

2024年度

群馬県立県民健康科学大学 診療放射線学部

学校推薦型選抜試験問題

# 小論文

群馬県立県民健康科学大学

## 小論文試験問題 1

【設問 1】 次の文章を読んで、問題 1～4 に日本語で解答せよ。(†は注釈あり)

A patient in the United States with the disease leukemia<sup>†1</sup> has become the first woman to be cured of HIV<sup>†2</sup>, the virus that causes AIDS<sup>†3</sup>.

The patient received stem cells from a **donor**. (ア) Stem cells are special cells that can become any kind of cell in the body. The donor was naturally resistant to HIV, researchers told reporters Tuesday.

The woman has been described as a 64-year-old woman of mixed race. Her case was presented at the Conference on Retroviruses and Opportunistic Infections<sup>†4</sup> in Denver, Colorado.

It is the first case involving the use of blood from (イ) the umbilical cord. The umbilical cord connects a pregnant mother to her fetus<sup>†5</sup>. Use of umbilical blood is a somewhat new method. Doctors are considering making the (ウ) treatment available to more people.

The woman had been receiving the umbilical cord blood to treat her leukemia. Leukemia is a cancer that starts in blood-forming cells in bones. Since receiving the treatment, the woman has been in **remission**<sup>†6</sup>. She has been free of HIV for 14 months. She has not needed HIV treatments known as antiretroviral therapy<sup>†7</sup>.

The two earlier cases in which patients were cured happened in males who had received adult stem cells. Adult stem cells are often used in **bone marrow transplants**<sup>†8</sup>.

"This is now the third report of a cure in this setting, and the first in a woman living with HIV," said Sharon Lewin in a statement. She is soon to be the head of the International AIDS Society.

(後略)

Voice of America ウェブサイト 2022年2月20日付記事  
“First Woman Is Reported Cured of HIV” より抜粋し、改変  
<https://learningenglish.voanews.com/a/first-woman-is-reported-cured-of-hiv/6444812.html>

## 小論文試験問題 2

†略語および用語の説明†

1. leukemia: 白血病
2. HIV: Human Immunodeficiency Virus ヒト免疫不全ウイルス
3. AIDS: Acquired ImmunoDeficiency Syndrome 後天性免疫不全症候群
4. Conference on Retroviruses and Opportunistic Infections: レトロウイルスと日和見感染に関する会議
5. fetus: 胎児
6. remission: 寛解 (病気の症状が一時的に軽くなったり, 消えたりしている状態を示す)
7. antiretroviral therapy: 抗レトロウイルス療法
8. bone marrow transplants: 骨髄移植

問題1 下線部 (ア) の **Stem cells** とはどのような機能を有する細胞として記述されているか述べてよ。 配点 5点

問題2 下線部 (イ) の **the umbilical cord** とは何か述べてよ。 配点 5点

問題3 下線部 (ウ) を適切に意識せよ。 配点 5点

問題4 本文中に白血病とはどのような疾患であると記載されているか述べてよ。 配点 5点

### 小論文試験問題 3

【設問 2】 次の文章を読んで、問題 5～9 に日本語で解答せよ。(†は注釈あり)

When you can't fit your entire workout into a busy day, do you think there's no point in doing anything at all? You should rethink that mindset. Just 11 minutes of moderate-to-vigorous intensity<sup>†1</sup> aerobic activity<sup>†2</sup> per day could lower your risk of cancer, cardiovascular disease<sup>†3</sup> or premature death<sup>†4</sup>, a large new study<sup>†5</sup> has found.

Aerobic activities include walking, dancing, running, jogging, cycling and swimming. You can gauge<sup>†6</sup> the intensity level<sup>†7</sup> of an activity by your heart rate and how hard you're breathing as you move. Generally, being able to talk but not sing during an activity would make it moderate intensity. Vigorous intensity is marked by the inability to carry on a conversation.

Higher levels of physical activity have been associated with lower rates of premature death and chronic disease<sup>†8</sup>, according to past research. But how the risk levels for these outcomes are affected by the amount of exercise someone gets has been more difficult to determine. To explore this impact, scientists largely from the University of Cambridge in the United Kingdom looked at data from 196 studies, amounting to more than 30 million adult participants who were followed for 10 years on average. The results of this latest study were published Tuesday in the British Journal of Sports Medicine.

