



Is Psychiatry at a Crossroads ?

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TAP Honorary President

Turkish Association for Psychopharmacology (TAP)'s 11th International Congress on Psychopharmacology
April 18-21, 2019, Antalya, Turkey

11th International Congress on PSYCHOPHARMACOLOGY



& 7th International Symposium on
CHILD and ADOLESCENT PSYCHOPHARMACOLOGY

"Psychiatric Neuroscience: The Challenges and Promises"

18 - 21 April 2019, Royal Seginus Star Hotel / Lara - Antalya / TURKEY

Financial Disclosures and Conflicts

I have no financial disclosures nor conflicts
concerning this talk



**Psychiatric disorders are
very common all over the world**



Lifetime Prevalence (%) by Gender

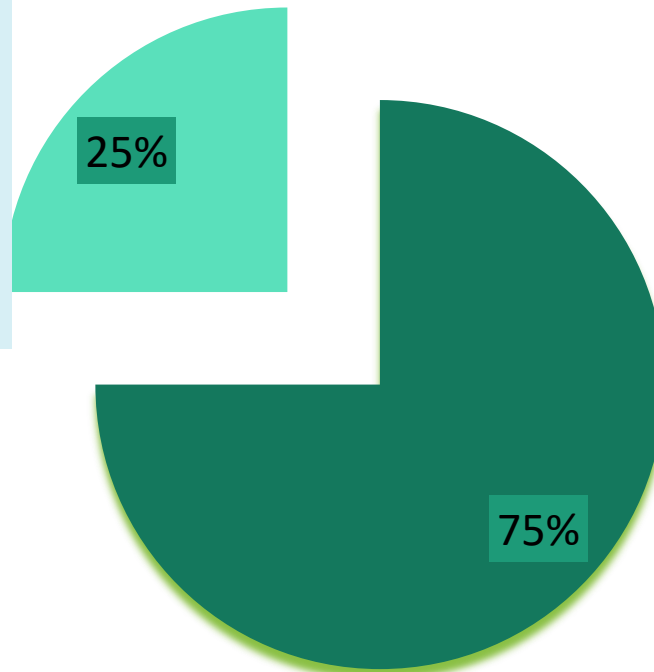
NIMH Collaborative Psychiatric Epidemiology Surveys

Schizophrenia 0.5 – 1.5%	Males	Females
Any Mood Disorder	14.4	22.31
Any Anxiety Disorder	17.1	25.46
Any Substance Disorder	17.6	7.86
<i>Any Mood, Anxiety Substance Disorder</i>	33.9	38.25



Mental Health Statistics in US

1 in 4 adults,
25% of peoples,
have a mental
disorders



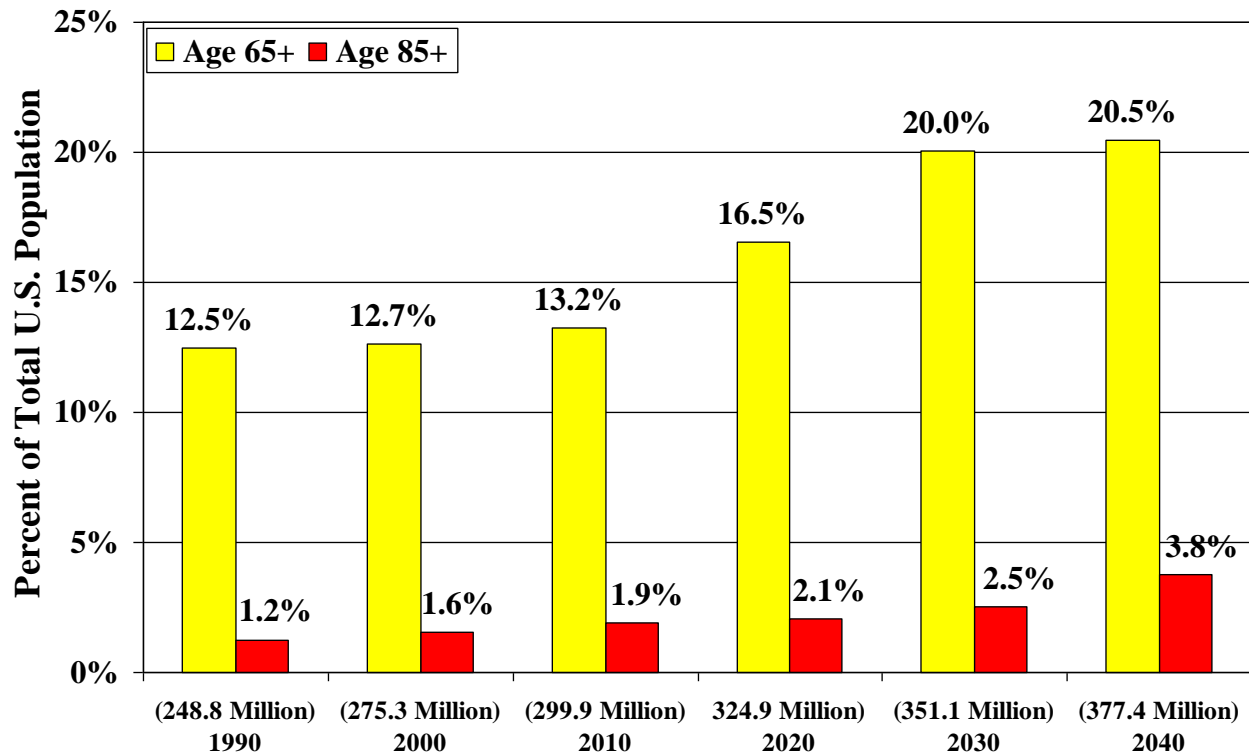
Depression: 6.7%

-1 in 10 peoples take antidepressants

Anxiety: 18.1%



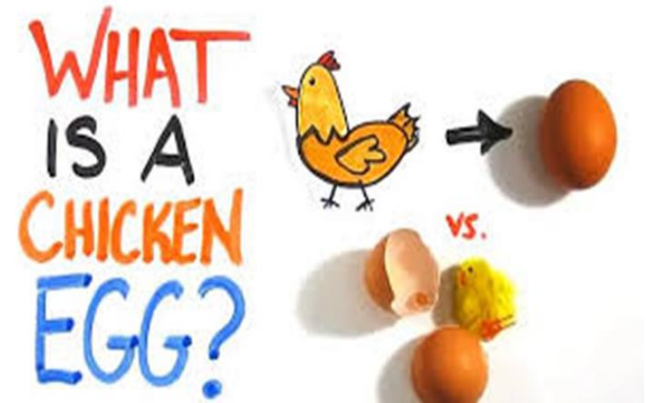
Aging in Population





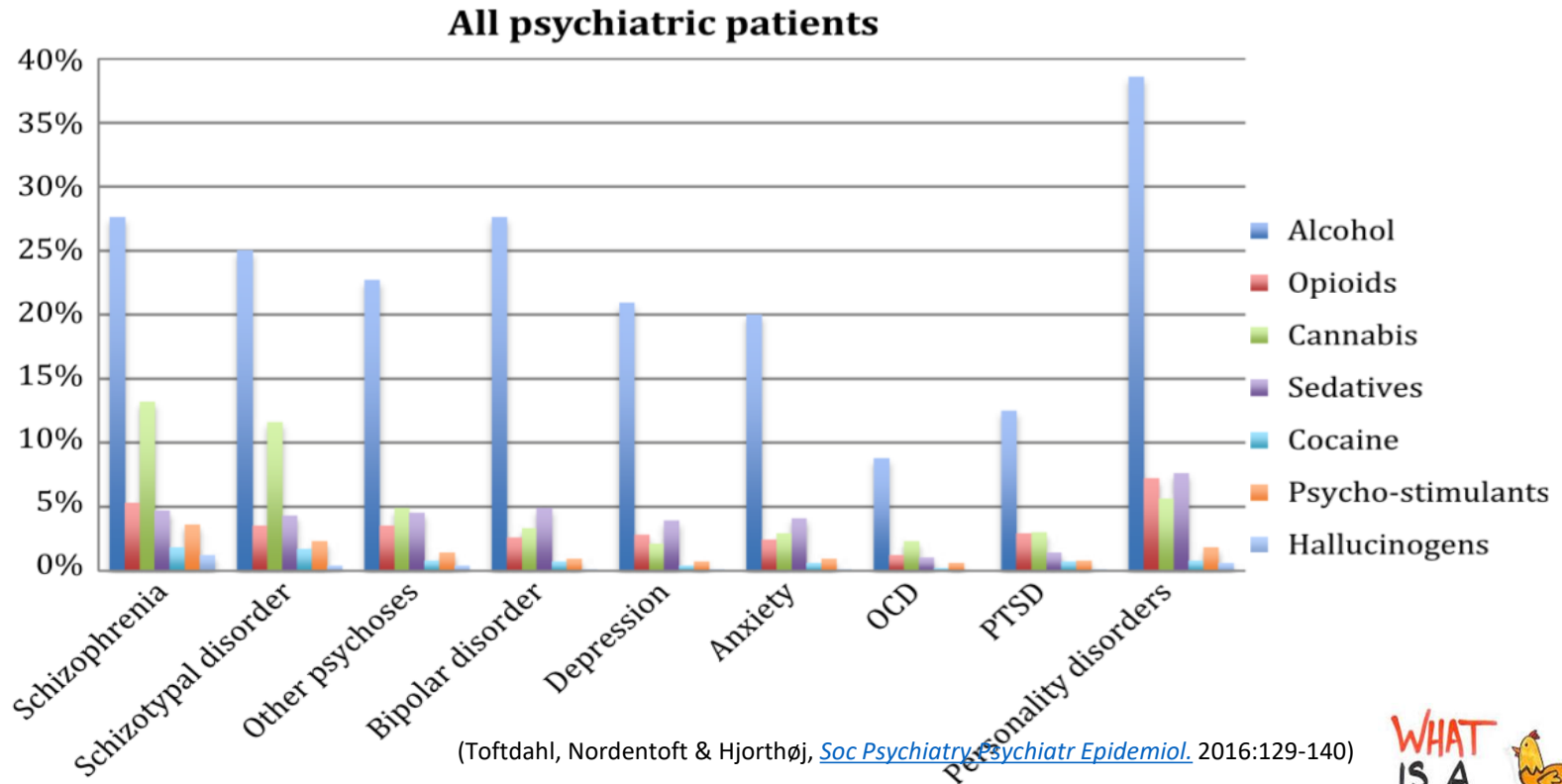
Substance Related Disorders Epidemiology: Prevalence

- **NIDA :**
 - 22.5M substance-related d/o
 - 15M – Alcohol Dependence or Abuse
- 40% of hospital admission have alcohol or drugs associated
- 25% of all hospital deaths
- 100,000 deaths/year
- **ETOH - \$300 billion/year!!!**

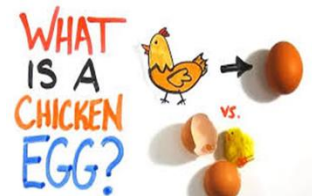




Epidemiology of Comorbide Disorder



(Toftdahl, Nordentoft & Hjorthøj, [Soc Psychiatry Psychiatr Epidemiol.](#) 2016:129-140)



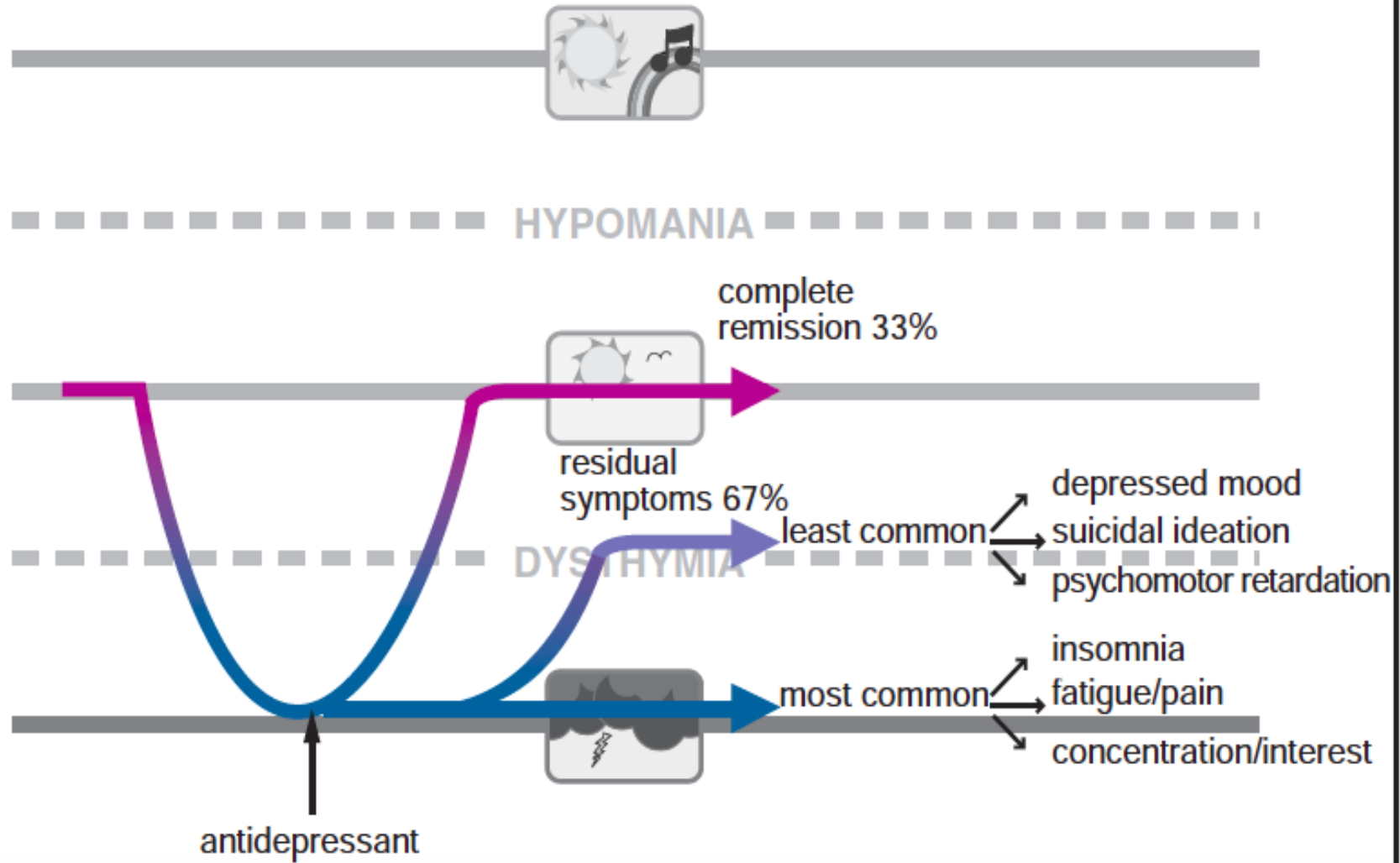


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Treatment & Remission Rates



What Are the Most Common Residual Symptoms in Nonremitters?



