

Clinical Neurogenetics of Syndrome Z and Scientific Evidence-Based Clinical Evaluation

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Mini Review

Clinical Neuro genetics of human behavior is extremely close to animal studies and functional neuroimaging. But there is a difficulty in clinical integration, combined with the increase in repetitive scientific studies, especially in cases of addiction and childhood disorders [1-34].

In the middle of 2023, the human brain has never had specific care attention, at each stage of intrauterine neurodevelopment until the end close to 25 years of age. What is common to all human beings, since the beginning of time, are behaviors dependent on neurobiology: enzymes, neurotransmitters and neurohormones and others. They show neurodevelopment of family affection or family synchrony by three years of age, and social skills are developed by five years of age [1-37].

The human brain that influences the response to fear and survival, through amygdala neuroadaptation mechanism, acquired by the absence of family synchrony, but with different intensity and content, which differentiates the responses at each moment, and individually. Neuro adaptation occurs in all humans and mammals during the first years of life and is altered by painful experiences that occur, and those that do not, causing unconscious suffering due to dopaminergic deficit, in which the human brain expected to experience, role in the family system, similar to mammalian brains, with neurobiological psychodynamics of survival instinct [2-44].

During this period, there are perennial changes, or lasting changes in brain structure and function, due to epigenetic changes (changes in DNA structure and chromatin function) and, consequently, affect the susceptibility of minimal, moderate or severe dysfunctions, which is the role of the physician.

Differentiate between disease, disorder or dysfunction without mental repercussions [3-45].

The world novelty of Syndrome (Sd) Z objectively described in September 2022, presents central dysfunction of familial asynchrony, which is dependent on biology (oxytoninergic neuronal systems) associated with the chronic hypodopaminergic neurological state. It can be observed clinically without invading the intimate forum, in any human being, transversally and retrospectively, as in all great geniuses, thinkers, drug addicts. Clinical understanding does not justify the production of new evidence-based scientific substantiation studies [4-50].

It presents a subtle clinic of automatic amygdala neurological states, fear adaptation, insecurity, camouflaged by characteristic family fights with secondary gains, or family schemas of Cognitive Behavioral Psychology of Schemas (Young), passed on to next generations by already identified genes [5-39].

Such family affective skills must be taught, as biological mechanisms are absent, training is necessary, noting that just guiding can make the situation worse, as it is like asking a chemical dependent to stop using it, or asking a blind person to see. Everyone will feel bad because of disability, and they won't be able to because they don't learn development [10-38].

They are currently absent, clinically perceptible by observing the reality produced unconsciously, by each person repeating what they received from their parents, easily identified by faulty acts. The truth is that it can be a mild dysfunction without repercussions, moderate without physical damage, but with loss of long periods of life, avoiding a family member, and serious as the cases of Family Alienation, and Chemical Dependence, where

the sciences of Law, and public policies end up aggravating the disease, unconsciously, and lack of information [5-44].

In families with chemically dependent children, Syndrome Z is responsible for the inability to observe their own illnesses, because during an activated schema state, there is simultaneously a state of alexithymia (inability to observe oneself effectively) and anosognosia (inability to observe others effectively) and then unconsciously neglects her own children [50-63].

In the dialectic family neurobehavioral assessment (unconscious and conscious), we evidenced that Sd Z presents children with chronic hypodopaminergic states, a clinical picture similar to newborns with Attention Deficit Disorder (ADHD), who present a specific group of genes (cause a decrease in the dopaminergic production in the prefrontal region) and autistic spectrum, which presents another group of specific genes [22-52,53-55].

The hypodopaminergic genes (GWARS), identified by Blum et al, allied to the familial asynchrony genes, form a group of current Syndrome Z genes, which is a third diagnosis in the neuropediatric clinic, which, when associated, makes the diagnosis difficult [22,52-55]

Syndrome Z was described in 2017 by a Chilean group with a clinical case of similar neurobehavior, but focusing on Sleep Apnea in the metabolic syndrome (Syndrome X). In daily practice in the voluntary project of the Therapeutic Community Aurora Boreal-SP, without the objective of doing science, we describe Syndrome Z, and the Use of Pathological Substance (USP), using the clinical neurobehavioral and neurogenetic of Relapse, with reorganization of two clusters simultaneous clinical trials, of hypodopaminergic pathophysiology, and reorganized all Addiction Medicine. Where many patients Sd Z, cause the Metabolic Syndrome or Sd X, observed in our clinic of Vascular surgery, because they present the same common brain pathway of the reward system, chronic hypodopaminergic state and toxic family scheme [8-17,22-48,50-55].

