



Healthy Hearts Programme

*Tackling Cardiovascular Disease Through Knowledge,
Exercise Prescription, & Behaviour Change*

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Executive Summary

With Cardiovascular Disease contributing to over 7 million often preventable deaths per year (British Heart Foundation, 2023), it is essential to begin to tackle this treatable ailment in effective ways that will contribute to healthier families and improved knowledge of the condition itself, along with ways to reduce the incidence of the associated symptoms for future generations. An effective programme that combats Cardiovascular Disease, such as our Healthy Hearts programme, can also play an instrumental role in reducing pressure on NHS services, and NHS appointment waiting times.

The aim of our Healthy Hearts programme is to educate those living with Cardiovascular Disease so that they can become empowered to take their health back into their own hands. This will be achieved through weekly educational content on cardiovascular disease and effective nutritional changes, twice-weekly fitness classes tailored to Cardiovascular Disease patients, and ongoing behaviour change support to promote manageable, sustainable lifestyle habits.

There will be a focus on helping attendees understand the factors that lead to the development of Cardiovascular Disease, including how poor mental health contributes to this, along with effective mental health guidance sessions to prevent future occurrences. We will apply behaviour change methods using the Transtheoretical model (see Prochaska & DiClemente, 1983), coupled with short term, and long-term goal setting to ensure effective long-term changes.

Our target audience is adults who have lived with this condition for many years, ideally parents who can pass on their new knowledge and skills to their children, contributing to a healthier, happier society for future generations. However, as this condition is now becoming prevalent in younger generations, we are not exclusive in our selection of candidates.

Key findings from this programme highlight a direct correlation between participants' cardiovascular health and known socioeconomic factors; many have developed CVD symptoms due to limited knowledge, lack of parental support, disadvantaged backgrounds, and, in many cases, social isolation. A common trend among participants is eating for convenience or comfort rather than for nourishment and long-term health. We found that once people are shown the *cause* of Cardiovascular Disease and *how* to tackle it, they quickly reversed the health markers and trends associated with Cardiovascular Disease.

Another key finding is that the development of a well-managed peer support group has been instrumental to the programme's success. On average, one or two individuals take the lead in sharing meal ideas and offering encouragement, creating a strong sense of community. This foundation has helped others feel included, supported, and more motivated to engage with the programme. However, it is essential to monitor the accuracy of information shared within the group and ensure that no individual becomes overly prescriptive in their advice. Clear boundaries were also established to maintain a respectful environment—such as discouraging any comments that might make fun of participants' culinary skills—to keep the group supportive, inclusive, and engaging.

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1.0 Introduction

1.1 Cardiovascular Background

Cardiovascular disease (CVD) places a significant burden on the NHS in the UK, impacting resources, patient care, and overall healthcare expenditure. Here's a breakdown of the key statistics:

Prevalence and Mortality:

- Over 7.6 million people in the UK are living with heart or circulatory disease (British Heart Foundation, 2023).
- CVD causes more than a quarter (26%) of all deaths in the UK, equating to over 150,000 deaths annually - an average of 420 deaths each day or one death every three minutes (British Heart Foundation, 2023).
- Around 42,000 people under the age of 75 die from CVD each year in the UK, considered premature deaths (British Heart Foundation, 2023).
- CVD is a major contributor to health inequalities, with those in the most deprived 10% of the population being twice as likely to die prematurely from CVD compared to the least deprived (British Heart Foundation, 2023).
- Premature mortality rates from CVD in England saw a decline between 2001 and 2019 but have since slightly increased and show regional variations, with the Northwest, Northeast, and Yorkshire and the Humber having the highest rates in 2023 (House of Commons Library, 2025).

Healthcare Costs:

- The estimated annual cost of CVD to the healthcare system in England was £7.4 billion in 2019 (National Audit Office, 2024).
- More recent analysis for the fiscal year 2021/22 indicates the total costs of CVD in the UK were £29.021 billion, including direct costs of £16.620 billion (e.g., inpatient care, long-term care, medications) and indirect costs of £12.402 billion (e.g., informal care, production losses) (see Shih et al., 2025).
- Inpatient hospital care accounts for the highest direct cost at £6.732 billion in 2021/22 (see Shih et al., 2025).

Impact on NHS Services:

- There were approximately 1 million hospital admissions for CVD in England in 2019/20, resulting in 5.5 million bed days (House of Commons Library, 2025).
- CVD is the primary reason for around 12% of all visits to GPs in England (Public Health England, 2019).
- The NHS Long Term Plan aims to prevent 150,000 heart attacks, strokes, and dementia cases by 2029 by improving the detection and management of high blood pressure, high cholesterol, and atrial fibrillation (AF) (NHS England, 2019).
- The NHS is actively working on initiatives like the NHS Health Check program and digital health checks to identify and support individuals at risk of CVD (NHS, n.d.).

