2012年度　　S②

英　　語

注　意

1. 問題は全部で12ページである。
2. 解答用紙に氏名・受験番号を忘れずに記入すること。(ただし，マーク・シートにはあらかじめ受験番号がプリントされている。)
3. 解答はすべて解答用紙に記入すること。
4. 解答用紙は必ず提出のこと。この問題冊子は提出する必要はない。

マーク・シート記入上の注意

1. 解答用紙(その1)はマーク・シートになっている。**HB**の黒鉛筆またはシャープペンシルを用いて記入すること。
2. 解答用紙にあらかじめプリントされた受験番号を確認すること。
3. 解答する記号・番号の ● を塗りつぶしなさい。○で囲んだり×をつけたりしてはいけない。

解答記入例(解答がイのとき)

1	●	㋺	㋩	㋥	㋭	㋬	㋣

4. 一度記入したマークを消す場合は，消しゴムでよく消すこと。×をつけても消したことにならない。
5. 解答用紙をよごしたり，折り曲げたりしないこと。

1 次の英文を読み，以下の問いに答えなさい。

When overweight, sedentary kids start to exercise regularly, their ability to think, to plan and even to do math improves, a new study suggests. In addition, exercise was linked to increased activity in the parts of the brain associated with complex thinking and self-control, according to brain imaging scans analyzed by the researchers. "This implies that chronic sedentary behavior is compromising children's ability and achievement," said lead[8] researcher Catherine Davis, a clinical health psychologist at the Georgia Prevention Institute at Georgia Health Sciences University in Augusta. "We know that exercise is good for you, but we didn't have very good evidence before this that it would help children do better in school," said Davis.

Although this study was done among overweight children, she believes that similar results would be seen in normal-weight kids. Davis speculates that these positive changes are a result of a combination of biological and environmental factors. "There are some neural growth factors that have been identified in mice that exercise," she said. These benefits may include more brain cells and more connections between them.[9]

But there are also social and environmental factors, she noted. "There's more stimulation when things are moving faster and when you're moving.

Notes:

sedentary ほとんど体を動かさない

scan(s) 精査

chronic 癖になった

clinical 臨床の

neural 神経の

So it is cognitively stimulating to move," Davis said. With one-third of U.S. children overweight, Davis thinks that exercise needs to become an essential part of children's lives. "Make sure your child has a balanced life — not only that they study, but that they learn to take care of their bodies as well," she said.

For the study, a report of which is published in the January issue of *Health Psychology*, Davis's team randomly assigned 171 overweight children 7 to 11 years old, to either 20 minutes or 40 minutes of vigorous exercise every day after school or to no exercise. The exercise program focused on fun and safety rather than competition and skill, and included running games, hula hoops and jump ropes. Researchers found it raised their heart rates to 79 percent of maximum, which is considered vigorous.

The researchers evaluated the children using standard achievement tests known as the Cognitive Assessment System and Woodcock-Johnson Tests of Achievement Ⅲ. Some children also had magnetic resonance imaging (MRI) scans of their brains.

The MRIs found that children who exercised had increased activity in the so-called executive function area of the brain — associated with self-control, planning, reasoning and abstract thought — as well as the prefrontal cortex. The latter is the part of the brain linked with complex thinking and correct social behavior, the researchers noted. There

cognitively 認知的に

randomly 無作為に

hula hoop(s) フラフープ

evaluate(d) …を評価する

magnetic resonance imaging 磁気共鳴断層撮影装置

abstract 抽象的な

prefrontal cortex 前頭前野皮質

was also decreased activity in an area of the brain that's behind the prefrontal cortex. The shift seems to be tied to faster developing of cognitive skills, Davis said. In addition, the more the kids exercised, the more the intelligence-test scores went up. An average increase of 3.8 points on scores in cognitive planning skills was noted in kids who exercised 40 minutes a day for three months, the researchers found. Children who exercised 20 minutes a day experienced smaller gains.

