

2 0 2 5 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 問題用紙 1

【設問 1】 次の文章を読んで、問題 1 ～ 5 に日本語で解答せよ。（※は注釈あり）

The Total Fertility Rate (TFR)^{†1} has halved from 3.3 children per woman in 1960, on average across the OECD^{†2}, to (□) in 2022, below the (ア) “replacement level” of 2.1 children per woman. This decline will change the face of societies, communities and families and will potentially have a significant impact on economic growth and prosperity.

(中略)

Fertility rates are down as women are having children later or not at all

The long-term decline in the TFR taking place since the 1960s, stopped temporarily during the 2000s, but resumed again after the great financial crisis of 2007-08. By 2022, the TFR was only (□) children per woman on average in the OECD, with 1.2 children per woman in Italy and Spain – and it was the lowest in Korea, with an estimated 0.7 children per woman in 2023.

Births increasingly occur at later ages, with an average age of 30.9 in 2022, compared to 28.6 in 2000. At the same time childlessness was rising, and around one in four women born in the 1975 cohort^{†3} in Italy and Spain was permanently^{†4} childless. In Japan it was 28%. The share of third born (or higher order) children is around 20% of all births but subject to large variation across countries.

Real and perceived challenges faced by young people could be holding back potential parenting plans

Personal choices on having a child depend on a wide range of factors, such as, economic and financial security, the costs of raising children, social norms, personal and medical conditions, labour market conditions and the family policy environment. Over the past decades, many of these factors have changed. Young people find it more difficult to become financially independent and establish themselves in labour and housing markets: increased housing costs are found to have a negative effect on TFRs.

A succession of global crises (e.g. COVID-19^{†5}, climate issues concerns, the cost-of-living crisis) has increased (economic) insecurities^{†6} among younger people, which complicates their transition into parenthood^{†7}. Young people increasingly find meaning in life outside of parenthood, and there appears to be increased acceptance of not having children.

小論文試験問題 問題用紙 2

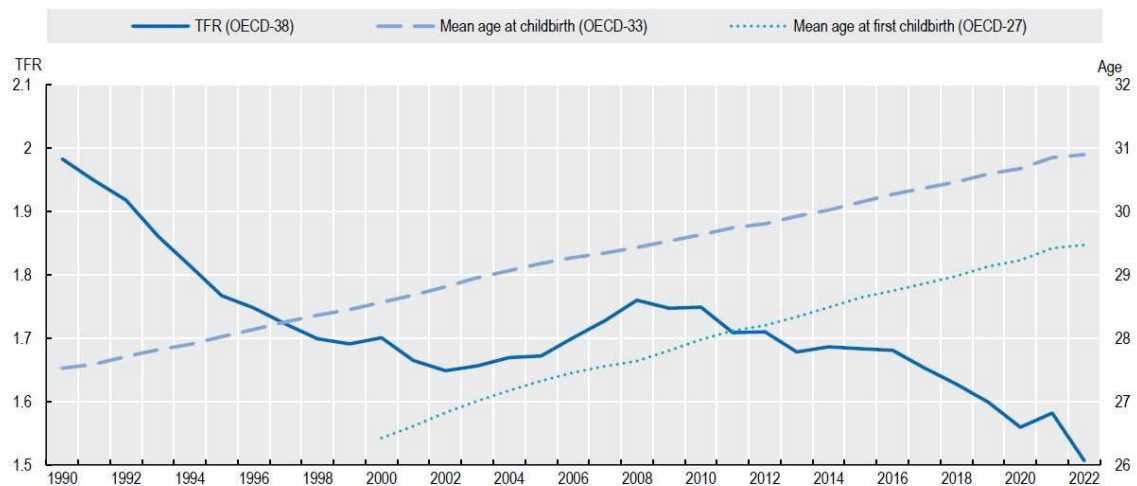
Fertility rises when women can combine work and family life on an equal footing with men

If women are able to combine work and family life, and participate in economic life on an equal footing, this leads to better economic outcomes and higher fertility rates. More options to combine work and family commitments and greater societal emphasis on gender equality have contributed to changing gender roles in families and dual-earner households^{†8}. Paid parental leave^{†9}, affordable quality childcare^{†10}, all help men and women be in employment, all have a positive effect on fertility rates. Financial support towards families, especially when linked to housing, is increasingly important.

