

When we test, do we stress?

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A new study shows that when we test older adults in a medical or research setting, it produces a stress response that reduces their memory.

Your mother had a doctor's appointment for a [memory](#) test. The results are conclusive: she presents with the first signs of Alzheimer type [dementia](#). Now, to get to her appointment, your mother, who is no longer used to driving in town, took her car, looked for a parking space for 15 minutes, got lost in a labyrinth of one-way streets, had never used those new electronic parking meters before and is convinced that the "machine" stole her credit card number. Out of breath, she walked 20 minutes looking for the doctor's office and finally arrived late for her appointment, even though at this advanced hour of the afternoon she usually has a [nap](#). Could all of these elements have influenced the results of her [memory test](#)?

A recent study carried out by Sonia Lupien's team at the Centre for Studies on Human Stress (CSHS) of the Louis-H. Lafontaine Hospital, in affiliation with Université de Montréal, demonstrates that the doctor's conclusions may well be somewhat hasty. The studies performed by this research group show that when faced with a stressful situation, memory, and especially among [older adults](#), can be affected in a very rapid manner.

"We know that when a situation is new, unpredictable, uncontrollable or threatening to the ego, it leads to the production of stress hormones," explains Shireen Sindi, lead author of the study and PhD candidate at the CSHS. These same hormones also have the capacity to reach the brain

and to generate acute memory disorders, especially in older adults, "We have shown that when older adults are assessed under stressful conditions, they produce stress hormones that reduce their memory," continues Ms Sindi.

Within the scope of this research project, the memory of older adults was tested in conditions similar to those in which their cognitive examinations in hospital or university settings usually take place: they had to go to an unfamiliar place that was not easily accessible and at times during the day that did not suit them. The results of Ms Sindi's study show that such conditions induce a [stress response](#) and reduce the performance of older adults on memory tests. Hence, it is possible that the conclusions of examinations carried out in a stressful context may resemble those reached in the presence of an underlying disorder, such as Alzheimer's. In fact, the results obtained are only due to the stress generated by medical settings. An interesting fact is that when these same examinations take place in conditions with which older adults are familiar, their memory performance is no different from that of young adults.

On the basis of these results, the CSHS team questioned over 150 older people, asking them to describe the situations they find stressful when they have to go to various medical environments. On March 29, during the scientific day "When we test, do we stress?", the CSHS researchers will reveal the results of this survey on stress induced in older people by medical settings and the testing environments. Moreover, renowned American and Canadian researchers will present their most recent findings on environmental factors that can affect mnemonic performance in older adults. This day will also present an opportunity for clinicians and doctors working closely with [older people](#) to share their ideas on the conditions that can induce [stress](#) in the clientele and on the way these conditions can be controlled.

Provided by University of Montreal

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