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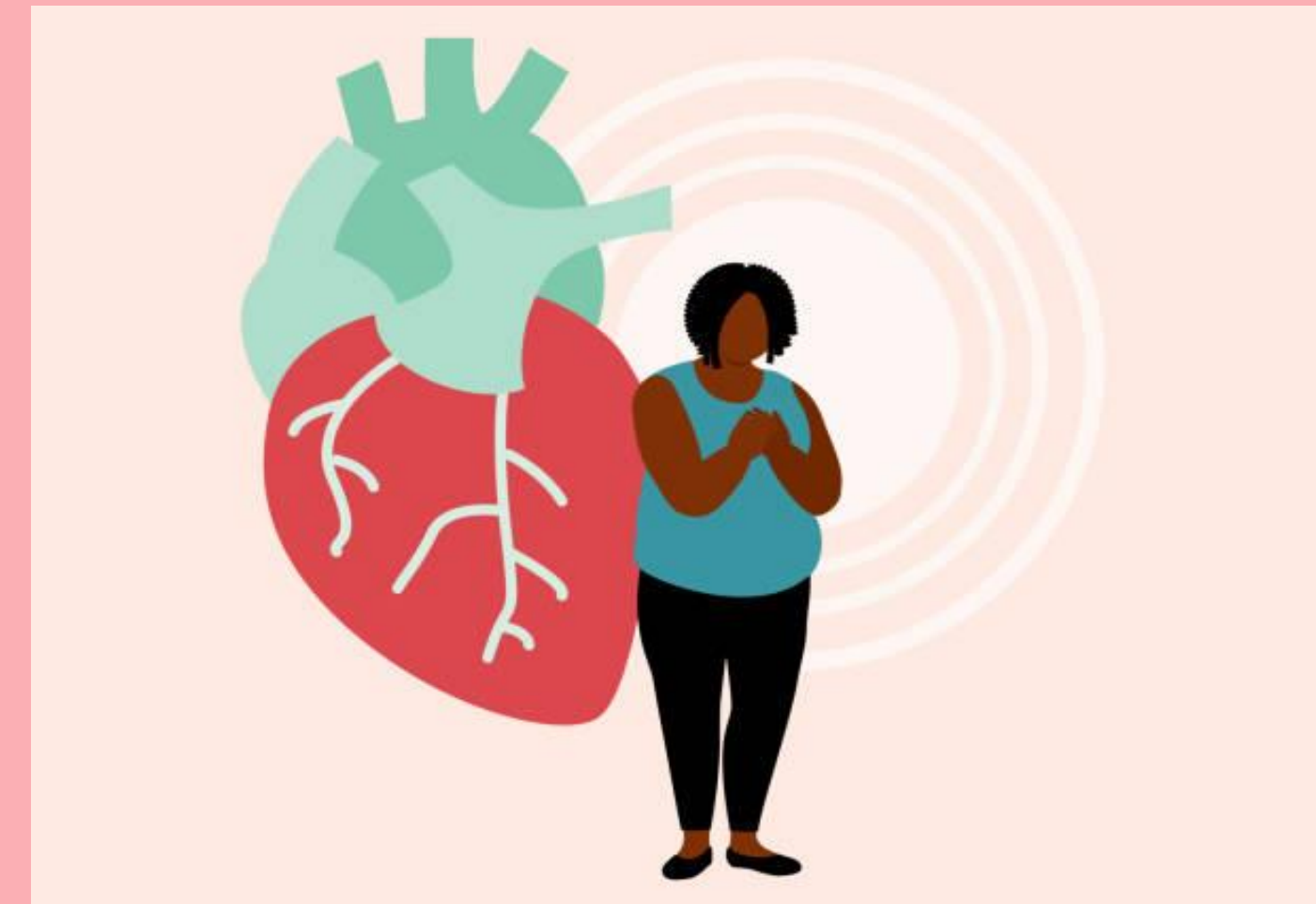
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Effects of Menopause in Coronary Artery Disease

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Introduction

Estrogen plays an important role in developing a female's secondary sexual characteristics and regulating the menstrual cycle. In addition, it offers protection against coronary artery disease (CAD), which aids in reducing the risk of a heart attack. As estrogen production declines during menopause, the title of "the heart protector" will no longer stay true to its name as studies have found that hormonal changes during menopause can be linked to cardiovascular health (Hodis & Mack, 2022).

Menopausal women, 40 to 60 years old, are at a higher risk of developing cardiovascular problems, such as coronary artery disease. It is one of the top causes of morbidity and mortality among women experiencing menopause (Honigberg et al., 2021).

Research Hypothesis

The intervention of the study, Hormone Replacement Therapy (HRT), will be able to slow down the progression of CAD, reducing the risk of CAD in menopausal women.

Research Proposal

This research proposal aims to investigate the effects of menopause on the development and progression of CAD, evaluating the effectiveness of hormone replacement therapy as an intervention. This study will contribute further insight into cardiovascular risks in menopausal women.

