Addiction – ASAM definition

• Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.
Addiction – ASAM definition

- Addiction is characterized by inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one’s behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.

Addiction

Chronic lack of self-care including hygiene, interpersonal relationships, and nutrition.

Research clearly shows nutrition education and intervention improves patient treatment outcomes, success rate of recovery, and relapse occurrence. (Grant, Haughton, Sachan; 2004)

Whatever our role in providing care to the addicted person, we all have one goal: to help them recover, get well, and stay well.

Nutritional support is an area in which most are able to help, through direct assistance, education, or patient advocacy.
“Detox” is a medically supervised withdrawal

• Predictable constellation of signs and symptoms after abrupt discontinuation of or rapid decrease in use of a substance that has been used consistently for a period. Signs and symptoms of withdrawal are usually opposite to the direct pharmacological effects of a psychoactive substance.

Predictive factors for potential course of withdrawal

Compromised health (infection, head injury, malnutrition) can complicate the course and cloud the clinical picture at admission and in early withdrawal.

Malnutrition: faulty nutrition due to inadequate or unbalanced intake of nutrients or their impaired assimilation or utilization (Merriam-Webster)
Medically supervised withdrawal or “detox”? A positive UDS or a “dirty” screen?

• Words are powerful. Withdrawal can be fatal, is certainly uncomfortable, and is in fact a medical condition. We can emphasize medical necessity and decrease stigma by staying clinical in our speech.

• Addiction resembles other chronic diseases like diabetes and heart disease in regard to genetic transmission, relapsing and remitting course, and the important role of personal responsibility in determining how well the disease is controlled.

What does the ADA say about SUD and nutrition?

▪ Subtance use disorders, especially alcoholism, commonly result in nutritional deficits.
▪ Dual diagnosis/SUD patients receive exercise and nutrition counseling at lower rates than other patients.
▪ Previous studies had shown that nutrition programming in rehab significantly improved 3-month success rate of SUD patients and has reduced recidivism rate in chronic DUI offenders.
Results of ADA paper

152 VAs offering SUD treatment surveyed, response rate of 68%
50% of all pts received nutrition education, but only 25% of
SUD/dual dx pts
“Positive, direct association” between nutrition education and
improvement in medical and psychiatric Addiction Severity Index
scores
WITH nutrition education, improvement from pre- to post-
Addiction Severity Index scores of 55-99%
WITHOUT nutrition education, “ASI scores worsened by 67-104%”

The case for teaching patients about the neurobiological basis of addictions.

Finnel (2000) suggested that substance abuse treatment
patients should have the same benefits of education as
patients with other chronic diseases, such as diabetes or
congestive heart disease, and that substance abuse-related
nutrition education should target the specific risk factors of
these patients.
Addiction is a chronic disease with striking similarities to others

Less than 60% of T1DM pts fully adhere to medication regimens
Less than 40% of asthma and HTN pts fully adhere to medication regimens
Less than 30% of adult-onset asthma, diabetes, or HTN adhere to prescribed diet or behavioral changes
30-50% of adults with T1DM and 50-70% of adults with HTN/asthma “relapse” and require medical care to re-establish remission

All chronic diseases require personal responsibility

We choose to become and remain healthy, and a central part of that choice is what we put in our bodies.
Personal responsibility and self care

The role of personal responsibility in the recovering addict is the same as with any other person facing a chronic condition. Clinicians are well-positioned to facilitate the mental shift from negative self-talk and poor self-care, to a place of personal responsibility and empowerment.

Self-care in the context of nutrition

Something the person can learn to feel in control of, which is empowering. A way to feel nurtured and supported. Self-nourishment as self love. Feeling better and more energetic provides the fuel for more positive change.
Self-care in the context of nutrition

- Learning to take your vitamins and your medications.
- Learning how to cook and prep foods.
- Learning the importance of kitchen cooking hygiene.
- Learning which foods do and don’t suit YOUR body well.
- Self-awareness.

