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From Rehab to Routine: Ensuring Lasting Lifestyle Changes After Cardiac Rehabilitation – First Experiences from the "Love Your Heart" Program

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Abstract

Objective. The study assesses how well patients follow secondary prevention measures after completing an outpatient cardiac rehabilitation (CR) program. **Materials and Methods.** This research involves 63 patients who completed an outpatient CR program between 2018 and 2020 at the Istrian Health Center in Pula, Croatia. Socio-demographic characteristics, levels of physical activity, adherence to a Mediterranean diet, and compliance with medical recommendations were assessed in a survey to gather data. **Results.** Out of the 63 patients surveyed, 51 responded (34 males, 17 females, average age 68.25 years). After completing a cardiac rehabilitation program, 78.4% maintained appropriate levels of physical activity but showed low adherence to a Mediterranean diet, with an average score of only 3.94 out of 9. Only a small percentage (2%) effectively followed medical recommendations. **Conclusion.** Despite the fact that patients maintain physical activity, there are still challenges regarding adherence to nutritional recommendations and medical advice. Long-term adherence can be improved by utilizing technology, involving family members, and offering education. Future research should focus on identifying obstacles to adherence and developing approaches to achieve lasting behavioral change.

Key Words: Cardiac Rehabilitation ▪ Cardiovascular Diseases ▪ Mediterranean Diet ▪ Physical Activity ▪ Prevention.

Introduction

In developed countries, including Croatia, cardiovascular diseases (CVD) are the primary cause of death, and pose many challenges to public health and the economy (1). Each year CVDs result in 3.9 million deaths in Europe and over 1.8 million in the European Union, thereby representing a significant portion of all mortality rates (45% of all deaths in Europe and 37% in the EU) (2). CVDs were responsible for 39.1% of deaths in Croatia in 2022, with 22,303 people dying from them (3). Global CVD mortality rates declined between 1990 and 2022 according to data from the World Health Organization (WHO) and numerous public health studies, such as Mensha et al (4). However, it is especially concerning that younger demographics, including the working population, are increasingly impacted by CVD, leading to notable economic repercussions (2). The study by Luengo Fernandez et al. in 2023 estimates that productivity losses due to CVD represent 17% of the total, amounting to 48 billion EUR, while informal care expenses amount to 79 billion EUR (5). These data highlight the importance of public health preventive measures in the form of primary and secondary prevention of CVD to reduce morbidity and mortality, and to mitigate the economic impact on the countries' economies. Numerous studies and meta-analyses have shown that cardiac rehabilitation (CR) programs are crucial for prevention, as they significantly reduce mortality rates and recurrent CVD events, while improving quality of life, increasing physical activity levels, and reducing anxiety and depression (6).

In Istria, a coastal tourist region of Croatia, the "Love Your Heart" project was initiated as part of the Adriatic Network for Cardiovascular

Disease Prevention program, funded through the Instrument for Pre-Accession Assistance Adriatic EU Cross-Border Cooperation Program in 2012 (7). It spanned various regions in Croatia, Italy, and Albania within the Adriatic area. One of the primary goals was the establishment of the Center for Cardiovascular Disease Prevention in Istria, aimed at improving the detection of risk factors, providing services to high-risk patients, and efficiently monitoring their condition. In 2018, an outpatient CR program was launched, including activities and educational workshops on CVD, risk factors, and preventive measures. A total of 63 patients completed the program of outpatient CR. After completing the rehabilitation program, patients have the opportunity to join a club for cardiovascular patients, where they can take part in regular Nordic walking training and educational workshops once a week. The program was suspended in 2020 due to the COVID-19 pandemic but was revitalized in 2023.