The USP clinic presents a common clinical picture of neuroadaptation, and common in the presence of specific genes, and relapse is one of them, with an evident clinical picture of behavior change, of lack of motivation for treatment, rich in unconscious signs and symptoms, loss of sense of self-observation and care, due to the production of epigenetic molecules. Relapse is a neurogenetic process reactivated by poor mental quality, or it can be cyclical every three months, due to lasting molecules, so abstinence, self-observation with psychoeducation, to identify the state itself is necessary [11].

Many hypodopaminergic elderly people can anticipate a picture of Senile Dementia, and even Alzheimer's subtypes, but there is no curiosity in exploring without proof, or announcement of big names, for fear of change, which is inevitable, since natural and fundamental human rights are being harmed by the disease unconsciously. Human biological evolution is acquiring fluid intelligence, self-observation, and again with love. Necessary to treat family members, children, and the next human generation [53-66].

Objective

In this mini-review with clinical evaluation in medical practice, it aims to raise awareness of Syndrome Z, an unconscious neurological family disease, and to help in the clinical genetic grouping, with neuro-epigenetic evidence that interferes with the free will of the child, the family and secondary diseases to

Syndrome Z. We selected 64 articles in Pubmed from many clinical articles and review of all 177 articles of simultanagnosia present in the same digital library, which presented in our medical evaluation, etiopathogenic clinical reality.

Discussion

The Covid-19 epidemic, the widespread fear of a frank epidemic, but also the increase in the worsening of family relationships, which is rarely addressed in the family relationship clinic, it was possible to systematically observe, together with clinical practice, a clinical interpretation opposite of Evidence-Based Medicine. Currently science evaluates only the correlation, which needs to have the agreement of observations and ideas (Stigler 1986), the null hypothesis and the hypothesis, it is not always evident, as the methodologies of clinical study, when it involves significant genetics, can be disastrous in terms of greater the number of participants. If biostatistics is always linear logic, which often nullifies clinical reasoning, what is happening happens, clinical skill is limited. But nothing is lost, the Learning tree is added (Platt, 1964) [67].

Currently we observe an addiction to reading just the conclusion of an article, in which the name of a big Brand, company, Laboratory, or simply being published, will come to be an absolute truth. The mercantilist bureaucracy annulled True Medicine.

A simple check is the ability to notice more than three or four features in your body, or an external object, in a single second. This inability has been studied as simultanagnosia, which clinically, proven by neuroscience, "losing" simultanagnosia is another result of the Treatment of Sd Z. [59-64] training the effective self-observation of our emotions. If we feel something or bad emotion during the service, we must review what is the problem that are similar between the therapist and the patient. As with all clinical training, so should emotional intelligence education for children and families [31-64].

The fluid intelligence that is acquired by the treatment of Sd Z, by the acquisition of new dopaminergic neurons stimulating the right cerebral hemisphere, activated when the automatic neuroadaptations are deactivated, and are moments of generation of the insight [64-66].

If verbal discourse or silence is not equivalent to behavior and reality, morals and ethics, the discourse can denounce the diagnosis, the intimate desire (true) of the brain's desire for neuroadaptation; of the pathological desire for resensitization of dopaminergic triggering, of a craving, or impulse. Subjectivity, character and intimacy are for the next step in the neuropsychic evaluation. The personal history, intimacy of each human being, is added to this psychic and behavioral functioning [11-64].

Pathological or illusory lying is clinically observed when there is an alteration in the sense of self-care by molecules of epigenetic origin, or when it is a neuroadaptation of fear, or if it is malicious or objective. For a person who is not in the area everything becomes the same thing, and if a specialist manages to clinically differentiate a relapse, a Z syndrome, a pathological neurological state, then Dialectic Medicine is born [29-45].

Burnout Syndrome is the complication of the Workaholic. Workaholic is secondary to Sd Z, verbally defended by the need for work. The same clinical state has had several names, such as Freudian hysteria, psychosomatic illness, stress crisis, unsuccessful bariatric surgery, marital fight similar to childhood trauma, Nobel Syndrome or "nobelitis" [65-66].