The study mainly focused on participants who had done the minimum recommended amount<sup>†9</sup> of 150 minutes of exercise per week, or 22 minutes per day. Compared with inactive participants, adults who had done 150 minutes of moderate-to-vigorous aerobic physical activity per week had a 31% lower risk of dying from any cause, a 29% lower risk of dying from cardiovascular disease and a 15% lower risk of dying from cancer.

The same amount of exercise was linked with a 27% lower risk of developing cardiovascular disease and 12% lower risk when it came to cancer.

“This is a compelling systematic review<sup>†10</sup> of existing research,” said CNN Medical Analyst Dr. Leana Wen, an emergency physician and public health professor at George Washington University, who wasn't involved in the research. “We already knew that there was a strong correlation between increased physical activity and reduced risk for cardiovascular disease, cancer and premature death. This research confirms it, and furthermore states that a smaller amount than the 150 minutes of recommended exercise a week can help.”

Even people who got just half the minimum recommended amount of physical activity benefited. Accumulating 75 minutes of moderate-intensity activity per week — about 11 minutes of activity per day — was associated with a 23% lower risk of early death.

#### 小論文試験問題 4

Getting active for 75 minutes on a weekly basis was also enough to reduce the risk of developing cardiovascular disease by 17% and cancer by 7%.

Beyond 150 minutes per week, any additional benefits were smaller.

“If you are someone who finds the idea of 150 minutes of moderate-intensity physical activity a week a bit daunting<sup>†11</sup>, then our findings should be good news,” said study author Dr. Soren Brage, group leader of the Physical Activity Epidemiology group in the Medical Research Council Epidemiology Unit at the University of Cambridge<sup>†12</sup>, in a news release. “This is also a good starting position — if you find that 75 minutes a week is manageable, then you could try stepping it up gradually to the full recommended amount.”

(後略)

CNN health ウェブサイト 2023年2月28日付記事

“11 minutes of daily exercise could have a positive impact on your health, large study shows” より抜粋し, 改変

<https://edition.cnn.com/2023/02/28/health/moderate-physical-activity-cancer-death-risk-wellness/index.html>

† 略語および用語の説明 †

1. moderate-to-vigorous intensity: 中程度から激しい強度
2. aerobic activity: 有酸素運動
3. cardiovascular disease: 心血管疾患
4. premature death: 早期死亡
5. large new study: 大規模な新しい研究
6. gauge: 評価する
7. intensity level: 強度レベル
8. chronic disease: 慢性疾患
9. minimum recommended amount: 最小推奨量
10. systematic review: 体系的に分析する評価法
11. a bit daunting: ちょっとむずかしい
12. the Physical Activity Epidemiology group in the Medical Research Council Epidemiology Unit at the University of Cambridge: ケンブリッジ大学医学研究評議会疫学ユニットの身体活動疫学グループ

## 小論文試験問題 5

問題5 この文章で言及されている研究の主な発見は何であるか述べよ。 配点 8点

問題6 文章中に出てくる有酸素運動の例を全て挙げよ。 配点 8点

問題7 研究の中で、活動の強度レベルはどのように決定されたのか述べよ。 配点 8点

問題8 中程度から激しい強度の有酸素運動を週に150分行った成人には、どのような効果が認められたか、具体的な数字を挙げて述べよ。 配点 8点

問題9 推奨されている週150分の身体活動を満たすことが困難な人々は、どうすればよいと記載されているか述べよ。 配点 8点

## 小論文試験問題 6

【設問 3】 次の文章を読んで、問題 10～13 に日本語で解答せよ。（†は注釈あり）

（前略）

In the “Kojiki” and “Nihon Shoki,” the oldest texts on classic Japanese history, a giant three-legged crow known as the yatagarasu appears.