Research Design

Design

- Quantitative Study
- Randomized Controlled Trial (RCT)
- Independent variable: HRT
- Dependent variable: Risk of CAD

Participants

- Women ages from 40 to 60 years old without a history of any cardiovascular diseases (sample size = 100)
- Recruiting participants from a community outreach setting

Materials/Measurements

- Questionnaire
- Coronary artery calcium scan

Methodology

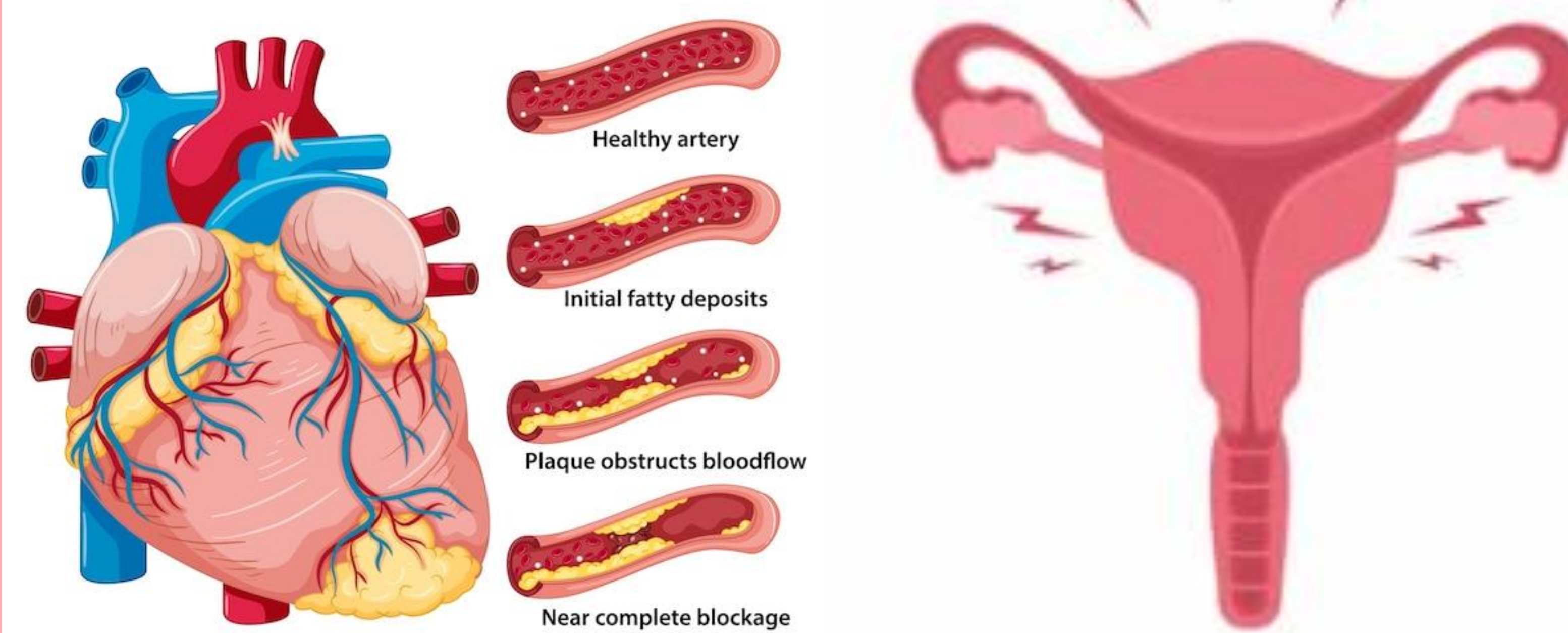
Plan for the Procedure

- From questionnaire gather demographics, age, menopausal status, medical history, and lifestyle.
- Gather cardiovascular health information through cardiac imaging (coronary artery calcium scan) and blood draws (calcium levels, cholesterol levels).
- Randomly assign half of the group to the control group (placebo) and the other half to experimental group (will use HRT).
- All participants will require to do a 5 annual follow-up assessment. Will gather cardiovascular status during each follow-up. Additionally, will do another questionnaire to assess participant's current quality of life, menopausal symptoms, and adherence to HRT.

Plan for Analysis

- T-Test
- Analyze calcium artery scoring

CORONARY ARTERY DISEASE



Analysis

- Inferential statistics, a T-test, will be used to determine the p-value. If p-value is <0.05 , then we can determine there is a statistical significance between HRT and CAD.
- If the calcium artery scoring results is 0, then no calcium build up is present. If the score is 100-300, moderate plaque has been built within the coronary arteries. Higher score of the calcium artery scoring means higher risk of a cardiovascular disease.

Conclusion

If results show a relationship with a p-value <0.05 , it suggests an association between HRT usage and CAD. Moreover, if a reduction or maintained calcium level in the coronary arteries is observed in individuals using HRT compared to the controlled group, this finding would suggest that HRT may potentially reduce the risk of CAD and slow its progression in menopausal women. These findings would encourage to raise awareness among women about the increased risk of CAD during menopause and the potential role of HRT in improving quality of life.

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References:

- Hodis, H. N., & Mack, W. J. (2022). Menopausal Hormone Replacement Therapy and Reduction of All-Cause Mortality and Cardiovascular Disease: It Is About Time and Timing. *Cancer journal (Sudbury, Mass.)*, 28(3), 208–223. <https://doi.org/10.1097/PPO.0000000000000591>
- Honigberg, M. C., Zekavat, S. M., Niroula, A., Griffin, G. K., Bick, A. G., Pirruccello, J. P., Nakao, T., Whitsel, E. A., Farland, L. V., Laurie, C., Kooperberg, C., Manson, J. E., Gabriel, S., Libby, P., Reiner, A. P., Ebert, B. L., NHLBI Trans-Omics for Precision Medicine Program, & Natarajan, P. (2021). Premature Menopause, Clonal
- Mayo Foundation for Medical Education and Research. (2023, July 22). *Coronary calcium scan*. Mayo Clinic. <https://www.mayoclinic.org/tests-procedures/heart-scan/about/pac-20384686#:~:text=A%20score%20of%20zero%20means,300%20means%20moderate%20plaque%20deposits.>