Clinically defined psychosis in the presence of delusions and hallucinations that may be secondary to intoxication of licit or illicit psychoactive medications, or dysfunction of dopaminergic receptors, mainly in the presence of specific genes, which bring about changes in brain processing in the increase of dopamine, with persecutory ideas, of grandeur, or magical thoughts, which are irrational [11-43]. The illusion is the Sd Z disease, due to parietotemporal processing deficit and some studies show occipital atrophy, frontal atrophy, with, neurological blindness and/or simultanagnosia [59-66].

The clustering of disease alleles secondary to Syndrome Z literally organizes the other mental comorbidities, aiding the goals of the Research Domain and Criteria (RDoC) and the Hierarchical Taxonomy of Psychopathology (HiTOP) represent large dimensional frameworks that study methods of accelerating progress, in the way psychopathology is studied, classified and treated. Syndrome Z is a true clinical Stakehold Z that interfaces with other areas of Medicine, Law, Pedagogy, Religion, we classify it as "Stakehold Z Brazil" or Dialectical Medicine [51-55].

Conclusion

The Sd Z features the same long-term changes in brain volume, microstructure, and connectivity, especially in the amygdala and hippocampal regions of childhood, caused by familial asynchrony or childhood emotional trauma, acquired in the window of childhood neurodevelopment, such as polymorphisms in genes of brain-derived neurotrophic factors, catechol-O-methyltransferase, genetic pathways related to glutamate, and monoaminergic signaling. Furthermore, there are several neuroendocrine dysfunctions, and clinically neglected chronic hypodopaminergic states, which can generate children with genius, instead of blaming them and classifying them as Generation Z. The same volumetric loss occurs in adults, mainly in the frontal lobe. It keeps worsening gene mutations, and passing on for generations, that in the near future, it will be more difficult to treat family relationships, and the human generation is literally doomed [30-60].

These are the same changes as chemically dependent adults. How many diabetic patients are not secondary to Syndrome Z? How many obese children and adults are not Syndrome Z? How many Sd X are not extensions of Sd Z, being "Sd ZX"? How many families across the globe will wait for the science bureaucracy to have the right to be evaluated, and informed of the neuroscientific family asynchrony?

Professional responsibility in the face of a disorder does not have the legal effect of right and duty to a doctor and patient, but a disease supported by the WHO, which presents all the etiopathogenesis of hypodopaminergic initial chollary, such as Sd Z, Sd X, USP, organizes prevention from early childhood with emotional intelligence teaching, family schema therapy, dialectical behavior therapy and relapse psychoeducation. Family treatment and associated psychiatric illness are mandatory, sleep reorganization drugs, insomnia, reorganization of basic neurotransmitters, mainly dopamine in D2 and D3 receptors in the prefrontal region, and avoiding situations of relapse, are new possibilities, such as the hypothesis of dopamine replacement, before harm reduction [30-64].

Conflict of interest

I declare that my conflict of interest is to teach, to raise awareness of the delay in human and scientific evolution, due

to dependence on bureaucracy and control. I have no political, religious, economic interest.

