

和歌山県立医科大学

平成 26 年 度

英 語

問 題 冊 子

- 1 次の英文の空所( 1 )～( 20 )に入るべき最も適切な語を下の「語群」より選び、必要に応じて適当な形に直して解答欄に書き入れなさい。ただし、各括弧には1語が入る。

A private group of scientists has announced plans to make an exact copy of a human being. An American member of the team says he and others will soon begin a serious effort to clone humans. Panos Zavos says the team hopes to produce the world's first cloned baby within the next two years.

He announced the project at a conference last month in the American city of Lexington, Kentucky. Dr. Zavos is an expert on human ( 1 ) at the University of Kentucky. He works at the Kentucky Center for Reproductive Medicine and Invitro Fertilization.

In recent years, scientists have produced ( 2 ) ( 3 ) copies of sheep and a few other animals. They ( 4 ) these clones from a single ( 5 ) of an adult animal.

Three years ago, another American doctor, Richard Seed, announced plans to clone a human being. However, there is no evidence that he was ( 6 ).

Dr. Zavos says the new international group plans to ( 7 ) human cloning only to women currently not able to become pregnant. He says the effort will be to ( 8 ) people who want to have their own ( 9 ) child.

The technology would be similar to that ( 10 ) to clone animals. It would ( 11 ) clearing genetic material from a woman's egg. Doctors then would ( 12 ) genetic material from the woman's husband into the egg before putting it into the woman's uterus.

Dr. Zavos says his group plans to do its work in a country near the Mediterranean Sea. He did not ( 13 ) the country. He says an Italian reproductive expert, Severino Antinori, is leading the team. Dr. Antinori has ( 14 ) successful efforts to help many older women become pregnant. He is known for ( 15 ) pregnancies in women as old as sixty.

Many medical experts and other groups are ( 16 ) to the idea of cloning humans. Several countries ban or ( 17 ) work on human cloning. Several doctors have ( 18 ) the announcement by Dr. Zavos. They say doctors do not know if cloning humans is possible or safe. They say it would be ( 19 ) to attempt to clone human being. The ( 20 ) of success are small, they say, and the risks are too great.

「語群」

assist	biological	cell	chances	create
criticize	establish	exact	genetic	involve
irresponsible	lead	name	offer	oppose
place	reproduction	restrict	successful	use

2

次の英文を読み、その内容に関する下の設問の答えとして(あるいは、設問中の下線部を満たすのに)最も適当なものをA～Dの選択肢より一つずつ選び、符号で答えなさい。

Some scientists say regular exercise can reduce stress and anxiety, but what if someone sincerely dislikes exercise and works out only under a kind of emotional pressure, deeming that he or she must do so, perhaps because a doctor or worried spouse has ordered it?

In that case, which is hardly uncommon, does the stress of being, in effect, forced to exercise reduce or cancel out the otherwise sure emotional benefits of physical activity?

That issue has been of considerable interest to exercise scientists for some time, particularly those who work with animals, since in some experiments, animals are required to exercise at intensities or for lengths of time that they don't control. Such intense exercise greatly increases their stress, as measured by certain behaviors and by physiological markers like increased levels of the stress hormone cortisol.

But no study had directly compared the emotional effects of forced and voluntary exercise on anxiety and emotional resilience. So scientists at the Center for Neuroscience at the University of Colorado at Boulder recently decided to conduct one.

They began by gathering a group of healthy adult male rats of a type that generally enjoy running. They then gave some of the animals access to unlocked running wheels and let them exercise whenever and for as long as they liked. The exercise was fully under the animals' control.

The scientists observed how long and in what pattern the animals choose to exercise, noting in particular that the rats tended to run frantically for brief periods, slow down, then speed up again — rather like people alternating jogging and walking or completing intervals.

Having determined how the animals spontaneously liked to run, the researchers next placed other rats in mechanized, lockable wheels that were controlled exclusively by the scientists. The scientists then forced these rats to run. To the extent possible, the researchers mimicked the animals' normal, spontaneous exercise pattern, having the rats run during the portion of the day when they naturally would be active and creating frequent stops and starts in their running, just as the rats that ran freely had done. The animals' daily running distance was equivalent to that of the voluntary runners.

Meanwhile, still other rats ran on little mechanized treadmills at a steady and even pace, without fits and starts of voluntary running. The animals could not control their speed or distance. A final group remained inactive with no forced exercise. All of the animals exercised, or lounged, for six weeks. At the end of that time, the animals were exposed to experiences that are known to cause stress and worry in rats, like being restrained.



