

# Offering a Putative “Dopamine Homeostatic” Solution to Overcome the Perils of Reward Deficiency Syndrome (RDS) Epidemic: Emergence of “Precision Behavioral Management (PBM)”

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## Editorial

In the midst, of the COVID 19 pandemic, there is also an addiction crisis worldwide [1]. The devastation and deaths due to drug overdose, while highest in the United States is indeed a global issue requiring “out of the box” thinking [2]. The use of opioids to treat the same problem with powerful opioids seems inane and locks people in unwanted addiction [3]. Our group has been cognizant that one primary benefit is to reduce harm without addressing the root cause [4]. An additional approach is to utilize the narcotic antagonist (e.g. naltrexone) to induce “*psychological extinction*” via blocking D2 receptors [5]. The latter approach seems to be more acceptable, but compliance is a major issue [6]. The approved drug acamprosate, a NMDA receptor antagonist and a positive allosteric modulator of GABAA receptors also disturbs dopaminergic signaling. Understanding the above premise and the further emerging acceptance of the umbrella term *Reward Deficiency Syndrome (RDS)* first coined by Blum in 1995, facilitates the common mechanism hypothesis for drug and non-addictive behaviors [7]. Understanding the common neuro modulating aspects of neurotransmission and its disruption via chronic exposure of drugs and behavioral addictions, requires a known Osteopathic approach involving “dopamine homeostasis [8].”

## Review of Evidence

Our “out of the box” novel approach requires the coupling of genetic risk polymorphic testing coupled with a safe and well researched complex KB220z customized to match the presence of resultant alleles and as such provide a precision nutraceutical known to have pro-dopamine regulatory pharmacological properties [9]. There is a plethora of high tier publications providing unequivocal evidence to establish a common neuro-mechanism between substance and non-substance addiction (alcohol, opioids and food etc.). In the 70s Blum’s laboratory developed an amino-acid based enkephalinase inhibitory Pro-Dopamine Regulator (PDR) having KB220 nutraceutical complex as the primary constituent ingredient base with now over 45 clinical studies [10]. The basis of this complex is that it mimics the **Brain Reward Cascade** [11] an established model of reward

processing. Most striking is the BOLD activation of KB220z across the brain reward circuit [12]. These include the nucleus accumbens, anterior cingulate gyrus, anterior thalamic nuclei, hippocampus, prelimbic and infralimbic loci. The evidence for genetic vulnerability as an important antecedent to this unwanted behavior may be a determinant factor which must be identified early in life. Based on a rather moderate published literature the role of reward gene polymorphisms set -up individuals with an increased risk for all subtypes of RDS behaviors including anhedonia [13]. With this mindset, our laboratory has developed the novel patented Genetic Addiction Risk Score (GARS) test to help identify one’s risk for these addictive-like behaviors. Specifically, published studies illustrate the coupling of GARS with KB220z variants utilizing a semi-customized precision PDR matched to one’s GARS [14]. This system biological approach provides an increased efficacy in terms of treating RDS.

## Conclusion

It is generally accepted that balancing the brain reward circuit or achievement of “dopamine homeostasis” is a laudable goal, instead of blocking natural dopamine or administering a powerful opioid to overcome opioid addiction [15]. We are encouraging both the neuroscience and clinical science community to potentially embrace this disruptive technology with a futuristic view of addressing the notion of what constitutes “standard of care” in the face of our current opioid/psychostimulant/alcohol and food addiction pandemic [16, 17]. While more research is required, let us at least initiate acceptable guidelines that include the understanding of RDS as an umbrella terminology for all addictive behaviors. Understanding the neurogenetics as pointed out the scientific community utilizing a systems biological approach (**Precision Behavioral Management**) as outlined herein seems most prudent and represents a step forward in redeeming joy to the multi-billions afflicted globally [18-22].

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