Prolonged use of substances upsets the natural balance

- Of neurotransmitter receptor sites, leading to dysregulation and a desire to artificially change the way we feel with food
- Of endorphin receptor sites, leading to weakened function of immune bodies
- Of digestive system integrity, resulting in malabsorption and multiple deficiencies - leading to concurrent ill health conditions.
Dopamine and reward

Alcohol, cocaine, opioids, and nicotine have tremendous impact on reward behaviors

Just as the lab rat will choose cocaine and ignore water, food, or rest, so does the addict continue to pursue, use, and try to recover from the use of drugs and ignore water, food, and rest

Alcohol abuse

- Hepatitis/pancreatitis, hypoglycemia (profound insulin imbalance), anemia
- Digestive bleeds
- Systemic inflammation
- Dehydration (both from drinking and from N/V/D in w/d)
Alcohol abuse

- Electrolyte deficiencies - seizures, arrhythmias, esp:
  - Calcium - osteoporosis, muscle spasms
  - Magnesium - 300+ processes require Magnesium, spasms, pain, insomnia, heart problems, confusion, irritability, fatigue
  - Potassium - slowed heart rate, fragile bones, weakness, CNS impairment
- Compromised ability for brain to process tyrosine (alertness) and tryptophan (serotonin precursor)

Alcohol abuse

- Vitamin B Complex deficiencies, (NS maintenance, metabolism, cofactors for many processes, Cardio health), esp:
  - folic acid (cell synthesis, anemia)
  - thiamin (glucose metabolism and Wernicke syndrome or Wernicke’s encephalopathy, ataxia, cognitive function, cellular energy, anorexia, CDV problems)
  - B5/pantothenic acid (low energy, low red blood cell prod, adrenal dysfunction, detoxification)
  - B6/pyridoxine (100+ enzymatic reactions, stress/anxiety, increased CVD risk, conversion of tryptophan to serotonin, convulsions)
  - B12 (metabolism of folic acid, vital tp NS function, anemia, fatigue, neuropathy)
  - Intrinsic factor deficiency, leading to B12 deficiency
Alcohol abuse

- **Vitamin C deficiency** - weakened immune system, slow wound healing, connective tissue degradation, joint pain, gum disease, impaired tyrosine metabolism
- **Vitamin A deficiency** - (impaired epithelial tissue - eyes, digestive system, skin, lowered immunity, weakened bones)
- **Compromised ability for brain to process tyrosine** (alertness) and tryptophan (serotonin precursor)
- **Vitamin D** - (calcium and phosphorus imbalance > bones and kidneys; weakened immunity)

Opioid abuse

Brain’s ability to produce affected: dopamine (mood dysregulation, low energy level, memory loss), serotonin (sleeplessness, appetite loss, memory loss), acetylcholine (memory loss, poor info processing), GABA (anxiety, muscle cramps/pain, brain fog), endorphins (pain, depression)

Exogenous opioid use artificially satisfies hunger cues *leads to...*

Malnutrition, esp. proteins, fats, vitamins and minerals (Ca, Mg) as well as impaired carbohydrate digestion *leads to...*

Insulin resistance, chronic liver failure and let’s not forget the risk of numerous infectious diseases *r/t IV use*
Stimulant abuse

Artificially satisfies hunger cues
Malnutrition
Prolonged cardiac stress

Common medical concerns in active addiction and withdrawal

- Arrhythmia (mineral imbalances, esp. magnesium, potassium, calcium; adrenal crisis)
- Hepatitis, Fatty Liver Disease (LFTs, balanced fat diets)
- Alcoholic pancreatitis (insulin imbalance)
- Digestive bleeds
- Dehydration
- Electrolyte deficiencies
Arrhythmia

Arrhythmia is irregular heartbeat. Sometimes congenital. Can be serious and require meds to stabilize.

Mineral deficiencies. Magnesium in particular. Calcium, potassium, trace minerals may also be lacking.

- 300+ metabolic processes need magnesium. The heart has highest demand.
- Titrating Mg+ OTC. Titrate up small amount daily to highest dose directed to bowel tolerance.