The next day, the animals were placed in a large, unfamiliar mazelike cage designed to determine their levels of anxiety or confidence. If they froze or hastened to the darkest corners of the cage and refused to explore, they were considered to be highly anxious and unsettled, by rats' standards.

The treadmill runners and the inactive animals were, the results showed, extremely anxious. They froze or ran for the darkness at the first opportunity. But the animals that had exercised on the running wheels, whether they could control their exercise regimens or not, proved to be quite resilient. They bounced back emotionally from the imposed stress and were willing to explore the lighted regions of their new surroundings on the next day. They were, by rats' standards, happy and well-adjusted guys.

What this suggests, says Benjamin Greenwood, a professor of integrative physiology at the University of Colorado who designed and led the study, is that "even forced exercise increases stress resistance." If, in other words, you are being induced to exercise, whether by your conscience, by your partner or by some other overriding force, you nevertheless are likely to wind up feeling less anxious, more relaxed and happier afterward, even if you're not having fun during the workout.

Of course, rats are not people, and no comparable experiment has been performed in people, Dr. Greenwood says. It's also unclear, he says, why the forced treadmill running did not afford stress resistance, although he suspects that the reason lies in the way the animals ran. The treadmill runners were not allowed to start and stop, but had to run continuously at a steady pace. This finding doesn't necessarily mean that alternating between walking and running will make people happy, he says. But it does indicate that how you exercise might add to a workout's emotional impact and that perhaps experimenting with a pattern of slowing and speeding up during a run or bike ride could be worthwhile.

More important, though, the study is a useful reminder that exercise is a proven, inexpensive and non-pharmacological means of combating stress — even, as it turns out, the stress of feeling that you should be exercising.

(Adapted from *nytimes.com/2013/03/13/.....*)

1. The main purpose of the study reported here is to find out \_\_\_\_\_.
  - A : how different amounts of exercise work to develop stress resistance
  - B : how forced and voluntary exercises differ in the effect on mental health
  - C : how different methods of exercise contribute to both mental and physical health
  - D : how forced and voluntary exercises differ in the effect on both mental and physical health

2. In the first experiment conducted by the scientists at the University of Colorado, \_\_\_\_\_.  
A : all the rats experienced four different types of activity  
B : four groups of rats experienced four different types of activity, respectively  
C : four groups of rats experienced four different patterns of exercise, respectively  
D : four groups of rats experienced a pattern of exercise of different levels of intensity, respectively
3. The rats of the second group \_\_\_\_\_.  
A : were not allowed to exercise at all  
B : could only exercise at a steady pace  
C : could exercise completely at their will  
D : could exercise following the patterns of rats' natural movements
4. The rats of the third group \_\_\_\_\_.  
A : were forced to run at a steady pace  
B : were forced to run at a maximum speed  
C : were allowed to run at their hearts' content  
D : were allowed to run and stop within the limit of natural rats' behavior
5. The amount of stress the animals experienced can be measured by \_\_\_\_\_ signs.  
A : physical and chemical  
B : physical and biological  
C : behavioral and metabolic  
D : behavioral and physiological
6. The experimental exercise session on the animals lasted for \_\_\_\_\_.  
A : half a month  
B : a month  
C : a month and a half  
D : two months
7. What was waiting for the rats when they finished the first experimental session?  
A : a stressful experience  
B : a short relaxing period  
C : a further exercise session  
D : confinement in a maze

8. In the second experiment, all the rats were moved to a certain place. What was the place like?
- A : It had dark and light areas.
- B : It was a large space with a lot of maize.
- C : It was divided into small compartments.
- D : It was designed according to rats' behavioral pattern.
9. How did the rats behave in the new place?
- A : The rats which had exercised most freely adjusted to the new environment the fastest.
- B : The rats which had been forced to exercise at a constant pace showed the greatest stress resistance.
- C : The rats which had exercised under the natural rats' fast—slow regimen had the hardest time adjusting to the new environment.
- D : The rats which had been forced to exercise against their will had a harder time adjusting to the new environment than those which had had no exercise.
10. Which of the following is the major finding of the present study?
- A : Exercise does work to develop stress resistance.
- B : Exercise's impact on emotional stability is rather limited.
- C : Forced and steady exercise works best to develop stress resistance.
- D : Exercising at fast and slow paces alternatively is the best way to make a person feel happy.