The effectiveness of rehabilitation and secondary prevention strategies relies heavily on patient adherence to treatment plans. Chen et al., in their meta-analysis, revealed that patients with coronary artery disease were more prone to CVD events and mortality due to their poor adherence to prescribed medications (8). Monitoring patients and ensuring that lifestyle adjustments made during rehabilitation are continued is of significant public health importance. A major impact on society can be achieved by timely detection of complications or recurrence of disease, potential deterioration of quality of life, and the emergence of other diseases. However, the sustainability of these habits varies in relation to the patients' characteristics, socioeconomic status, cultural influences, and regional factors. Regrettably, adherence to these lifestyle changes tends to decrease over time.

This study aims to assess how well patients follow secondary prevention measures after completing an outpatient CR program. This evaluation can aid in identifying areas where the CR program may require modifications to enhance adherence to secondary prevention measures and outcomes, at both regional and global levels.

Patients and methods

Participants

The study was carried out from December 2023 to March 2024. The study included 63 patients who completed an outpatient CR program at the Istrian Health Center in Pula in the period between 2018 and 2020. Three patients passed away between 2020 and 2024, and seven individuals were not available because they changed their contact numbers. Two patients failed to complete the survey. The CR program included patients recovering from myocardial infarction (with or without interventions such as percutaneous coronary intervention – PCI, or coronary artery bypass grafting - CABG), stable angina pectoris, chronic heart failure (stadium NYHA I-II) with a stable clinical condition, and post-valve replacement or repair, and patients with implanted devices such as implantable cardioverter defibrillator (ICD) or pacemakers. Participation required a stable clinical state, as well as the physical and cognitive ability to engage in the program and the motivation to adhere to its recommendations. The exclusion criteria for participation in CR included acute or unstable conditions, such as acute myocardial infarction, unstable angina pectoris, uncontrolled or severe cardiac arrhythmias, or acute heart failure. Patients with uncontrolled concomitant diseases or severe lung disease with respiratory insufficiency were also excluded. In addition, physical and cognitive impairments, such as severe disabilities or significant cognitive impairment, as well as the patient's refusal to participate in rehabilitation were considered exclusion criteria. For patients of working age, outpatient CR was organized five times per week over seven and a half weeks to prepare them for returning to work. Retired or unemployed patients participated three times per week over 12 weeks. The rehabilitation program included aerobic exercises, muscle-strengthening activities, walking on a treadmill, or cycling on a bicycle ergometer for 30–40 minutes as interval training in groups of 1-6 patients, under the supervision of a physiotherapist, with monitoring of blood pressure and pulse, and an electrocardiogram during

treadmill or bicycle-ergometer exercises. Regular workshops on adapting lifestyle habits were also provided. Before joining the rehabilitation program, patients underwent a specialist cardiology examination, and a six-minute walk test was conducted. During the rehabilitation program, patients had regular medical check-ups.

Procedure and Materials

In this study, a customized questionnaire was used to collect information on how patients changed their lifestyles after completing outpatient rehabilitation. In the first part of the survey, information was collected on the basic characteristics of the participants (age, gender, and the indications for rehabilitation). Subsequent sections of the questionnaire included inquiries about the participant's behaviors and physical activity levels after rehabilitation. On the basis of their responses, participants were categorized into three groups: those with a low level of activity (< 50 minutes of physical activity per week), those with moderate physical activity (50-149 minutes of physical activity per week), and individuals with a high level of physical activity (≥150 minutes of physical activity per week).

The third part was the standard questionnaire entitled 'Rate Your Med Diet Score' from Oldways and the Mediterranean Foods Alliance, which contains nine standard questions (9). This questionnaire was not specifically created for cardiovascular patients but is very easy to use and easily understood by patients of various cultural and educational backgrounds. In this section, the health benefits of a Mediterranean diet were highlighted, with each positive response being worth one point. The findings were classified into four groups (0-3 points – "Time to turn your life around" – your diet is not following the ideal Mediterranean diet; 4-5 points "A good start, but you can do better if you value your health." – your diet includes some elements of the ideal Mediterranean diet; 6-7 points – "You're doing well. What would help you to add another point or two?" – your diet has a lot in common with the ideal Mediterranean diet; 8-9 points – "Long life! Your eating habits follow the Med Diet very closely" – your diet is largely in line with the ideal Mediterranean diet.)

