

Go Wild: Free Your Body and Mind from the Afflictions of Civilization

John Ratey, MD

Associate Clinical Professor of Psychiatry

Harvard Medical School

COURSE OBJECTIVES

The participant will be able to recall and elaborate for her patients the benefits of meditation as it impacts their general health and the brains.

The participant will be able to help patients realize the importance of getting the necessary amount of restorative sleep.

The participant will be able to help her patients understand the physical and psychological benefits of spending time in nature.

GO WILD



Genetically Designed to live

- NATURE
- DIET
- EXERCISE
- SLEEP
- MINDFULNESS
- CONNECTION

GO WILD

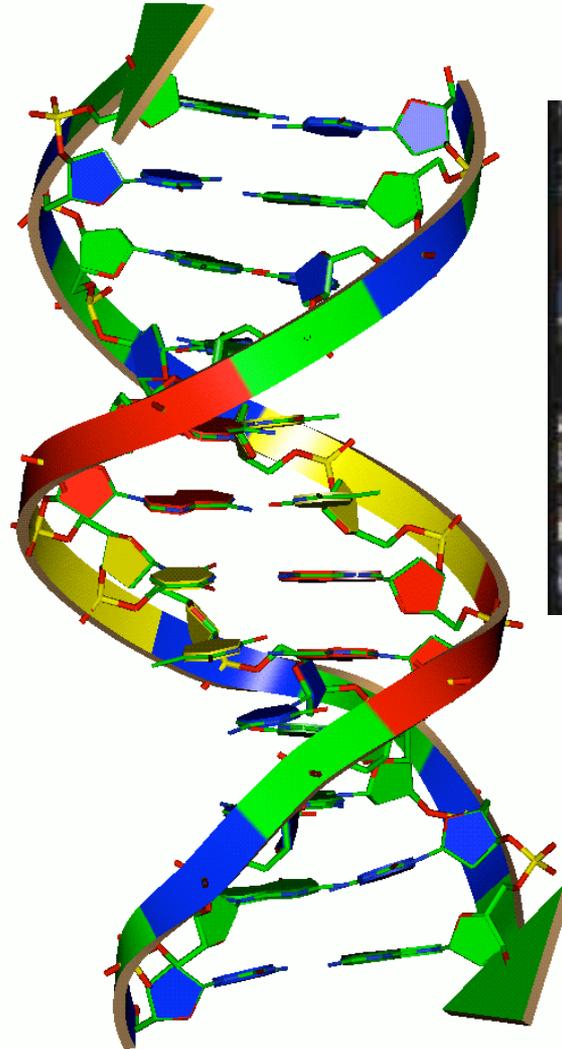
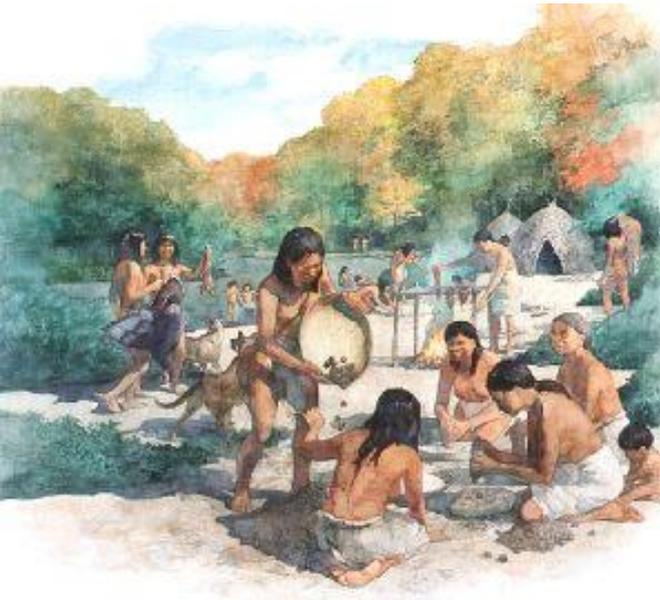
FREE YOUR BODY AND MIND
FROM THE AFFLICTIONS
OF CIVILIZATION



Eat fat, run free, be social,
and follow evolution's other rules for
total health and well-being

JOHN J. RATEY, MD
Coauthor of the National Bestseller SPARK and
RICHARD MANNING

SAME DNA



Conditions that are caused or worsened by the Mismatch of Genes and our Lifestyles



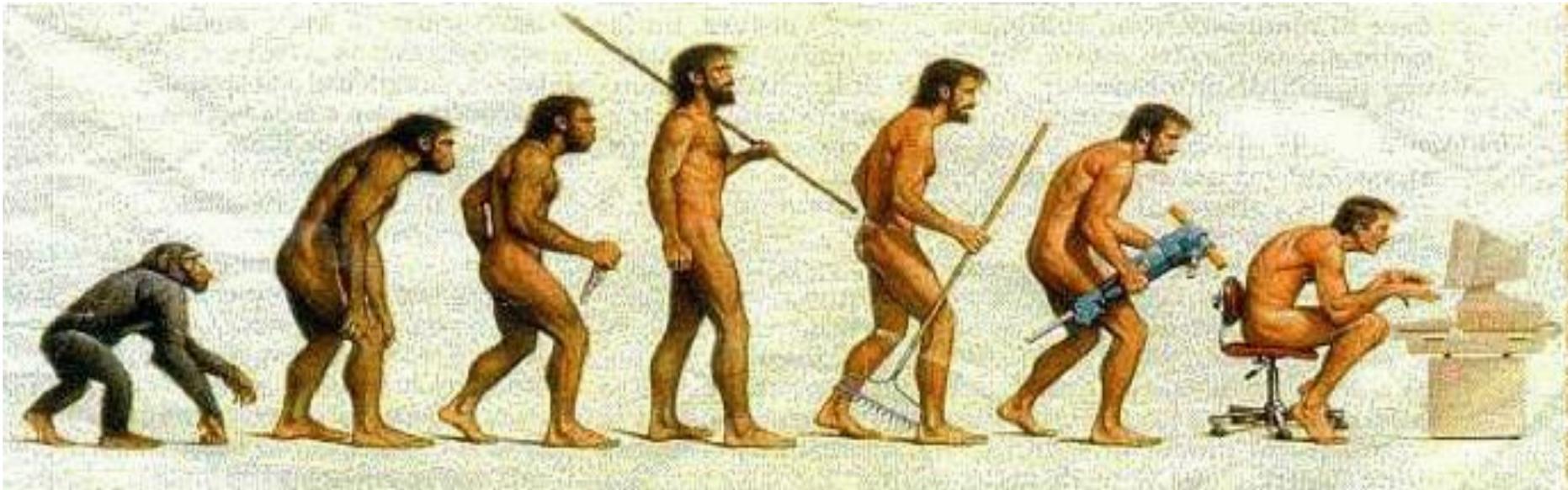
Angina, heart attack,
Coronary artery disease
Breast cancer
Colon cancer
Congestive heart failure
Depression
Gallstone disease
High blood triglyceride
High blood cholesterol
Hypertension
Less cognitive function
Low blood HDL
Lower quality of life
Obesity (more difficult time
with weight control)
Osteoporosis
Pancreatic cancer
Peripheral vascular disease
Physical frailty
Premature mortality
Prostate cancer
Sleep apnea
Stiff joints
Stroke
Type 2 diabetes

