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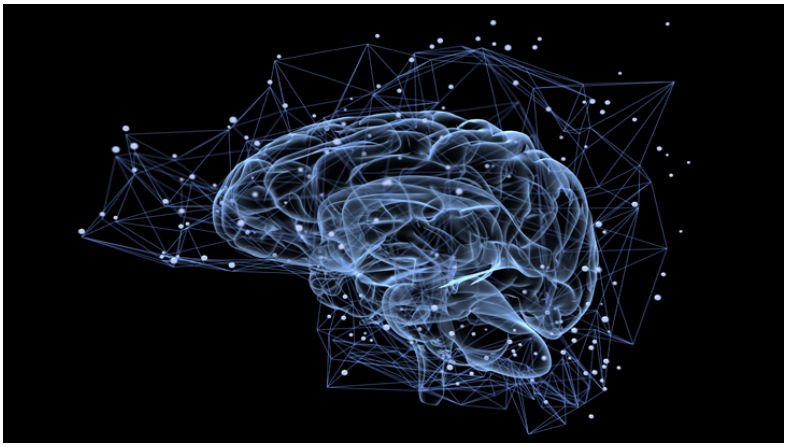
Decision-making dysfunction in substance addictions, gambling disorder and obesity



Substance abuse, compulsive gambling and obesity show to have a very similar cognitive profile when it comes to the decision making process. This process drives individuals to choose determinate actions, over others, after deliberating all possible consequences. The results of the study allow to further the knowledge of the underlying neurological mechanisms in patients reciving treatments.

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The currently available neuropsychological models show that addiction-associated conducts (physical and behavioral) result from an imbalance between three primary neuronal systems: processes that promote the execution of impulsive conducts, interceptive processes that regulate uncertain risk-compensation situations, and the system that regulates inhibitory control and decision making. This last mechanism, decision making, implies particular cognitive process that drive subjects to choose to carry out a concrete action after evaluating the possible consequences, and has been revealed as a key component for the development and maintenance of substance use-abuse and in behavioral addictions (such as gambling).

Moreover, obesity has become a global health problem in developed countries. Its clinical profile

presents evident similitudes with addictive behaviors. For example, obese individuals usually choose to eat more than their organism needs, although they know the negative consequences this represents to their health in general, and report that their attempts to control their eating habits are unsuccessful. On a neuropsychological level, available studies suggest that obese patients show alterations in the inhibitory system, in emotional regulation processes and in executive functions related to decision-making (they usually choose immediate and/or short term compensation behaviors despite knowing their adverse consequences at the long term).

A recent study, -that took place at the Psychiatric Unit of the Bellvitge Hospital under the clinical direction of doctors Susana Jiménez-Murcia and Fernando Fernández-Aranda and the statistical direction of Dr. Roser Granero (Department of Psychobiology and Methodology Department, UAB)-, faced the objective of evaluating decision-making processes in three groups of subjects with different clinical diagnoses: substance use-abuse (106 patients), gambling disorder (178 patients) and obesity (113 patients). The study also included a control group (194 individuals with no psychiatric diagnosis). IGT computerised tests ("Iowa Gambling-Task"), which evaluate individual competences in making appropriate decisions on ambiguous risky situations that include reward or punishment reinforcements, were administrated as a neuropsychological measure.

The main results of the study showed that the cognitive profile in the decision-making process was very similar in the three clinical groups (substance use, gambling disorder and obesity) and clearly more dysfunctional compared with the control group registered profile (with no psychopathological disorders). Although the differences between clinical groups were not relevant, substance use patients showed an earlier and slightly functional learning pattern. Obese patients revealed the highest learning latency and gambling disorder patients the most dysfunctional global pattern. No inter-group differences attributable to gender were found, or to other socio-demographic variables.

The results of this research allow us to further the knowledge of the underlying neurological mechanismsin patients receiving treatments for substance addiction, gambling disorder and obesity.

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References

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