

# PROVA DE PROFICIÊNCIA EM LÍNGUA INGLESA

DATA: 20 E 21 DE JULHO DE 2018

NOME DO(A) CANDIDATO(A)

CPF OU RG: \_\_\_\_\_

TELEFONE: (      ) \_\_\_\_\_

E-MAIL: \_\_\_\_\_

**NOTA**

ASSINATURA DO(A) CANDIDATO(A)

## FOLHA DE RESPOSTAS

Leia o texto com atenção e, em seguida, responda às questões que se seguem. A resposta de cada questão deve ser registrada no **Gabarito** abaixo. Respostas com rasuras **NÃO** serão consideradas. Marque apenas uma (1) alternativa para cada questão.

**DURAÇÃO DA PROVA: 02 HORAS**

### GABARITO

|     | A   | B   | C   | D   | E   |
|-----|-----|-----|-----|-----|-----|
| 1.  | (A) | (B) | (C) | (D) | (E) |
| 2.  | (A) | (B) | (C) | (D) | (E) |
| 3.  | (A) | (B) | (C) | (D) | (E) |
| 4.  | (A) | (B) | (C) | (D) | (E) |
| 5.  | (A) | (B) | (C) | (D) | (E) |
| 6.  | (A) | (B) | (C) | (D) | (E) |
| 7.  | (A) | (B) | (C) | (D) | (E) |
| 8.  | (A) | (B) | (C) | (D) | (E) |
| 9.  | (A) | (B) | (C) | (D) | (E) |
| 10. | (A) | (B) | (C) | (D) | (E) |

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# Scientist turns to Ayurvedic medicine in hunt for a cure to dementia

## **Herbs used in the ancient healing system could yield a cure**

Amy Kazmin MARCH 11, 2018

In Kolar, a farming district two hours drive from India's IT hub Bangalore, researchers are enlisting 10,000 residents for a groundbreaking, 10-year study on dementia in rural Indians.

The investigation will track participants' health and mental acuity for a decade, probing the relationship between physical wellbeing and dementia. The study aims to identify the factors that both raise and lower risk of developing dementia. Led by Vijayalakshmi Ravindranath, chair of the Indian Institute of Science's Centre for Neuroscience, it will be the first probe of its kind in South Asia.

"Dementia starts two to three decades before the actual presentation of symptoms. We also believe lifestyle factors contribute to dementia," says Prof Ravindranath.

"I want it to be the Framingham of India," she adds, referring to the landmark cardiovascular study of residents of the US town of Framingham, which has provided many modern insights into heart disease and its prevention.

There has been little research on dementia in the developing world, where public health concerns typically focus on infectious diseases or reducing infant and maternal mortality. That constitutes an imbalance that many scientists and public health experts are trying to correct.

Two thirds of the world's dementia sufferers actually reside in low and middle-income countries, according to Alzheimer's Disease International, a global research and advocacy group. It has set up an international research collective called 10/66 Dementia Research Group. Its name refers to the 66 per cent of dementia sufferers who live in those low and middle income countries and the 10 per cent, or less, of population-based research that has been carried out in those regions.

"We require research to find out the extent of dementia and the care arrangements," says Dr Amit Dias, a professor at Goa Medical College, and India co-ordinator for the 10/66 Dementia Research Group.

Philanthropic funding for scientific research into the disease itself is also growing in India, where concerns about geriatric care are mounting.

"We never worried about ageing before", says Prof Ravindranath, but she points out that fewer elderly people live with their adult children. "Because of the joint [or extended] family system, people were shielded from this. But with the social order breaking down, people are thinking about it a lot more."

In 2014, Kris Gopalakrishnan, one of the co-founders of the Indian IT giant Infosys, donated \$35m to establishment of a new Centre for Brain Research at the IIS in Bangalore.

The centre is collaborating with the National Institute of Mental Health and Sciences on the Kolar study. Prof Ravindranath has also received a \$11m grant from the Tata Trusts for research into Alzheimer's disease, particularly to focus on early detection — before obvious symptoms emerge.

Working with mice, her team has already identified one potential bio-marker for early detection of Alzheimer's. Their findings were published in the *Journal of Neuroscience*, a peer reviewed journal, in December. They are now planning a study of 600 upper-middle class professionals in Bangalore as part of the project.

Besides studying the progress of the disease, many believe India's traditional medical system, Ayurveda, might provide clues for how to slow, stop or even reverse Alzheimer's progress — a goal that has so far eluded Western pharmaceutical companies, despite spending billions of dollars. "If you look at the Alzheimer's situation, it's very bleak," Prof Ravindranath says.

Ten years ago, she began testing traditional Ayurvedic memory-boosting formulas on mice, with no success at first. But then she isolated the root of a plant called *Withania somnifera*, or Ashwagandha in Sanskrit.

It turned out that mice treated for 30 days with oral doses of purified Ashwagandha root showed a sharp reduction in the brain of the amyloid plaque and amyloid protein — conditions that have been strongly associated with Alzheimer's — and showed improved mental performance.