Sedentary Life Style Increases
The Progression Of :

ADHD
Anxiety
Lowered Academic Achievement
Depression
Post Traumatic Stress
Learned Helplessness
ADDICTIONS
Stress related illnesses
Lack of Resilience
Cognitive Decline
Alzheimer's
Premature Aging and Frailty

It's better to wear out than to rust

-Civilization has evolved at such a rapid pace- but our core, hunter-gatherer DNA has not kept up. This mismatch is greatly affecting both our physical and psychological health





Intervention vs. Control Group Composite OASIS Scores Over Time

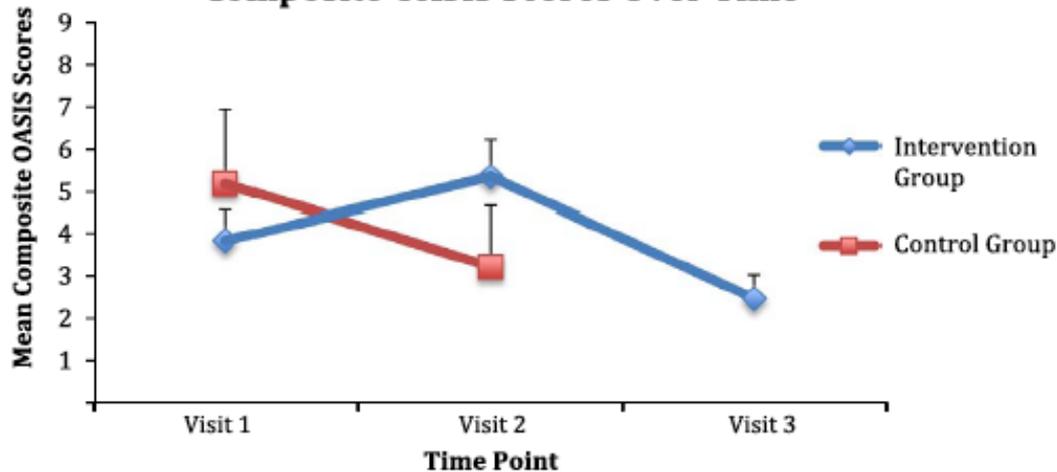


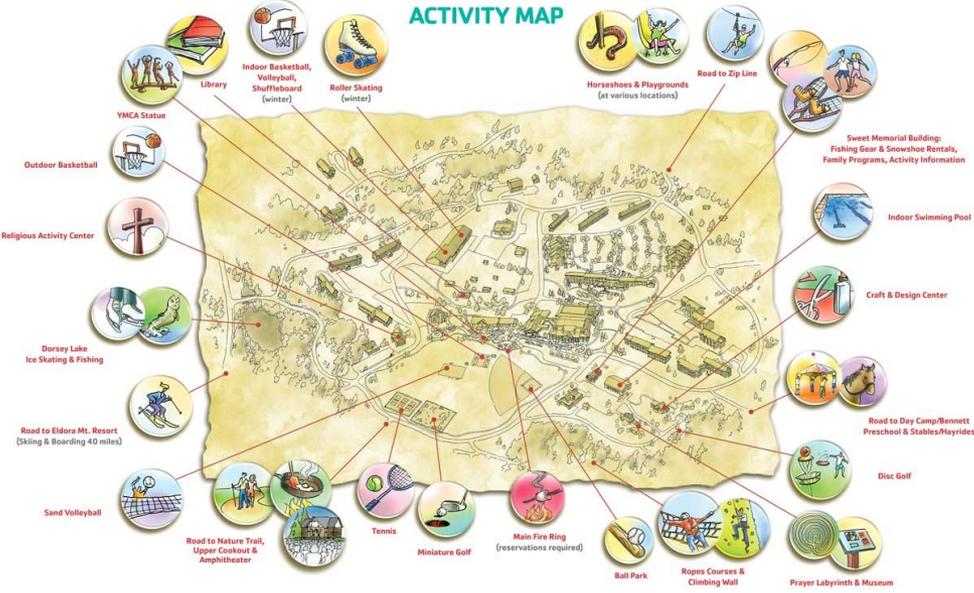
Fig. 3. Intervention Group vs. Control Group Composite OASIS Scores Over Time.

[J Affect Disord.](#) 2016 Jun 15;204:166-173. doi: 10.1016/j.jad.2016.06.045. **Experimentally increasing sedentary behavior results in increased anxiety in an active young adult population.** [Edwards MK¹](#), [Loprinzi PD²](#).