(後略)

Figure 1.1. Simultaneous trends of fewer and later births

Total fertility rate (left axis) and mother's mean age at (first) childbirth (right axis), 1990 or 2000 to 2022, OECD average



【 Society at a Glance 2024: OECD Social Indicators より抜粋改変 ,
https://www.oecd.org/en/publications/society-at-a-glance-2024_918d8db3-en.html,
<https://read.oecd.org/10.1787/918d8db3-en>】

小論文試験問題 問題用紙 3

†略語および用語の説明†

1. Total Fertility Rate (TFR): 合計特殊出生率
2. OECD: 経済協力開発機構 (Organisation for Economic Co-operation and Development)
3. cohort: 同じ年に生まれた人々の集団
4. permanently: 永続的に、一時的ではなく
5. COVID-19: 新型コロナウイルス感染症
6. insecurities: 安定していない状況や感情
7. parenthood: 親であること、親の立場
8. dual-earner households: 共働き世帯
9. Paid parental leave: 有給育児休暇
10. affordable quality childcare: 負担できる価格で質の高い保育サービス

問題 1 下線部 (ア) は具体的に何を意味するかを述べよ。 配点 8 点

問題 2 OECD 加盟国中で TFR が最低な国名を述べよ。 配点 8 点

問題 3 本文中で子供を持つかどうかの選択はどのような要因に左右されると述べられているか全て答えよ。 配点 8 点

問題 4 本文中で出生率の上昇のために必要な社会的支援は何と述べているか全て答えよ。 配点 8 点

問題 5 Figure 1.1.を参照し、(□)に入る適切な数値を以下の選択肢から選べ。
配点 4 点

- (a) 約 26
- (b) 約 28
- (c) 約 31
- (d) 約 1.5
- (e) 約 1.85
- (f) 約 2.0

小論文試験問題 問題用紙 4

【設問 2】 次の文章を読んで、問題 6 ～ 9 に日本語で解答せよ。(†は注釈あり)

People with type 2 diabetes^{†1} should exercise in the afternoon instead of the morning to manage their blood sugar, a new study has found.

“In this study, we (have) shown that adults with type 2 diabetes had the greatest improvement in glucose control^{†2} when they were most active in the afternoon,” co-corresponding author^{†3} Dr. Jingyi Qian, from the Division of Sleep and Circadian Disorders^{†4} at Massachusetts’ Brigham and Women’s Hospital^{†5}, said in a statement.

“We’ve known that physical activity is beneficial, but what our study adds is a new understanding that timing of activity may be important too,” Qian added.

(中略)

A team of researchers from Brigham and Joslin Diabetes Center studied data from more than 2,400 people who were overweight and diagnosed^{†6} with type 2 diabetes, and were wearing a waist accelerometry recording device^{†7} – something that measures vibration or acceleration of motion^{†8} – to measure their physical activity.

After reviewing data from the first year of the study, researchers found that those who did “moderate-to-vigorous” physical activity^{†9} in the afternoon had the greatest reduction in blood glucose levels.

According to Harvard’s School of Public Health^{†10}, examples of “moderate” activity include brisk walking, mowing the lawn with a power mower and playing badminton recreationally, while “vigorous” activity includes hiking, fast jogging, a basketball or soccer game or cycling at 14-16 miles per hour.

You can tell if you are exercising at a moderate aerobic level if you’re able to talk but not sing your favorite song, according to the US Centers for Disease Control and Prevention^{†11}.

When looking at data from the fourth year of the study, the team found that those who exercised in the afternoon maintained a reduction in blood glucose levels, and had the highest chance of being able to stop taking glucose-lowering diabetes medication.

Type 2 diabetes is the most common type of diabetes, and occurs when the body becomes resistant to insulin^{†12}, or doesn’t make enough insulin, according to the

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World Health Organization.

Mostly found in adults, it is associated with older age, obesity^{†13}, family history, physical inactivity and race/ethnicity.

People with diabetes are at risk of complications including nerve damage, vision and hearing problems, kidney disease, heart disease and premature death.

The study's authors note that the observational study^{†14} does come with limitations, as it didn't measure sleep or diet.

“Timing does seem to matter,” said co-corresponding author Dr. Roeland Middelbeek, assistant investigator at Joslin Diabetes Center^{†15}. “Going forward, we may have more data and experimental evidence for patients to give more personalized recommendations.”

Dr. Lucy Chambers, Head of Research Communications at Diabetes UK^{†16}, said of the study: “Keeping physically active can help people with type 2 diabetes manage their blood sugar levels and reduce their risk of developing serious diabetes-related complications such as heart disease and kidney failure, as well as improving their overall wellbeing.

Chambers, who was not involved with the study, emphasized the need for people to exercise where they can.

“This new research found that regular ‘moderate-to-vigorous’ physical activity – whether in the morning, midday, afternoon or evening – was associated with lower average blood sugar levels in people with type 2 diabetes. Afternoon exercise was linked with the greatest benefits but the reasons for this are unclear and current evidence on optimal times for exercising is mixed.

