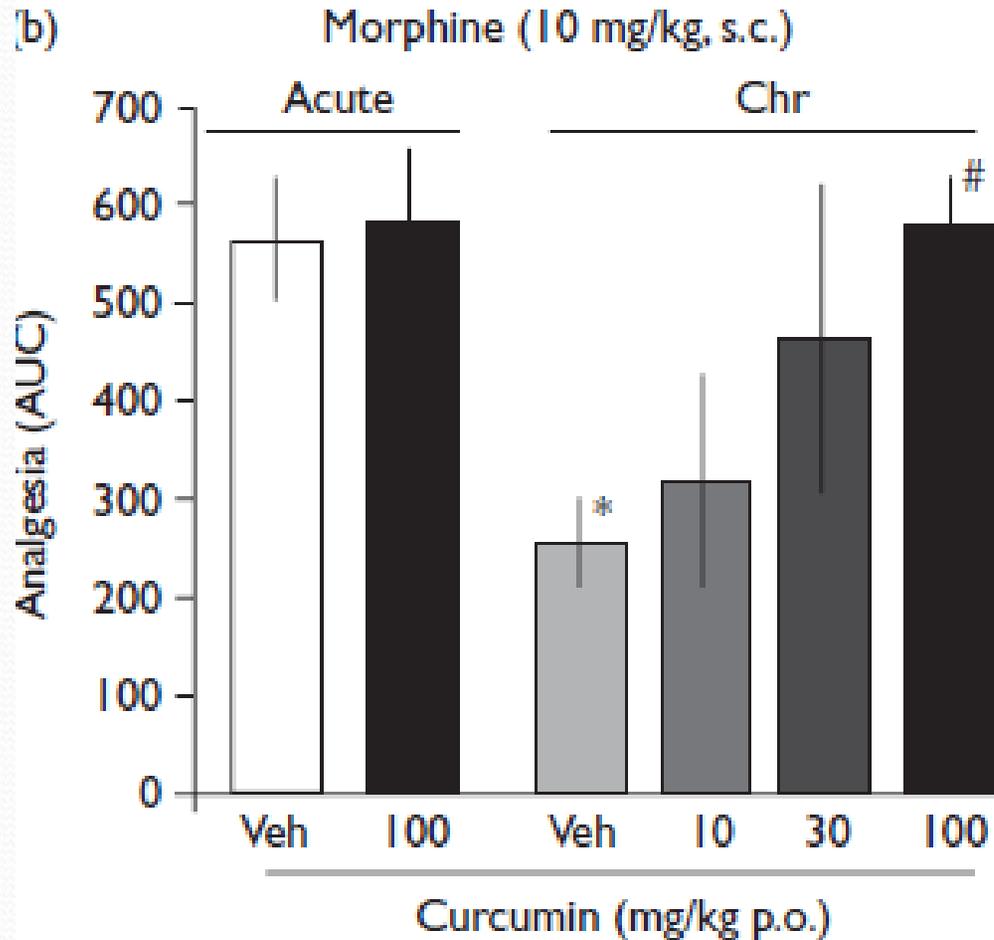
Magic Pill for the prevention of addiction- A personal perspective

Spices:

Do they have any therapeutic potential in addiction?

- ❖ Herbs may have an important role in the management of brain diseases such as pain, depression, inflammation, addiction, etc.

Turmeric's active ingredient reverses morphine-induced tolerance in mice



Spices- do they have any therapeutic potential in addiction?

- Turmeric with little black pepper in extra virgin olive oil (10:1:10 ratio) is likely to reduce brain inflammation.
- It can be added in gradually increasing amounts in soups, fast foods and tea etc for the Western people.
- It may help in preventing tolerance and improving the efficacy and safety of opiate pain medications.
- Turmeric and other spices may reduce brain inflammation and reduce the need for pain and other medications.
- Turmeric and other spices may improve satiety.

<http://www.healthyindiandiet.com/1/post/2011/10/interview-with-dr-bharat-aggarwal-pioneer-of-turmeric-research.html>

Safe and Effective Anti-inflammatory Herbs (Ayurvedic Medicine)



Turmeric, ginger, cinnamon, hot peppers, bitter melon, cinnamon, multicolor vegetables and selected fruits, chia seeds may increase satiety and reduce brain inflammation and thus reduce the need for pain killers