The final part of the questionnaire featured four questions aimed at gauging respondents' views on adherence to recommendations, such as not smoking, monitoring blood pressure daily following the prescribed medication intake, and attending regular cardiac checkups. A point was awarded for each affirmative response. Poor adherence to these habits was implied by one positive answer, two positive answers were associated with the attitude of moderate adherence to medical recommendations, while three or more positive answers implied good adherence to medical recommendations.

Ethical Considerations

The study was approved by the Ethics Committee of the Istrian Health Centers (approval number: 2168/01-59-49-01-1/801-23-176). The Law on the Protection of Patients' Rights (Official Gazette 169/04, 37/08) and the Law on the Protection of Personal Data (Official Gazette 103/03-106/12) were adhered to in order to protect the rights of the participants and their data. The study also followed the principles of the Declaration of Helsinki (1964-1973). Participation in the study was voluntary and anonymous. Participants were informed in advance about the aims of the study. All participants signed a consent form.

Statistical Analysis

The data obtained were analyzed using Statistica 13.3 (TIBCO Software Inc.). The computer program Microsoft Office Excel was used for the graphical and tabular presentation of the results for better visualization.

The socio-demographic data are presented in absolute frequencies and as percentages. Descriptive statistical methods were used to determine the respondents' views on the continuity of lifestyle changes after CR, including the determination of the mean and standard deviation. The reliability of the "Rate Your Med Diet Score"

questionnaire was assessed by calculating the Cronbach's alpha coefficient. Multivariate regression analysis was used to determine the influence of independent variables from Table 1, such as the BMI, height, oxygen saturation, and blood pressure of the participants in the results of the 6-minute walk test. The normality of the scores obtained was tested using the Kolmogorov-Smirnov test. As the data were not normally distributed, a non-parametric chi-square test was used to test the differences between the groups of patients obtained depending on their diet. Also, on the basis of the results obtained, the most frequent physical activity levels after rehabilitation were determined using the Chi-square test. Statistical significance was assessed at the level of $P \leq 0.05$, with 95% confidence limits.

Results

The research involved 51 respondents (N=51). Of these participants, 34 were men (66.7%) and 17 were female (33.3%) (Table 1). The average age of the respondents was 68.25±8.54 years. The youngest participant was aged 49, while the oldest was 86 years old. The most common indication for CR was myocardial infarction (64.7%).

Table 1. Characteristics and Baseline Values of the Study Population

Characteristics	N (%)
Gender	
Male	34 (66.7)
Female	17 (33.3)
Diagnosis	
Myocardial infarction	33.7 (64.7)
Chronic ischemic heart disease	13 (25.5)
Other diagnoses*	5 (9.8)
Baseline values of the patients	
Age average (years)	68.3±8.5§
Average height (cm)	173.5±8.95§
Average weight (kg)	81.6±12.8§
BMI† (kg/m^2)	27.1±3.11§
LDL‡ (mmol/L)	2.71±0.94§
Triglycerides (mmol/L)	1.71±0.58§
Oxygen saturation (%)	97.5±0.63§
Systolic blood pressure (mmHg)	126.8±4.8§
Six-minute walk test (m)	320.85±88.81§

*Aortic valve replacement, Electro-stimulator placement, Heart failure; †Body mass index; ‡LDL cholesterol; §M±SD.