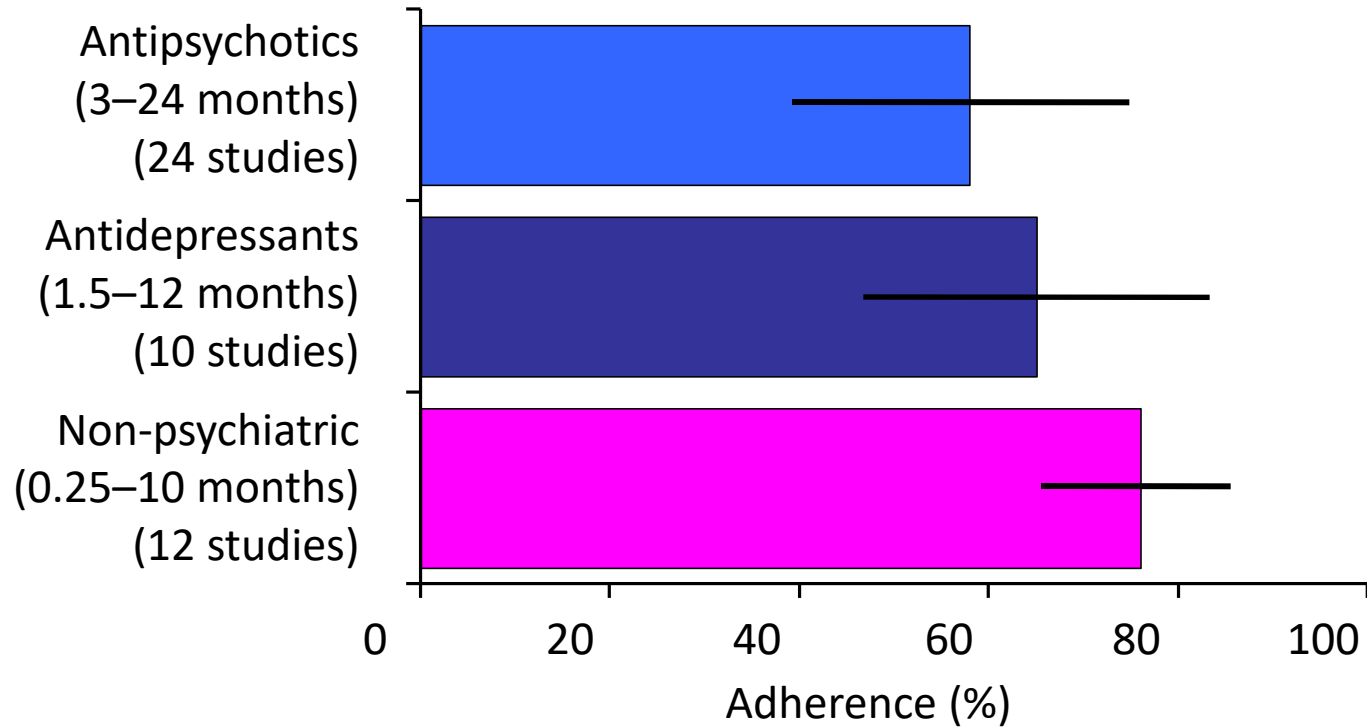


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Treatment & Adherence



Adherence in general clinical practice is poor



Wide range of estimates across studies may reflect difficulty of assessing covert non-adherence

Data shown are mean \pm SD

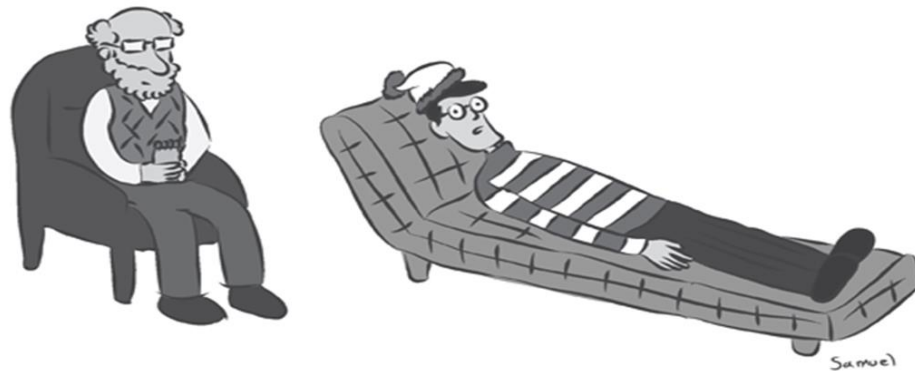
Cramer & Rosenheck. Psychiatr Serv 1998;49 (2):196–201



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Do Psychotherapies Really Work?

thedailysnooze.com



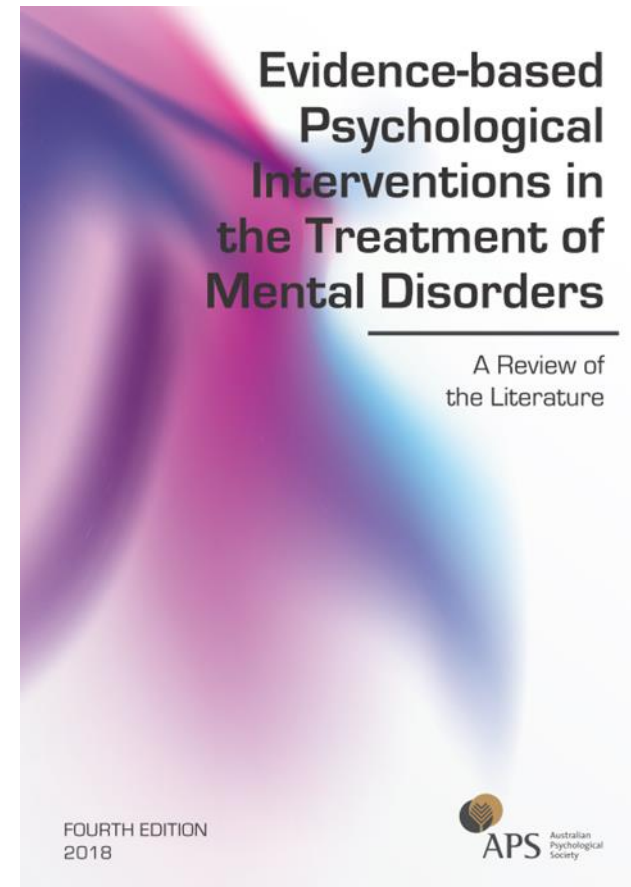
“And then it dawned on me—I’ve never truly found myself.”



Psychotherapy Outcomes

1. The discussion about whether therapies work through common or specific mechanisms has been going on for several decades, but it has not been resolved because it is not known how therapies work.

2. Although hundreds of correlational studies have been conducted during the past decades, little progress has been made in understanding the mechanisms of change of therapies: It is as if we have been in a pilot phase of research for five decades.



Cuijpers P, et al. The Role of Common Factors in Psychotherapy Outcomes. *Annu Rev Clin Psychol.* **2018 Dec** 14. doi: 10.1146/annurev-clinpsy-050718-095424.



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**Treatment:
Statistics & Cost**



COSTS

Major Depressive Disorder

\$83.1 billion

- \$26.1 billion dollars direct medical costs
- 5.4 billion dollars suicide-related mortality costs,
- \$51.5 billion dollars were workplace costs.