A group of participants between 18-34 yr old who met the 150 min/week activity requirement n=26 of sedentary group, n=13 of control group -- For one week, the intervention group eliminated exercise and minimized steps to ≤ 5000 steps/day whereas the control group continued their normal physical activity levels. Both groups completed the Overall Anxiety Severity Impairment Scale (OASIS) pre- and post-intervention, with higher OASIS scores indicating worse overall anxiety

Re-wilding at Estes Park

ESTES PARK CENTER ACTIVITY MAP



Climbing Wall, Craft Shop, Skiing and Boarding, Horseback Riding and Sleigh Rides, High Ropes Course, Equipment Rentals, Family Zip Line and Family Programs may require a fee. Please visit our website ymcarkockies.org for the activities available during your stay, some activities are only available seasonally.



Nature



Best way to raise your vitamin D



shinrin-yoku

Japanese noun

A visit to a forest for relaxation. Literally: forest bathing.

University of Tokyo Study
Lowers heart rate
Boost Immune Response
Improves Cognition

Nature Heals

Patients with bedside windows looking out on leafy trees

- Healed on average, a day faster
- Needed significantly less pain medication
- Had fewer postsurgical complications than patients who instead saw a brick wall.

Power of a Picture

- 160 Heart Surgery Patients- ICU-no windows
- Patients with a picture of landscape versus a blank wall or abstract art by their bed
- Reduces need for pain medicine and lowers cortisol, boosting immune system
- Allows your own body to partner with medications and other treatments to hasten healing

[A review of the research literature on evidence-based healthcare design.](#) Ulrich RS, Zimring C, Zhu X, DuBose J, Seo HB, Choi YS, Quan X, Joseph A. HERD. 2008 Spring;1(3):61-125. Review.

Plants are amazing

- Scientists from the University of Exeter found plants aid concentration, increase productivity and boost staff wellbeing by 47 per cent at work
- Another Study show that the mere presence of plants in an office setting boosts one's ability to maintain attention.
- House plants clean the air while improving your mood.
- Harvard Study shows looking at flowers if you are not a morning person, raises your alertness and improves mood for the rest of the day. Nancy Etcoff
https://www.ted.com/talks/nancy_etcoff_on_happiness_and_why_we_want_it

Diet



The Wellness Warriors alert

As individuals who care about our health and the health of our nation, we already know that sugary beverages are harming Americans and costing taxpayers hundreds of billions of dollars (\$200 billion to be exact). The evidence is crystal clear. Sugar is the biggest source of added calories in the American diet today (beating out pizza). A new study published in the *British Medical Journal* tells us that

drinking just one can of sugar-sweetened beverage a day increases the risk of developing type 2 diabetes by 18 percent over a decade (13 percent if you are not overweight).



“The high-carb diet I put you on 20 years ago gave you diabetes, high blood pressure and heart disease. Oops.”

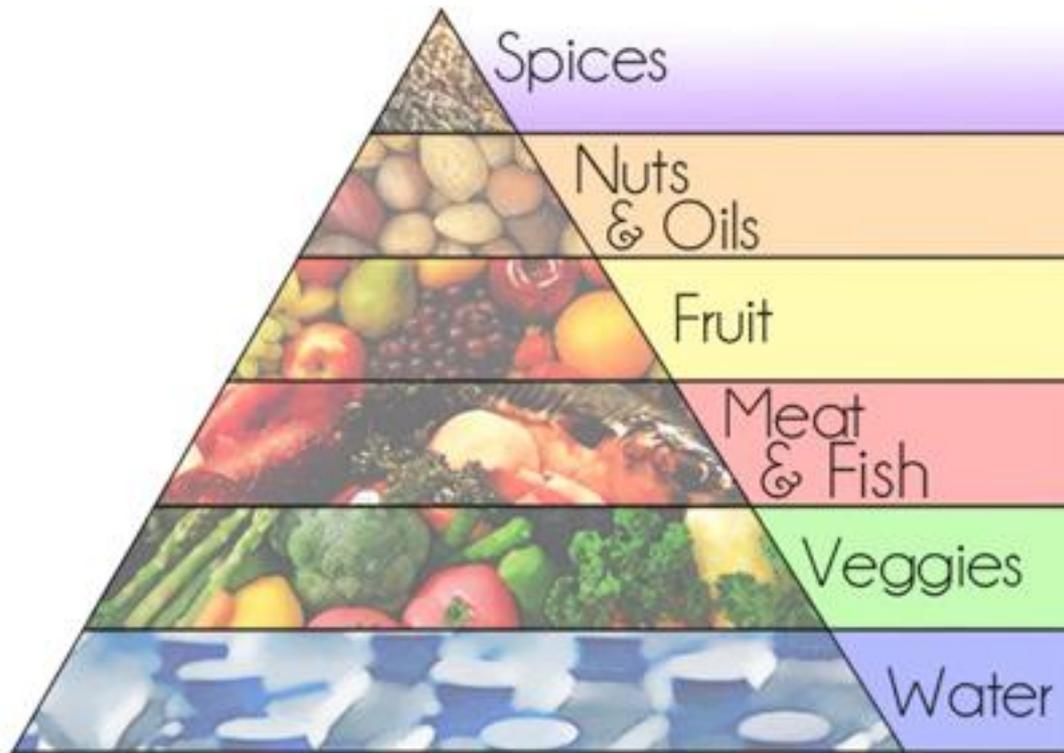
ALSO LED TO YOUR

EARLY COGNITIVE
DECLINE

PRIME CANDIDATE FOR
ALZHEIMER’S

NOW WE SEE “SUGAR
AS TOXIC” High carb
=high sugar

Caveman Food Pyramid



It is estimated that as Hunter gatherers we foraged for over 300 types of plants, berries, nuts and tubers that was a major part of our diet

