**Provide a good translation of this passage to get 5 marks as a bonus:**

[Exercise and Computer Use May Prevent Mild Cognitive Impairment](http://newsblog.mayoclinic.org/2010/04/06/exercise-and-computer-use-may-prevent-mild-cognitive-impairment/)

Sitting in front of a computer screen may seem like inactivity, but it could be giving your brain a workout. It may even help protect your brain from cognitive decline. For frequent computer users, the strength of their memory may be just as powerful as the memory in the machines they work with.

New research from the Mayo Clinic has revealed that a combination of moderate exercise along with mentally stimulating activities, such as using a computer, help decrease the chances of having memory loss in people older than 70 years old. The combination of the two activities was found to protect memory function more than just computer use or exercise alone.

“The results were over and above what we expected, but not surprising,” said study’s author, Dr. Yonas Geda, a physician scientist with Mayo Clinic in Arizona and a member of the American Academy of Neurology.”We know physical exercise is independently associated with brain function and mentally stimulating activities are also independently associated with brain function. Combing the two makes sense.”

Geda and his team studied 926 people between the ages of 70 and 93 in Olmstead County, Minn. Each participant filled out a questionnaire regarding their computer use and physical exercise within the past year. The study then analyzed the participants’ responses compared with their risks of having mild cognitive impairment (MCI) – the transitional stage between traditional memory loss that comes with aging and early dementia and Alzheimer’s disease.

Of the people who did not use a computer and did not exercise, 20.1 percent had normal cognition, while 37.6 percent showed symptoms of MCI. For the opposite participants – those who exercised and used a computer – 36 percent were cognitively normal and only 18.3 percent showed MCI symptoms.

The participants’ physical exercises were defined as mild, moderate or vigorous. Mild exercise included bowling and stretching, moderate activities included hiking and tennis, and vigorous exercise referred to jogging or biking uphill. Although those who combined computer use and frequent moderate exercise were least likely to have MCI, Geda says that any kind of exercise — as long as you do it regularly — has benefits. Many previous studies have also [linked physical activity with a lower risk of dementia](http://healthland.time.com/2011/07/19/more-evidence-that-exercise-is-key-to-brain-health/).

The best results were for those who exercised moderately five to six times a week, but even once a week was helpful, Dr. Geda emphasizes. "You should never underestimate any small amount of activity," he says. He referred to [Dr. James Levine's NEAT (Non-Exercise Activity Thermogenesis) research](http://www.nytimes.com/2011/04/17/magazine/mag-17sitting-t.html), which posits that all the small movements we make throughout the day can add up to the kind of activity we need for both physical and mental health.

“We have scratched our heads about this,” Geda said. “In the paper, we found the most beneficial exercise in terms of frequency was five to six times per week, not daily. And the most beneficial is moderate, not vigorous. We don’t exactly know why this is.”

Why the combination appeared to be cognitively protective is still unclear. The researchers speculate that physical exercise improves good health in general — or is a marker for a generally healthy lifestyle — which also affects the health of the brain, particularly the regions involved with memory. The computer activity may separately boost brain function at the neurological level.

“Our argument is that perhaps the physical exercise increases blood flow and oxygen to the brain, and then the computer activity enhances the communication between nerve cells,” Geda said. “So the exercise brings the resources and raw material, and then the computer activity is implementing it.”

Because the survey relied on participant response, Geda said the team has a lot more research to do in order to better understand their results. But they have an idea as to why the exercise and computer combination was so beneficial.

Geda hopes that his findings will spur further research on the topic and more closely analyze the role of computer use — an increasingly common activity among all age groups — in cognitive health. The current study did not determine how long the participants spent on the computer overall or what they were using it for, which is a weakness of the study, the authors acknowledge. It also does not establish a causal link between computer use and risk of memory loss. Until they better understand the science behind their findings, Geda said that for people older than 70, it doesn’t take much to improve their memory function.

“People try to do things perfectly when they’re exercising,” Geda said. “But we’re talking about people above age 70 doing both mentally stimulating activities and exercise in moderation without feeling pressured.”