References

- Meyer PJ, King CP, Ferrario CR. Motivational Processes Underlying Substance Abuse Disorder. *Curr Top Behav Neurosci.* 2016;27:473-506. doi: 10.1007/7854_2015_391. PMID: 26475159; PMCID: PMC4851611.
- HAHN, Joel D. et al. Current Views of Hypothalamic Contributions to the Control of Motivated Behaviors. *Frontiers in systems neuroscience*, v. 13, 2019
- Elvir, L., Duclot, F., Wang, Z., & Kabbaj, M. (2019). Epigenetic regulation of behaviors driven by histone deacetylase inhibitors. *Neuroscience and Biobehavioral Reviews*, 105, 305-317. <https://doi.org/10.1016/j.neubiorev.2017.09.030>
- He, Zhengming et al. "The aversion function of limbic dopaminergic neurons and their roles in functional neurological disorders". *Frontiers in cell and developmental biology* vol. 9 713762. September 20, 2021, doi:10.3389/fcell.2021.713762
- Goodman I, Peterson-Badali M, Henderson J. Understanding motivation for substance use treatment: the role of social pressure during the transition to adulthood. *Addicted Behavior.* 2011 Jun;36(6):660-668. doi: 10.1016/j.addbeh.2011.01.011. Epub 2011 Jan 20. PMID: 21295918
- Puckett, Rosemary E, and Farah D Lubin. "Epigenetic mechanisms in experience-driven memory formation and behavior." *Epigenomics* vol. 3.5 (2011): 649-64. doi:10.2217/epi.11.86
- Sayegh CS, Huey SJ, Zara EJ, Jhaveri K. Follow-up treatment effects of contingency management and motivational interviewing on substance use: A meta-analysis. *Psychol Addict Behavior.* 2017 Jun;31(4):403-414. doi: 10.1037/adb0000277. Epub 2017 Apr 24. PMID: 28437121.
- Alcaro A, Panksepp J. The seeking mind: primitive neuro-affective substrates for appetitive incentive states and their pathological dynamics in addictions and depression. *Neurosci Biobehav Rev.* 2011 Oct;35(9):1805-20. doi: 10.1016/j.neubiorev.2011.03.002. Epub 2011 Mar 15. 21396397.
- Meyer PJ, King CP, Ferrario CR. Motivational Processes Underlying Substance Abuse Disorder. *Curr Top Behav Neurosci.* 2016;27:473-506. doi: 10.1007/7854_2015_391. PMID: 26475159; PMCID: PMC4851611.
- Szupszynski KPDR, Oliveira MS. Psychology: The Transtheoretical Model in the Treatment of Chemical Dependence Psychology: Theory and Practice, vol. 10, no. 1, 2008, pp. 162-173 Universidade Presbiteriana Mackenzie São Paulo, Brazil
- Furlanetto Jr ML, et al. Treatment and the Current Concept of Relapse, in Substance Use Disorder. *IJCIMR-V1-1035* <https://dx.doi.org/10.55920/IJCIMR.2022.01.001035>
- Anders, Quézia Silva et al. "BDNF mRNA expression in leukocytes and frontal cortex function in substance use disorder". *Frontiers in psychiatry* vol. 11 469. May 19, 2020, doi:10.3389/fpsyt.2020.00469
- Becker, Jill B and Elena Chartoff. "Sex differences in neural mechanisms mediating reward and addiction." *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology* vol. 44.1 (2019): 166-183. doi:10.1038/s41386-018-0125-6
- Ferguson, Michael A., et al. "Reward, salience, and attentional networks are activated by religious experience in devout Mormons." *Social neuroscience* 13.1 (2018): 104-116.