"The mouse that was forgetting and had tons of amyloid — it completely reversed it," the scientist says.

Taking that initial research forward has been challenging.

Prof Ravindranath has worked to purify a large batch of the plant for toxicology tests, but her institute lacks the experience or financial muscle for serious drug development. However, she says she will keep pushing her research forward.

"We need to partner with somebody now," she says. "When we are at the stage that nothing that we think will work has worked, we should explore new avenues. And one of those is leveraging ancient knowledge. But unless we base it on strong scientific foundations, it won't gain acceptability."

**Source:** <https://www.ft.com/content/1974bd86-01ed-11e8-9e12-af73e8db3c71>

1. According to the text, studies on dementia

- a. have been conducted in rural areas of India for the past 10 years
- b. will be carried out during 10 years with 10,000 Indians
- c. have their focus on 10 farms in India
- d. can bring the cure to 10,000 residents
- e. will reach residents of both Bangalore and Kolar

2. Prof Ravindranath believes that

- a. dementia starts only with symptoms
- b. lifestyle leads to dementia
- c. dementia and lifestyle have a close connection
- d. the illness starts 2 or 3 years before symptoms
- e. health and mental acuity are the first symptoms of dementia

3. In the sentence “*The mouse that was forgetting and had tons of amyloid — it completely reversed it,*” the scientist says.”, the two pronouns *it* refer respectively to:
- purified Ashwagandha root and amyloid
  - mouse and memory
  - mouse and amyloid
  - amyloid and purified Ashwagandha root
  - mental performance and mouse
4. The reason why Prof. Ravindranath uses the expression *financial muscle* has to do with the fact that:
- Her research group does not have enough man power to keep working on the study.
  - Her institute has a shortage of capital to move toxicology tests forward.
  - Funds are never available at their institution.
  - Her research center has not been able to purify any plant as there is no money available.
  - The partners she has been negotiating with lack experience.
5. In paragraph 4, the words *it* and *which* in the sentences ““I want *it* to be the Framingham of India,” [...] *which* has provided many modern insights into heart disease and its prevention”, refer, respectively, to:
- Prof Ravindranath’s 10-year study on dementia and US residents’ modern insights
  - Prof Ravindranath’s 10-year study on dementia and heart diseases
  - Rural Indians and cardiovascular prevention.
  - Prof Ravindranath’s 10-year study on dementia and rural Indians
  - Prof Ravindranath’s 10-year study on dementia and the US residents’ cardiovascular study
6. Identify the true (T) and false (F) statements based on the reasons why a long-term investigation on dementia should be carried out, according to the text:
- ( ) Concerns about geriatric care are increasing in India.  
( ) There has been little research on dementia in the developing world.  
( ) Since 2014 India has been asking for donations from more developed countries.  
( ) Ageing has not been previously investigated.

The correct sequence is

- a) F–F–F–F      b) F–T–T–T      c) T–T–F–T      d) T–T–F–F      e) T–T–T–F

7. In the last paragraph of the text, the term “new avenues” has been used metaphorically to imply that Prof Ravindranath’s research institute should:
- Find a new address in India?
  - Ask for financial help from more developed countries?
  - Explore innovative ideas to expand their findings?
  - Look for scientific partners to give credibility to their findings?
  - Focus on new directions for the dissemination of knowledge?

8. In the statement “*We need to partner with somebody now*”, Prof Ravindranath points out to the fact that:

- a. Now they need to look for more experienced partnerships in order to carry on with their research.
- b. Now they need to split their research team in order to explore new avenues.
- c. Now they need to find a larger amount of *Withania somnifera* for toxicology tests.
- d. Now they need to publish more scientific research.
- e. Now they need to look for international cooperation.

9. The general idea of Prof Ravindranath’s final statement “*But unless we base [our research] on strong scientific foundations, it won’t gain acceptability*” is one of:

- a. an example and a consequence?
- b. a contrast and a condition?
- c. a concession and an addition?
- d. a comparison and a consequence?
- e. a concession and an example?

10. In the paragraph “*Besides studying the progress of the disease, many believe India’s traditional medical system, Ayurveda, might provide clues for how to slow, stop or even reverse Alzheimer’s progress — a goal that has so far eluded Western pharmaceutical companies, despite spending billions of dollars. “If you look at the Alzheimer’s situation, it’s very bleak,” Prof Ravindranath says.*” the author :

- a. India’s traditional medical system will provide the cure for Alzheimer.
- b. Due to the investment of billion of dollar, Western pharmaceutical companies have encountered a solution for Alzheimer.
- c. Prof. Ravindranath states that the Alzheimer situation in India is very promising.
- d. Currently, Ayurveda is the unique solution for Alzheimer.
- e. Western medicine has spent billions of dollars in research and testing and has not yet found a solution to the possible cure of Alzheimer.