The Patients' Consistency in Engaging in Physical Activity after Finishing the CR Program

According to the analysis, most respondents continued to engage in physical activity after completing the outpatient CR program. According to the survey data, one-fourth (27.4%) of the respondents reported walking 1 to 2 times per week, while over one-third (33.4%) walked three to four times per week, and nearly forty percent (39.2%) walked five or more times per week. Furthermore, one-fifth (19.6%) walked less than 30 minutes, and around thirty percent (31.3%) for over an hour. It was also found that 54.9% of the respondents participated in a different type of physical activity alongside walking. In conclusion, using the Chi-square test it was determined that according to the time spent engaged in physical activities, 16% of the respondents were classified as having low levels of physical activity, 6% were classified as having moderate physical activity, and a significant 78% were classified as having a high level of physical activity, (χ^2=47.412, P=0.000). Furthermore, in the fourth iteration, the multivariate regression analysis (R=0.727, P=0.000) established a statistically significant relationship between the subject's height (b*=0.468, P=0.003) and the initial blood pressure measured (b*=0.351, P=0.047) in the results of the 6-minute walk test. In addition, the statistically significant differences (t=8.553, P=0.000) between the results of these tests at the beginning (320.85±88.81 m) and the end of CR (527.83±137.36 m) were utilized.

Application of Healthy Eating Rules Adopted During Outpatient CR

To assess compliance with the Mediterranean diet, a study used the "Rate Your Med Diet Score" questionnaire. The calculated value of the Cronbach's alpha coefficient (α=0.75) indicates

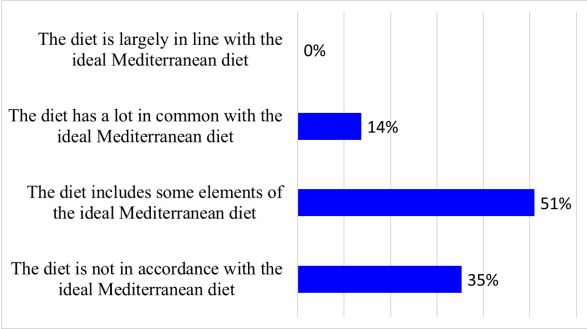

Figure 1. Percentage distribution of the respondents by eating habits.

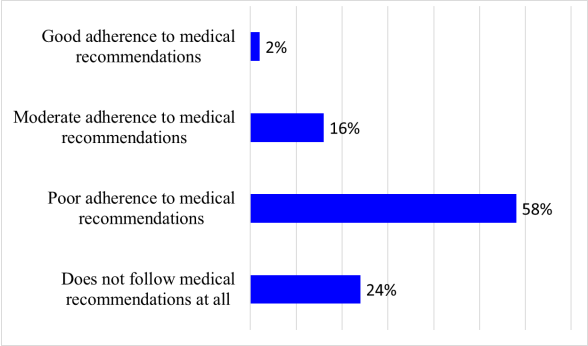

Figure 2. Percentage representation of respondents according to categories on adherence to medical recommendations.

the good reliability of the scale. The results of the Kolmogorov-Smirnov statistical test showed that the data were not normally distributed (P<0.01).

It is worth noting that the ideal Mediterranean diet pattern was not followed by any of the respondents. Percentage distribution of the respondents by eating habits is depicted in Figure 1. The majority of respondents only partially adhere to the rules of the Mediterranean diet.

To assess compliance with the Mediterranean diet, a study used the "Rate Your Med Diet Score" questionnaire. The calculated value of Cronbach's alpha coefficient (α=0.75) indicated the good reliability of the scale. The results of the Kolmogorov-Smirnov statistical test showed that the data were not normally distributed (P<0.01).

However, a difference was found in the frequency of the application of healthy eating rules during CR between the defined categories (χ^2=10.706, P=0.005). Moreover, each respondent's average score was calculated as 3.94±1.58 points. This indicates that the sampled individuals either did not strictly follow the Mediterranean diet or only included some elements from it in their food intake

Adherence to Medical Recommendations

Representation of respondents according to categories on adherence to medical recommendations is shown in Figure 2. Moreover, the data analysis revealed the existence of significant differences between these categories (χ^2=38.961; P=0.000). Unfortunately, only a minimal number of respondents adhere to the medical recommendations, while three quarters of them do not or only partially follow the recommendations they received during the CR.