**3** 次の英文を読み、その内容に関する下の設問の答えとして(あるいは、設問中の下線部を満たすのに)最も適当なものをA～Dの選択肢より一つずつ選び、符号で答えなさい。アスタリスク(\*)の付いた語には下に注釈があります。

When your favorite hospital drama star is treating a patient who's having \*seizures, you might want to pay more attention to what he or she does in the drama than what real doctors do in the hospital. However, it turns out that popular medical dramas don't always portray medical treatment accurately. A new study found that seizure care in particular was depicted appropriately less than half the time on major fictional medical shows. "People who are watching these television shows and don't know how to respond might get the false impression of how to provide first aid, and, when they're trying to help someone having a seizure, actually



do some harm to them by stuff they learned on television,” said researcher Andrew Moeller of Dalhousie University in Halifax, Nova Scotia. The study looked at the depiction of seizure care for all episodes of “Grey’s Anatomy,” “House, M.D.,” and “Private Practice,” and the last five seasons of “ER.” The research will be presented at the American Academy of Neurology’s annual meeting in Toronto, Ontario, in April.

In nearly half the seizure cases, characters on these shows delivered inappropriate treatments such as holding the person down, trying to stop involuntary movements or putting something in the person’s mouth, the study said. The shows did show proper treatment for general medical care about 29 percent of the time, and in the remaining 25 percent of the time, the accuracy of the portrayal couldn’t be determined. Proper care for seizing patients is to clear the area of dangerous objects, put something soft under the head, rotate them onto their side, make sure they don’t hurt themselves while \*convulsing, and provide support by just being with them until they return to consciousness, Moeller said. Do not stick something in the patient’s mouth, he said. First aid for seizures was provided by “nurses” or “doctors” in nearly all of the televised cases, he said. Viewers may be more likely to believe that the kind of treatment is real if doctors, rather than nonmedical characters, are performing it, he said. The researchers have not yet broken down which shows were better or worse at depicting seizure first aid, he said.

The findings are not surprising to Dr. Lisa Sanders, technical adviser to “House, M.D.” and author of “Every Patient Tells a Story.” Her New York Times Magazine column “Diagnosis” was one of the inspirations for the show. “It’s very clear to anybody who watches ‘House’ and has ever worked in a hospital that ‘House’ is not a close representation of the truth on any level,” said Sanders, a physician on the faculty of the New York University School of Medicine. The accuracy of medical treatments on “House, M.D.” has gotten better over time, however, she said. Sanders recalls spending nearly an entire season persuading the “House” production team to not put anything in patients’ mouths during seizures. Her advice triumphed during one episode when a doctor scolded another character who put something in a seizing person’s mouth, explaining that it would choke the patient. “They’re interested in representing the idea of the uncertainty of making the diagnosis and the likelihood of diagnostic error on the way to making a correct diagnosis,” she said of the “House” team. “Everything else is completely subjected to the needs of the drama.”

Part of the reason that shows like “House” are far from true-to-life is that real medicine is supposed to be as undramatic as possible — doctors perform procedures and try to make sure that no one gets excited, she said. On the show, which centers on Dr. George House and his team of doctors, few nurses are portrayed, and hardly any technicians, transport people or

other medical professionals are seen. House and company personally perform tests and procedures, including brain surgery, that other kinds of health care professionals would do in real hospitals, she said. Even more annoying to Sanders is when Dr. House performs surgery without a mask or hat. The “Sherlock Holmes” aspect of diagnostic medicine on “House” is real, however, and the description of the detective process in those mystery books reflect what real doctors do, she said.

Sanders tried to read all of the show’s scripts, and she’ll send an e-mail with points she considers erroneous from a medical perspective. Sometimes the show will take her advice and fix the inaccuracies, and other times, they will remain in the final broadcast.

There have been other studies showing that television medical shows do a poor job of portraying procedures appropriately and accurately. Of concern is one about cardiopulmonary resuscitation, or CPR, Sanders said. A 1996 New England Journal of Medicine study of “ER,” “Chicago Hope” and “Rescue 911” found that in the episodes viewed, 75 percent of patients survived cardiac arrest immediately, and 67 percent appeared to be well enough to leave the hospital. In real life, long-term survival rates vary from 2 to 30 percent for cardiac arrest outside a hospital and 6.5 to 15 percent for arrests inside a hospital, the study said.

False depictions of CPR are probably more alarming than misrepresented seizure care, Sanders said. Normally, seizure care is left to doctors, who don’t get their information on treatments from television. But CPR is a procedure that lay people may learn how to do by using devices equipped in public places or by using techniques for artificial respiration. This rather increases the chance of getting false impressions from watching dramas, she said.

Medicine today requires a collegial environment with constant collaboration among technicians, radiologists, surgeons, doctors, nurses and other hospital professionals. That’s why House’s character — obstinate, aggressive, egocentric and disrespectful of rules — is somewhat unrealistic, she said. There are, of course, doctors with big egos, but getting along is important, she said. “We’ve all learned how to work together with our own and other people’s enormous egos to serve patients’ needs,” Sanders said. “There might be doctors like House, there are not very many, and I would suspect that they’re not nearly as successful.”