Anti-inflammatory fruits



Blueberries



Dragon Fruit



Citrus



Goji Berries



Acai Berries



Pomegranate



Grapes



Avocado



Soursop



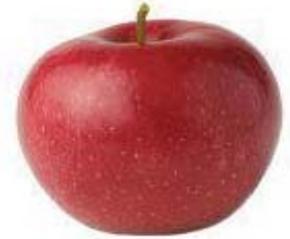
Strawberries



Mangosteen



Noni



Apple



Kiwi

Following approaches may help in drug abuse prevention

- Supportive environment- family, school, peers, work family
- Balancing between self medication (alcohol as anti-anxiety or smoking for ADHD; pain/sleep medications and abuse potentials and development of tolerance)
- Positive mindset
- Good nutrition “satiety”
- Body hydration
- Good sleep- mild walk after dinner, eating cultured foods-yogurt; prayers, meditation and yoga; reading bible or other books etc
- Re-building relationships- parents and grandchildren, friends, family, etc.
- Keep good company
- Learn the art of living better and dealing with losses

Personal Perspective on Prevention of addiction

- Acceptance - beat “denial mind set”
- Seek help – sooner the better
- Nutrition: functional foods, spices, chia seeds, nuts
 - Foods rich in fiber, antioxidants and Omega- 3 (DHA)
- Vitamin D3 or exposure to sun
- Keep good company- beat loneliness and boredom
- Stress management
 - Any enjoyable physical activity-Exercise
 - Meditation and laughing yoga
 - Forgiveness
 - Beat unemployment- farming, gardening/swimming, volunteering, community service etc
 - Walk and talk
- Together, you, your caring family, community and physician can HELP in preventing drug abuse and associated mental illnesses and co-morbidities

Following approaches may help in drug abuse prevention

- Calming the brain and restoring “satiety”:
 - Prayers
 - Meditation- deep breathing exercises
 - Yoga- stretching and re-building mind and body connections
 - Laughing as anti-anxiety and anti-stress medication
 - Exercise- any enjoyable physical activity

Other Areas of Concern

- In addition to alcohol and substance abuse, many people are also misusing pain and sleep medications

Disturbing Trend:

Abuse of Prescription Medication and Illicit Drugs in Older Adults

- The number of 50- to 59-year-olds reporting past-month abuse of illicit drugs — including the nonmedical use of prescription drugs — more than doubled from 2002 to 2010, going from **907,000** to **2,375,000**, or from 2.7 to 5.8 percent in this population.
- Among those 65 and older, 414,000 used illicit drugs in 2010.

From: June 7, 2012 report:

<http://nihseniorhealth.gov/drugabuse/commonlyabusedmedications/01.html>

Pain killers

- Americans consume **80 percent** of the world's supply of painkillers, and prescriptions have increased by **600 percent** over the last decade.

Exercise, yoga, meditation, spices, fish oil, functional foods may reduce addiction to pain medications.

Addicted to Painkillers

The New York Times, By Paul Christopher, M.D., October 1, 2012

- Prescription drug abuse is America's fastest-growing drug problem
- Every 19 minutes, someone dies from a prescription drug overdose in the United States, triple the rate in 1990.
- According to the Centers for Disease Control and Prevention, prescription painkillers (like oxycodone) are largely to blame.
- More people die from ingesting these drugs than from cocaine and heroin combined.
- The requirements for involuntary substance treatment vary widely across the nation, from posing a serious danger to oneself, others or property, to impaired decision-making or even something as vague as losing control of oneself.
- States approach compulsory treatment for mental illness with far greater uniformity. All allow it, and almost all restrict it to instances in which a patient poses an immediate danger to himself or another.

Sleep disorders



Consequences- fatal accidents and deaths
Many times people abuse sleep medications , alcohol and other medications!

Seek help- Walking after dinner; yogurt, butter milk , prayers and reading or even chanting may help!
Do not drive!

Conclusion

- Alcohol and substance abuse are preventable behaviors.
- Addiction is a treatable disease.
- Holistic approaches regularly utilized in home, hospital and school settings may help in the prevention of addiction.
- Early recognition and intervention are the key to the success.



Thank you

Compliments from www.dadstea.com

Seeking feedback

Contact: info@dadstea.com

Resources

- Education and prevention
 - Drug Facts: Lessons from Prevention Research
 - <http://www.drugabuse.gov/publications/drugfacts/lessons-prevention-research>
 - <http://www.drugabuse.gov/>
 - <http://www.drugabuse.gov/related-topics/medical-consequences-drug-abuse>
 - <http://www.samhsa.gov/prevention/>
 - <http://nihseniorhealth.gov/drugabuse/commonlyabusedmedications/01.html>

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- <http://www.drugabuse.gov/news-events/nida-notes/2012/04/physical-activity-reduces-return-to-cocaine-seeking-in-animal-tests>
- <http://www.livestrong.com/article/27164-people-become-addicted-alcohol/#ixzz27hUN94rG>
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Yoga- Ancient Ayurvedic practice for modern day use

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