

EcoKitchen

a new assessment task of daily executive functioning in Huntington's Disease

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My presentation is going to be about a novel virtual reality task that we have created at our lab to assess the executive functioning of HD affected individuals – EcoKitchen

Impairments in executive functions are frequent in HD affected individuals, that often show a dysexecutive syndrome even in premanifest or early manifest disease stages. These impairments need to be properly acknowledge and assessed.

Executive functions have to do with the ability to formulate, plan and execute thoughts and actions, so we need this cognitive domain to be at its bests to properly function in everyday life.

In fact, the precise nature of the real-life executive deficits shown by HD affected individuals needs to be further understood and probably we will need new and more sensitive assessment tools, with higher ecological validity, to assess the impact of the dysexecutive syndrome on the patient's daily life.

So, we have put together a comprehensive study protocol, with different assessment tools, to try to address these issues.

We have four main components – a conventional neuropsychological test battery, a more ecological executive test battery, a self-report or subjective functional measure and a new measure, EcoKitchen, a non-immersive virtual reality task developed by our team.

Participants were assigned to one of three groups - controls, premanifest HD (HP), and early manifest HD (HD).

Our results showed that HD patients present several cognitive and functional deficits when compared to Controls and HP participants and this was signaled with all the tools we have used – TFC, conventional neuropsychological tests, BADS, IAFAI and EcoKitchen. On the other hand, premanifest individuals that show a

similar cognitive and functional profile to controls, as assessed by multiple tests, scales, or self-report measures, as TFC, conventional neuropsychological tests, BADS or IAFAI, only differ from control individuals in the EcoKitchen task.

In the light of these results, we can say that this protocol seems to be sensitive to early impairments in the Executive Functioning of HD affected individuals; seems to also contribute to a better understanding of HD phenotype and to a better identification and management of the patients' real-life problems; specifically Ecokitchen seems to have the potential to be used as an outcome measure to assess the efficacy of pharmacological and non-pharmacological interventions in disease onset and progression or even as a rehabilitation tool.