Discussion

This study aimed to assess how well participants adhered to the rules and maintained the lifestyle changes learned as part of a CR program. CR is a crucial aspect of secondary prevention in cardiovascular care, which aims to improve the prevention of heart problems by encouraging healthy habits, adherence to medication routines, and regular check-ups with healthcare providers (10). The participants in this study were predominantly elderly, with an average age of 68 years. This age range is important because the risks and complications tend to increase with age. Twice as many men as women took part in the study. A higher number of men was certainly to be expected, as numerous studies to date have shown a higher prevalence of CVD in men than in women, especially in younger age groups, where the protective role of estrogen in the development of CVD has been confirmed (11, 12). In addition, it is important to consider that men are more likely to engage in high-risk behaviors such as smoking or excessive alcohol consumption, and be affected by socioeconomic inequality (13-15). The most common indication for outpatient CR among participants was myocardial infarction. This finding

reflects the continued prevalence of ischemic heart disease, which, as noted in the article by Wu et al, is the most common form of CVD worldwide (16). Recent studies show that ischemic heart disease remains one of the leading causes of death, highlighting the need for effective secondary prevention strategies (17). On the other hand, the significant positive effect of CR on the cardiorespiratory status of patients with heart failure is indisputable. A study by Acanfora et al. confirmed the benefits of CR in patients with heart failure and reduced left ventricular ejection fraction (18).

However, outpatient CR is not yet fully developed in the Republic of Croatia, partly because patients often opt for inpatient CR after cardiovascular events. There are only two facilities offering inpatient cardiac rehabilitation in Croatia, and their capacity is insufficient to meet the needs of the population. Outpatient CR, which serves as a complement to inpatient CR, could significantly reduce the burden on the healthcare system. However, it is currently only offered in three public and one private facility. The CR center in Istria offers outpatient CR treatment and is primarily intended for stable, low-risk patients. This is mainly due to the still prevailing belief of both patients and healthcare professionals that rehabilitation after a cardiovascular event should take place in an inpatient setting. This explains the predominance of simple, less complicated patients with ischemic heart disease in this study. At the same time, this limitation highlights the need for wider availability and easier access to outpatient rehabilitation services and the need to change public awareness of the role of outpatient CR.

This study emphasizes existing knowledge about the importance of participants adhering to physical activity recommendations, as the benefits of regular physical activity in reducing cardiovascular risk are well-known (19). According to the guidelines of the European Society of Cardiology, it is recommended to exercise at least 150-300 minutes per week at moderate intensity (20). The results of the study suggest that participants understood the importance of physical activity and its positive impact on reducing the morbidity and mortality associated with cardiovascular disease. This is supported by the fact that the patients improved their 6MWT results. Subsequent analysis revealed that the patient's height influenced these results, which is understandable given the widely accepted ratio of stride length to height, which varies according to age, gender, fitness level, and exercise style. Despite the results related to physical activity, the study shows that maintaining a healthy diet is a challenge. None of the participants fully adhered to the secondary prevention guidelines for the Mediterranean diet, which is known for its cardiovascular benefits (21). Only about half of the participants adhered to certain aspects of these recommendations. With an average adherence rate of 3.94 out of a possible 9 points, poor adherence to the prescribed diet plan highlights the need for targeted interventions and ongoing support to address this common problem in secondary prevention (22). The average LDL cholesterol value determined is significantly higher than the values recommended by the professional associations, with only two participants reaching the target values. This result is all the more worrying as the study was conducted in a Mediterranean region where the Mediterranean diet should be a common lifestyle. It underscores the need to examine regional socio-demographic, economic, cultural, and other factors that may contribute to such unhealthy eating habits in the population. These findings serve as a basis for planning targeted public health initiatives.