Schizophrenia 2006

\$62.7 billion

- Treatment (22.7 billion) plus indirect costs like lost productivity

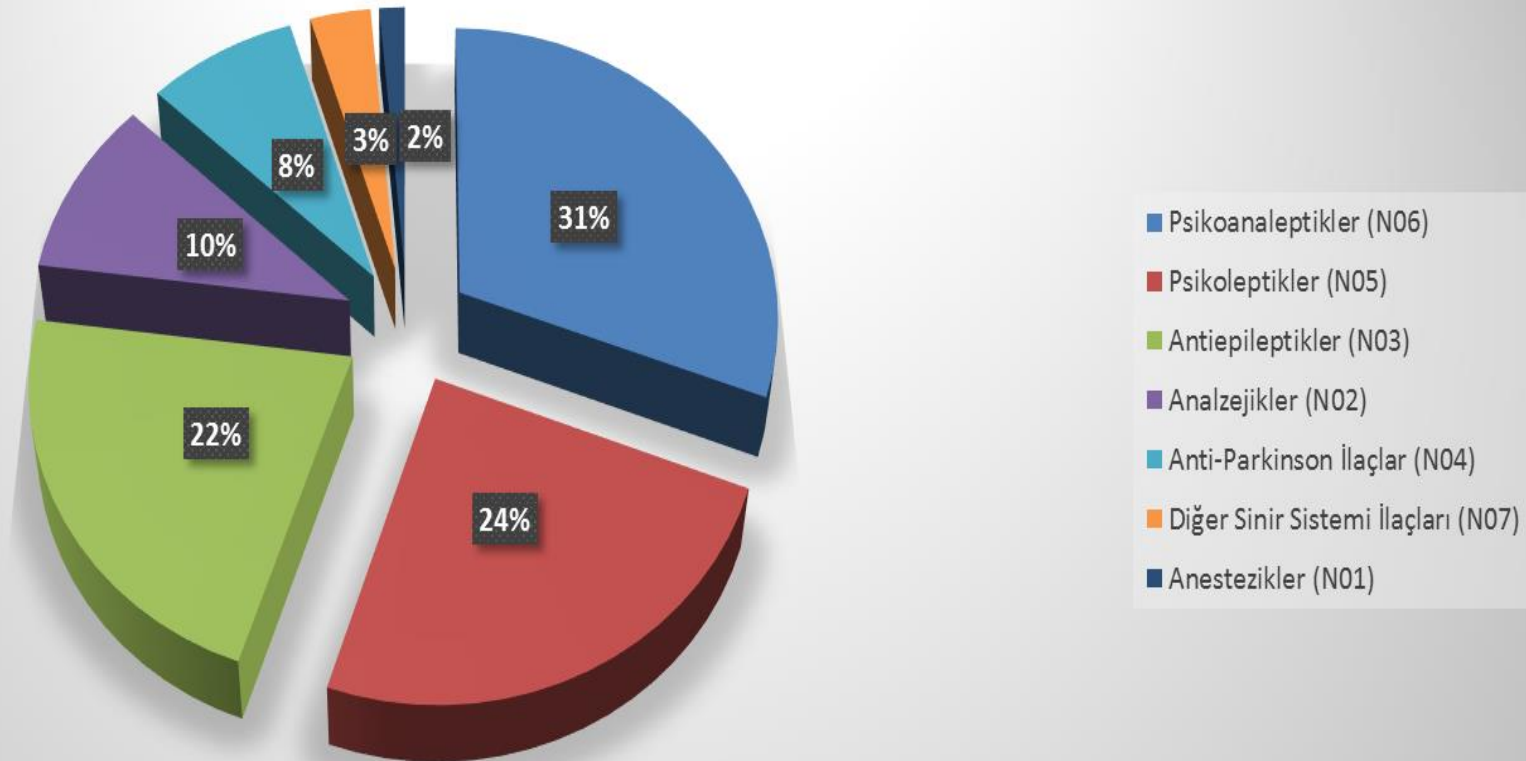


PHARMACEUTICAL STATISTICS

DISTRIBUTION OF N-GROUP ATC-2 LEVEL

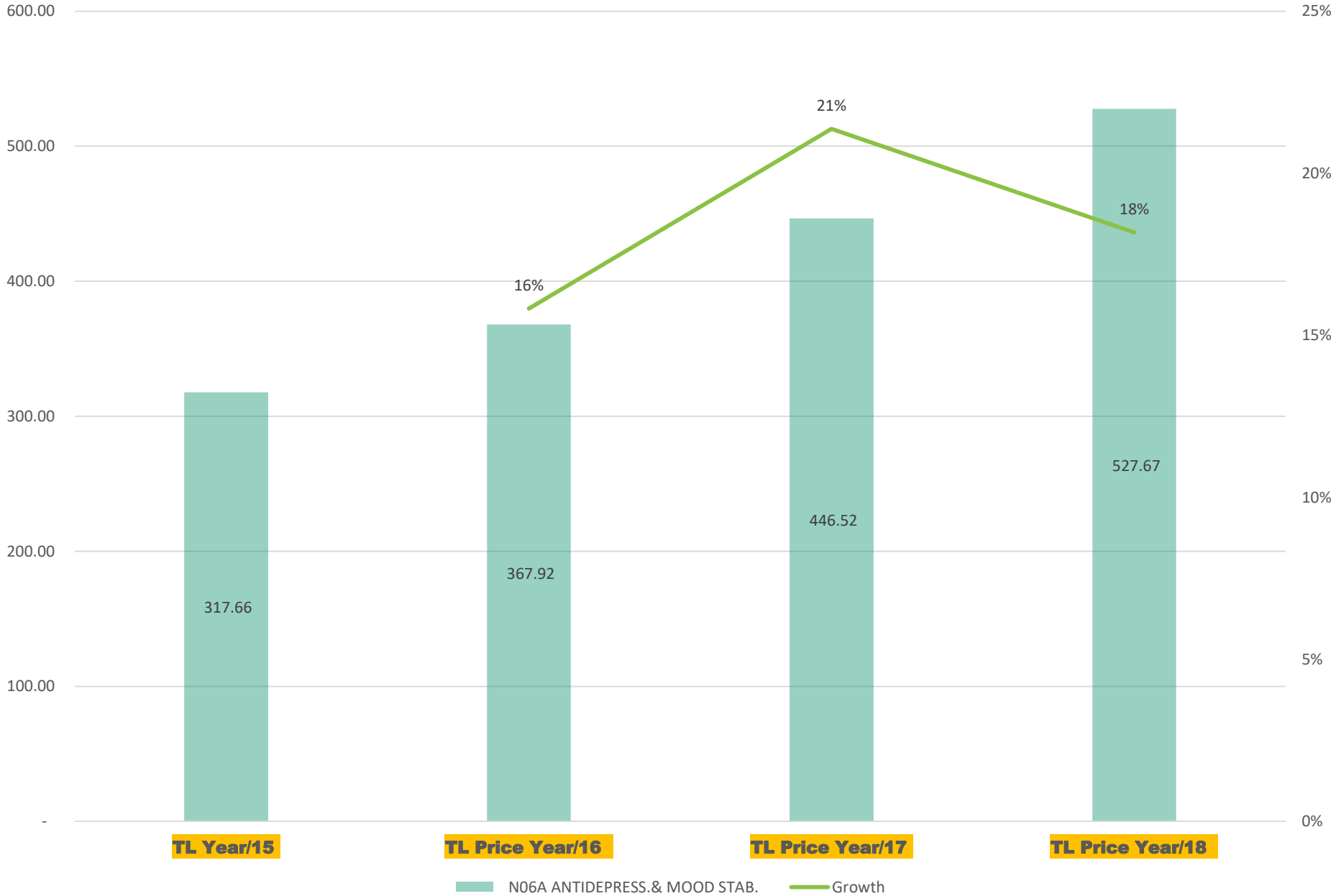
in Turkey (2016)

- ✓ Nervous System Drugs (N Group) in 2016 Total Amount of 9% (approximately 2 Billion TL)



ANTIDEPRESSANTS & MOOD STABILZERS

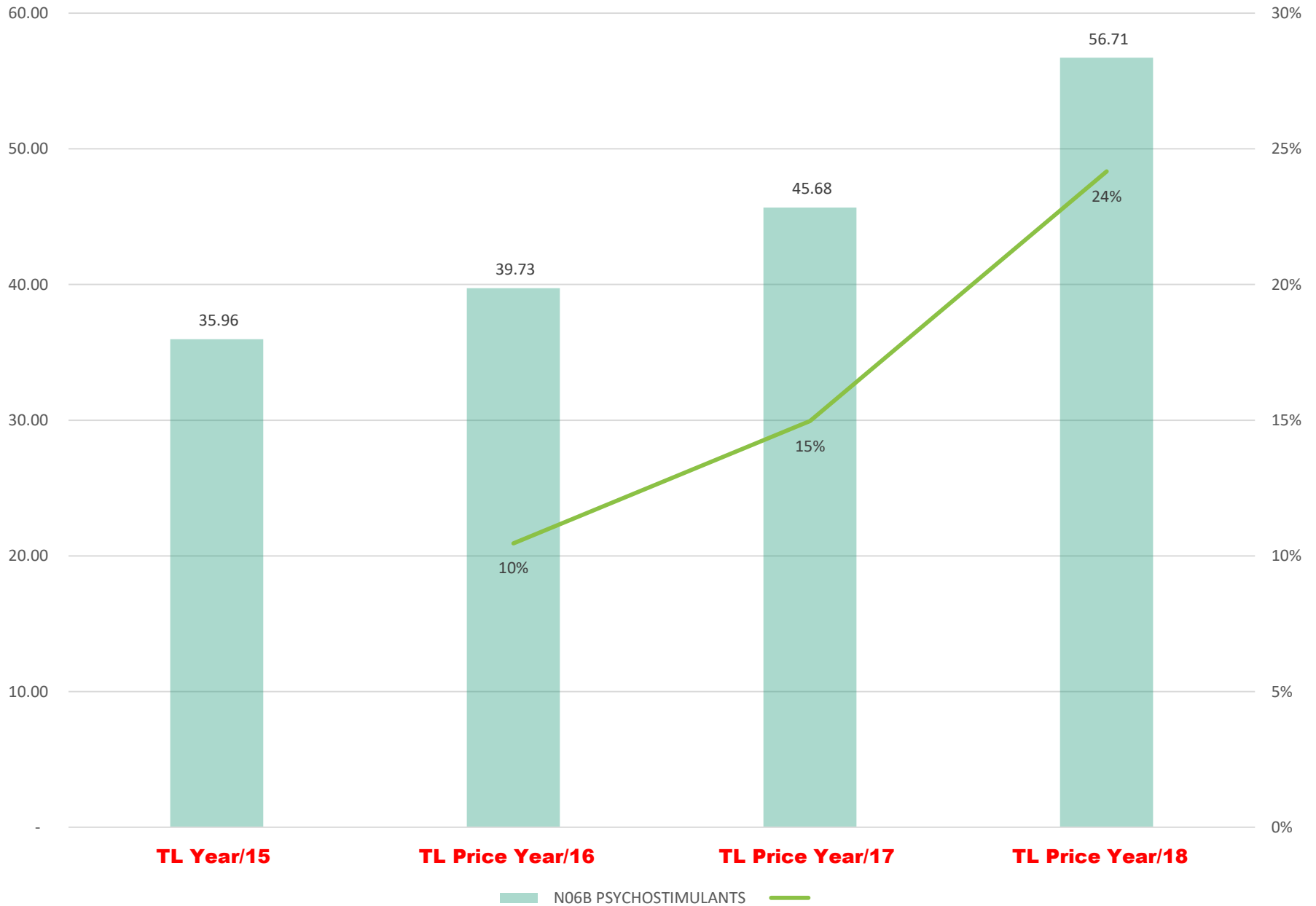
2015-2018/ TURKISH LIRA



ANTIPSYCHOTICS 2015-2018 / TURKISH LIRA

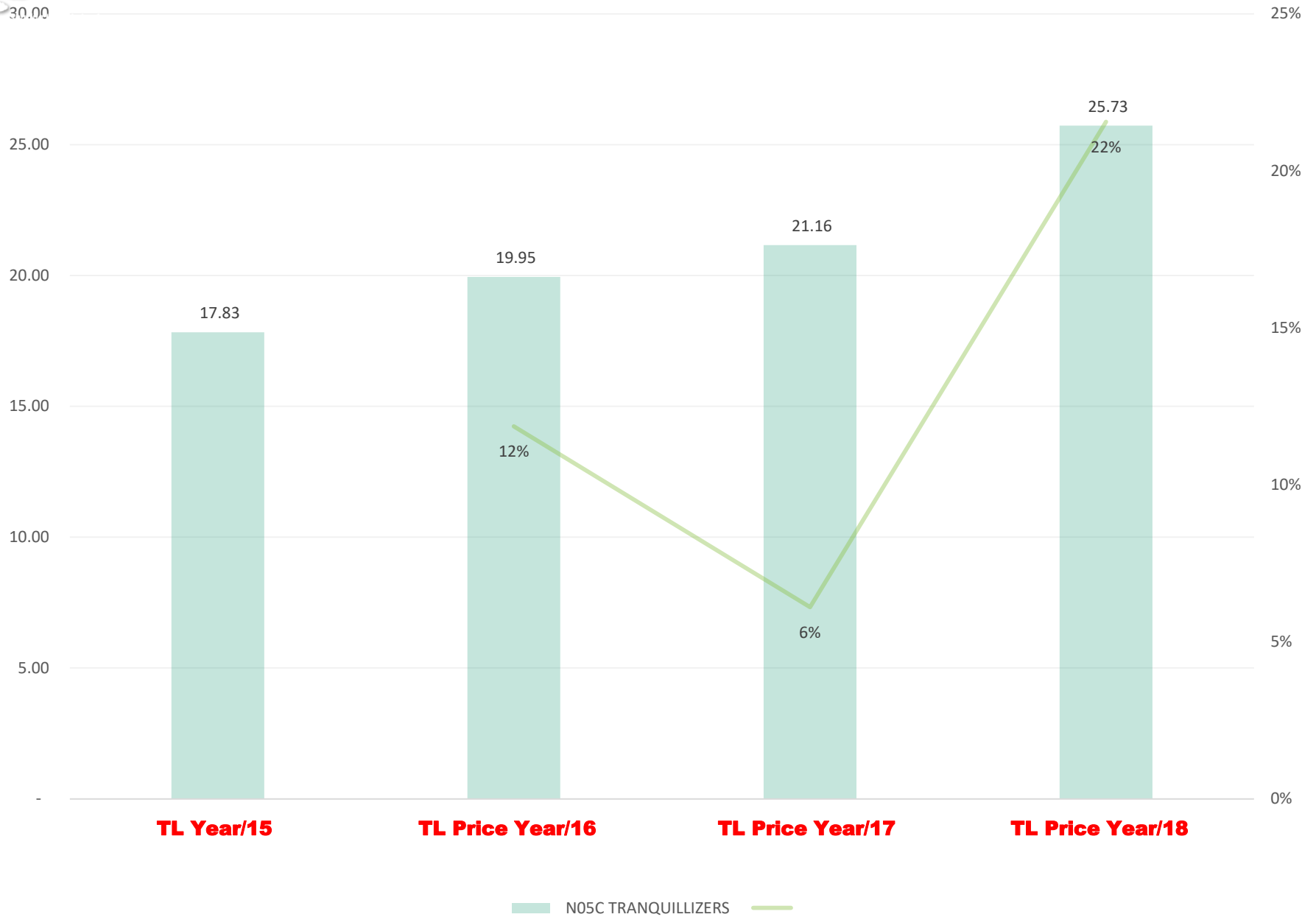


PSYCHOSTIMULANTS 2015-2018 / Turkish Lira





TRANQUILLIZERS 2015-2018 / Turkish Lira





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Great Risk: Suicide



Data and General Figures published by WHO

- More than **800,000** people around the world die from **suicide every year**.
- **75% of suicides** occur in **low-income and medium countries**.
- Suicide is the **second-leading cause of death** in **15-29-year-olds** globally.
- The **suicidal behaviors** represent **15% of the 15,000 fatal accidents** that **daily occur** around the world.

**IN THE LAST DECADE, THE PHARMACEUTICAL INDUSTRY DOES
NOT HAVE A NEW MEDICINE ABOUT PSYCHIATRIC DRUGS !!**

There's nothing in the pipeline.

THE PHARMACEUTICAL INDUSTRY OF THE PHARMACEUTICAL INDUSTRY IN THE
LAST DECADE:

1. Making new drugs that the active metabolites of the old molecules,
2. The same molecule parenteral (long acting intramuscular forms, transdermal patches, oral dissolving tablets or oral XR forms)
3. THERE IS ALL THAT!!



Intercollegiate Psychedelics Summit 2019

April 4th - April 5th | University of Pennsylvania

Speakers and Talks

For the full summit schedule, please see [here](#).