Specific Conditions and Risk Factors:

- High blood pressure affects more than 1 in 4 adults in England and is a leading risk factor for CVD mortality and morbidity. It is estimated that millions more have undiagnosed high blood pressure (Public Health England, 2019).
- Atrial fibrillation (AF) affects nearly 1.3 million people in the UK and is a major cause of stroke (NHS England, 2019).
- Other significant risk factors for CVD include smoking, high cholesterol, diabetes, kidney disease, inactivity, and being overweight or obese (Public Health England, 2019).

Trends:

- While CVD mortality rates have significantly declined since the British Heart Foundation was established, the rate of improvement has slowed in recent years (British Heart Foundation, 2023).
- Hospital admission rates for CHD have decreased over the past two decades (British Heart Foundation, 2023).
- The number of people diagnosed with conditions that make up CVD has increased considerably between 2006-07 and 2023-24, likely due to increased detection and an aging population (British Heart Foundation, 2023).

In conclusion, cardiovascular disease has a massive impact on the NHS in the UK, both in terms of the number of people affected and the financial resources required for treatment and care. Prevention, early detection, and effective management of risk factors are crucial to reducing this burden and improving the health of the population.

The Healthy Hearts programme aims to educate and empower individuals to regain control over their health, with the hope that they will also share this knowledge with family members and peers, thereby contributing to a healthier society.

1.2 Key Determinants Influencing Cardiovascular Disease Risk

While individual choices and genetics play a significant role in the development of cardiovascular disease (CVD), several overarching trends in society create environments and conditions that increase the risk for many people.

Key risk factors contributing to cardiovascular disease are as follows:

Unhealthy Lifestyle Factors:

- **Poor Dietary Habits:** Increased consumption of processed foods high in saturated and trans fats, salt, and sugar, and low in fruits, vegetables, and whole grains is a major contributor. Busy lifestyles and the accessibility of unhealthy options often drive this trend (Public Health England, 2018).
- *Example:* The rise of fast-food culture and convenience meals often leads to higher intake of unhealthy fats and sodium.

Physical Inactivity:

- Sedentary jobs, increased screen time (TV, computers, and phones), and reduced opportunities for physical activity in daily life contribute significantly. Urbanization and reliance on cars also play a role (British Heart Foundation, 2017).
- *Example:* More people working in office jobs with prolonged sitting and less active commuting methods

Smoking and Tobacco Use:

- Despite public health campaigns, smoking and the use of other tobacco products remain significant risk factors. According to the Office for Health Improvement and Disparities (2022), social smoking and the uptake by younger generations are concerning trends.
- *Example:* Although overall smoking rates have declined in many developed countries, certain demographics may still have high rates.

Excessive Alcohol Consumption:

- Heavy and binge drinking can lead to high blood pressure, weight gain, and other risk factors for CVD. Social norms around alcohol consumption contribute to this trend (National Institute for Health and Care Excellence, 2010).
- *Example:* Cultural acceptance of frequent heavy drinking in some social settings.

Increased Stress Levels:

- Modern life often involves chronic stress from work, finances, and social pressures. Prolonged stress can negatively impact blood pressure, cholesterol levels, and overall cardiovascular health (British Heart Foundation, 2023).
- *Example:* Job insecurity and demanding work schedules leading to constant worry and anxiety.

Socioeconomic Factors (Social Determinants of Health):

- Poverty and Economic Instability: Limited access to healthy food options, safe environments for physical activity, and quality healthcare are more common in lower socioeconomic groups. Financial strain also increases stress levels (The Health Foundation, 2020).
- *Example:* Lack of affordable fresh produce in low-income neighbourhoods, making it easier to rely on cheaper, less nutritious processed foods.

Lower Educational Attainment:

- Reduced health literacy can lead to a lack of awareness about healthy lifestyles and the risks of CVD. It can also impact employment opportunities and income, further exacerbating other socioeconomic factors (Marmot et al., 2020).
- *Example:* Individuals with lower education levels may be less aware of recommended daily intake of fruits and vegetables or the dangers of high cholesterol.

Food and Housing Insecurity:

- Not having consistent access to adequate food and stable housing creates significant stress and can lead to poor dietary choices based on availability and cost (Marmot et al., 2020).
- *Example:* Families struggling with homelessness may prioritize cheap, calorie-dense foods that are often high in unhealthy fats and sodium.