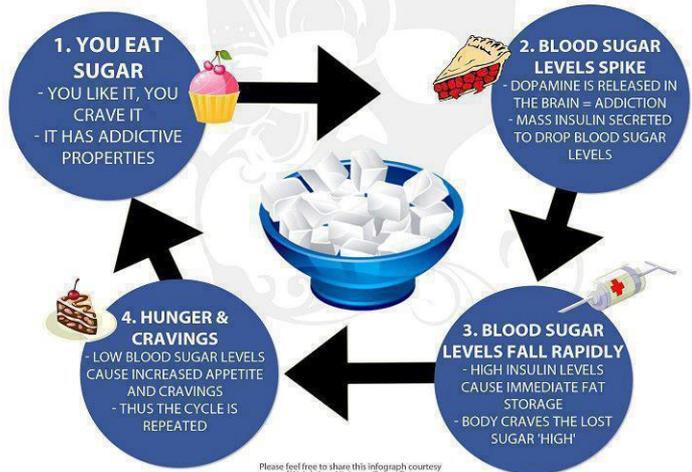


I WILL KILL YOU ALL...



WITH STARCH!

SUGAR ADDICTION:
THE PERPETUAL CYCLE



Please feel free to share this Infograph courtesy of WeightLossNinja.org/Sugar-Detox

New Guidelines

In response to a growing concern, the American Academy of Pediatrics set forth the following guidelines:

- Juice should not be given to infants before they are at least 6 months old
- Children should not be given juice from bottles or transportable covered cups that allow them to consume juice easily throughout the day
- Children should not be given fruit juice before bed
- Juice intake should be limited daily to:
 - 4 to 6 oz for children 1 to 6 years old
 - 8 to 12 oz for children 7 to 18 years old

Supplements that are anti-aging

- Vitamin D
- Omega 3s
- Cinnamon
- Curry- Tumeric, curcumin, cumin
- Chocolate- dark
- Garlic, Onions, Broccoli, Cayenne

All help reduce inflammation the new target in medicine.



Curry



- Contains Tumeric- yellow color, which
- Contains Curcumin which is an anti-inflammatory which may be partly responsible for elderly villagers in India to have the lowest rate of Alzheimer's in the world.

curcumin

- Often Contains Cumin which is also an anti-inflammatory and is in most chili powders.

Cinnamon



- Anti-clotting agent
- Anti-inflammatory
- Helps Insulin work better, so lowers blood glucose levels.
- The smell increases our cognitive abilities
- Protects memory and may help prevent Alzheimer's and Parkinson's

CURCUMIN- EAT AN INDIAN MEAL A WEEK.

Curcumin, the main active ingredient in the spice turmeric, is currently the subject of intense scientific inquiry, especially as it relates to the brain. It has been used in traditional Chinese and Indian (ayurvedic) medicine for thousands of years. Although it is well known for its antioxidant, anti-inflammatory, anti-fungal, and antibacterial activities, its ability to increase BDNF in particular has attracted the interest of neuroscientists around the world, especially epidemiologists searching for clues to explain why the prevalence of DEMENTIA AND CANCER is markedly reduced in communities where turmeric is used in abundance.