Click on each speaker's image for their talk description and bio



David Nutt



Chris Bache



David Yaden



Frederick Barrett



Manoj Doss



Jonathan Moreno



Matt Brown



Jason Wallach

Organizers and Sponsors

PSPS

BGSA

gapsa

GSEG

msas.gov



AYAHUSCA

dimethyltryptamine (DMT)

Sat, Apr 20, 2019

Newsweek

U.S. | World | Business | Tech & Science | Culture | Sports | Health |

HEALTH

WHAT HAPPENS WHEN YOU DIE? SCIENTISTS HAVE RE-CREATED A NEAR-DEATH EXPERIENCE TO FIND OUT WHAT IT FEELS LIKE

BY KASHMIRA GANDER ON 9/4/18 AT 10:23 AM EDT



Anna said she felt as if she was in a tunnel when she first felt the effects of DMT.
GETTY IMAGES

SHARE       

What happens when you die? As she lay blindfolded in a seat in a dimly lit room, Anna* came close to finding out.

But Anna wasn't dying, or even close to death, when she entered what she described as an alternate realm. Instead, she was among 13 volunteers who had agreed to take the powerful hallucinogenic **dimethyltryptamine (DMT)** for a study conducted by the psychedelic research group at Imperial College London, U.K.

The researchers, who watched Anna surf her consciousness in the low light of the research room at one of the world's most prestigious research institutions, pumped the volunteers with the psychedelic to learn how close DMT could bring a person to the sensation of skirting death.

DMT's trip is said to mimic the feeling of almost dying so accurately that those who take it describe hallucinations that mirror near-death experiences—psychological events reported by people who have come close to or believe they have come close to dying.

Sat, Apr 20, 2019

Newsweek

U.S. | World | Business | Tech & Science | Culture | Sports | Health

HEALTH

FDA APPROVES PSYCHEDELIC MAGIC MUSHROOMS INGREDIENT PSILOCYBIN FOR DEPRESSION TRIAL

BY KASHMIRA GANDER ON 8/23/18 AT 9:02 AM EDT



Magic mushrooms grow on a tree in this stock image. Psilocybin is the psychedelic ingredient in magic mushrooms.

The [Food and Drug Administration](#) has approved the use of the psychedelic ingredient in magic mushrooms for a drug trial for treatment-resistant [depression](#).

The agency gave the green light to Compass Pathways, a life sciences firm, to perform clinical trials using psilocybin.

[Occurring naturally in magic mushrooms](#), psilocybin is a hallucinogenic which can cause feelings of euphoria.

According to a [statement](#) by Compass Pathways, 216 patients with treatment-resistant depression will take part in the phase two trial across 12 to 15 research sites in North America and Europe, which will start in the U.K. later this month.

Medical Marijuana



The U.S. Food and Drug Administration (FDA) has not recognized or approved the marijuana plant as medicine.

However, scientific study of the chemicals in marijuana, called cannabinoids, has led to two FDA-approved medications that contain cannabinoid chemicals in pill form. Continued research may lead to more medications.



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Etiologies of Psychiatric Disorders:

Modern Life Style:

1. Stress
2. Refined and Processed Foods
3. Sugar Consumption
4. Sedentary Life Style
5. Excess Screen Time



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Modern Life Style= Stress

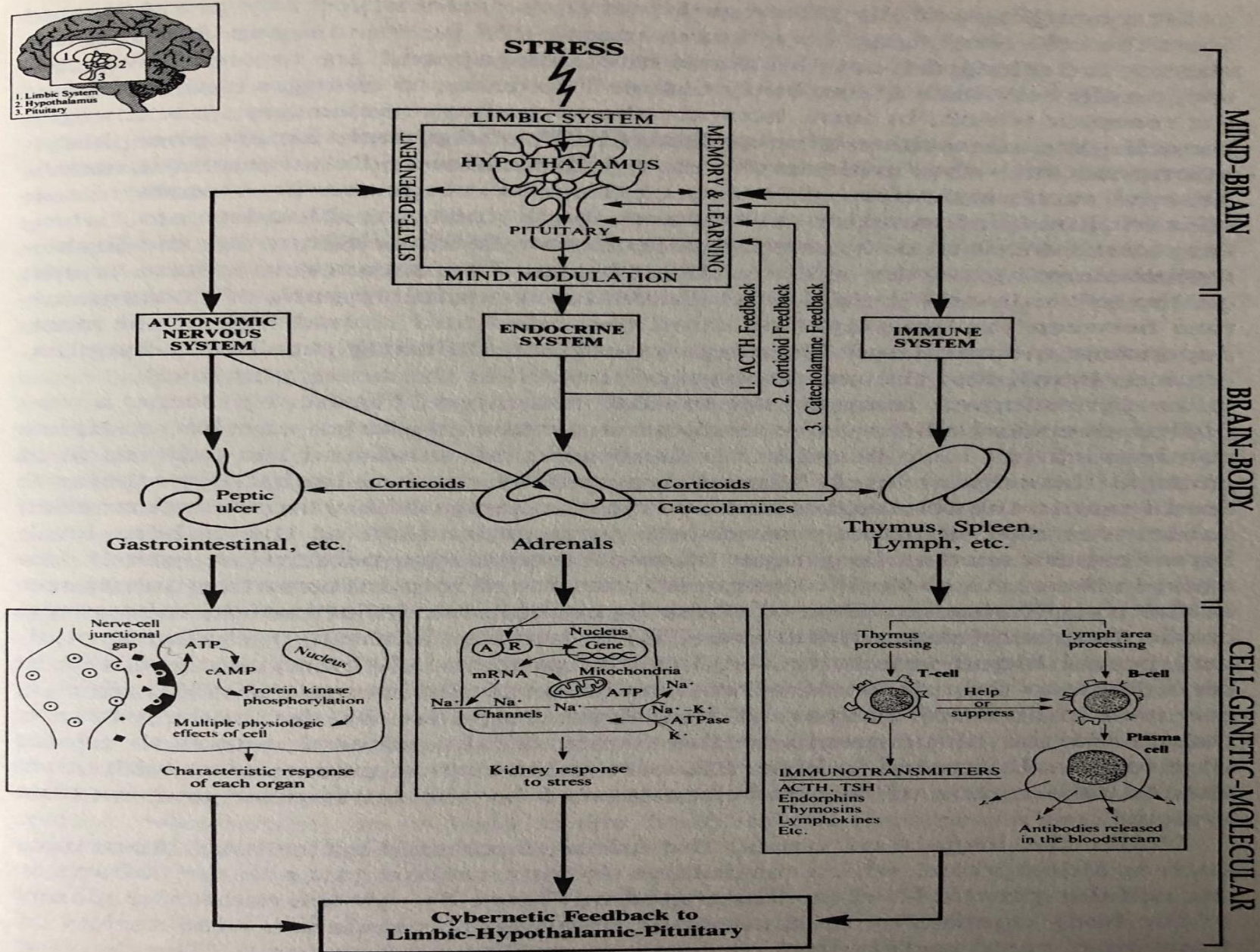
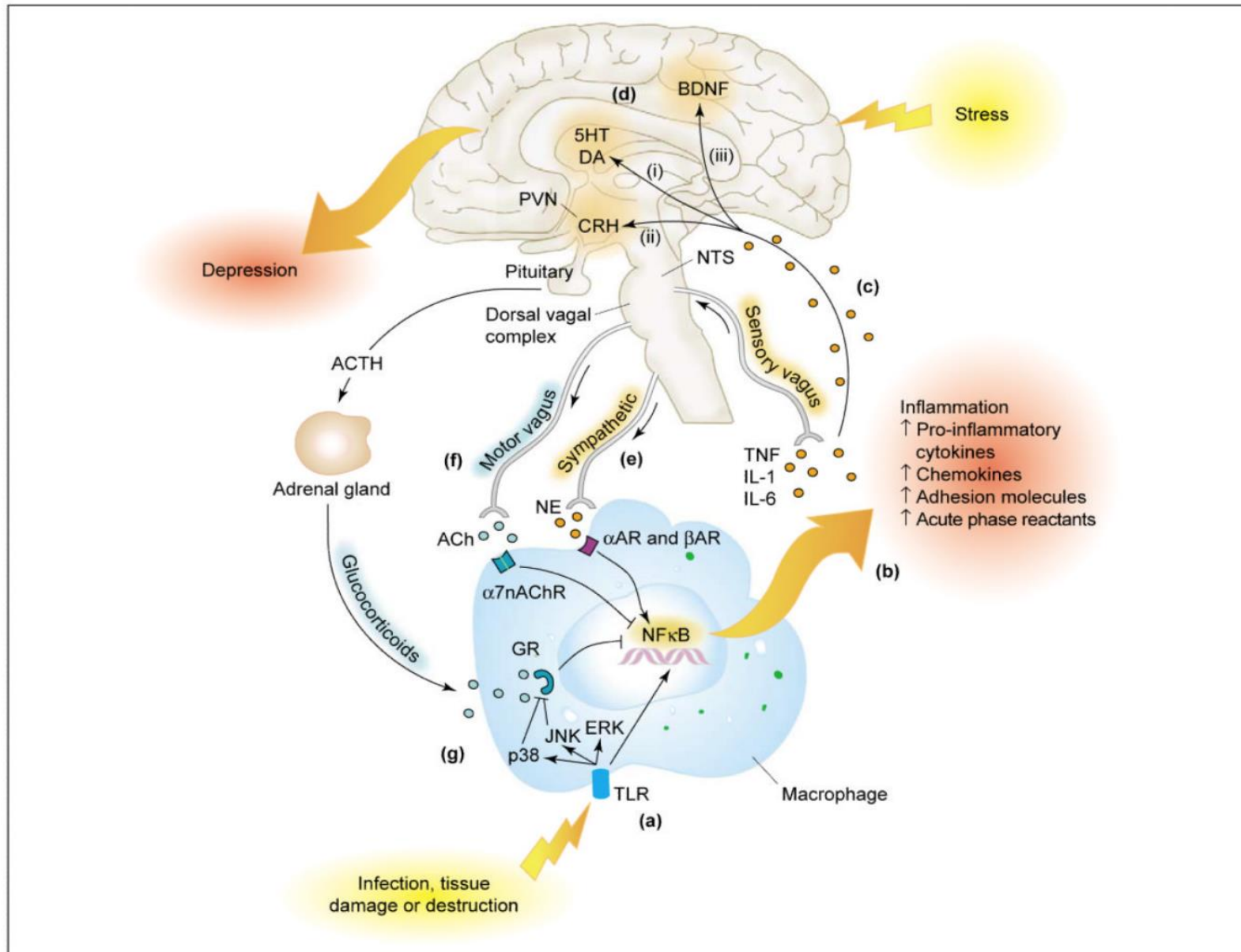


Figure 8: Three levels of mind-body cybernetic communication during stress. (Adapted from Rossi, 1986d)

Stress=Inflammation

Physical Diseases & Psychiatric Disorders





Mental Disorders & Physical Health

Mental Symptoms:

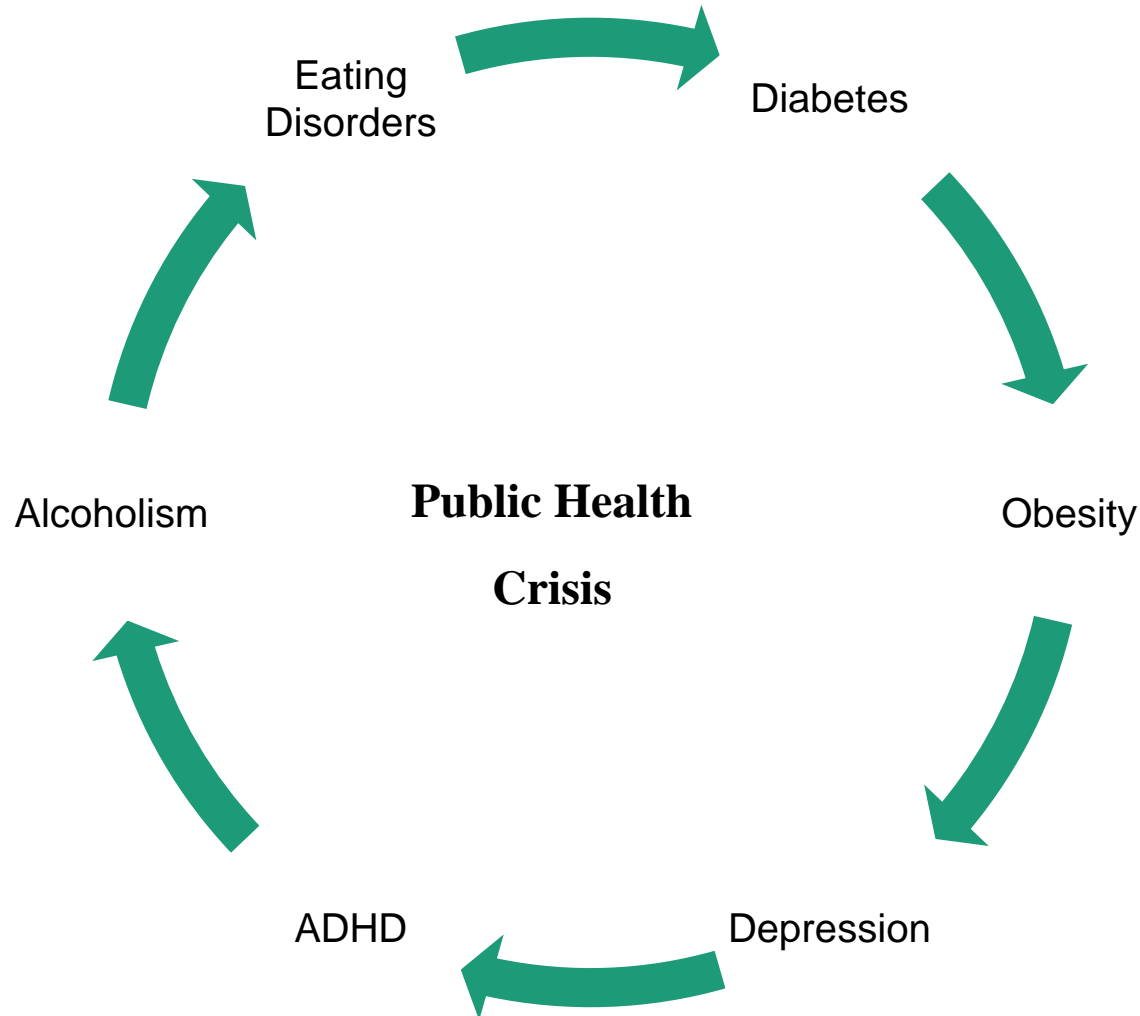
- Fatigue
- Anxiety
- Depression
- Irritability
- Poor mood
- Stress Intolerance
- Overeating, cravings
- Inability to sleep

Physical Symptoms:

- Fatigue
- Anxiety
- Depression
- Irritability
- Poor mood
- Stress Intolerance
- Overeating, cravings
- Inability to sleep



How do these public health issues relate to diet?