Social Isolation and Lack of Support:

- Limited social connections and lack of emotional support can increase stress and negatively affect health behaviours (Marmot et al., 2020).
- *Example:* Elderly individuals living alone with little contact with family or friends may be less likely to engage in healthy activities or seek medical care.

Neighbourhood and Environmental Factors:

- Living in disadvantaged neighbourhoods with high levels of pollution, limited green spaces, and poor access to healthcare facilities can increase CVD risk (Marmot et al., 2020).
- *Example:* High levels of air pollution from traffic or industrial areas can damage the cardiovascular system.

Ageing Population:

- As populations worldwide age, the prevalence of age-related chronic diseases like CVD naturally increases. This demographic shift puts a greater number of people at risk (World Health Organization, 2024a).
- *Example:* The increasing proportion of individuals over 65 in many countries leads to a higher overall burden of CVD.

Globalisation and Westernisation:

- The spread of Western lifestyles, including dietary patterns high in processed foods and sedentary behaviours, to developing countries is contributing to a rise in CVD in these regions (World Health Organization, 2024b).
- *Example:* Increased consumption of fast food and sugary drinks in countries that traditionally had healthier diets.

Health System Inequities:

- Unequal access to preventive care, early diagnosis, and effective treatment based on socioeconomic status, geographic location, or ethnicity can lead to higher rates of CVD and poorer outcomes in certain populations (Marmot et al., 2020).
- *Example:* Longer waiting times for specialist appointments or limited availability of advanced cardiac care in rural areas.

1.3 From Insight to Action: Informing the Healthy Hearts Approach

It is important to understand that these trends are often interconnected and can amplify each other's effects on cardiovascular health. Addressing these societal factors through public health policies, community initiatives, and individual-level interventions is crucial for reducing the burden of CVD. These findings have been crucial in the development of our Healthy Hearts programme and form the basis of our intervention.

2.0 Program Outline & Implementation

Our Healthy Hearts programme was a purposely designed 12-week intervention with aim of combatting Cardiovascular Disease and the underlying issues associated, such as poor nutritional knowledge and poor mental health (Marmot et al., 2020). It was designed for participants to attend 3 sessions per week. One session would be educational or holistic intervention and two fitness sessions that are appropriate, with contraindications to exercise considered (American College of Sports Medicine, 2025). There would also be the implementation of a peer-support group where participants will be encouraged to share healthy meal ideas in a supportive environment.

We applied behaviour change guidance using the Trans Theoretical Model as this has shown to be very effective in encouraging long-term behaviour change (see Prochaska & DiClemente, 1983). This is achieved effectively with the allowance of a relapse period and understanding that change is not always a straight line to success. Quite often it takes more than one or two momentary relapses before participant begin to reap the benefits of a successful behaviour change pattern, and we must support them effectively during relapses otherwise they are at risk of completely disengaging with the programme and developing much worse symptoms than they started with.

The purpose of this report is to show the impact that can be made in a short period of time, and to hopefully guide others in the effective implementation of similar programmes. With funding being quite limited, and NHS cutbacks at an all-time high (NHS England, 2025), it is essential to develop best practice and value for money with the aim of supporting those most at risk from these factors.

2.1 Implementation Strategy

We initially opened 15 spaces for attendees on the Healthy Hearts programme, of which 12 of those were taken up. We then arranged the assessment week where we would take initial health metrics via non-invasive, in-depth health assessments. At the end of the assessment week, we had 6 attendees engaging with the programme, with the other 6 not attending for varying reasons unrelated to the programme.

The attendees presented with various other co-morbidities, and some experiencing poor mental health with social anxieties. We planned to educate through our weekly sessions around the links between poor diet and poor mental health, and vice-versa. Procuring an effective peer-support group would be essential in getting the most out of this programme, as most of the work is completed at home, and participants would be encouraged to support each other; something that is usually an underlying issue in the development of poor diet and lifestyle habits.

The health metrics that are being monitored are as follows (Table 1):

No.	Health Metric
1	Body Weight
2	Body Mass Index (BMI)
3	Basal Metabolic Rate (BMR)
4	Resting Heart Rate
5	Peak Flow (tidal volume)
6	Blood Pressure
7	Blood Lipids (cholesterol)
8	V02 Max (static testing)
9	PHQ 9 (depression)
10	GAD 7 (anxiety)

Table 1: Health metrics monitored in the study

Following the health assessments, supported by a Physical Activity Readiness Questionnaire (PARQ) (see Appendix 1), we discussed participants' short- and long-term goals for the programme, after which they completed a SMART goals form as part of this.