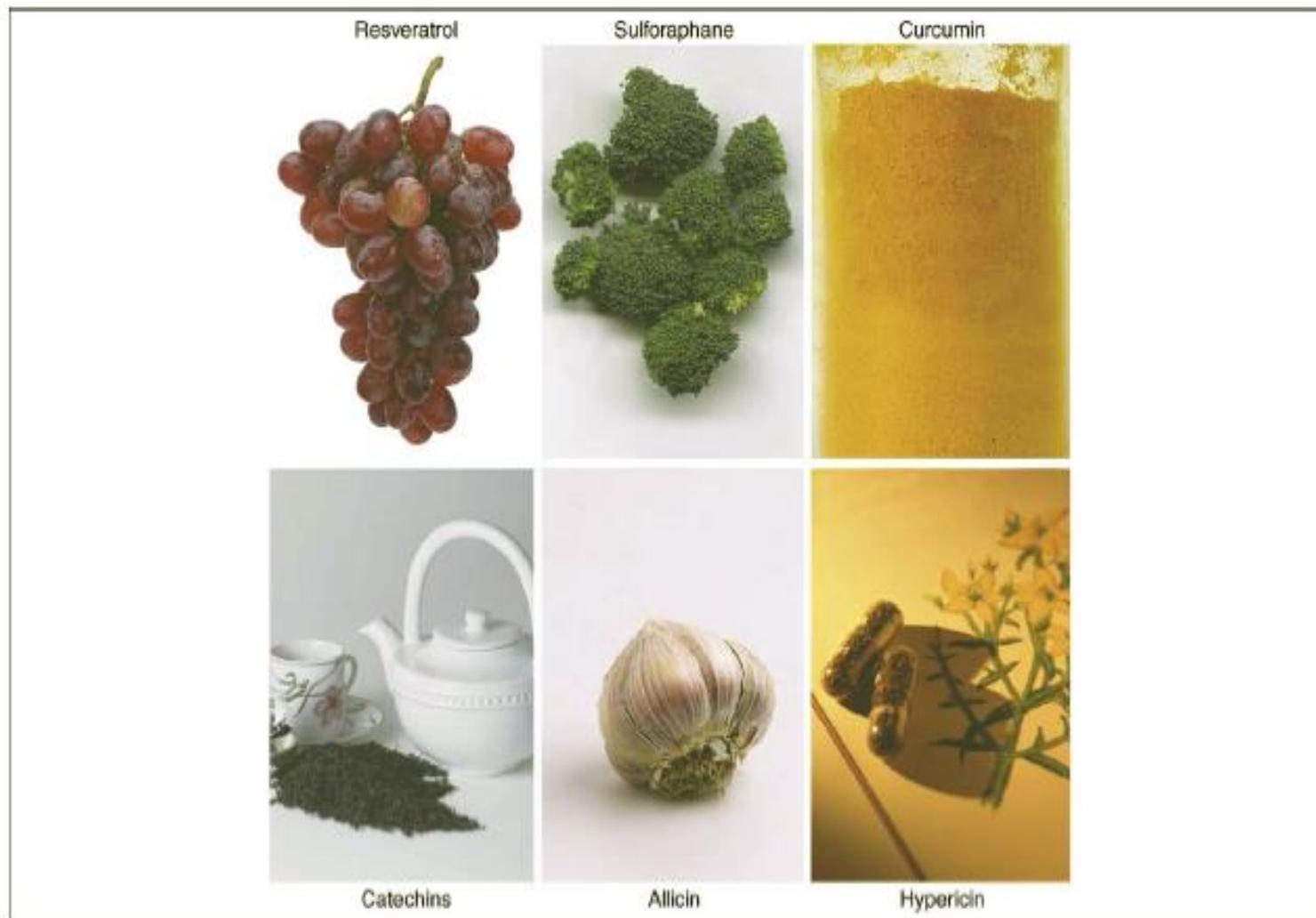
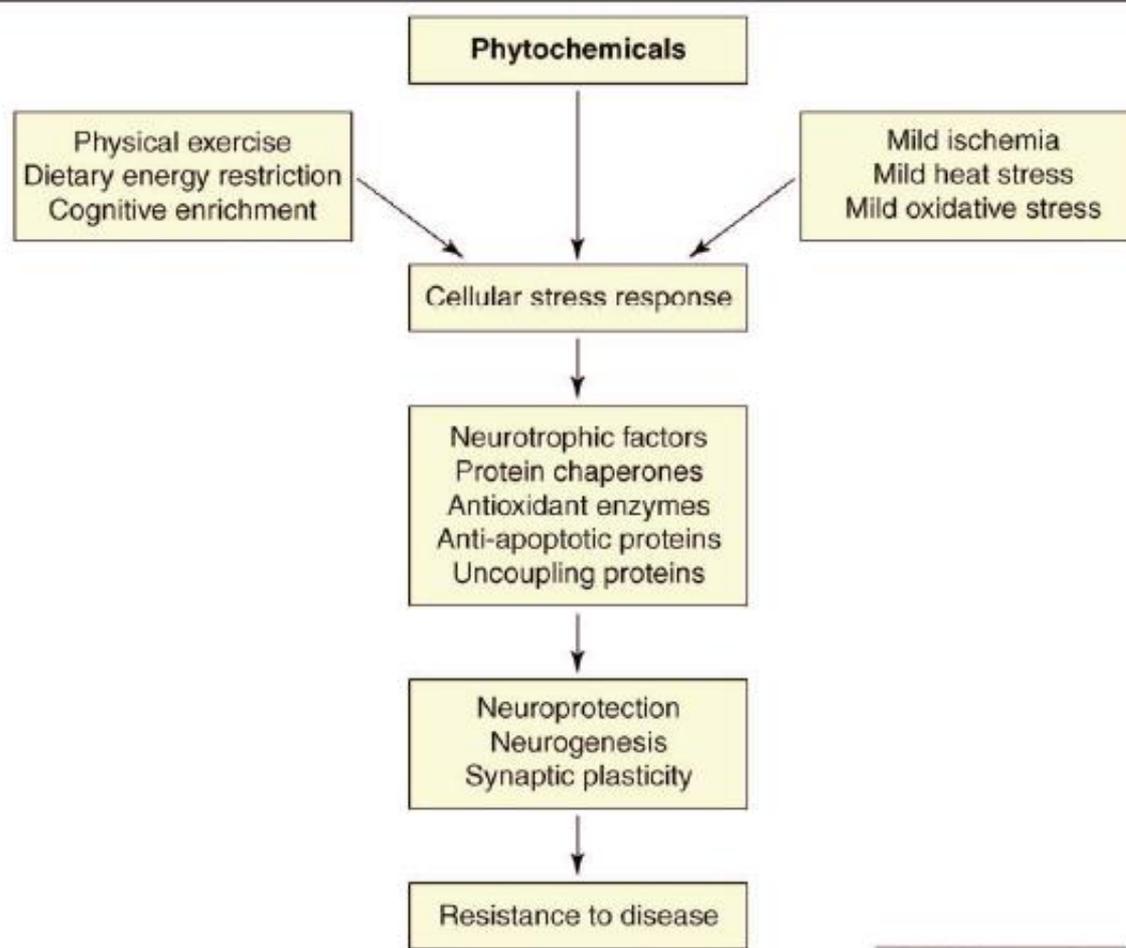


Figure 2. Neurohormetic phytochemicals include compounds from a range of botanical sources and chemical classes. Resveratrol is a polyphenolic compound present in high amounts in red grapes and wine, and in peanuts and soy. Broccoli and other cruciferous vegetables contain high amounts of the isothiocyanate sulforaphanes. Curcumin is the yellow pigment in the roots of turmeric. Green tea contains high amounts of catechins. Garlic is rich in allicin, allium and other organosulfur compounds. St John's wort contains the phenanthroperylene quinone hypericin.



TRENDS in Neurosciences

Figure 1. Disparate environmental and dietary factors activate common hormetic cellular stress-response pathways. Exercise, dietary energy restriction and cognitive stimulation are all known to enhance neurogenesis and synaptic plasticity, and can protect neurons against injury and neurodegenerative disorders. Exposure to one or more of these environmental factors induces the expression of neuroprotective proteins such as neurotrophic factors, protein chaperones, antioxidant enzymes, antiapoptotic proteins and mitochondrial uncoupling proteins. More direct exposure of neurons to sublethal levels of oxidative stress, heat stress or metabolic stress (e.g. mild ischemia) also induces the expression of multiple stress-resistance proteins. Phytochemicals might exert many of their beneficial actions by inducing a mild stress in neurons.

[Challenging oneself intermittently to improve health.](#) Mattson MP. Dose Response. 2014 Oct 20;12(4):600-18.