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Modern Life Style=
Refined and Processed Foods
&
Sedentary Life Style



The Problems with Processed

- Unhealthy – high sugar, salt, fat
- Addictive ingredients to sell
- Less educated, poorer more susceptible





Standard American Diet (=SAD)





Obesity

- **64% of U.S. adults** are estimated **obese or overweight** (*NHANES 1999-2000*)
- **5 – 7%** increase in obesity each year (*CDC*)





Nutrition, Inflammation, & Depression

Processed foods are linked to higher rates of depression

Diets with foods that trigger inflammation (refined, processed foods) result in 29-41% greater risk for depression

Inflammation itself may mediate depressive symptoms



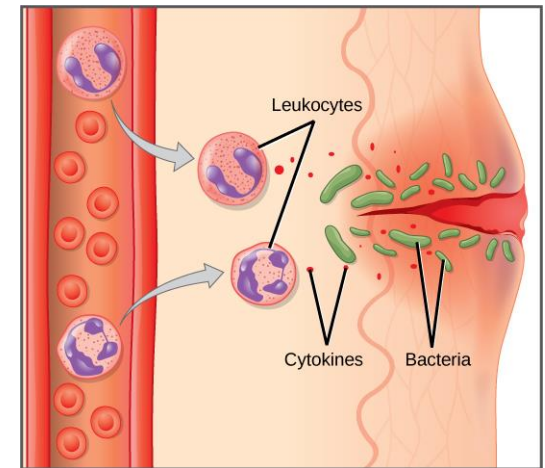
Inflammation and Mood

• Causes of Inflammation

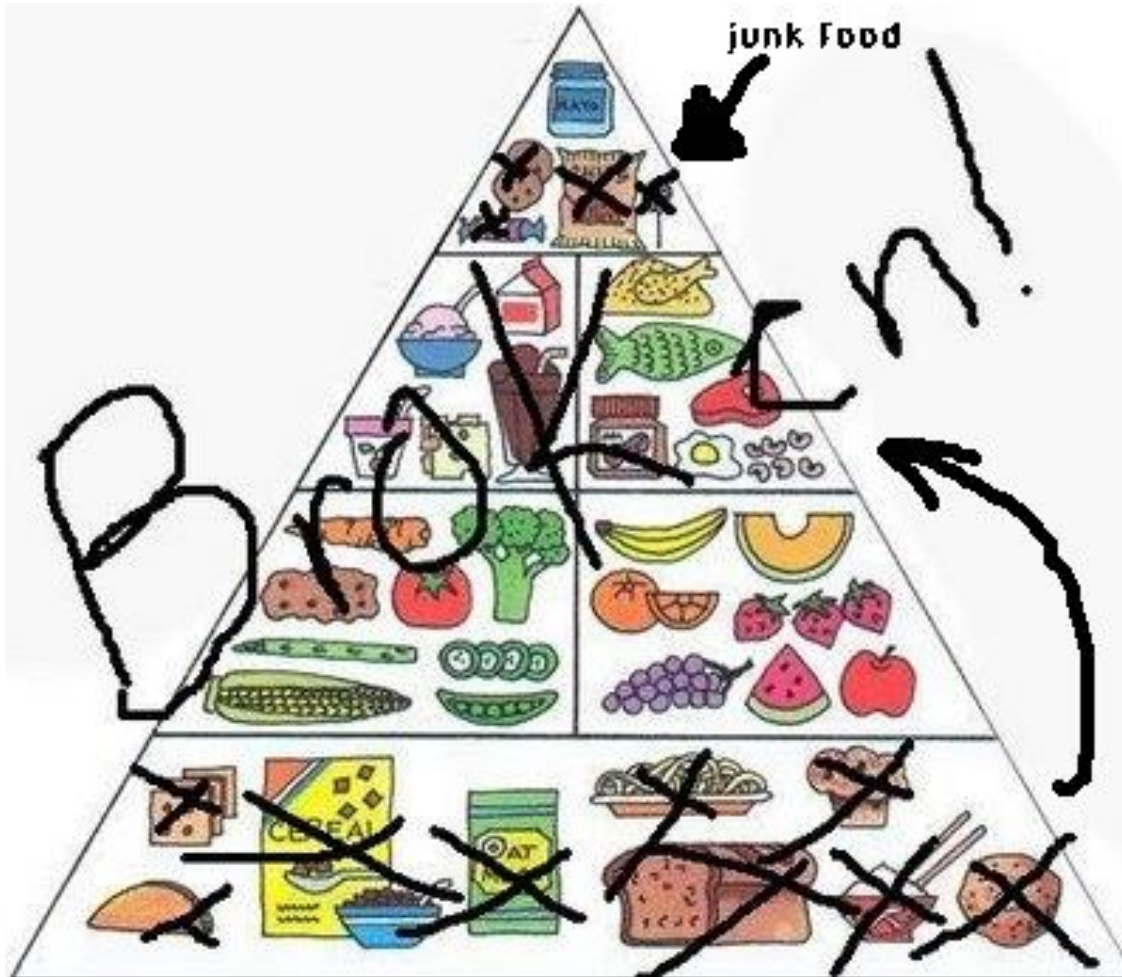
- Stress
- Poor quality foods
- Physical inactivity
- Obesity
- Smoking
- Lack of sleep
- Toxic exposures
- Vitamin D deficiency

• Inflammatory Contributors

- Refined sugars
- Vegetable oil
- Refined flour
- Full-fat dairy
- Artificial additives
- Saturated fats
- Processed meats



Food Advice via Big Business



Ignore mainstream nutritional advice. Many big nutritional bodies are funded by Big Sugar <http://iquitsugar.com/funded-by-big-sugar/>



Nutritional Confusion





For a better start in life
start COLA earlier!



- Promotes Active Lifestyle!
- Boosts Personality!
- Gives body essential sugars!

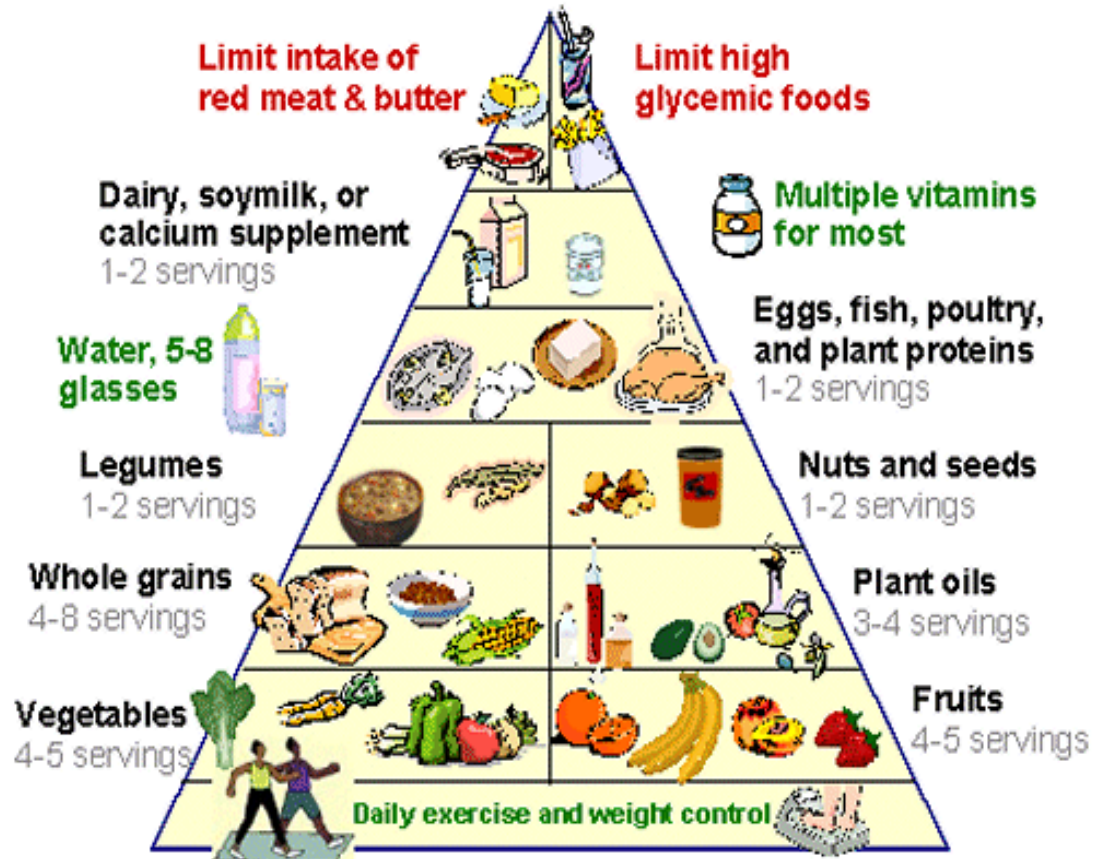
How soon is too soon?

Not soon enough. Laboratory tests over the last few years have proven that babies who start drinking soda during that early formative period have a much higher chance of gaining acceptance and "fitting in" during those awkward pre-teen and teen years. So, do yourself a favor. Do your child a favor. Start them on a strict regimen of sodas and other sugary carbonated beverages right now, for a lifetime of guaranteed happiness.

The Soda Pop Board of America
1515 W. Hart Ave. - Chicago, ILL.



New Food Pyramid



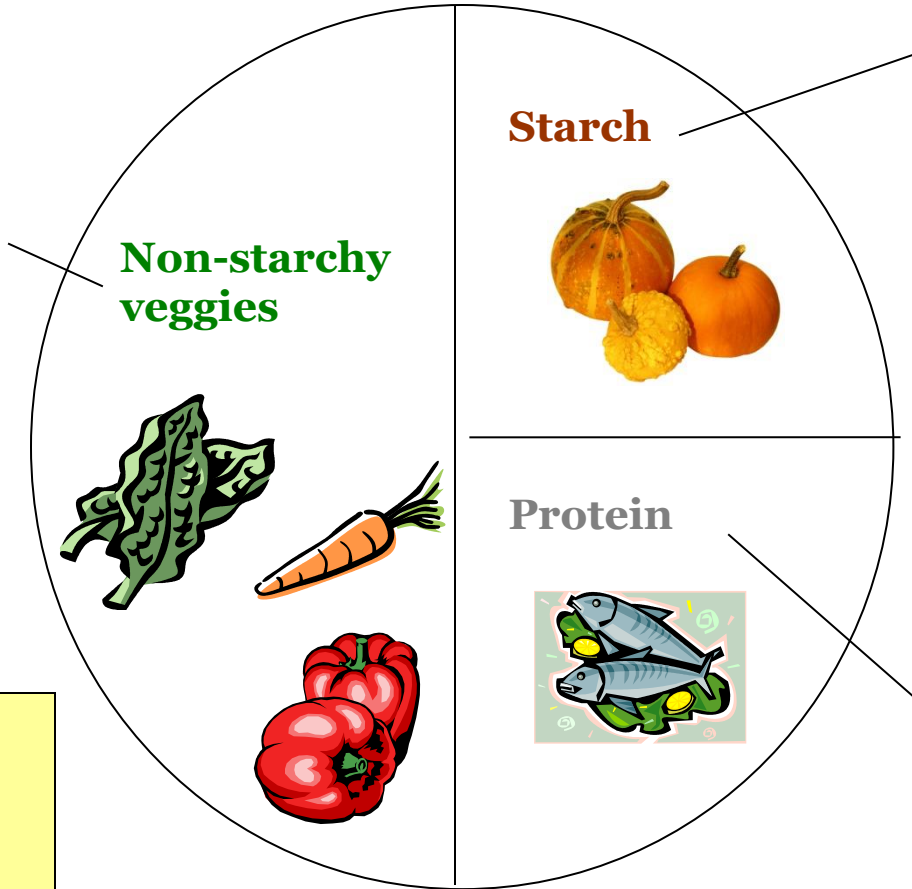
New US Food Advice



Healthy Plate



- Broccoli
- Cabbage
- Carrots
- Cauliflower
- Dark green leafy veggies (e.g. Spinach, kale, chard, Brussels sprouts etc.)
- Green beans
- Peppers
- Tomatoes



- + *healthy fats, including:*
- Avocado
- Nuts and seeds
- Olive & Canola oil

- Corn
- Peas
- Potatoes
- Pumpkin
- Squash
- Sweet potatoes
- Yams
- (Brown/wild rice, oats, Quinoa)

- Beans & lentils
- Beef (grass fed)
- Poultry (w/o skin)
- Dairy (Yogurt)
- Eggs
- Fish
- Nuts & nut butters



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MOOD FOOD



**GOOD
FOOD = GOOD
MOOD**



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Modern Life Style= Sugar Consumption



Sugar Isn't Just Empty Calories...