Our educational content was delivered as the first session of the week. This was typically at 11 am on a Monday. For the first four weeks, the content consisted of educating participants on the importance of nutrition. Sessions covered subjects such as understanding the importance of our unique Basal Metabolic Rate (BMR) (Henry, 2005), and how to count calories to achieve weight management. We also educated on understanding the Macronutrients and their role in the body (Gush et al., 2021) including busting any myths around 'fad diets' such as Keto diets (O'Neill & Raggi, 2020) and intermittent fasting (Blanco et al., 2019).

Once participants had a good grasp of this knowledge, we then moved into vitamins, minerals, and those of which are essential to combat Cardiovascular Disease (Jenkins et al., 2018). There was consideration for those on specialist diets, such as celiac, and those with allergies. After week four, we had a review session where participants had a chance to ask further questions.

The following four weeks of educational content were focused around understanding how diet impacts our mood, and vice versa (Magesh, 2022). We spent time understanding how quite often food that gives us a dopamine hit is rather bad for us, and this can quickly lead to a perpetual downward spiral of poor physical and mental health (Flaskerud, 2015). We delivered educational content around understanding the Limbic System of the brain (Rajmohan & Mohandas, 2007), the Vagus Nerve, and how these parts of our cognition can play a major role in the poor decisions we make (Fanselow, 2013). We looked at, and practiced effective interventions that can help us intervene during episodes where the limbic system triggers poor decision making.

Finally, we practiced mindfulness and meditation, so participants had more 'tools in the bag' to manage themselves better at home and outside of direct peer-support settings. After week nine, we had a review session where participants had a chance to ask further questions.

During week 12, we delivered the final health-metric measurements and had a final 1-2-1 with participants to discuss the results and review their goals for moving forward. During the final 1-2-1 session we asked participants to give feedback on their experience of the course. This information was accumulated into our qualitative data.

2.2 Programme Resources

The resources required for the programme consisted of educational content slides procured by Shawn Duckers based on Cardiovascular Disease, and the connection between 'Food and Mood'. We used guided meditation scripts procured by Shawn Duckers, these were based on 'safe place' meditations and also Imagery-work to help release any negative beliefs we had about ourselves. We used light dumbbells for exercise classes, resistance bands for isometric training, and tennis balls for proprioception and coordination. There was also a need for chairs to be available for some exercises and in the incidence that some exercises may need to be regressed for any participants that require more chair-based activities.

We collaborated with Bay Veterans Association CIC who kindly offered us space to hold these sessions in their social hub at a reduced rate. We also received commissioning to deliver this project from Bay Medical Group of £680 which covered all costs of session delivery adequately. The equipment was already purchased and no specialist equipment was needed initially; however, it was later discovered that Smart Watches could help gather more accurate data for resting heart rates and the equations we used for V02 Max testing without maximal aerobic fitness tests.

2.3 Addressing Challenges

A key challenge encountered was participants' family commitments, which occasionally affected their attendance at sessions. This was addressed by encouraging those who could not attend to take up some additional exercise at home, such as taking a longer walk with their dog, and maybe adding in a hill or two. Another challenge encountered was when a participant developed a recurrence of an old injury which prevented them from engaging in the fitness session, and this was addressed by developing a bespoke programme they could complete at home at their own pace. This meant that the participant would complete a similar set of exercises but in smaller chunks throughout the day.

3.0 Evaluation Methodology

Our aim was to determine whether a programme designed around established trends and socioeconomic factors could achieve measurable positive impacts within 12 weeks, and whether these changes would be sustainable for participants in the long term. The evaluation was based on both qualitative and quantitative data gathered from the 10 health metric measurements assessed 12 weeks apart. There were statistical data sets from quantitative health measurements, and qualitative data from 1-2-1 discussions and feedback.

3.1 Data Collection Methods & Instruments

Data collection began on 24th February 2025 and concluded on 26th May 2025. The data collection tools included the following: digital scales for measuring body weight, online calculators for measuring BMI and BMR, blood pressure machine for measuring resting heart rate and blood pressure, blood lipid testing machine for measuring total cholesterol, including high density lipo-proteins (HDL), and low density lipo-proteins (LDL), peak-flow tube for measuring tidal volume, static testing of V02 Max using an equation based on resting heart rate and maximum heart rate, and PHQ9 and GAD7 'mental wellbeing questionnaires'.

Participants were recruited via promotional fliers (see Appendix 10), referrals from The Bay Medical Group (NHS), and Lancaster District Community Volunteer Service (third-sector community organisation), rather than through a formal sampling strategy. The fliers were shared online via Bay Veterans association's social media pages, handed out in their community hub in the Arndale Centre, Morecambe, and through Bay Medical Group emailing lists from the Integrated Community Care team.