There were also improvements in math skills, but not reading ability. "The finding of improved math achievement is remarkable, given that no academic instruction was provided, and suggests that a longer intervention period may result in more benefit," the researchers said.

intervention 介入

Commenting on the study, Samantha Heller, a dietitian, nutritionist and exercise physiologist, said: "Take a bunch of kids, put them outside, give them some balls, jump ropes and street chalk, and they will be running, jumping and playing hopscotch in no time." They become happier, more energetic, smarter kids, she said.

dietitian 栄養学者
nutritionist 栄養士
physiologist 生理学者
hopscotch 子供の遊びの一種
energetic 精力的な

"Children's bodies know intuitively that exercise is essential for healthy brain and body function. But when we deny children their natural instincts and allow them to stultify in front of a TV or computer, they become lethargic and moody," Heller said, adding that sedentary kids are also prone to being

intuitively 直感的に
stultify ぼんやり時間を過ごす
lethargic 無気力な

overweight and may do poorly in school.

"It seems a no-brainer[15] to me that for kids' brains to be healthy, they should be encouraged to participate in regular exercise and given the time and place for it," Heller concluded. "We need to turn off the computers, TVs, cell phones and iPads and let kids do what they do naturally: Run around and play."

moody　気分の変わりやすい

prone to　…の傾向がある

cell phone(s)　携帯電話

iPad(s)　アイパッド

〔1〕 下線部A，Bを日本語に訳しなさい。(**解答用紙その2**)

〔2〕 1～7の質問に対しては英文の内容から判断し，また，下線部8～15の質問に対しては前後の関係から判断してもっとも適切と思われるものをひとつ選び，その番号のところをマークしなさい。(**解答用紙その1**)

1. Brain imaging scans analyzed by the researchers showed that
(1) exercise was linked to increased activity in the areas of the brains associated with simple thinking and self-confidence.
(2) exercise had decreased activity in an area of the prefrontal cortex.
(3) exercise had increased activity in an area of the brain that is behind the prefrontal cortex.
(4) exercise had increased activity in the parts of the brain related to complicated thinking and self-control.

2. Catherine Davis believes that
(1) both overweight and normal-weight kids would benefit from regular exercise.
(2) only overweight kids would benefit from regular exercise.
(3) normal-weight kids would not benefit from regular exercise.
(4) only normal-weight kids would benefit from regular exercise.

3. In a study published in the January issue of *Health Psychology*,
(1) the exercise program focused on competition and skill.
(2) the exercise program included watching TV and using computers.
(3) the exercise program included enjoyable and very active activities.
(4) the exercise program was not vigorous.

4. The same study in the January issue of *Health Psychology* indicated that

(1) an average increase of 3.8 points on scores in cognitive planning skills was noted in kids who exercised 20 minutes a day.

(2) the more kids exercised, the more the scores in cognitive planning skills went up.

(3) kids who exercised 40 minutes a day scored lower on the intelligence test.

(4) children who exercised 40 minutes a day experienced smaller gains on scores in the intelligence test and cognitive planning skills.

5. According to Samantha Heller, children intuitively know through their bodies that

(1) they should be allowed to watch TV and use computers.

(2) they shouldn't be given the time or place for running around and playing.

(3) exercise is a necessary part of their lives.

(4) sedentary children need to be overweight.

6. Samantha Heller thinks that

(1) when children are denied the chance of running around and playing, it will not help them do better in school.

(2) when we deny children their natural instincts, they become happier and more energetic.

(3) when children participate in regular exercise, they may do poorly in school.

(4) we should turn off computers, TVs, cell phones and iPads in order to let children concentrate on their studies.

7. The main point of this new study suggests that children who are overweight can improve

(1) their thinking, planning and reading by exercising regularly.

(2) their ability to think, to plan and even to practice by starting to exercise regularly.

(3) their ability to think, to plan and even to stultify in front of a TV by starting to exercise regularly.

(4) their thinking, planning and math skills by exercising regularly.

8. The word "lead" means

(1) conservative.

(2) head.