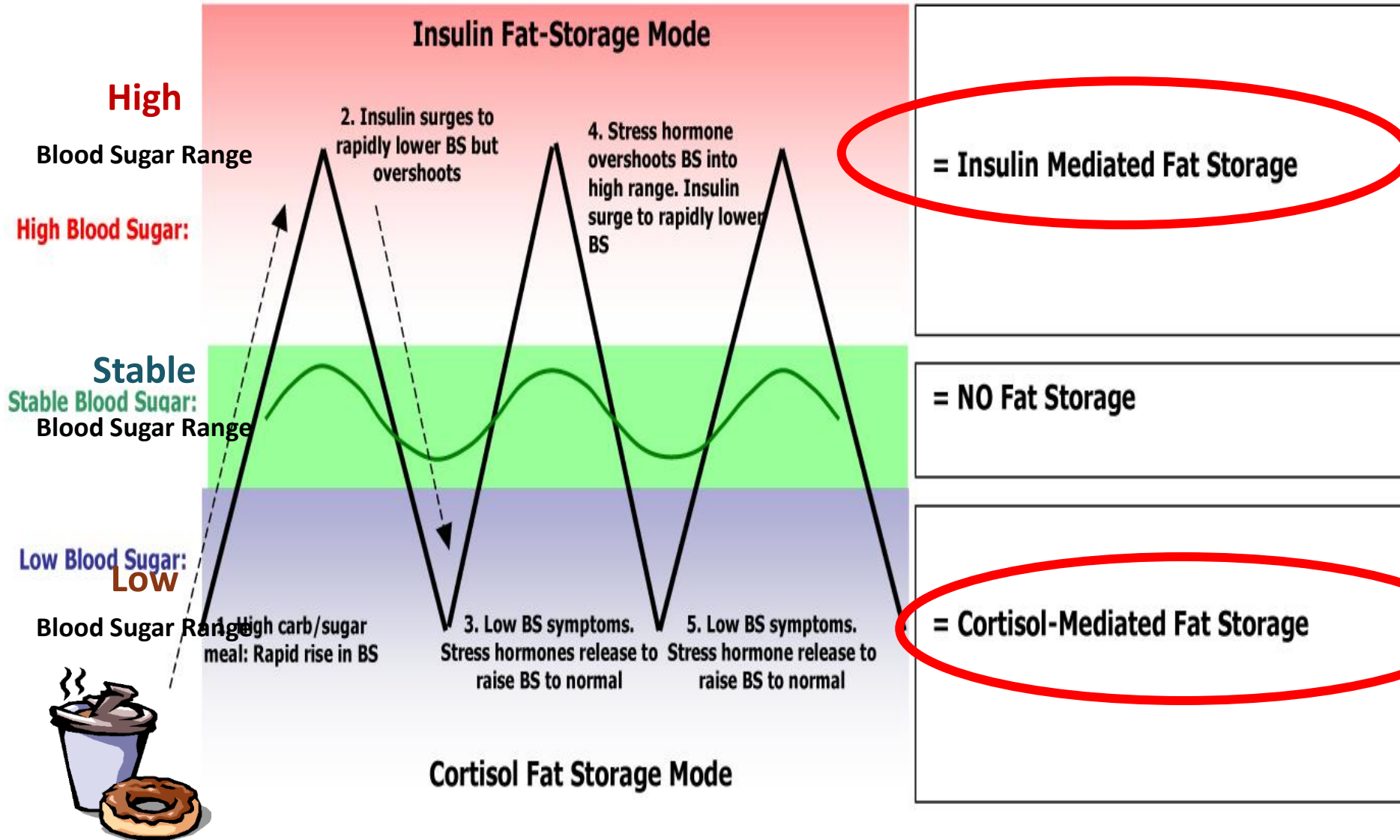
- Increased depression and anxiety
- Memory/hippocampal structure
- Reduced learning ability
- Metabolic syndrome in the brain
- Increased inflammation


• Increased

- Blood Pressure
- Obesity
- Cholesterol
- Triglycerides
- Cardiovascular Disease
- Insulin resistance
- Cancer tumor growth
- Dental disease
- Liver disease



Eat to Stabilize the Blood Sugar-Adrenal Axis





Blood Sugar

- **Fluctuations in Blood Sugar** can lead to fluctuations in mood.
- **Regulates blood sugar** – no dips and spikes
 - No *'sleepiness; less irritability; not moody*

A sign that you consume too much sugar...





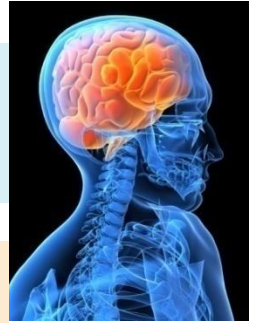
Sugar Consumption: Health Consequences

- **Cardiovascular system-increase in heart disease**
 - Increase in blood pressure
 - Increase risk for heart attacks, strokes, 5 or fewer hours have 45% greater risk
- **Endocrine**
 - Affects appetite regulating hormone
 - Diabetes and impaired glucose tolerance
 - ✦ 2.5 times more with 5 or less hours of sleep
 - ✦ 1.7 times more with 6 or fewer hours of sleep
 - Obesity and weight management
 - Increase in stress hormones
 - Thyroid and growth hormones affected
- **Immune system-more susceptible to illness**
- **Early death**
 - Less than 6 hours of sleep or less per night-
 - 15%-30% greater risk of dying, regardless of cause
 - Protective factors of avoiding tobacco, alcohol, and unhealthy foods lost with sleep deprivation
- **Nervous system-memory and learning affected**
 - Balance is affected, more falls, 2 to 4.5 greater chance of falling
 - Increased risk of tremors, seizures
 - Increase in pain, frequent headaches





Sugar Consumption: Mental Health Consequences



- Mental Health
 - Decreased neurotransmitters affecting mood
 - Distress,
 - Irritability,
 - Depression ,
 - Alcohol Use,
 - Suicide
 - Decreased quality of life



Global /Globalisation Trends

- Urbanisation & Westernisation
- Climate change
- Soil, air, water pollution
- Hunger
- Obesity & disease of affluence





Sugar By Other Names

syrup sugar
maltose raw sugar sucrose
glucose corn sweetener
high-fructose corn syrup
fruit juice concentrates
fructose brown sugar dextrose
honey malt sugar invert sugar
molasses corn syrup
lactose

1. Artificial Sweeteners - Aspartame (E951)

Neurotoxin and carcinogen

Adverse effects:

- Brain Tumor,
- Diseases Like Lymphoma,
- Diabetes,
- Multiple Sclerosis,
- Parkinson's,
- Alzheimer's,
- Fibromyalgia,
- Depression
- Anxiety Attacks,
- Dizziness, Nausea,
- Mental Confusion,
- Headaches, Migraines
- Seizures





2. Artificial Sweetener - Acesulfame-K

A relatively new artificial sweetener found in **baking goods, gum and gelatin**, has not been thoroughly tested and has been linked to **kidney tumors**?



3. Monosodium Glutamate (MSG / E621)

Flavour enhancer. Regular consumption may result in **depression, disorientation, eye damage, fatigue, headaches, and obesity.**

Found in: Chinese food (Chinese Restaurant Syndrome) many snacks, chips, cookies, seasonings, most Campbell Soup products, frozen dinners, lunch meats





4. Trans/Hydrogenated Fat



- **2009-WHO declared** that trans fats (from hydrogenated vegetable oils) really are toxic.
- These “fake fats” raise the risk for-Type II diabetes, Cardiovascular disease, Obesity and Inflammation.
- **Trans Fats are associated** with- Depression, anxiety, memory problems and irritability and aggression.
- **Found in:** margarine, chips and crackers, baked goods, fast foods.



5. High Fructose Corn Syrup

- A source of sugar used in processed food **especially drinks**
- **Contributes to heart disease, obesity, cancer, dementia, liver failure, tooth decay.**





6-Food Dyes



Watch out for these ones:

- **Blue #1 and Blue #2 (E133)**, Banned in Norway, Finland and France. May cause **chromosomal damage**
- **Red dye # 3 (also Red #40 – a more current dye) (E124)** Banned in 1990 after 8 years of debate from use in many foods and cosmetics. This dye continues to be on the market until supplies run out! Has been proven to cause **thyroid cancer and chromosomal damage** in laboratory animals, may also interfere with brain-nerve transmission.
- **Yellow #6 (E110) and Yellow Tartrazine (E102)**. Banned in Norway and Sweden. Increases the number of **kidney and adrenal gland tumours** in laboratory animals, may cause **chromosomal damage**. Found in: **American cheese, sweets and carbonated beverages, lemonade and more.**



7-GLuten



- ❖ Gluten is the diet that humans have consumed for more than 99.9% of our existence on this planet.
- ❖ Recent review in *New England Journal of Medicine* listed 55 diseases that are related to consuming **gluten including disease such as anxiety, depression, schizophrenia, dementia and migraines.**
- ❖ **Gluten contains significant amounts of *glutamate*-an excitotoxin**

Non-celiac gluten sensitivity (NCGS)?

Bloating
Diarrhea
Fatigue
Migraines
Mood swings
Depression
Joint inflammation



8-Beverages

- Water is the best choice for thirsty children. Model good habits for the children by choosing water first.
- Soda and fruit drinks are full of sugar and “empty calories” (few nutrients, many calories).
- Serving low fat milk with meals and snacks provides calcium but doesn’t add many calories.





Contemporary Foods Affect Bodies, Minds & Behaviors





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Modern Life Style=Excess Screen Time



What is screen time?

Amount of time spent using digital screen technology

- **Daily number of hours viewing:**
 - Videos on **YouTube, Netflix, Vimeo**, others
 - Texting or chatting on sites like **Instant Messenger, Finsta**, others
 - SM sites like **Snapchat, Instagram, Facebook** and the rest
 - Smartphone, pad, computer or console based **video games**
 - **Shopping, dating, gambling, surfing randomly**
 - **Email, school assignments, researching on Wikipedia**
- **More than 50% of teen screen time is with smartphone**



Side effects of excess screen time

- **Increased sedentary behavior**

- Less physical activity
- Poor nutrition
- Poor hygiene
- Obesity
- DVT

- **Disrupted sleep and circadian rhythms**

- **Elevated cortisol levels**
- **Lower melatonin levels**

- **Physical injury**

- Repetitive motion tendinitis- carpal tunnel
- 'Text neck'
- Eye strain and headaches
- Motor vehicle accidents



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Modern Life = Social Media



Social Media Effects

- Once connected people can directly share texts, ideas, pictures, gifs, videos, blogs, etc

- *Likes*
- *Views*
- *Shares*
- *Follows*
- *Retweets*
- *Streaks*
- *Gifs*
- *Upvotes*
- *Memes*
- *Stars*
- *Gifts*



Social media bullying

- **Cyberbullying affects 15.5% of high school students**
 - 20% of high schoolers experience in-person bullying at school.
 - Girls, kids who are disabled, LGBTQ, obese or history of victimization are more likely to be cyberbullied than other kids





Social media and suicide

- **Social media may be a place where kids and teens are exposed to suicidal imagery**
 - Facebook live suicide
 - YouTuber Jake Paul showed suicided Japanese person in 2018
- **Social media may be a place where kids and teens communicate suicidal thoughts**
 - More teens are communicating suicidal ideation over social media than before
 - Suicidal teens prefer to keep thoughts to self or small group of peers, only 25% tell and adults



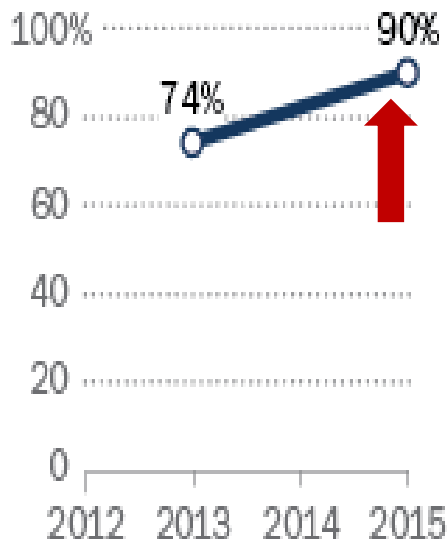
For the Love of Smartphones

Americans increasingly use smartphones for more than voice calls, texting

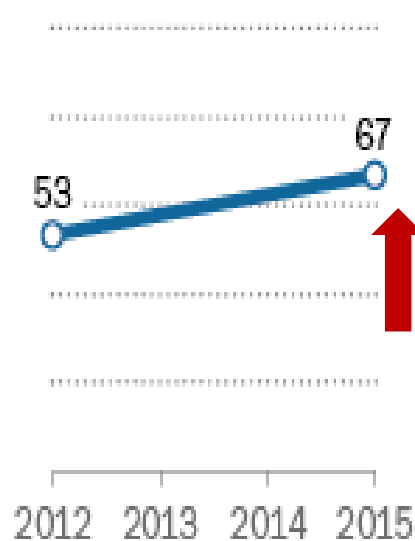
% of U.S. smartphone owners ages 18 and over who have ever used their phone to ...