Considered a god of guidance<sup>†1</sup> and the incarnation of the sun, there are still shrines that deify<sup>†2</sup> the divine<sup>†3</sup> crow, and the yatagarasu is considered a symbol of the Kumano region in the Kii Peninsula, for example, an area known for being home to an ancient pilgrimage<sup>†4</sup> site.

“Crows and humans go back tens of thousands of years,” says Hajime Matsubara, an affiliate assistant professor<sup>†5</sup> at the University of Tokyo’s museum.

“They appear not only in Japanese mythology, but in legends handed down by hunter-gatherers in Eurasia and America,” he says.

Despite its revered history, crows have suffered an image problem in recent centuries, and have been associated with death and impurity — partly stemming<sup>†6</sup> from how, according to records, they flocked around corpses during pre-modern famines<sup>†7</sup>.

Japanese superstition warns its caw forebodes misfortune. And its rapid proliferation in cities over the past few decades haven’t helped improve its public perception.

Matsubara has been researching crows for 27 years and has released books on the bird’s behavior. He says that despite its negative portrayal in mass media, humans are responsible for its population growth. In fact, he says, the government’s forestry policy may have expanded its habitat.

After spending years studying crows in urban and suburban<sup>†8</sup> settings, Matsubara has been focusing on tracking jungle crows in Japan’s mountains and forests — an arduous<sup>†9</sup> task considering the wide range of woodlands the species roam over. Still, he has discovered some important hints involving its ecology.

“Crows seem to prefer coniferous<sup>†10</sup> forests over beech forests,” he says. “Jungle crows often nest<sup>†11</sup> on branches of evergreens.”

Japan’s forests have undergone a massive transformation over the past century. Vast portions were cut down during World War II to support the military, and after the war, a spike in demand for timber<sup>†12</sup> to feed reconstruction needs saw even more woodlands disappear, prompting the government to launch a nationwide reforestation<sup>†13</sup> campaign.

Millions of hectares of beech trees were wiped<sup>†14</sup> out and replanted with fast-growing conifers such as cypress and cedar, which now account for around 40% of the nation’s forests.

“We talk about how our garbage attracts crows. But I find it even more ironic<sup>†15</sup> that we’ve been creating a habitable environment for them by destroying our woodlands and planting conifers,” Matsubara says. “We’ve essentially been spending the past 100 years catering to their needs.”

## 小論文試験問題 7

Despite its negative representations<sup>†16</sup> in popular culture, crows have drawn countless enthusiasts<sup>†17</sup> over the years, including Karasawa, who has spent the best part of his life studying the animal.

Part of the bird's allure<sup>†18</sup> lies in their unusually large brains that allows them to, for example, drop nuts on roads to have them crushed by cars. They can fashion tools from pieces of wires and sticks to reach grubs<sup>†19</sup>, and are known to have an uncanny memory of human faces. That advanced cognitive<sup>†20</sup> ability may be what makes crows both fascinating and fear-inspiring.

“We need to reflect on what we've done,” says Karasawa, who embarks<sup>†21</sup> on frequent bicycle trips to monitor his avian friends in the city.

“Shintaro Ishihara vilified<sup>†22</sup> crows, but we're the ones who have been responsible for their livelihood,” he says. “If we can accept and learn from that fact, I think it's an improvement.”

The Japan times ウェブサイト 2022年4月11日付記事

“As the crow flies: A bird's-eye view of Japan's urban ecology” より抜粋し、改変  
<https://www.japantimes.co.jp/life/2022/04/11/environment/tokyo-crows-pandemic/>

† 略語および用語の説明 †

1. guidance: 導き
2. deify: 神格化する
3. divine: 神聖な
4. pilgrimage: 巡礼地
5. affiliate assistant professor: 特任助教
6. stemming: 由来している
7. famine: 飢饉
8. suburban: 郊外
9. arduous: 根気のいる
10. coniferous: 針葉樹の
11. nest: 巣を作る
12. timber: 木材
13. reforestation: 森林再生
14. wiped: 一掃された
15. ironic: 皮肉な
16. representation: 表現
17. countless enthusiasts: 数えきれないほどの愛好家
18. allure: 魅力
19. grub: 地虫、食物
20. cognitive: 認知の
21. embark: 着手する
22. vilified: 非難された