Avoid stimulants such as caffeine, nicotine.

Foods high in essential minerals: Nuts, beans/lentils, leafy greens, fish, mushrooms, shellfish, milk/yogurt, seeds, whole grains, cheese, beef, lamb, tofu, dark chocolate (80% cocoa), dried fruit

B-Complex for nervous system support/stress regulation.
Hepatitis

Hepatitis is the inflammation of the liver (reversible in some cases)
Cirrhosis is irreversibly scarred and compromised liver
The liver filters toxins, helps fight infection, has a major role in digestion, glucose control, hormone control, and about 500 other functions

How can we support hepatic compromise?

- Ease burden on liver.
- Digestive bitters-
  - Choose mild ones, such as chamomile or bitter salad herbs, like arugula, dandelion.
  - bile and HCL production, break down fats and proteins
  - Increase nutrient absorption
- Avoid heavy fats and oils.
- Digestive enzymes, especially lipases (break down fats)
- MCT (medium chain triglyceride) oils, which don’t require as much processing by body; coconut oil, palm kernel oil, cheese, grassfed butter
How can we support hepatic compromise?

- Green juices very beneficial.
- Lots of water.
- Avoid EFA supplements in fatty liver disease.
- Rest
- Manage anger (TCM concept, with evidence that hormones secreted in anger affect liver)

• Milk thistle – great evidence for the Silymarin in milk thistle supporting liver, protecting from toxins, aiding healing liver diseases. (PubMed.gov for research)

Alcoholic pancreatitis and insulin imbalance

• The brain and associated neurons and neurotransmitters require a substantial portion of the body’s glucose – and cannot store it. With poor glucose control (either insulin imbalance or poor nutrition, or both), the brain has little chance to repair and to function “normally”

• Blood glucose control thru nutrition (low glycemic diet, chromium picolinate supplementation)
Digestive bleeds

• Gut lining damage leading to malabsorption of nutrients

Mineral Deficiencies

**Magnesium** - seizures and delirium. 300+ processes require Magnesium, spasms, pain, insomnia, heart problems, confusion, irritability, fatigue

**Sodium** - delirium, N/V, HA, confusion, fatigue, muscle spasm, sz, coma

**Potassium** - cardiac anomalies, fragile bones, weakness, CNS impairment

**Calcium** - osteoporosis, muscle spasms

**Zinc** - cofactor for numerous processes; impaired immune function, vision, taste, hearing, wound healing, hormone regulation, diarrhea, IBD, blood vessel integrity

**Selenium** - may correlate with increased risk of liver cancer and heart disease

**Iron** - anemia, low oxygen, lowered immune function, low energy
Vitamin Deficiencies

Water soluble deficiencies generally, due to increased urination and other fluid loss. Body doesn’t store.

Fat soluble deficiencies generally, due to metabolic compromise and/or stores used up and not replaced.

- **Vitamin B Complex deficiencies** generally, (NS maintenance, metabolism, cofactors for many processes, Cardio health), esp:
  - Folic acid (cell synthesis, anemia)
  - Thiamin (glucose metabolism and Wernicke syndrome or Wernicke’s encephalopathy, ataxia, cognitive function, cellular energy, anorexia, CDV problems)
  - B5/pantothenic acid (low energy, low red blood cell prod, adrenal dysfunction, detoxification)
  - B6/pyridoxine (100+ enzymatic reactions, stress/anxiety, increased CVD risk, conversion of tryptophan to serotonin, convulsions)
  - B12 (metabolism of folic acid, vital to NS function, anemia, fatigue, neuropathy)
  - Intrinsic factor deficiency, leading to B12 deficiency

- **Vitamin C deficiency** - (weakened immune system, slow wound healing, connective tissue degradation, joint pain, gum disease)

- **Vitamin A deficiency** - (impaired epithelial tissues: eyes, digestive system, skin; lowered immunity, weakened bones)

- **Vitamin D** - (calcium and phosphorus imbalance > bones and kidneys; weakened immunity)

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So Where Do We Begin?