15. Amini-Rarani M, Khedmati Morasae E, Pashaei T, Moeeni M. Redemption of the situation: a qualitative study of the reasons behind treatment decisions among Iranian male opioid users. *Past Substance Abuse Treatment Policy*. 2020;15(1):57. Published August 8, 2020. doi:10.1186/s13011-020-00299-x
16. Mousali, Amir Abbas et al. "Factors affecting substance use relapse among Iranian addicts". *Journal of education and health promotion* vol. 10 129. May 20th. 2021, doi: 10.4103 / jehp. jehp_984_20
17. Baker TB, Piper ME, McCarthy DE, Majeskie MR, Fiore MC. Addiction motivation reformulated: an affective processing model of negative reinforcement. *Psychol Rev*. 2004 Jan;111(1):33-51. doi: 10.1037/0033-295X.111.1.33. PMID: 14756584.
18. Sartor, Gregory C. "Epigenetic pharmacotherapy for substance use disorder." *Biochemical pharmacology* vol. 168 (2019): 269-274. doi:10.1016/j.bcp.2019.07.012
19. Martins de Carvalho, Luana et al. "Epigenetic mechanisms underlying stress-induced depression". *International review of neurobiology* vol. 156 (2021): 87-126. doi:10.1016/bs.irn.2020.08.001
20. Werner, Craig T et al. "Epigenetic Mechanisms in Drug Relapse." *Biological psychiatry* vol. 89.4 (2021): 331-338. doi:10.1016/j.biopsych.2020.08.005
21. Grummitt, Lucinda et al. "Intervention targets to prevent substance use in youth exposed to childhood adversity: a systematic review". *PloS one* vol. 16.6 and 0252815. June 7, 2021, doi:10.1371/journal.pone.0252815
22. Fuchshuber, Jürgen and Human Friedrich Unterrainer. "Childhood Trauma, Personality, and Substance Use Disorder: The Development of a Neuropsychanalytic Model of Addiction". *Frontiers in psychiatry* vol. 11 531. June 9, 2020, doi:10.3389/fpsy.2020.00531
23. Tambling, RR, Russell, B., & D'Aniello, C. (2021). Where is the Family in Substance Use Treatment for Young Adults? The Case for Systemic Family Therapy for Young Adults with Substance Use Disorders. *International Journal of Mental Health and Addiction*, 1–12. Early online publication. <https://doi.org/10.1007/s11469-020-00471-1>
24. Rodrigues ACT. Karl Jaspers and the phenomenological approach to psychopathology. *Revista Latino Americana de Pa.sicopatologiaFundamental*.year VIII.n4.December.2005
25. Predicting longitudinal service use for individuals with substance use disorders: A latent profile analysis - *Journal of Substance Abuse Treatment*
26. Hong, P., Li, S., Yu, Y., & Deng, Q. (2021). How to Increase Motivation for Drug Detoxification: Consciousness Guidance and Behavioral Restraint from Intergenerational Family Ethics. *International Journal of Environmental Research and Public Health*, 19(1), 366. <https://doi.org/10.3390/ijerph19010366>
27. National Institute on Drug Abuse Principles of Drug Addiction Treatment: A Research-Based Guide. [(accessed June 23, 2021)]; Available online: <https://www.drugabuse.gov/download/675/principles-drug-addiction-treatment-research-based-guide-third-edition.pdf?v=74dad603627bab89b93193918330c223> .
28. US Department of Health and Human Services Treatment Improvement Protocol (Tip) 39: Treatment of Substance Use Disorders and Family Therapy. [(accessed July 18, 2021)]; Available online: https://store.samhsa.gov/sites/default/files/SAMHSA_Digital_Download/PEP20-02-02-012-508%20PDF.pdf .
29. Ali, Bina et al. "Stress tolerance interacts with circumstances, motivation, and readiness to predict withholding substance abuse treatment." *Addictive Behaviors* vol. 73 (2017): 99-104. doi:10.1016/j.addbeh.2017.04.016
