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Saliva analysis can reveal decision-making skills



A study conducted by researchers at the University of Granada Group of Neuropsychology and Clinical Psychoneuroimmunology has demonstrated that cortisol levels in saliva are associated with a person's ability to make good decisions in stressful situations.

To perform this study, the researchers exposed the participants (all women) to a stressful situation by using sophisticated virtual reality technology. The study revealed that people who are not skilled in decision-making have lower baseline cortisol levels in saliva as compared to skilled people.

Cortisol—known as the stress hormone— is a steroid hormone segregated at the adrenal cortex and stimulated by the adrenocorticotrophic (ACTH) hormone, which is produced at the pituitary gland. Cortisol is involved in a number of body systems and plays a relevant role in the muscle-skeletal system, blood circulation, the immune system, the metabolism of fats, carbohydrates and proteins and the nervous system.

Recent studies have demonstrated that stress can influence decision making in people. This cognitive component might be considered one of the human resources for coping with stress.

A Study on 40 Healthy Women

To verify that decision-making skills might modulate human response to psychosocial stress, the University of Granada researchers evaluated the decision-making process in 40 healthy women. Participants were asked to perform the so-called *Iowa Gambling Task*. Next, participants were presented a stressful situation in a virtual environment consisting on delivering a speech in front of a virtual audience. Researchers evaluated the participants' response to stress by examining the activation of the hypothalamic pituitary adrenal axis, and measuring cortisol levels in saliva at different points of the stressful situation.

Professors Isabel Peralta and Ana Santos state that this study *provides preliminary evidence on an existing relationship between decision-making ability –which may play a major role in coping with stress– and low cortisol levels in psychosocially stressful situations*. This means that the effects of psychological stress on the health people with lower cortisol levels might be milder.

The paper *Can decision-making skills affect responses to psychological stress in healthy women?* was recently published in the prestigious journal *Psychoneuroendocrinology*. The paper authors are Ana Santos Ruiz, María Carmen García Ríos, Juan Carlos Fernández Sánchez, Miguel Pérez García, Miguel Ángel Muñoz García and María Isabel Peralta Ramírez from the University of Granada Department of Personality, Evaluation and Psychological Treatment.

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