

# Times are changing: Assessment of Apathy using new technology Focus on the interest game

Philippe Robert<sup>1,2,3</sup>, Radia Zeghari<sup>1</sup>, Valeria Manera<sup>1,3</sup>

<sup>1</sup> CoBTeK - Cognition Behaviour Technology Research Unit, Université Côte d'Azur, Nice, France, <sup>2</sup> Memory center CHU - Nice, France

<sup>3</sup> Association IA, France



Apathy is a very common neuropsychiatric syndrome across brain disorders. In 2018 an international consensus group update the diagnostic criteria<sup>1,2</sup>. **Apathy is defined as a quantitative reduction of goal-directed activity in comparison to the patient's previous level of functioning** and affect at least two of the three clinical dimensions

- Behavior/Cognition
- Emotion
- Social interaction

Full diagnostic criteria link: [www.innovation-alzheimer.fr/assessment/](http://www.innovation-alzheimer.fr/assessment/)

The consensus group also indicated that there is evidence that apart from the currently used assessment methods for apathy (scales and indexes), **new information and communication technologies approaches could provide clinicians with valuable additional information** for detection and therefore more accurate diagnosis of apathy.

The objectives of this poster is to present result of the Interest Game developed in relation with the Apathy diagnostic.



## INTEREST GAME

17 questions for 17 interests<sup>3</sup>

Are you interested in eating well ?  
Are you interested in playing ?  
Are you interested in the family ?  
Are you interested in the Sea ?  
Are you interested in Love ?  
Do you like reading ?  
Is the Sport interesting ?  
Do relaxation and meditation interest you ?  
Are you interested in Dance ?  
Do you like singing, music ?  
Do you like Mountain ?  
Are you interested in Nature ?  
Are you interested in movies / TV ?  
Are you interested in social relations ?  
Are you interested in museums / Arts ?  
Are new technologies of you interest for you ?  
Is the self-image of interest to you ?



Scores  
Interest number / 17  
Image number / 102

## REFERENCES

- 1 Robert P, Lancot KL, Agueria-Ortiz L, et al. Is it time to revise the diagnostic criteria for apathy in brain disorders? The 2018 international consensus group. *European psychiatry : the journal of the Association of European Psychiatrists*. 2018;54:71-76.
- 2 Manera V, Fabre R, Stella F, et al. A survey on the prevalence of apathy in elderly people referred to specialized memory centers. *International journal of geriatric psychiatry*. 2019.
- 3 Leone E, Piano J, Deudon A, et al. What are you interested in? A survey on 601 nursing homes residents activities interests. *Advances in Aging research*. 2012;1(2):13 - 21.



[www.innovation-alzheimer.fr/assessment/](http://www.innovation-alzheimer.fr/assessment/)

Also on Apple & Android stores

## POPULATION

|                                  | CONTROL<br>n=21 |       | APATHY NO<br>n=41 |      | APATHY YES<br>n=33 |      | 3 groups<br>comparison |
|----------------------------------|-----------------|-------|-------------------|------|--------------------|------|------------------------|
|                                  | mean            | SD    | mean              | SD   | mean               | SD   | p-value <sup>a</sup>   |
| Age                              | 73,3            | 8,8   | 75,3              | 7,8  | 77,0               | 7,4  | 0,238                  |
| MMSE                             | 29,5            | 0,9   | 23,0              | 4,4  | 19,9               | 5,3  | <.001                  |
|                                  | n               | %     | n                 | %    | n                  | %    | p-value <sup>c</sup>   |
| Sex                              |                 |       |                   |      |                    |      | 0,044                  |
| Female                           | 17              | 81,0  | 32                | 78,0 | 18                 | 54,5 |                        |
| male                             | 4               | 19,0  | 9                 | 22,0 | 15                 | 45,5 |                        |
| Education level                  |                 |       |                   |      |                    |      | 0,179                  |
| none / primary                   | 7               | 33,3  | 6                 | 14,6 | 12                 | 37,5 |                        |
| Secondary                        | 7               | 33,3  | 21                | 51,2 | 13                 | 40,6 |                        |
| Superior                         | 7               | 33,3  | 14                | 34,1 | 7                  | 21,9 |                        |
| Diagnostic                       |                 |       |                   |      |                    |      | -                      |
| DSM5 minor cognitive disorders - | -               | -     | 31                | 75,6 | 11                 | 33,3 |                        |
| DSM5 Major cognitive disorders - | -               | -     | 10                | 24,4 | 22                 | 66,7 |                        |
| Control group                    | 21              | 100,0 | -                 | -    | -                  | -    |                        |

<sup>a</sup>Anova ou test de Kruskal-Wallis

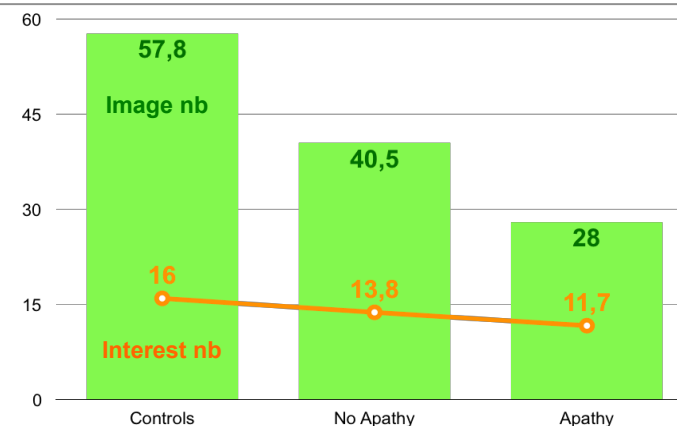
<sup>c</sup>Test du Chi2

## RESULTS

Multivariate analysis (age, sex, level of education, Apathy diagnostic). MMSE and DSM5 diagnostic not included in the model because non significant in univariate analysis)

The number of interest is significantly associated with the diagnosis of apathy (.012) and the level of education (.05)

The number of images is significantly associated with the diagnosis of apathy (.017) and the level of education (.03)



## CONCLUSION



- Allows a playful assessment of apathy in relation to diagnostic criteria
- Develop a "tailor-made" approach, designing specific activities depending on individuals' interests and capacities ».

Contact: [philippe.robert@univ-cotedazur.fr](mailto:philippe.robert@univ-cotedazur.fr)