“If you're living with type 2 diabetes, the most important thing is to find an exercise you enjoy and that you can incorporate into your routine in the long-term – whether it's before work, on your lunch break, or in the evening,” she added.

The team's findings are published in the journal Diabetes Care^{†17}.

(後略)

小論文試験問題 問題用紙 6

【CNN health 2023 年 5 月 26 日付記事

“People with type 2 diabetes may benefit from exercising in the afternoon, study shows” より抜粋改変

<https://edition.cnn.com/2023/05/26/health/diabetes-type-two-afternoon-exercise-intl-scli-wellness/index.html>】

†略語および用語の説明†

1. type 2 diabetes: 2 型糖尿病
2. glucose control: 血糖値の管理
3. co-corresponding author: 共著者
4. Division of Sleep and Circadian Disorders: 睡眠と循環リズム障害部門
5. Brigham and Women's Hospital: ブリガム・アンド・ウィメンズ病院
6. diagnosed: 診断された
7. waist accelerometry recording device: 腰部加速度計測装置
8. vibration or acceleration of motion: 振動または運動の加速度
9. physical activity: 身体活動
10. Harvard's School of Public Health: ハーバード公衆衛生学校
11. US Centers for Disease Control and Prevention: 米国疾病管理予防センター
12. insulin: インスリン
13. obesity: 肥満
14. observational study: 観察研究
15. assistant investigator at Joslin Diabetes Center: ジョスリン糖尿病センターで働く助手研究員
16. Head of Research Communications at Diabetes UK: イギリス糖尿病協会の研究広報部長
17. journal Diabetes Care: 糖尿病ケア学会誌

問題 6 この研究では、2 型糖尿病の人々にとって、運動のタイミングと種類が血糖値にどのような影響を与えると発見されたか述べて。 配点 8 点

問題 7 問題文中で言及されている「適度な」身体活動の例を全て挙げよ。
配点 8 点

問題 8 問題文中に出てくる糖尿病に伴う合併症にはどのようなものがあるか全て挙げよ。配点 8 点

問題 9 Dr. Lucy Chambers は、2 型糖尿病患者の運動について何が最も重要と述べているか述べて。 配点 8 点

小論文試験問題 問題用紙 7

【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）

New blood tests could help to identify, or **diagnose**, Alzheimer's disease^{†1} faster and with more **accuracy**, researchers reported recently. However, some of the tests for the brain-wasting disease^{†2} appear to work better than others.

New tests, new drugs

Doctors can confirm Alzheimer's in a patient if they find one of the disease's main signs: the development, or buildup, of a sticky^{†3} protein called beta-amyloid^{†4}. Currently, doctors use brain imaging or a special test known as a spinal tap^{†5} to look for beta-amyloid buildup. Brain imaging is hard to get and spinal taps are painful.

Instead, many patients are diagnosed based on their behavior and **cognitive** exams^{†6}.

Now, labs have begun offering blood tests that can show some signs of Alzheimer's. Scientists are excited about the possibilities that the tests offer.

But the tests are not widely used yet because there is little data to guide doctors about which kind to order and when. The U.S. Food and Drug Administration (FDA) has not officially approved any of them, and few patients have insurance coverage for such tests.

“What tests can we trust?” asked Dr. Suzanne Schindler of Washington University in St. Louis. Schindler is part of a research project examining the tests. While some tests are very accurate, Schindler said, “(ア) other tests are not much better than a flip of a coin^{†7}.”

More than 6 million people in the United States and millions more around the world have Alzheimer's, the most common form of dementia^{†8}. Its usual signs, or “biomarkers^{†9},” are amyloid plaques^{†10} and abnormal tau protein that leads to tangles that damage **neurons**.

New drugs such as Leqembi and Kisunla can slow the disease a little. The medicines remove amyloid from the brain. But these drugs only work in the early part, or stage, of Alzheimer's progression. Few patients get the costly brain scans and invasive^{†11} spinal taps that could show early stage Alzheimer's.

Even specialists struggle to tell if Alzheimer's or something else is to blame for a patient's problems.

小論文試験問題 問題用紙 8

Schindler said she sometimes has patients “(イ) who I am convinced have Alzheimer’s disease and I do testing and it’s negative.”

A limited number of doctors have carried out blood tests for Alzheimer’s in carefully controlled research settings. However, a new study of about 1,200 patients in Sweden shows they also can work in doctors’ offices.

The findings suggest (ウ) the blood tests may be more helpful for general care doctors. They see many more cases of people with memory problems than specialists do. However, general care doctors have fewer diagnostic tools.

