



# NSIPM & Sano Wellness Center

## Sugar

### A Spoonful of Sugar...

When we think of addictions, we often picture the ravaging effects of methamphetamine use or the tragic stories of Hollywood stars whose lives have been cut short due to the inability to stop using their drug of choice. But how many of us consider the concept of addiction when it comes to the obesity and the diabetes epidemic? According to Dr. David Kessler, former commissioner of the FDA, there are more than 70 million food-addicted adults in the US alone. One of the primary components in food addiction is the craving for sugar, which releases beta-endorphins, the same "feel good" chemicals that are released with morphine and other opiates.

Sugar also causes a release of dopamine, the neurotransmitter that is most associated with the reward response. Dopamine stimulates the pleasure center of the brain and affects motivation, behavior and cognition. Normally, a surge of dopamine would trigger the release of GABA, our primary inhibitory neurotransmitter, that would counteract the dopamine and keep the system in balance, but studies have shown that in addition to triggering dopamine release, sugar inhibits the release of GABA, thus further enhancing the "high" of the dopamine. Patients with low dopamine levels are more likely to engage in activities that trigger a release of the neurotransmitter, including bingeing on sugar, alcohol or other substances.

Sugar cravings are among the most commonly reported symptoms on the Labrix symptom questionnaire, and dysglycemia and diabetes are among the most costly and detrimental health problems our population is faced with today. Diets alone are useful for balancing blood sugar, but treating the underlying chemical imbalances that may be driving patients' cravings will enhance and improve treatment outcomes for metabolic conditions. Help your patients help themselves; start with saliva/urinary neurotransmitter levels to assess their individual situation.

#### References:

Yamamoto T. *Brain Mechanisms of Sweetness and Palatability of Sugars*. Nutr Rev. 2003;61(5Pt2): S5-9.

Garcia-Caceres C, Tschoep MH. *The Emerging Neurobiology of Calorie Addiction*. Elife. 2014 Jan 7;3(0).

Peng XQ, Li X, Gilbert JG et al. *Gamma-vinyl GABA inhibits cocaine-triggered reinstatement of drug-seeking behavior by rats in a non-dopaminergic mechanism*. Drug Alcohol Depend. 2008 Oct 1;97(3):216-5.