## 小論文試験問題 8

問題 1 0 「yatagarasu」とは何であるか述べてよ。 配点 10点

問題 1 1 近代において、カラスはどのような否定的なイメージを持つようになったか述べてよ。 配点 10点

問題 1 2 Matsubara 氏によれば、人間はカラスの増加にどのように寄与していると述べられているか説明せよ。 配点 10点

問題 1 3 Matsubara 氏はなぜ、カラスが日本で適応可能な環境を持つことが皮肉だと感じているか述べてよ。 配点 10点

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙 1

受験番号	氏名

【設問 1】 問題 1 下線部（ア）の Stem cells とはどのような機能を有する細胞として記述されているか述べてよ。

---

---

---

得点 1	／ 5
------	-----

【設問 1】 問題 2 下線部（イ）の the umbilical cord とは何か述べてよ。

---

---

---

得点 2	／ 5
------	-----

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙2

受験番号	氏名

【設問1】 問題3 下線部（ウ）を適切に意識せよ。

---

---

---

得点 3	／ 5
------	-----

【設問1】 問題4 本文中に白血病とはどのような疾患であると記載されているか述べてよ。

---

---

---

得点 4	／ 5
------	-----

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙3

受験番号	氏名

【設問2】問題5 この文章で言及されている研究の主な発見は何であるか述べてよ。

---

---

---

---

---

---

得点5	/8
-----	----

【設問2】問題6 文章中に出てくる有酸素運動の例を全て挙げよ。

---

---

---

---

---

---

得点6	/8
-----	----

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙4

受験番号	氏名

【設問2】問題7 研究の中で、活動の強度レベルはどのように決定されたのか述べてよ。

---

---

---

---

---

得点 7	/ 8
------	-----

【設問2】問題8 中程度から激しい強度の有酸素運動を週に150分行った成人には、どのような効果が認められたか、具体的な数字を挙げて述べてよ。

---

---

---

---

---

得点 8	/ 8
------	-----

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙5

受験番号	氏名

【設問2】問題9 推奨されている週150分の身体活動を満たすことが困難な人々は、どうすればよいと記載されているか述べよ。

---

---

---

---

---

得点 9	/ 8
------	-----

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙6

受験番号	氏名

【設問3】問題10 「yatagarasu」とは何であるか述べてよ。

---

---

---

---

得点10

／10

【設問3】問題11 近代において、カラスはどのような否定的なイメージを持つようになったか述べてよ。

---

---

---

---

---

得点11

／10

群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙7

受験番号	氏名

【設問3】問題12 Matsubara氏によれば、人間はカラスの増加にどのように寄与しているかと述べられているか説明せよ。

---

---

---

---

---

---

---

---

---

---

得点12	/10
------	-----



群馬県立県民健康科学大学  
診療放射線学部診療放射線学科  
2024年度 学校推薦型選抜  
小論文試験問題 解答用紙 8

受験番号	氏名

【設問3】問題13 Matsubara氏はなぜ、カラスが日本で適応可能な環境を持つことが皮肉だと感じているか述べてよ。

---

---

---

---

---

---

---

---

---

---

得点 13

／ 10

## 注 意 事 項

- 1 問題用紙は表紙を含めて9枚、解答用紙8枚、下書き用紙2枚、裏表紙（注意事項記載）1枚です。
- 2 解答用紙の所定の欄に、必ず受験番号・氏名を記入してください。
- 3 解答は、すべて解答用紙に記入してください。下書き用紙に解答を記入しても、採点の対象とはしません。また、解答用紙の「得点欄」には何も記入しないでください。
- 4 問題用紙・解答用紙に印刷不鮮明や汚れ等がある場合は、無言のまま手をあげて、監督員の指示に従ってください。
- 5 試験中に質問や用便等の用件がある場合も、無言のまま手をあげて監督員の指示に従ってください。
- 6 試験開始後は途中退室を認めません。
- 7 問題用紙及び下書き用紙は持ち帰ってください。
- 8 不正行為や他の受験者に迷惑となる行為を行った場合は、失格とすることがあります。