In the study, patients who visited either a general care doctor or a specialist for memory problems got an early diagnosis using traditional exams. They gave blood for testing and got confirmatory spinal taps or brain scans.

Blood testing is far more accurate, Lund University researchers reported recently at the Alzheimer’s Association International Conference^{†12} in Philadelphia. They said that the primary care doctors’ first diagnosis was 61 percent accurate and the specialists’ first diagnosis 73 percent. However, the blood test was 91 percent accurate, their study showed. The Journal of the American Medical Association^{†13} published the study.

(後略)

【Voice of America 2024 年 8 月 1 日付記事

“Researchers: New Blood Tests Help Doctors Identify Alzheimer’s Disease”より抜粋
改変

<https://learningenglish.voanews.com/a/researchers-new-blood-tests-help-doctors-identify-alzheimer-s-disease/7717354.html>】

小論文試験問題 問題用紙 9

† 略語および用語の説明 †

1. Alzheimer's disease : アルツハイマー病
2. brain-wasting disease : 脳障害を起こす病気
3. sticky : 粘着性の
4. beta-amyloid : アミロイド β
5. spinal tap : 脊椎穿刺
6. cognitive exams : 認知検査
7. flip of a coin : 指で硬貨を弾き上げる, コイントス
8. dementia : 認知症
9. biomarkers : バイオマーカー (疾患の有無などを推定し得る体内の物質)
10. amyloid plaques : アミロイド β の沈着物
11. invasive : 侵襲的な
12. Alzheimer's Association International Conference : アルツハイマー協会国際会議
13. The Journal of the American Medical Association : 米国医師会雑誌

問題 1 0 米国におけるアルツハイマー病患者数はどのくらいと記述されているか答えよ。 配点 8 点

問題 1 1 下線部 (ア) では、他の検査の「何が」良くないと述べているか答えよ。
配点 8 点

問題 1 2 下線部 (イ) を適切に和訳せよ。 配点 8 点

問題 1 3 下線部 (ウ) に関し、この血液検査が **general care doctors** に役立つ可能性がある理由として述べられている事は何か答えよ。 配点 8 点

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2025 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）は具体的に何を意味するかを述べよ。

得点 1	/ 8
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【設問 1】
問題 2 OECD 加盟国中で TFR が最低な国名を述べよ。

得点 2	/ 8
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小論文試験問題 解答用紙 2

受験番号	氏 名

【設問 1】
問題 3 本文中で子供を持つかどうかの選択はどのような要因に左右されると述べられているか全て答えよ。

得点 3	/ 8
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【設問 1】
問題 4 本文中で出生率の上昇のために必要な社会的支援は何と述べているか全て答えよ。

得点 4	/ 8
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受験番号	氏 名

【設問 1】
問題 5 Figure 1.1.を参照し、(□)に入る適切な数値を以下の選択肢から選べ。

- (a) 約 26
- (b) 約 28
- (c) 約 31
- (d) 約 1.5
- (e) 約 1.85
- (f) 約 2.0

得点 5	/ 4
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小論文試験問題 解答用紙 4

受験番号	氏 名

【設問 2】
問題 6 この研究では、2 型糖尿病の人々にとって、運動のタイミングと種類が血糖値にどのような影響を与えると発見されたか述べてよ。

得点 6	／ 8
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小論文試験問題 解答用紙 5

受験番号	氏 名

【設問 2】

問題 7 問題文中で言及されている「適度な」身体活動の例を全て挙げよ。

得点 7	／ 8
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【設問 2】

問題 8 問題文中に出てくる糖尿病に伴う合併症にはどのようなものがあるか全て挙げよ。

得点 8	／ 8
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小論文試験問題 解答用紙 6

受験番号	氏 名

【設問 2】
問題 9 Dr. Lucy Chambers は、2 型糖尿病患者の運動について何が最も重要と
いっているか述べてよ。

得点 9	／ 8
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2025 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 1 0 米国におけるアルツハイマー病患者数はどのくらいと記述されているか答えよ。

得点 1 0	/ 8
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【設問 3】
問題 1 1 下線部（ア）では、他の検査の「何が」良くないと述べているか答えよ。

得点 1 1	/ 8
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小論文試験問題 解答用紙 8

受験番号	氏 名

【設問 3】
問題 1 2 下線部（イ）を適切に和訳せよ。

得点 1 2	／ 8
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【設問 3】
問題 1 3 下線部（ウ）に関し、この血液検査が general care doctors に役立つ可能性がある理由として述べられている事は何か答えよ。

得点 1 3	／ 8
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注 意 事 項

- 1 問題用紙 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。