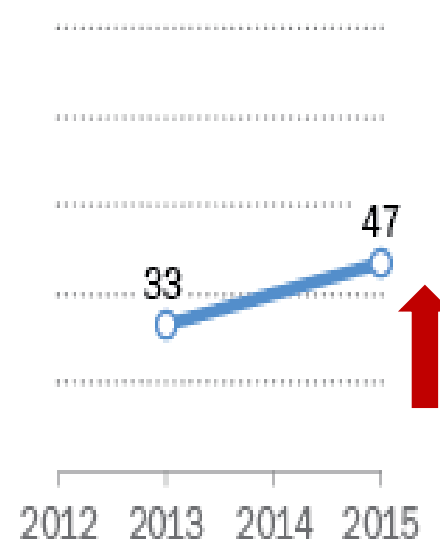
Get directions, recommendations, other info related to your location



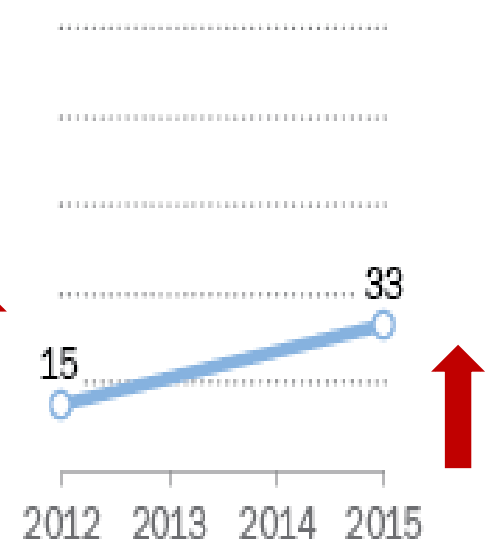
Listen to an online radio/music service, e.g. Pandora or Spotify



Participate in a video call or chat



Watch movies or TV through a paid subscription service, e.g. Netflix or Hulu Plus





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Modern Life Style=Sleepless nights



Sleep Problems are Common

- An estimated 50% of peoples are sleep deprived
 - 30% average less than 6 hours per night
- 7 out of 10 have trouble sleeping
- 15% suffer from some long term disorder
- %7 experience occasional problems
- 1/3 of peoples have symptoms of insomnia





Technology & Physical Health: A Sleep Deprived Nation

- Sleeping less than 7 hours is linked to an increased risk of:
 - Diabetes
 - Stroke
 - High Blood Pressure
 - Heart Disease
 - Obesity
 - Poor Mental Health
 - Early Death



Source: Center for Disease Control and Prevention (2016)



Technology Affects **Melatonin** & Sleep

According to a National Sleep Foundation Study...



95% of individuals surveyed reported using electronics in the hour before they went to sleep

Source: Stampler (2014)



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What Can be Done?

Preventive Psychiatry



Prevention Phases of the Psychiatric Disorders

Primary prevention tries to **improve the environment** in order to prevent new cases of a mental disorder from developing.

Government: Laws and Regulations

- **Secondary prevention** focuses on the **early detection** of emotional problems in the hope of preventing them from becoming more serious and difficult to treat.

Government and Health Professionals

- **Tertiary prevention** may **involve any of the treatments** discussed in this chapter, because the intervention occurs after the illness has been identified.

Health Professionals and Individual



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Preventive Psychiatry Approaches

Primary & Secondary Prevention
Social and Political



Policy Attention

- **Advertisements of all soda and boxed juices, energy drinks, fast foods, candies and snacks should be prohibited!**
- Soda machines and fast food removed by schools
- High taxes on unhealthy foods and beverages such as alcoholic beverages, tobacco and tobacco products should be taken.
- Food additives should be strictly inspected
- VAT rate of organic products should be reduced to 1%
- Government funding for fresh fruits and vegetables in school lunches
- Support for physical and nutrition education in school and community contexts
- Construction of public gyms and swimming pools by the Government and municipalities





Some useful foods and beverages can be promoted by placing bonuses on their packages



Tax rates for some foods should be reduced from 8% to 1%





Tax rates for Gyms should be reduced



Tax rates for sport products should be reduced

Integration of health insurances with exercise recorder devices to ensure that less insurance costs are applied to people who exercise more





***Sharing Knowledge for a Better
Understanding of the Brain***

Preventive Psychiatry Approaches



Preventive Psychiatry Approaches

- Nutrition
- Exercise Routines
- Sleep Hygiene
- Medication Routines
- Stress Management
- Psychological/Mental Health
- Healthful Living Space
- Social Relationships
- Recreational Activities
- Personal Health Choices
- Spirituality



Exercise

Aerobic exercise most studied

Randomized controlled trials

- ◆ Antidepressant effects
comparable to CBT
- ◆ Feasible in older subjects
- ◆ Total caloric expenditure/wk more critical than frequency/wk





Complementary & Alternative Treatments for Depressive Disorders

- Most robust evidence – Light therapy in seasonal depression.
- Evidence and clinical support in mild-moderate MDD
 - Light therapy – augmentation
 - Exercise/yoga – augmentation
 - Omega-3 fatty acids – monotherapy or augmentation
 - SAM-e – monotherapy
 - St. John's Wort – monotherapy
- Bipolar disorder
 - Omega-3 fatty acids - augmentation
- Inconclusive evidence at present for other physical, herbal or nutraceutical therapies



Some University-based Integrative Medicine Centers

Columbia
Cornell
Duke
George Washington
Harvard
Stanford
Thomas Jefferson
Tufts
University of Arizona
University of Maryland
University of Miami
University of Michigan
University of Pittsburg
University of Texas
University of Washington



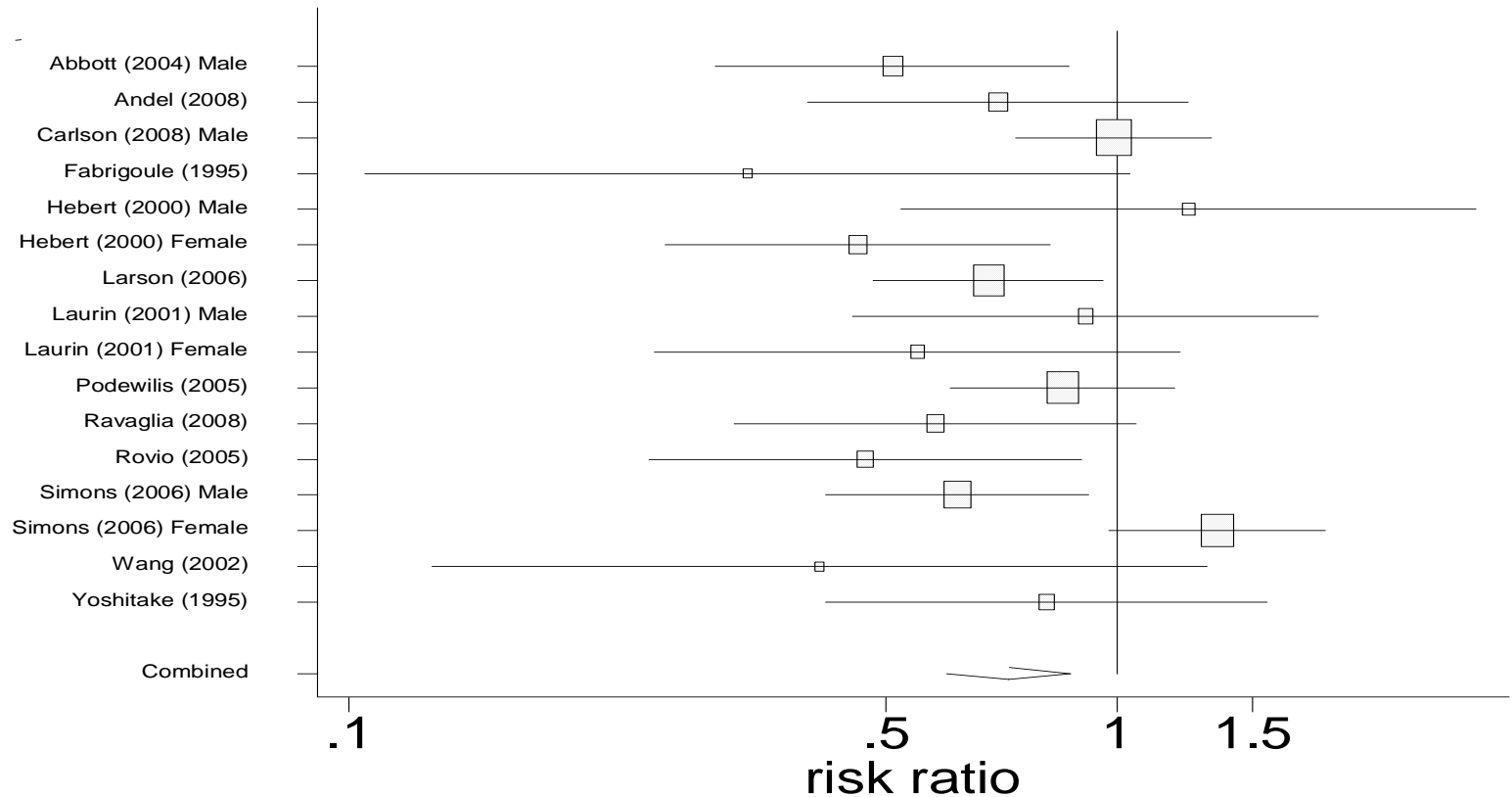


Benefits of Physical Activity



- Helps prevent CVD, type 2 diabetes, obesity and some types of cancer
- Benefits bone, joint and digestive health
- Improves mental wellbeing and can help prevent depression.
- Also associated with reduced risk of cognitive decline
- Physical activity influences cognitive health in later life
- 38% lower risk of dementia
- **increases size of hippocampus and improves memory**

Physical Activity and Risk of Dementia



Zucchella C, et al. The Multidisciplinary Approach to Alzheimer's Disease and Dementia. A Narrative Review of Non-Pharmacological Treatment. *Front Neurol.* 2018; 9: 1058. doi: 10.3389/fneur.2018.01058



Sleep Hygiene

- Getting the *right amount of sleep* for your body
- **Maintaining a functional sleep schedule**
 - Setting and sticking to a bedtime
 - Getting up around the same time every day
 - Managing time well to avoid all-nighters
 - Knowing when to prioritize sleep over socializing
- Dealing with sleep disruptions effectively



Stress Management

- Finding and implementing effective, positive strategies to deal with everyday concerns
 - “Stress Busters”
 - **Deep breathing exercises**
- Avoiding negative or destructive behaviors





Personal Health Choices

- Becoming educated about personal health issues such as **tobacco, alcohol, drugs, sexual activity, etc.**
- Making positive and healthful decisions about personal health issues
 - Practicing safe sex or abstaining
 - Abstaining from illegal drugs
 - Using prescribed drugs responsibly
 - Drinking responsibly and/or abstaining from alcohol
 - Abstaining from or quitting tobacco products
- Resisting peer pressure and making decisions based on your own convictions





Spirituality

- Fulfilling spiritual/religious needs if applicable
- Seeking out spiritual guidance as needed
- Connecting with others of similar faith
- Exploring your current faith or a different one





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Preventive Psychiatry Approaches

Healthy Nutrition & Nutraceuticals



Nutrition

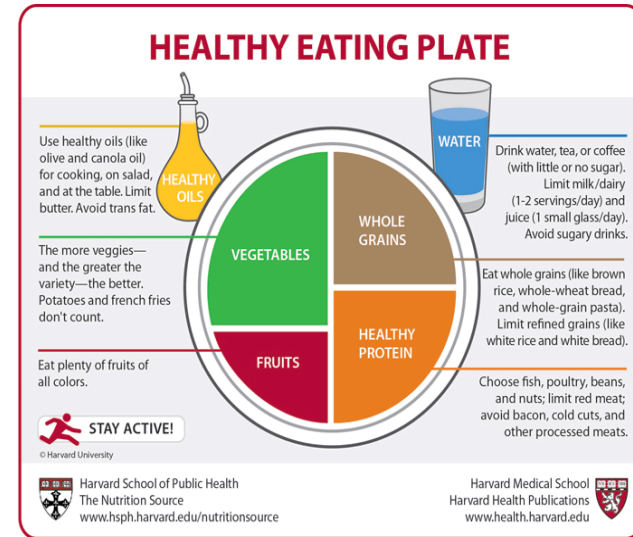


- Identifying healthful foods
 - Whole grains
 - Lean protein
 - Fruits & vegetables
 - Dairy products
 - Healthy fats
- Finding, preparing, and eating nutritious foods
- Making healthy choices about what to eat from the options available on campus