(3) controversial.

(4) chemical.

9. The word "them" means

(1) biological and environmental factors.

(2) two cells.

(3) mice and exercise.

(4) some neural growth factors.

10. The phrase "with one-third of U.S. children overweight" means

(1) in spite of the fact that one-third of U.S. children are overweight.

(2) on the condition that one-third of U.S. children are overweight.

(3) regardless of whether one-third of U.S. children are overweight or not.

(4) because of the fact that one-third of U.S. children are overweight.

11. The word "it" means

(1) no exercise.

(2) running competition.

(3) the exercise program.

(4) jump rope competition.

12. The phrase "the latter" means

(1) the executive function area of the brain.

(2) reasoning.

(3) abstract thought.

(4) the prefrontal cortex.

13. The phrase "a bunch of" means

(1) few of.

(2) a group of.

(3) a couple of.

(4) the number of.

14. The phrase "in no time" means

(1) immediately.

(2) gradually.

(3) in good time.

(4) at no time.

15. The phrase "no-brainer" means

(1) something that requires much thought.

(2) anything that requires little thought.

(3) anything that is unclear.

(4) something that is impossible to understand.

2 以下のそれぞれの定義に従って，指定された頭文字で始まる単語を書きなさい。(ただし，解答は与えられた頭文字から書くこと)(**解答用紙その3**)

(解答例)

someone who is trained in science, especially someone whose job is to do scientific research

→(s　　)　　正解(scientist)

1. a flash of bright light in the sky which is produced by electricity moving between clouds or from clouds to the ground

→(l　　)

2. the result obtained by adding two or more amounts together and dividing the total by the number of amounts

→(a　　)

3. the force that causes something to fall to the ground or one planet to be attracted to another one

→(g　　)

4. a very small living thing that can enter your body and make you sick, or a disease or illness caused by this

→(v　　)

5. relating to energy that is produced by changing the structure of the central part of an atom

→(n　　)

3 次の会話文を読んで，以下の問いに答えなさい。

Sue: (A)! It is so good to see you again!

Ned: It's great to see you again too. Thanks for coming to the airport to pick me up.

Sue: (B). I wanted to be the first to see you. How was your stay in Japan?

Ned: It was (C). The semester flew by. Actually, I enjoyed my studies but I wish I had more time there. I saw some great sights but there was so much more to see.

Sue: And the food. Did you learn to use chopsticks?

Ned: (D). You know I knew how before I left. But I already miss the food.

Sue: What did you like the (E)?

Ned: Genghis Khan.

Sue: Genghis Khan? I thought that he was some conqueror or something.

Ned: He was, but it is a barbeque dish with mutton and vegetables. You fry the stuff on a griddle that is shaped to look like a Mongolian helmet.

Sue: Grilling food on some helmet? Sounds real tasty.

Ned: (F). I am sure you would like it!

〔1〕 下の選択肢1～8の中から，上の空欄A～Fに入れるのに最も適切と思われるものを一つ選び，その番号のところをマークしなさい。(ただし，文頭に来る単語も小文字で表記している)(**解答用紙その1**)

1. terrible	5. cut it out
2. most	6. welcome home
3. no problem	7. least
4. fantastic	8. don't worry

〔2〕 次の文の中から会話文の内容と一致すると思われるものを４つ選んで，その番号のところをマークしなさい。(**解答用紙その１**)

1. Sue went to the airport to meet Ned.
2. Sue and Ned meet by accident at the airport.
3. Ned spent one year in Japan.
4. Ned enjoyed his time in Japan.
5. Ned could use chopsticks before he went to Japan.
6. Ned thought the Genghis Khan dish was terrible.
7. Sue wants to try the barbeque dish as well.
8. Sue doesn't think the Mongolian barbeque sounds tasty.

4 次の日本語の文を表現するような英文を，与えられた書き出しを使って完成しなさい。**(解答用紙その 3)**

科学者として大成功した後，彼は思いがけなく 1985 年にノーベル賞を受賞した。

Following...