Regarding adherence to medical recommendations, only one participant showed high adherence, while eight participants showed moderate adherence. This reflects a general problem with adherence to recommendations in areas such as taking medication, attending regular check-ups, and monitoring vital signs. Nonadherence to prescribed medications can lead to adverse outcomes, including increased hospitalization and mortality, especially in the elderly and patients with comorbidities (23). Although it is a widespread assumption that women are more likely to adhere to medical recommendations and medication regimens, the results of previous studies are quite

controversial and full of contradictions, as shown by the studies of Venditti et al. and Olmastroni et al. which indicate poorer adherence to recommendations among women. This can certainly be influenced by various factors, such as socio-demographic, cultural, psychological, or treatment-related factors (24, 25).

Further research should be conducted to determine which specific medical recommendations patients do not adhere to, how long they maintain the habits acquired during cardiac rehabilitation before they falter, and what the exact causes of nonadherence are. These factors may help to develop more effective follow-up programs and interventions to improve long-term adherence to secondary prevention strategies. Recent studies have investigated various strategies to improve adherence to lifestyle changes and medical recommendations in CR. Mobile health applications and remote monitoring technologies have proven to be effective in promoting adherence to exercise, diet, and medication plans (26). Long-term adherence and outcomes could be improved by incorporating technology into CR. Involving patients' families and their social environment in the rehabilitation process through family-centered interventions can provide important support and encouragement and help patients adhere to lifestyle changes and medical advice (27). Patients may benefit from refresher sessions or follow-ups that emphasize the importance of maintaining activities, dietary changes, and medication regimens. These sessions provide an opportunity to address barriers to adherence, motivate the patients, and suggest ways to maintain this behavior. Behavioral interventions, such as motivational interviewing and behavioral therapy, have been shown to improve adherence to lifestyle changes and medical advice (28). These approaches strengthen patients' motivation, self-confidence, and problem-solving skills. Integrating these approaches into CR programs helps to overcome barriers, improve treatment adherence, and maintain behavior change. Addressing socioeconomic factors, such as access to healthy food, safe places to exercise, and medical care, and through policies and community initiatives, can reduce disparities in adherence and treatment outcomes.

Limitations of the Study

The small sample size of the study makes it difficult to generalize the results to a wider population and reduces the study's ability to detect smaller but potentially significant effects. With such a limited number of participants, the likelihood of bias that could affect the generalizability of the results is also higher. Since the study focused on an outpatient rehabilitation program in Istria, Croatia, the conclusions may not be relevant for people in other regions. Another limitation is the gender imbalance in the sample, in which there were twice as many men as women, which could bias the results and make them less representative of both genders. The use of questionnaires in research also brings challenges as they rely on patient self-report, which is often unreliable. Patients may answer in a way they think is socially acceptable or in a way they believe the researcher wants to hear, rather than giving honest answers. In addition, the use of predetermined questionnaires limits the researcher's ability to ask follow-up questions that could clarify responses, which may lead to misinterpretation. The study also did not examine how factors such as socioeconomic status or cultural background might affect treatment adherence, leaving important influences on behavior unaddressed.

Conclusion

This study emphasizes the importance of secondary prevention and lifestyle changes in reducing the impact of CVD. While adherence to physical activity after rehabilitation is promising, there are still gaps in adherence to dietary habits and medical interventions. Targeted interventions, the use of technology, and family involvement can improve adherence. Tailored programs, education, and behavioral strategies such as motivational interviewing will support lasting lifestyle changes. Policies need to address socioeconomic barriers and expand access to outpatient CR. Further research

is needed, taking into account regional population characteristics. Integrating evidence-based practices will strengthen program effectiveness and help patients maintain healthy behaviors, reduce relapse, and improve quality of life.

What Is Already Known on This Topic:

CVD is one of the most common causes of death worldwide and in Europe. CR programs are considered important secondary prevention strategies that reduce mortality and recurrent events, and improve quality of life. Despite their effectiveness, adherence to CR and associated lifestyle changes often declines over time. Factors such as socioeconomic status, cultural influences, and regional characteristics have a significant impact on adherence. Public health initiatives, such as the Croatian "Love Your Heart" project, demonstrate the potential of community-based programs to combat CVD through prevention and rehabilitation. However, maintaining healthy habits and ensuring long-term adherence remain key challenges in optimizing CVD outcomes.