Omega-3s and Aggression 1

- Important components of phospholipids which are integral to neuron membranes, especially dendrites and synapses
- Shift in Western Diet to high w-6 EFAs (Essential Fatty Acids) versus w-3 EFAs
- Estimates are optimum 4:1 ratio where we are 17:1
- May be responsible for large rise in psychiatric disorders as a whole and impulsivity and aggression in particular.
- Finnish and Japanese studies show less suicidal ideation and deaths from suicide in frequent fish consumers..

Exercise

- Made to move- Bodies and Brains evolved to move
- Thinking is evolutionary internalization of movement
- Sparks our frontal cortex- makes our attention better, our memory, executive function
- Brain as a muscle, need to toughen it, just like our bodies, the more we use it, the better it gets

The Power of PLAY

Play evolved – to promote survival. Play makes the brain smarter - more adaptable - higher animals.

Play is the basis of social contact and group interaction - fostering empathy – The core of creativity and innovation.

Play gives us the ability to become smarter and more creative, to learn more about the world than the genes could ever teach, to adapt to a changing world.

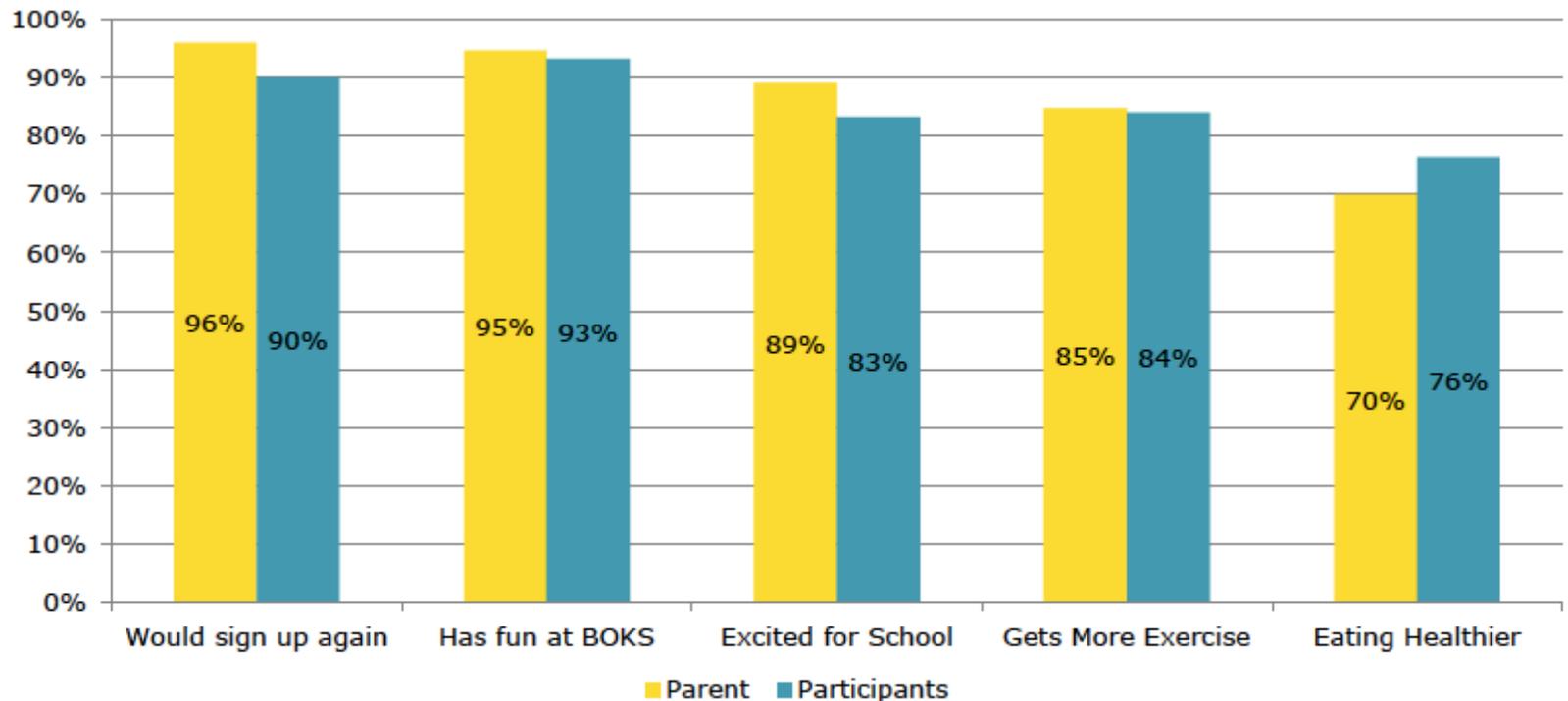
In a world of continuously presenting unique challenges and ambiguities.. Play Prepares the Player to cope with the evolving planet.

The more recess... the better behaved and attentive the student or worker.

Spring 2012 Survey Results

Parents and Participants

Parents and Participants Agree with the Following Statements:



These results based on a sample size of parents n=412 and participants n=1087 from schools in Natick, Boston, D.C. and New York.



BRAIN GAINS

City Park Collegiate, Saskatoon, Saskatchewan

20 minutes/daily, 65-75% MHR, 4 months
All students ran after teacher began as well

Student 1- life changing-- reading comprehension 400%

Student 2- Controlled anger, ODD, improved 25% in all.



Grade 8

GO TO

WWW.JOHNRATEY.COM

PRESS- VIDEO

MICHAEL PHELPS OFF RITALIN



PRONE TO ADDICTIONS AND SUBSTANCE ABUSE ISSUES- BULIMIA, ETC.



When the Dog walker did not show up



Today on Facebook- Quebec

 FÉDÉRATION
DES MÉDECINS
OMNIPRATICIENS
DU QUÉBEC

 le grand
DÉFI
PIERRE LAVOIE

15 minutes d'activité physique = 1 cube énergie

 x  = 

Nom: _____

Date: _____ 20 _____

 _____ cube(s) énergie par jour

_____ fois par semaine pendant _____ mois

"It's not just advice. This way, it's a medical prescription."