30. Görgülü, Tuğba. "How effective are the works of psychosocial groups in improving treatment adherence and self-efficacy? An experimental study with substance users". *Noro psikiyatri arsivi* vol. 57.3 241-247. August 17, 2020, doi:10.29399/npa.24810
31. Cornelius, T et al. "Treatment motivation among caregivers and adolescents with substance use disorders". *Journal of Substance Abuse Treatment* Vol. 75 (2017): 10-16. doi:10.1016/j.jsat.2017.01.003
32. Votaw, Victoria R and Katie Witkiewitz. "Motives for substance use in daily life: a systematic review of studies using momentary ecological assessment". *Clinical Psychological Science: A Journal of the Association for Psychological Science* vol. 9.4 (2021): 535-562. doi:10.1177/2167702620978614
33. Wu, Qiong et al. "Understanding the role of emotion-oriented coping in women's motivation for change." *Journal of Substance Abuse Treatment* Vol. 86 (2018): 1-8. doi:10.1016/j.jsat.2017.12.006
34. Franco P, Tesio V, Bertholet J, Gasnier A, Gonzalez Del Portillo E, Spalek M, Bibault JE, Borst G, Van Elmp W, Thorwarth D, Mullaney L, Røe Redalen K, Dubois L, Chargari C, Perryck S, Heukelom J, Petit S, Lybeer M The role of alexithymia and empathy in the quality of professional life of radiation therapists. *Tech Innov Patient Support Radiat Oncol*. 2020 Aug 17;3:29-36. doi: 10.1016/j.tipsro.2020.07.001. PMID: 32904144; PMCID: PMC7451808.
35. Turgeon J, Milot T, St-Laurent D, Dubois-Comtois K. Hostile-helpless states of mind: A scoping review of risk factors, correlates, and consequences. *Infant Ment Health J*. 2022 Jul;43(4):597-623. doi: 10.1002/imhj.21994. Epub 2022 May 31. PMID: 35638585; PMCID: PMC9542117.
36. Miguel PM, Pereira LO, Silveira PP, Meaney MJ. Early environmental influences on the development of children's brain structure and function. *Dev Med Child Neurol*. 2019 Oct;61(10):1127-1133. doi: 10.1111/dmnc.14182. Epub 2019 February 11th. PMID: 30740660.
37. Zhang L, Li Z, Chen J, Li X, Zhang J, Belsky J. The BDNF Val66Met Polymorphism Interacts with Maternal Parenting Influencing Adolescent Depressive Symptoms: Evidence from the Differential Susceptibility Model. *J Young Adolescent*. 2016 Mar;45(3):471-83. doi: 10.1007/s10964-015-0378-x. Epub 2015 October 28th. PMID: 26510938.
38. Ozbay F, Fitterling H, Charney D, Southwick S. Social support and stress resilience across the lifespan: a neurobiological framework. *Representative of Psychiatry Curr*. 2008 Aug;10(4):304-10. doi: 10.1007/s11920-008-0049-7. PMID: 18627668.
39. Tian L, Ma L, Kaarela T, Li Z. Neuroimmune crosstalk in the central nervous system and its significance for neurological diseases. *J Neuroinflammation*. 2012 Jul 2;9:155. doi: 10.1186/1742-2094-9-155. PMID: 22747919; PMCID: PMC3410819.
40. Garfinkel SN, Seth AK, Barrett AB, Suzuki K, Critchley HD. Knowing Your Own Heart: Distinguishing Interoceptive Precision from Interoceptive Awareness. *Psychological Biography*. 2015 Jan;104:65-74. doi: 10.1016/j.biopsycho.2014.11.004. Epub 2014 November 20th. PMID: 25451381.
41. Harakawa S, Nedachi T, Suzuki H. Extremely low frequency electric field suppresses not only induced stress response but also stress-related tissue damage in mice. *Science Representative*. December 7, 2020; 10(1):20930. doi: 10.1038/s41598-020-76106-1. PMID: 33288776;

