

# A study relates neural damage provoked by ecstasy with ambient temperature at which it is consumed

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There exists a direct relationship between the consumption of MDMA, or Ecstasy, at a high ambient temperature and an increase in the neural damage which this drug provokes. This was the conclusion of the research carried out by Beatriz Goñi at the School of Pharmacy of the University of Navarra.

These results form part of her doctoral dissertation, entitled "A Study of the Neurotoxicity Mechanism of 3,4-methylenedioxy-N-methylamphetamine (MDMA or 'Ecstasy') after its Administration in Rats: New Responses to Old Questions." By means of this study, the researcher was able to relate for the first time the body temperature of the user with a higher metabolism of this substance. There are two factors which, when they co-occur can produce malignant hyperthermia, a disorder which can sometimes be fatal.

In order to come to this conclusion, the Pamplonan pharmaceutical specialist administered the drug to rats at ambient temperatures of 15, 21 and 30 degrees centigrade. After performing the pertinent analyses, she demonstrated that metabolism of Ecstasy is accelerated by higher ambient temperatures at the time of administration. In addition, higher ambient temperatures also increase, in the same proportion, the neurochemical deficit that affects the brains of the users of this drug.

## Higher Risk in Closed Establishments

According to Beatriz Goñi, the author of the study undertaken at the University of Navarra, the discoveries of this research project acquire more relevance precisely because Ecstasy is typically taken in closed environments, with lots of people and poor ventilation, due to which factors the

temperature tends to be quite high.

In addition, she notes that the neural damage provoked by this substance, and which originally was only observed in rats, has already been demonstrated in humans, who appear to suffer severe damage to the serotoninergetic neurons, which are involved in processes as basic as sleep, appetite and mood regulation.

Finally, the pharmaceutical specialist noted that the damage caused by the consumption of MDMA is dependent upon its being metabolized after to its ingestion, since if it were administered directly to the brain, neuronal damage would not occur.

Source: Elhuyar Fundazioa

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