Sleep

During adolescence, daytime sleepiness **INCREASES** even if the total amount of nighttime sleep is held constant.

Teenagers need **more** sleep than adults, so many teenagers are **chronically** sleep deprived.



Stealing Sleep



Roger Federer and LeBron James have said they sleep an average of 12 hours per day, compared to about 7 hours for the average American. Usain Bolt, Venus Williams, Maria Sharapova and Steve Nash sleep up to 10 hours per day. Most NBA players take naps every game day, sometimes for as long as 3 hours.

How Much Sleep Do You Really Need?

Age	Sleep Needs
Newborns (0-2 months)	12-18 hours
Infants (3 to 11 months)	14 to 15 hours
Toddlers (1-3 years)	12 to 14 hours
Preschoolers (3-5 years)	11 to 13 hours
School-age children (5-10 years)	10 to 11 hours
Teens (10-17)	8.5-9.25 hours
Adults	7-9 hours

Source: National Sleep Foundation

Complications of **Insomnia**

Psychological

- Lower performance
- Slowed reaction time
- Risk of depression
- Risk of anxiety disorder

Other:

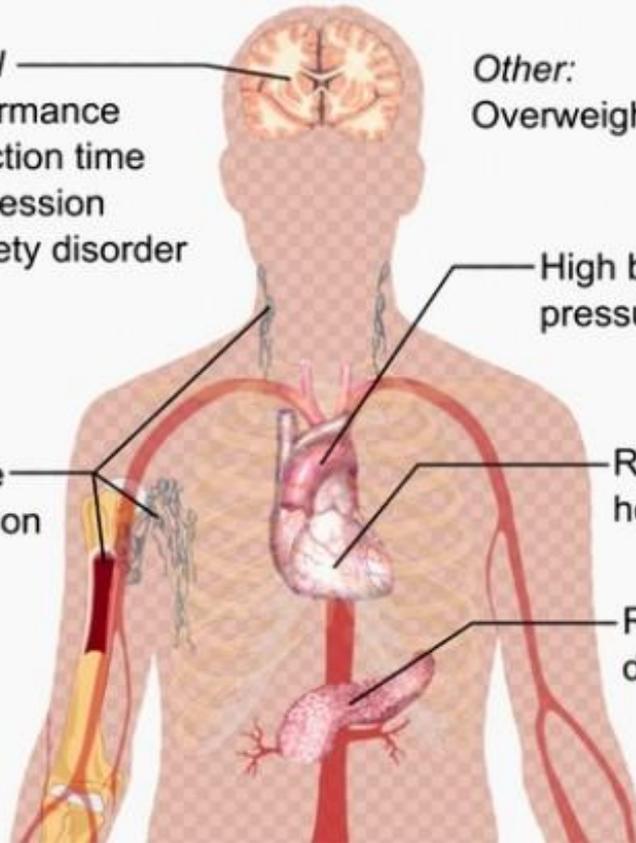
Overweight or obesity

High blood pressure

Poor immune system function

Risk of heart disease

Risk of diabetes



Mindfulness



Mindfulness



**The pace of
change is
unrelenting**

**How can we
keep up
with it?**





Social Media use

facebook

>500 Million



**>14 million
articles**



>125 Million

twitter

>100 Million

Linked in

>50 Million

You Tube

**2 Billion views/day
24 hours/minute**

flickr

>4 Billion images

Meditators use more of their Brain

A 12 Expert Meditators ($\alpha < 0.05$)