Macronutrient Mood Therapy

- Removal of dietary factors associated with mental health symptoms
 - Sugar and simple carbohydrates
 - Processed foods
 - Trans fats
 - Caffeine
- Replace with increased intake of:
 - Protein
 - Healthy fat
 - Vegetables
 - Complex/high nutrient carbs



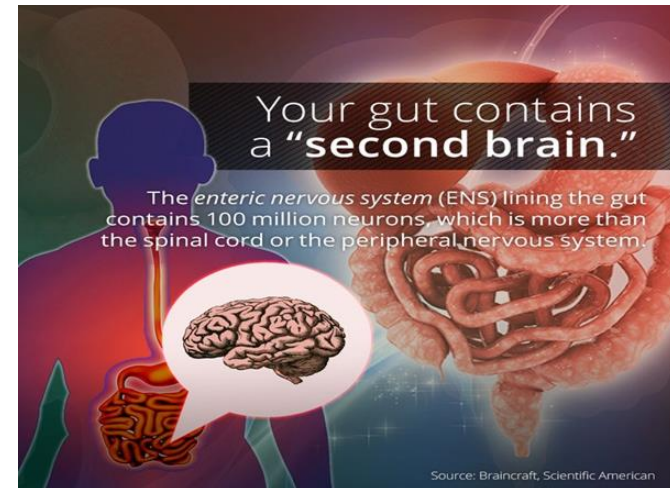
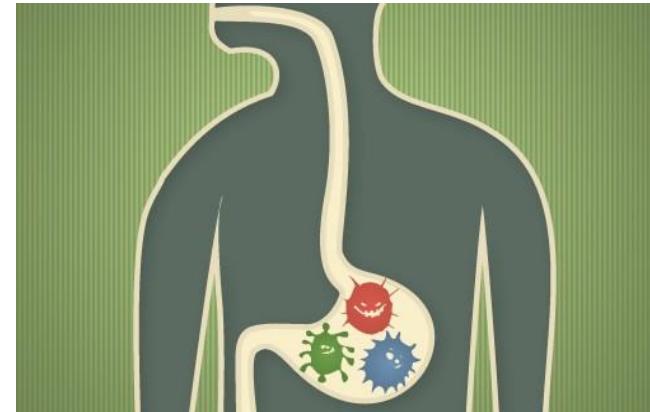


Feed Your 38 Trillion* Friends

Probiotics (Psychobiotics)

- ❖ Your body is colonized by a multitude of organisms that outnumber your cells on a 10-1 ratio.
- ❖ No other system in the body is more sensitive to changes in gut bacteria than the central nervous system, especially the brain.
- Limit inflammation
- Improve nutrient absorption from food
- Activate neural pathways between the brain and the gut.

**We estimate the total number of bacteria in the 70 kg "reference man" to be 3.8×10^{13} .*



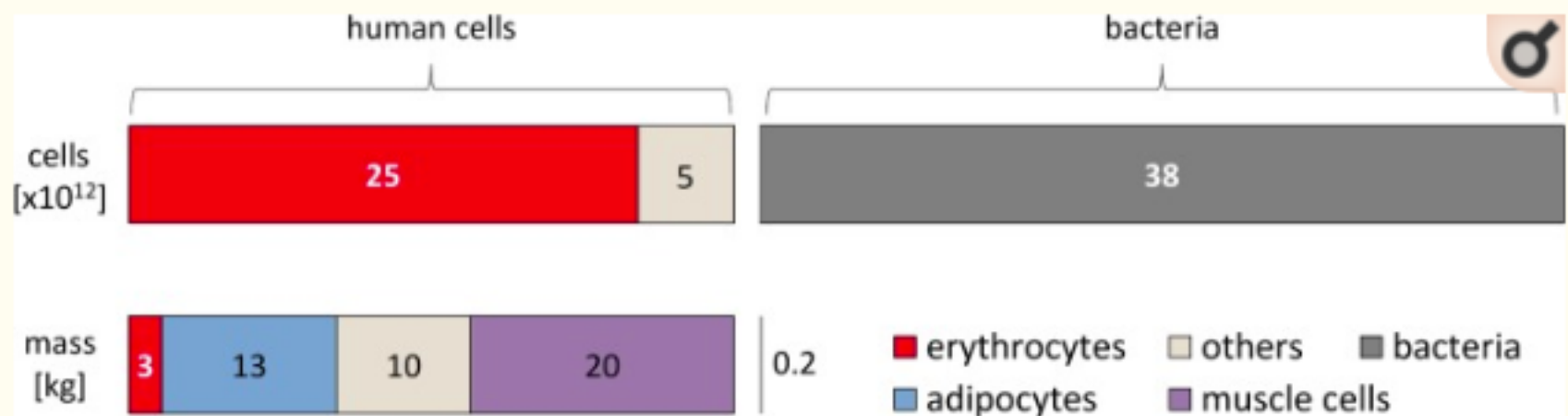
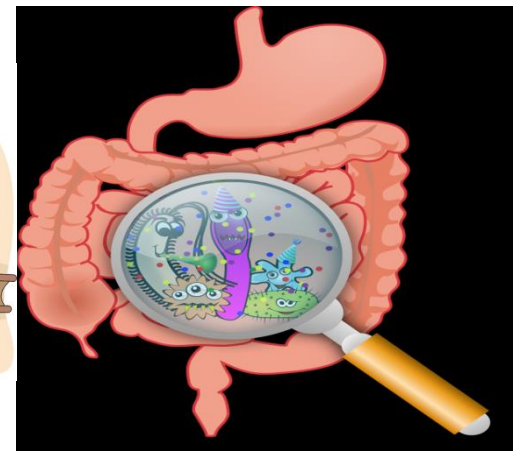
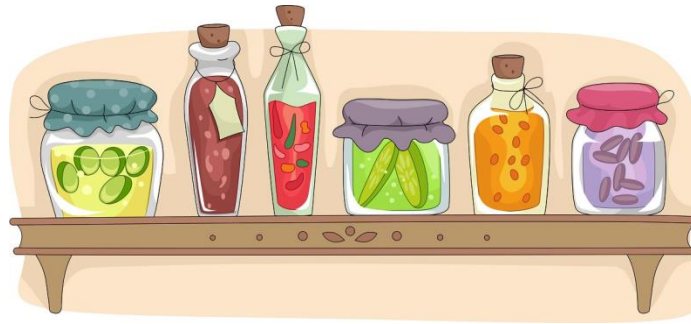


Fig 3
Distribution of cell number and mass for different cell types in the human body (for a 70 kg adult man).

The upper bar displays the number of cells, while the lower bar displays the contribution from each of the main cell types comprising the overall cellular body mass (not including extracellular mass that adds another ≈ 24 kg). For comparison, the contribution of bacteria is shown on the right, amounting to only 0.2 kg, which is about 0.3% of the body weight.



Feed Your BUGS!



- **Probiotics:**Yogurt, Kefir, Kombucha, Kimchi, Sauerkraut,
- **Prebiotics:** Vegetables, low-sugar fruits, healthy fats-extra virgin olive oil, coconut oil, pasture fed butter, nut butters, protein-pasture raised eggs, wild fish, grass fed meat.



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Preventive Psychiatry Approaches

Nutraceuticals



What are Nutraceuticals?

- Non-prescription natural health products, usually concentrated forms of natural substances
- They are often used to support general physical and mental well-being
 - Omega-3 fatty acids,
 - Tryptophan,
 - Folic acid,
 - Vitamin B12
 - Vitamin D3
 - Zinc
 - Magnesium,
 - Selenium



Amino Acids -> Neurotransmitters

- Tyrosine



**Catecholamine
Dopamine,
Norepinephrine,
Epinephrine**

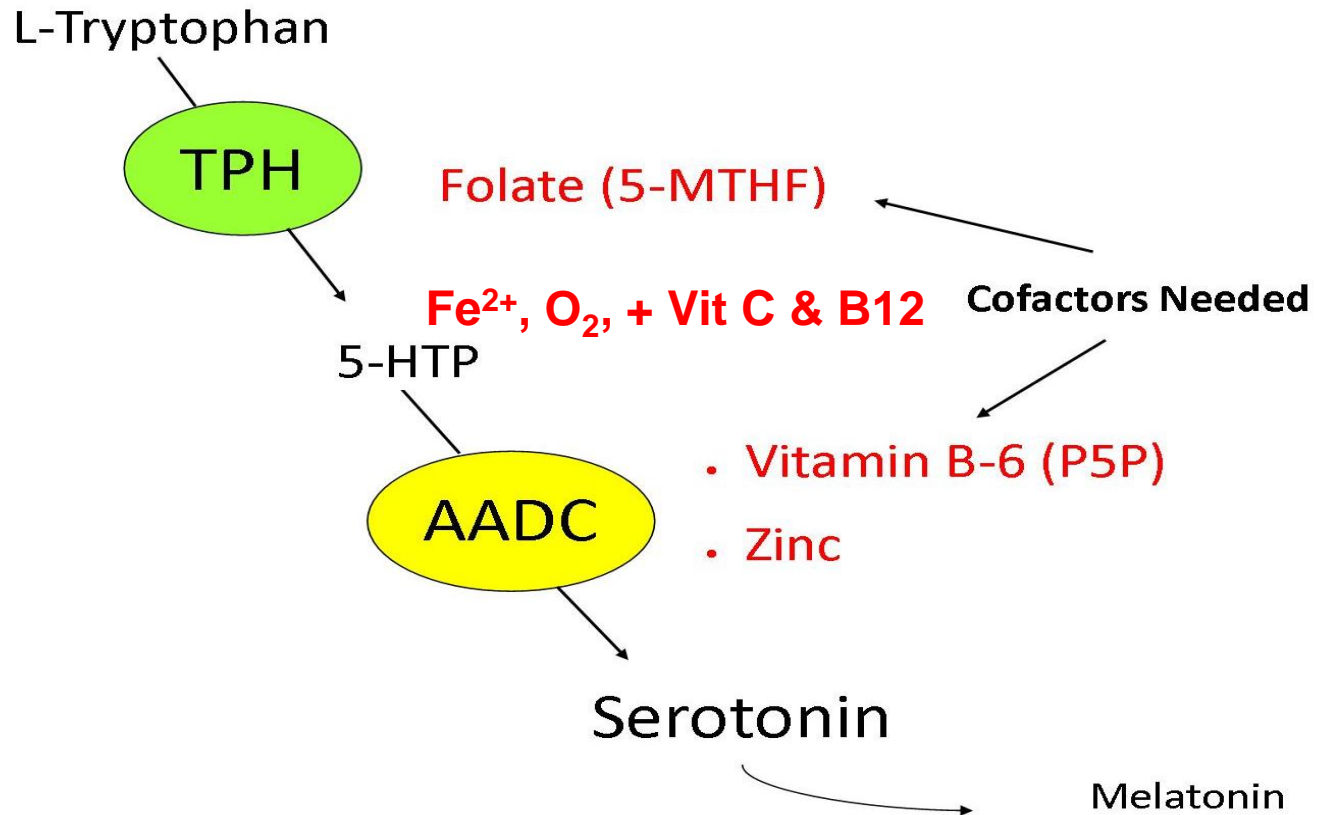
- Tryptophan



Serotonin



Serotonin Synthesis





Serotonin & Vitamin D₃

- Seasonal Affective Disorder (S.A.D.)
- Sunlight helps body synthesize Vitamin D.
- Part of reason may be that Vitamin D increases Serotonin levels
- Serotonin is often lower in winter months



Omega-3 Fatty Acids

- Essential polyunsaturated fatty acids integrated in multiple biological systems
 - Focus on eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)
- Found in oily fish, nut oils, avocados, flax seeds, walnuts
- Mechanism of action still unknown
 - ? Improving integrity of neural cell membranes and myelin
 - **Variable dosing of EPA (at least 1000 mg /day)**





EPA for Bipolar Depression

- Two parallel studies of efficacy and biology

Efficacy †

12 week double-blind RCT
(n=51)
Augmentation with
EPA (1-2 gms) or Placebo

****EPA superior to Placebo on HAM-D and CGI (p=0.04)**

Biology ‡

MRS before and after 12 weeks
of EPA or Placebo augmentation
(n=18 females)

****Higher levels of N-acetyl
aspartate (NAA) with EPA vs.
Placebo (p=0.02)**

† Frangou et al., Brit J Psychiatry, 2006

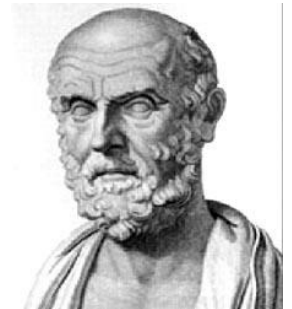
‡ Frangou et al., J Psychopharmacol., 2007



Conclusions:

- 1-Mental and physical health should be considered as holistic
- 2-Priority should be given to preventive health approaches
- 3-It is necessary to protect from the processed foods, social media, immobility, etc., which negatively affect the mental health of young people
- 4-People's preventive health approach styles should be educated on issues

Primum non Nocere!



Hippocrates BC 400

Please Write Down to Your Agenda

Turkish Association for Psychopharmacology (TAP)
Upcoming Scientific Activity

**12th International Congress on
Psychopharmacology
&
8th International Symposium on Child and Adolescent
Psychopharmacology**

15-18 April, 2020 Antalya, TURKEY



Thank you