What This Study Adds:

This study evaluates adherence to secondary prevention measures following an outpatient CR program in Istria, Croatia. It shows promising results in sustained physical activity. However, adherence to the Mediterranean diet and medical recommendations remains low: no participant fully adhered to the dietary guidelines and only 2% strictly followed the medical advice. The findings highlight the need for tailored interventions to address barriers, improve long-term adherence, and refine CR programs. These findings contribute to improving secondary prevention strategies at regional and global levels.

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Conflict of Interest: The authors declare that they have no conflict of interest.

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APPENDIX

Questionnaire

Assessing Long-Term Adherence to Physical Activity, Diet, and Medical Advice Following Cardiac Rehabilitation

Dear Participant,
Thank you for taking the time to complete this questionnaire. Your responses will help us assess how well patients adhere to the recommended prevention measures after completing the outpatient cardiac rehabilitation program. All your information will be kept confidential and used only for this study. Your responses will help improve patient care and rehabilitation programs.
Please take your time to answer each question honestly. There are no right or wrong answers — this is simply to understand your habits and adherence to the recommendations after completing the cardiac rehabilitation program.
If you have any questions or need assistance while filling out the questionnaire, please feel free to ask for help.
Thank you for your participation!

• Gender: _____

• Age (years): _____

• Indication for cardiac rehabilitation: _____

Here Are Some Questions about Dietary Habits

*(For each question, please answer **Yes** or **No** based on your daily dietary habits.*
If you're unsure about a particular question, please try to answer as accurately as possible based on your typical eating habits over the past few weeks.)

1. I eat two or more cups of vegetables a day
   a) Yes b) No
2. I eat two or more pieces of fruit a day
   a) Yes b) No
3. I eat two or more whole grains a day
   a) Yes b) No
4. I drink ½ to 1 drink wine a day for women, 1 to 2 for men (but no more)
   a) Yes b) No
5. I eat fish 2 or more times a week
   a) Yes b) No
6. I eat 2 or more servings legumes/beans a week
   a) Yes b) No

7. I eat a handful of nuts most days
   a) Yes b) No
8. I eat lots of olive oil and few other fats
   a) Yes b) No
9. I eat 2 servings or fewer red or processed meat a week
   a) Yes b) No

We Will Briefly Discuss Your Physical Activity

(The first set of questions asks about your walking habits. Please indicate how many times per week you go for a walk, as well as how long you typically walk each time.
The second part asks whether you engage in other physical activities (e.g., jogging, swimming, cycling). If you do, please indicate the frequency and duration of those activities.)

1. How many times a week do you go for a walk?
   a) 1-2 times or less b) 3-4 times c) 5 and more times
2. How much time do you spend walking?
   a) less than 30 min b) 30-60 min c) more than 60 min
3. Do you engage in any other physical activity?
   a) No b) Yes: (Please specify which activity)
4. If your answer to the previous question was YES, how often per week do you engage in the specified activity?
   a) 1-2 times or less b) 3-4 times c) 5 and more times
5. How much time do you spend engaging in the specified physical activity?
   a) less than 30 min b) 30-60 min c) more than 60 min

Finally, Here Are a Few Questions about following Medical Recommendations

(The last set of questions concerns adherence to medical recommendations such as smoking cessation, daily blood pressure monitoring, medication adherence, and follow-up visits with a cardiologist.
For each question, please select the answer that best represents your current habits.)

1. Have you quit smoking after the onset of cardiovascular disease?
   a) Yes b) No c) I have never smoked
2. Do you measure your blood pressure every day?
   a) Yes b) No
3. Do you regularly take all prescribed medications?
   a) Yes b) No
4. Do you regularly check with a cardiologist?
   a) Yes b) No