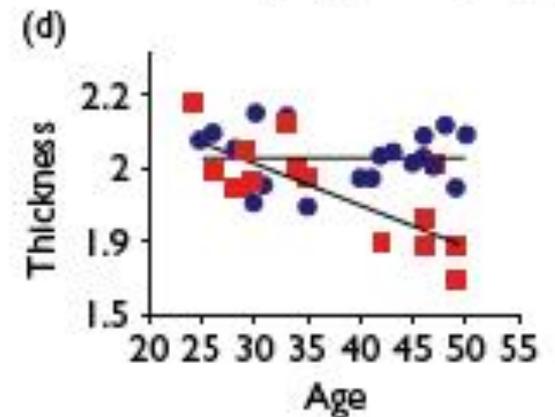
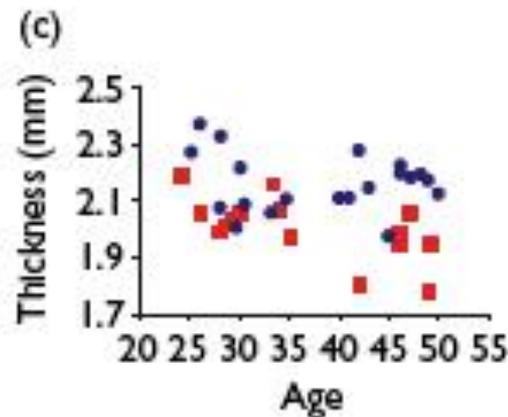
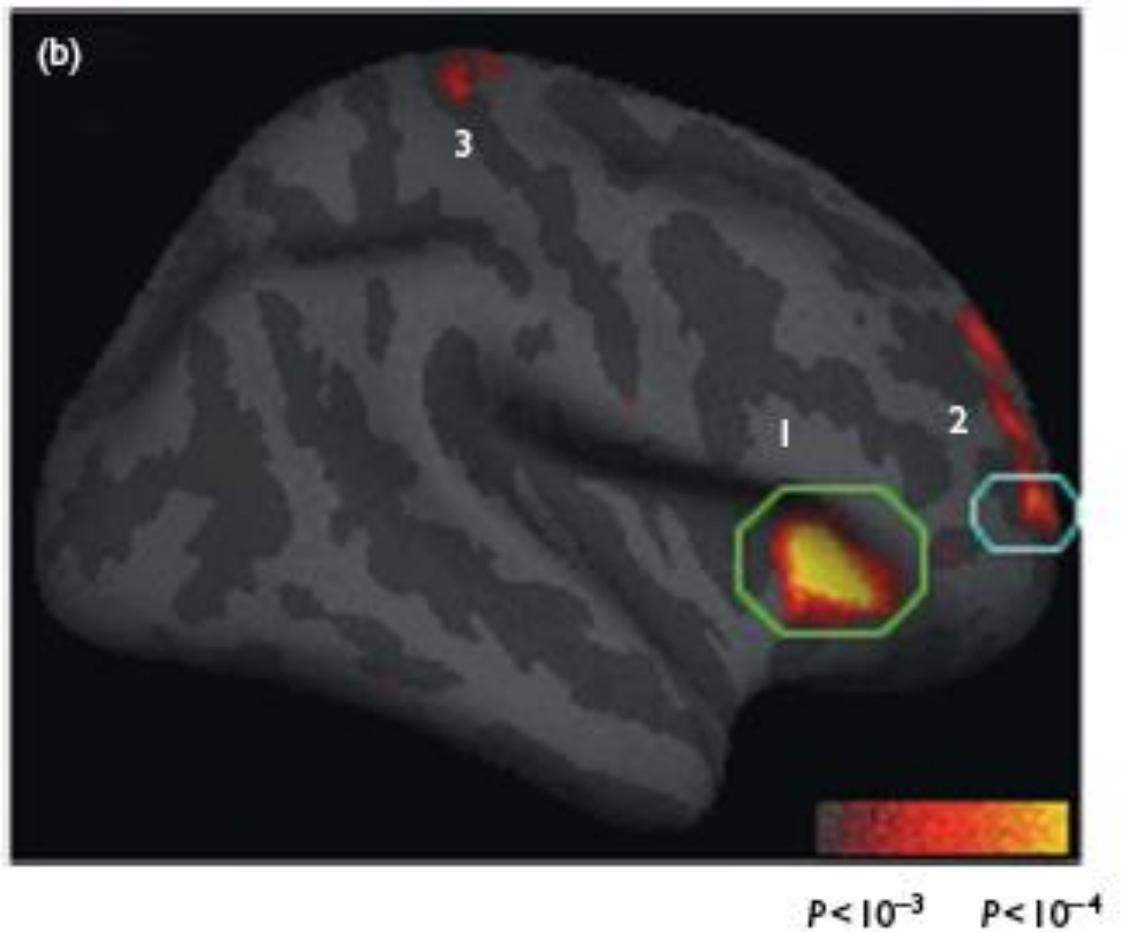


B 12 Age-Matched Novices ($\alpha < 0.05$)



Similar to Exercise, meditation challenges the brain,
makes our brains grow- higher levels of BDNF

Lazar et al., 2005.
Meditation
experience is
associated
with increased
cortical thickness.
Neuroreport 16:
1893-1897.



Mindfulness As a Way of Life

Mindfulness should not be thought of as a technique but rather as a way of being. It is practiced for its own sake, and cultivated daily regardless of circumstances.

John Kabat-Zinn, 1996

Sometimes, the non-intervention in the mind that characterizes mindfulness as a kind of attention becomes central to mindfulness as a way of life, with overlaps and links to “nondual awareness” and related therapies.

What is mindfulness?

- Mindfulness is a mental discipline involving training attention
- It is not a method of distracting ourselves or tuning out, it is about tuning in –hence people perform better when mindful.
- The anxious, stressed or depressed state of mind is the distracted state
- Hence the negative



How Social Contact Affects the Brain and Body

- Social contact influence:
 - Stress levels
 - Heart rate
 - Chemical levels
 - Blood pressure
- These in turn can influence:
 - Hormones
 - Immune system
 - Behaviors
 - Gene expression



Did you know that
a twenty-second
hug releases
the bonding
hormone and
neurotransmitter
oxytocin, *which*
is nature's
antidepressant
and antianxiety

Connection- Small tribes

- Made to Connect- Oxytocin- rises when we connect, help us connect, birthing hormone- helps uterus contract and start the milk flowing, but floods the brain with this love hormone – for the baby mom and dad bliss.
- Not connecting today- all virtual
- Oxytocin, makes the brain better, memory, learning, more appealing , need it
- Small tribes of up to 30-40 is how we evolved, at home groups – bridge, games, exercising, dance, town meetings, book clubs- families first

Connection- Small tribes

- Autism- lack of oxytocin, nasal spray, PITOICIN, better naturally - exercise does it as well.
- Altruistic endeavor- giving back – raises oxytocin, well-being hormone, to love and be loved. Increases social skills and wish and mechanics of being social.

Can oxytocin treat autism? We are still at an early stage of assessing oxytocin-based therapy for autism spectrum disorders. [Larry J. Young](#) and [Catherine E. Barrett](#) [Science](#). 2015 Feb 20; 347(6224): [825–826](#).

RE-WILDING PRESCRIPTION

SMALL TRIBES- volunteer, play bridge, always connect- family, friends, walking groups, tai chi, yoga, spinning, family meals, get a pet

MINDFULNESS- practice being present, turn off the net, put down your cell phone, add something of you to the moment, practice meditation, work on physical balance

BIOPHILLIA NATURE- get outside, exercise outside, get a plant or a tree for your office, live by a window, bathe in nature

SLEEP- turn off digital world two hours before bed, DARK, 8 hours, use aids if need be, sounds: crackling of the fire, breathing of dogs, tides; Melatonin

DIET- get your vitamin D level, know your A1C level, take omega 3's (high EPA/DHA), never processed food again, cook at home, stop the grains- gluten, GLUCOSE as a TOXIN- eat nuts, berries, eggs, vegetables, meat, fish, fat; use cinnamon, curcumin

EXERCISE- daily, get a heart rate monitor, 70-80% (220-AGE) for 30-40 minutes, Tabata, interval training, outside with someone, learn to play again, groups again, SITTING IS THE NEW SMOKING