(Adapted from *edition.cnn.com/2010/HEALTH/02/15/.....*)

\*seizure : (てんかんなどの突発的な)発作

\*convulse : けいれん 痙攣する



1. What is this article all about?

A : Medical professionals are obliged to correct erroneous information provided by medical dramas.

B : Viewers of medical dramas should not swallow the treatments they see in medical dramas.

C : A significant part of medical treatments shown in popular medical dramas in the U.S. is not accurate.

D : Producers of medical dramas must be more careful about the accuracy of medical treatments they depict.

2. The writer of this article most heavily relies on the opinions of \_\_\_\_\_.

A : Dr. Andrew Moeller

B : Dr. Lisa Sanders

C : Dr. Gregory House

D : New England Journal of Medicine

3. About what percentage of treatments for seizure depicted in popular medical dramas in the U.S. is correct?

A : 30%

B : 40%

C : 50%

D : 60%

4. What is most problematic in the treatments of seizure cases shown in medical dramas?

A : holding the patient down on the ground.

B : trying to stop involuntary movements.

C : putting something in the patient's mouth.

D : turning the patient's body onto his/her side.

5. A very important thing in first aid for a seizure patient is \_\_\_\_\_.

A : to stay with the patient and keep encouraging him/her

B : to remove things possibly hurting the patient in the surroundings

C : to try to get the patient to regain consciousness as soon as possible

D : to keep the patient's head high by placing something stable under his/her head

6. Which of the following is true?

- A : Nurses are more conscious of the quality of medical dramas than doctors.
- B : The scholars have not found yet which medical dramas are better or worse.
- C : Studies on medical dramas have not been presented in a medical conference.
- D : The scholars know which medical dramas are better or worse, but they are refraining from releasing the information.

7. Choose the correct statement.

- A : Most producers of medical dramas do not care much about medical accuracy of their products.
- B : Most erratic treatments shown in the medical dramas come from wrong advice provided by medical experts.
- C : The TV show "House, M.D." was launched by getting the idea from a magazine column written by a medical doctor.
- D : Anybody who has ever been hospitalized can tell that many of the treatments depicted in "House, M.D." are very different from real ones.

8. Choose the correct statement.

- A : Despite a long effort of persuasion, Dr. Sanders failed to get the producers of "House, M.D." to accept her advice.
- B : The producers of "House, M.D." will never put viewers' thrills and excitements above the accuracy of medical procedures.
- C : The most important feature of "House, M.D." is the depiction of difficult and erratic processes of reaching a correct diagnosis.
- D : The producers partly accepted Dr. Sanders' advice by making the character of Dr. House scold another doctor for putting something in a seizing person's mouth.

9. Which of the following descriptions is the most foreign to "House, M.D."?

- A : It lacks teamwork.
- B : It is like a detective story.
- C : Surgeons in the drama often ignore the basics of surgery.
- D : It represents a future model of medicine in a collegial environment.

10. CPR is a medical technique to save people who \_\_\_\_\_.  
A : have lost their vital signs  
B : are caught in a panic attack  
C : have lost their consciousness  
D : have lost their heartbeats and breathing
11. Choose the correct statement.  
A : Medical dramas tend to depict CPR as much more effective than it really is.  
B : Dr. Sanders admires Dr. House's medical insight, but is critical of his personality.  
C : Mistaken procedures of CPR shown in the medical dramas are not so harmful as those for seizure.  
D : Survival rates of cardiac arrest found outside a hospital are clearly lower than those found inside a hospital.
12. What is most important in today's medical practice in a large hospital is \_\_\_\_\_.  
A : advanced equipment                      B : high-quality staff  
C : cooperation of various specialists      D : volition to serve patients' specific needs

4 次の日本語文の下線部(1)~(6)を英語で表現しなさい。

日本列島の温度が平均一度上がると、全国の電力需給が350万キロワットも増えるそうだ。この数字にはクーラーの普及が一役買っている。暦の「大暑」にあたる23日、東京の八王子では、寒暖計が39度を示した。午後、関東地方では一時、広い地域で停電があった。暑さにうだって扇風機やクーラーを使う人が急増し、電力を供給する側が対応しきれなくなった。ひととき、電車の運行が乱れ、道路の信号機の光が消えた。ビルのエレベーターに閉じ込められる人があり、銀行や病院のコンピューターが混乱した。

(朝日新聞「天声人語」1987年7月24日 一部改変)