Don’t forget the basics

- Hydration, movement, sleep
- Are they eating? When/what? Are they sleeping? When/how much/quality?’
- Are their basic needs of food, water, shelter and security being met? Don’t assume.
- Support emotional state. Encourage. Recognize small achievements.
- Joy is the most important nutrient.
So Where Do We Begin?

Treat the person who has the condition, not the condition which has the person

- Take time to understand their unique situation. Make personalized recommendations that can work for them.
- There is no one-size fits all.

So Where Do We Begin?

Meet ‘em where they’re at

- Don’t overwhelm the patient. Start small. Easiest first. Accomplishment!
- Give practical solutions they or their caregiver are capable of doing.
- Add to or change the plan as they adapt. When they’re feeling better, they will have the strength and drive to take on next steps.
- Recommendations only as good as what they will do, what they can do, and what their bodies can utilize in present state of health.
So Where Do We Begin?

Assume significant physiological damage has been done.

- Digestive system damage
- General malnourishment and multiple nutrient deficiencies.
- Degenerative disease processes set into motion
- Neurotransmitters and hormones depleted. (adding to stress and cravings)

Biochemical and physical repair must take place

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Nutritional deficits

- Carbs
- Proteins
- Fats
- Vitamins/minerals
- Dehydration
Carbs overview

Carbohydrates provide the sugar, or glucose, needed by all parts of the body for fuel
Complex - whole grains, nuts, most vegetables. Remain combined with other nutrients and are broken down slowly for sustained use; allows for “regular” insulin control
Simple - processed foods, colas, processed bread/pastries, alcohol, “the white stuff”
Poor glycemic control = diabetes, adrenal fatigue
Is the addict typically buying expensive fruits and vegetables? Or for $2 a soda and chips?

Fats overview

Normal growth and development, energy, cell maintenance/protection, production of hormones, neurotransmitters, and more.
Absorption, transportation, and storage of fat soluble nutrients (A, D, E, K, and carotenoids)
Brain is fattiest organ in the body: +/- 60% fat. Myelin 80% fat

Essential Fatty Acids (EFAs) must be supplied in diet:
  Indicated to lower depression and CDV risk.
  DHA and EPA maintain high levels of dopamine in brain.
  Production and synthesis of serotonin (mood, sleep)
  Anti-inflammatory, involved in wound healing

Cholesterol:
Cholesterol

Cholesterol:
Involved in production of adrenal steroid hormones, sex hormones, Vitamin D, bile acids.
80% produced by liver and intestines.

The heart burns fat as its primary source of fuel.

Proteins overview

Protein is needed for growth, tissue repair, healthy immune systems, essential hormone production, enzymes, and energy when carbohydrates and fats are not available. Protein also preserves lean muscle mass.

Must be broken down into amino acids or small peptides that can be absorbed by the intestine and transported into the blood; broken down in the stomach by HCl acid and proteolytic enzymes, in the small intestine by pancreatic proteases, and in the plasma membrane of intestinal cells.

Greater protein/amino acid needed during intense detoxification and repair

Amino acid Glutamine essential to GI health

Amino acid Tryptophan precursor of neurotransmitter serotonin.

Amino acid Tyrosine precursor of neurotransmitter dopamine.

Meat, poultry, fish, eggs, cheese, milk, yogurt, seeds, legumes, grains, veggies.
Hydration overview

About 60% of adult body weight is water; more in children.
Less water in tissues of elderly, female, and obese patients. More water in lean muscle tissue.
Most essential nutrient; survival only a few days without.
Mental and physical health dependent on water.
Optimal functioning of all organs and body systems dependent on water.