42. Mitchell, I.J., & Beech, A.R. (2011). Towards a neurobiological model of offending. *Clinical Psychology Review*, 31(5), 872–882. doi:10.1016/j.cpr.2011.04.001
43. PMID: PMC7721718.
44. Seitz, Benjamin M et al. "Higher Order Conditioning and Dopamine: Charting a Way Forward." *Frontiers in behavioral neuroscience* vol. 15 745388. October 4, 2021, doi:10.3389/fnbeh.2021.745388
45. Donges, U.-S., & Suslow, T. (2017). Alexithymia and automatic processing of emotional stimuli: a systematic review. *Reviews in the Neurosciences*,28(3).doi:10.1515/revneuro-2016-0049
46. Behrendt PR. A neuroanatomical model of passivity phenomena. *Cognitive Consciousness*. 2004 Sep;13(3):579-609. doi: 10.1016/j.concog.2004.06.004. PMID: 15336249.
47. Friedman, Naomi P and Trevor W Robbins. "The role of the prefrontal cortex in cognitive control and executive function." *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology* vol. 47.1 (2022): 72-89. doi:10.1038/s41386-021-01132-0
48. Patrícia M Miguel, Lenir O Pereira, Patrícia P Silveira, Michael J Meaney. Early environmental influences on the development of children's brain structure and function. *Developed Medicine & Child Neurology*. Wiley. February 11, 2019. [https:// doi.org/10.1111/dmcn.14182](https://doi.org/10.1111/dmcn.14182)
49. Ostroff LE, Manzur MK, Cain CK, Ledoux JE. Synapses lacking astrocyte appear in the amygdala during consolidation of Pavlovian threat conditioning. *J Comp Neurol*. 2014 Jun 15;522(9):2152-63. doi: 10.1002/cne.23523. PMID: 24338694; PMID: PMC3997591.
50. Sanacora G, Yan Z, Popoli M. The stressed synapse 2.0: pathophysiological mechanisms in stress-related neuropsychiatric disorders. *Nat Rev Neurosci*. 2022 Feb;23(2):86-103. doi: 10.1038/s41583-021-00540-x. Epub 2021 Dec 10. PMID: 34893785.
51. Carneiro G, Fontes FH , Togeiro SMGP. Metabolic consequences of untreated obstructive sleep apnea syndrome. *J Bras Pneumol*. 2010;6(supl.2):S1-S61
52. Michelini G, Palumbo IM, DeYoung CG, Latzman RD, Kotov R. Linking RDoC and HiTOP: A new interface for advancing psychiatric nosology and neuroscience. *Clin Psychol Rev*. 2021 Jun;86:102025. doi: 10.1016/j.cpr.2021.102025. Epub 2021 March 24th. PMID: 33798996; PMID: PMC8165014.
53. Blum MSGK, et al.Molecular role of dopamine in anhedonia linked to reward deficiency syndrome (RDS) and anti-reward systems.*Frontiers In Bioscience, Scholar*, 10, 309-325, March 1, 2018 et al.
54. Blum MSGK, et al. Genetic addiction risk score (GARS) TM, a predictor of vulnerability to opioid dependence. *Frontiers In Bioscience, Elite*, 10, 175-196, January 1,2018]
55. Gene-Jack Wang et al. Cannabis Addiction and the Brain: a Review Received: 18 January 2018 / Accepted: 7 March 2018 / Published online: 19 March 2018 # The Author(s) 2018 *Journal of Neuroimmune Pharmacology* (2018) 13:438–452 <https://doi.org/10.1007/s11481-018-9782-9>
56. González-Villalobos CG, Guevara-Gutiérrez E, Gutiérrez-Fajardo P, Tlacuilo-Parra JA, Sánchez-Castellanos ME, García-Vargas A, Barba-Gómez JF. Metabolic syndrome and subclinical carotid atherosclerosis in Mexican children and adolescents with acanthosis nigricans. *Gac Med Mex*. 2018;154(4):462-467. doi: 10.24875/GMM.18003699. PMID: 30250327.
57. Antunes M, Biala G. The new object recognition memory: neurobiology, test procedure and its modifications. *Cogn Process*. 2012 May;13(2):93-110. doi: 10.1007/s10339-011-0430-z. Epub 2011 December 9th. PMID: 22160349; PMID: PMC3332351.
58. Holmes E, Johnsrude IS. Speech-evoked brain activity is more robust to competing speech when it is spoken by someone familiar. *Neuroimage*. 2021 Aug 15;237:118107. doi: 10.1016/j.neuroimage.2021.118107. Epub 2021 Apr 30. PMID: 33933598.
59. Mazza V. Simultanagnosia and individuation of objects. *Cogn Neuropsychol*. 2017 Oct-Dec;34(7-8):430-439. doi: 10.1080/02643294.2017.1331212. Epub 2017 June 6th. PMID: 28632043.
60. Tagliabue CF, Lombardi L, Mazza V. Individuation of object parts in aging. *Atten Percept Psychophys*. 2020 Jul;82(5):2703-2713. doi: 10.3758/s13414-020-01996-2. PMID: 32133599.
61. Poncet M, Caramazza A, Mazza V. The individuation of objects and parts of objects depends on the same neuronal mechanism. *Sci Rep*. 2016 Dec 7;6:38434. doi:10.1038/srep38434. PMID: 27924910; PMID: PMC5141436.
62. Dalrymple KA, Barton JJ, Kingstone A. A cool world: simultanagnosia as a spatial restriction of attention. *Front Hum Neurosci*. 2013 Apr 17;7:145. doi: 10.3389/fnhum.2013.00145. PMID: 23616758; PMID: PMC3627977.
63. Dalrymple KA, Barton JJ, Kingstone A. A cool world: simultanagnosia as a spatial restriction of attention. *Front Hum Neurosci*. 2013 Apr 17;7:145. doi: 10.3389/fnhum.2013.00145. PMID: 23616758; PMID: PMC3627977.
64. Cui, Y., Liu, Y., Yang, C. et al. Cerebral structural and functional anomalies associated with simultangnosia in patients with posterior cortical atrophy. *Brain Image and Behavior*16, 1148–1162 (2022). <https://doi.org/10.1007/s11682-021-00568-8>
65. Rakei A, Tan J, Bhattacharya J. Flow in contemporary musicians: Individual differences in flow proneness, anxiety, and emotional intelligence. *PLoS One*. 2022 Mar 25;17(3):e0265936. doi: 10.1371/journal.pone.0265936. PMID: 35333890; PMID: PMC8956189.
66. Scabia A. Workaholism: An Addiction or a Quality to be Appreciated. *J.Addict. Res. The R*. 2014;5 doi: 10.4172/2155-6105.1000187
67. Cossin T, Thaon I, Lalanne L. Workaholism Prevention in Occupational Medicine: A Systematic Review. *Int J Environ Res Public Health*. 2021 Jul 2;18(13):7109. doi: 10.3390/ijerph18137109. PMID: 34281048; PMID: PMC8297306.
68. Martins RP & Coutinho FA, 2004. The Phantom Theory. In: Coelho AS, Loyola RD & Souza MBG (Ed.). *Theoretical Ecology: challenges for the improvement of Ecology in Brazil*. Belo Horizonte: The Fighter. P. 15-26.