Hydration overview

- The fluid in which all life processes occur in the body. The water in body fluids:
  - Carries nutrients and waste products throughout the body
  - Maintains structure of large molecules such as proteins and glycogen (muscles, organs...)
  - Participates in metabolic reactions
  - Solvent for minerals, vitamins, amino acids, glucose and other small molecules so they can participate in metabolic activities
  - Lubricates and cushions joints, inside eyes, spinal cord, and amniotic sac in pregnancy.
  - Aids in regulation of body temp; sweat evaporation removes excess heat from skin
  - Maintains blood volume
Hydration overview

- Water needs vary by: State of health, diet, humidity, energy expended…
- Minimum life sustaining daily need - enough to carry away waste products generated metabolically.
- Recommended for person burning 2,000 calories: 8-12 cups (2-3 liters). For healthy person in average conditions.
- Caffeinated beverages increase urination; don’t count fully. Alcohol counts not at all.
- **Best choices:** Water, herbal and other non-caffeinated teas (contribute without added sugar burden); fruit-infused water, broth, fruits/veggies, especially with high water content (celery, leafy greens, melon, cucumber, etc)
- **Jedi Mind Tricks:** pitcher of water in sight, apps and bottles that remind, half glass before each meal, smartphone reminder, a glass or water bottle you love

Some common factors affecting adequate nutrition

- **Lifestyle, Habits, Schedule**
- **Economics**
- **Misinformation about nutrition** - Clients may make seemingly good food choices which have limited nutritional value. Over-processed and fast food. Internet and crowd-sourcing info. Barrage on info is confusing and not personalized.
- **Lack of support system or caregiver**
- **Cultural bias** - may feel stigma about certain foods or “healthy” lifestyle; may be culturally predisposed to eat a certain way and reluctant to change
- **Homelessness**
- **Trauma** - past experiences with food, caregivers; phobias
- **State of health** (malabsorption, dysbiosis, parasites, vomiting, diarrhea, diuresis, diaphoresis, lack of appetite, lethargy; extensive list of possibilities, these are but a few)
- **Food deserts**
- **Know-how**
A general healing protocol

- Hydration + Movement (lymphatic drainage)
- Outside air/sun 20 minutes each day.
- Low glycemic diet
  - Avoid processed sugars and highly processed foods.
  - Avoid simple carbs. Complex carbs from veggies, whole grains.
- Eat The Rainbow. Eat Real Food.
- Leafy greens for minerals.

A general healing protocol

- Eat breakfast. Good quality protein and fat.
  - Helps regulate blood sugar; more energy during day
  - eggs, avocados, unsweetened whole milk yogurt.
  - If in a hurry, protein shake with a spoon of coconut oil, or a quality whole food meal replacement powder
- Variety of healthy fats from fish, nuts, seeds, avocados, olives, whole dairy.
A general healing protocol

- Easily digestible, nutrient dense foods.
- More cooked/less raw
  - Long cooked (crockpot stews)
  - Kichari
  - Congee
  - Broths
  - Blended soups
  - Oats (very nourishing and supportive to nervous system)

A general healing protocol

- Supplements
  - B-Complex w/ methylfolate and intrinsic factor,
  - Sublingual B12 as methylcobalamin,
  - Vitamin D3
  - quality multivitamin/multimineral
  - EFAs*

- As a person becomes nutritionally replenished, one can zero in on other specific needs
Other Gut Healing Tips

- Aloe vera juice
- Bone broth
- Tissue healing nutrients from herbal teas such as nettle, oatstraw, rose, calendula
- Fermented Foods w/ live cultures (yogurt, kefir, ACV w/mother, raw sauerkraut, kimchi), with every meal.
- Digestive Bitters- Stimulate bile, help break down fats; appetite stimulant, 15 mins before meal.
- Avoid acid reducers. Much more likely to have low stomach acid, the symptoms of which look very similar to high stomach acid. Use Ginger (warming) or peppermint (cooling) tea, and digestive bitters first.
- Digestive enzymes and/or HCL Betaine supps with meals

Pro tips

Meal prep once or twice weekly; solo, as a family or social activity. Crockpot. Overnight yogurts and oatmeals in the fridge. Hard boiled eggs. Cold protein salads. Easy to reach for stuff. Makes changing eating habits easier, and especially helpful for those who can’t fully do for themselves.
Additional recommendations or exceptions for concurrent conditions

Alcoholic Pancreatitis and Hepatic Compromise -
MCTs (medium chain triglycerides) useful for a number of medical disorders with impaired fat metabolism
Less processing by the body, easily absorbed and used for energy
Coconut oil, grassfed butter, cheese, milk, yogurt. Available as a supplement.
Enhanced Ca+, Mg+ absorption as well as amino acids
Useful for any malnourished client
Avoid EFA supplements

Supporting digestibility and nutrient absorption

Blenders- smoothies, blended soups, juicing
Carminatives- pungent/aromatic herbs and spices (eg, ginger, black pepper, fennel, peppermint, cardamom, clove, chamomile, dill, fennel.

Enhance digestion by stimulating digestive juices, increasing blood flow to GI, increasing downward motility.
Room temp and warm fluids ... Water
Digestive enzyme supplementation: include lipases, proteases, amylases.
Supporting digestibility and nutrient absorption

Presoak legumes, nuts, and grains
Porridge, congee (TCM), kicharee (Ayurveda), crockpot and other long cooking methods.

Digestive bitters and tonics (chamomile, ginger, fennel, dandelion, orange peel)

*Bitter taste stimulates HCL production in stomach and bile from liver, aiding in digestion of fats and proteins.*

High nutrient herbal teas (nettle, oatstraw, peppermint, hibiscus)

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Stages of change 101

• Precontemplation/contemplation - “what if?”
• Preparation - “what’s worked in the past? What can you do?”
• Action - “how can we enhance your recovery?”
• Maintenance - “how can we maintain your successes?”
• Relapse
Goals of stages of change

• Help the patient move one stage farther along the continuum of change

Clinician role in preventative and maintenance care

Bartlett et al (2016) found that (survey of 151 community mental health clinicians):
95% felt confident in their ability and knowledge base to discuss inadequate nutrition
82% felt confident in their ability to provide resources
48% believed strongly that clients were interested in improving their behaviors
Health literacy

Low - less knowledge of disease and self-care, worse self-management skills, lower compliance rates, higher rates of hospitalization, higher smoking rates. High - improved preventive care, early detection of disease and illness, better able to access care, and more likely to eat “at least 5 portions of fruit and vegetables a day,” according to one study (Taggart et al, 2013)

How can we clinicians do better to support our clients?

Education (materials and hands-on skills training, i.e. cooking, grocery shopping on a budget)

Empowerment and confidence building

Support

“Never give up”

Resources
Resources

Book Recommendations:
“Food Rules: An Eater’s Manual” - simple, easy to remember, fun; 120 pages (Michael Pollan)
“The New Whole Foods Encyclopedia”- easy to understand info re nutrients and healing qualities per individual foods (Rebecca Wood)
“Herbal Recipes”- fantastic kitchen herbalism primer for nourishment and common family ailments (Rosemary Gladstar)
“End Your Addiction Now”- specific to substance supplement protocols to jumpstart recovery by reducing cravings, from sugar to opioids (Charles Gant, MD/Greg Lewis PhD)
“Clinical Nutrition, A Functional Approach”- published by the nonprofit Institute for Functional Medicine (multiple authors, but usually listed as Jeffrey S. Bland, as he is first alphabetically)
“Nourishing Traditions”- cookbook with nutrition education throughout; traditional wisdom paired with science. (Sally Fallon)

www.WHFoods.com - nutrient density of different foods, food prep methods, recipes, articles, glycemic rating food list, foods highest in specific nutrient lists (nonprofit, doesn’t accept advertising).

Sustainable Food Center- sliding scale cooking, nutrition, and food gardening classes.
**All Sustainable Food Center Farmer’s Markets and Texas Farmer’s Market accept SNAP, WIC, and FMNP and double the dollar value on all three.(locations on their websites)

www.Fullscript.com (practitioners only; can create recommendations, ship directly to client; over 300 brands of practitioner grade supplements below retail)

Bulk herbs and herbal formulas: Local- The Herb Bar, Sacred Moon Herbs; Online: Mountain Rose, Frontier, Healing Spirits Herb Farm