3.2 Data Analysis & Interpretation

Our approach to analysing the data involved comparing each participant’s results at the start and end of the programme. We report total and best individual changes in key metrics, including blood pressure and blood lipid levels, to illustrate the overall impact. Although this approach may be deemed unconventional, it provides a clear view of the programme’s overall effectiveness.

While these measurements may not *appear* as standard blood pressure and blood lipid values, we are confident that the programme’s impact remains evident. In the discussion section, we will present averages for more conventional analyses, along with detailed interpretations of the results.

3.3 Ethical Considerations

Ethical considerations were to give participants informed consent to participate, a confidentiality agreement, and equal opportunities policy. This ensured a fair and quality delivery of service without bias.

To maintain participant confidentiality and protect their identity, all quotes from programme participants have been attributed using pseudonyms. Each quote is accompanied by the participant’s age to provide relevant context while ensuring anonymity. This approach aligns with ethical research practices and safeguards personal information.

3.4 Limitations

Limitations of the data collected were owed to a small sample size of only 6 participants rather than the 15 we had hoped to engage with. There was no random sampling or control group applied as we wished to target a specific audience. Therefore, we cannot compare the impact of the programme content across to a generally healthy audience. Blood pressure readings have a tendency to fluctuate throughout the day, and we had to consider ‘white coat syndrome’ which can cause an increase in blood pressure during testing.

VO2 Max testing was conducted using an equation based on maximum and resting heart rates. While this method provides a useful estimate, especially for individuals unable to perform maximal fitness testing, it is less precise due to natural daily fluctuations in resting heart rate.

Lastly, due to the relatively small sample size and occasional instances where expected inverse associations did not occur for various reasons, the overall statistical progress appears limited. Additionally, averages can be disproportionately influenced by individual cases compared to results from larger samples.

4.0 Programme Results

The following section presents detailed results gathered throughout the programme. These data provide insights into individual *and* collective progress, illustrating key changes observed over the course of the intervention (see Tables 2–11).

1. Weight

Total weight at start:	538.6kg
Total weight at end:	527.9kg
Total weight loss:	10.7kg
Best individual loss:	3.3kg

Table 2: Programme Results - Weight

2. BMI

Total BMI at Start:	202.3 (kg/m ²)
Total BMI at end:	199.6 (kg/m ²)
Total BMI loss:	2.7 (kg/m ²)
Best individual loss:	1.9 (kg/m ²)

Table 3: Programme Results - **Body Mass Index (BMI)**

3. BMR

Total BMR at start:	9290 Kcal
Total BMR at end:	9255 Kcal
Total BMR loss:	35 Kcal
Best individual loss:	52 Kcal

Table 4: Programme Results – **Basal Metabolic Rate (BMR)**

4. Resting Heart Rate

Total RHR at start:	384 bpm
Total RHR at end:	377 bpm
Total RHR loss:	7 bpm
Best individual loss:	12 bpm

Table 5: Programme Results – **Resting Heart Rate**

5. Peak Flow Test

Total PF at Start:	2420 L/min
Total PF at end:	2640 L/min
Total PF gain:	220 L/min
Best individual gain:	170 L/min

Table 6: Programme Results – **Peak Flow Test**

6. Blood Pressure

Total BP at start:	876/541 (mmHg)
Total BP at end:	772/382 (mmHg)
Total BP loss:	104/159 (mmHg)
Best individual loss:	41/65 (mmHg)

Table 7: Programme Results – **Blood Pressure**

7. Blood Lipids

Total BL at start:	21.99 (mg/dL)
Total BL at end:	20.52 (mg/dL)
Total BL loss:	1.47 (mg/dL)
Best individual BL loss:	2.41 (mg/dL)

Total HDL at Start:	4.19 (mg/dL)
Total HDL at end:	5.07 (mg/dL)
Total HDL gain:	0.88 (mg/dL)
Best individual HDL gain:	0.68 (mg/dL)

Total LDL at start:	9.15 (mg/dL)
Total LDL at end:	6.13 (mg/dL)
Total LDL loss:	3.03 (mg/dL)
Best individual LDL loss:	2.43 (mg/dL)

Table 8: Programme Results – Blood Lipids

8. V02 Max (static testing)

Total V02m at start:	230.95 (mL/kg/min)
Total V02m at end:	235 (mL/kg/min)
Total V02m gain:	4.05 (mL/kg/min)
Best individual gain:	8.3 (mL/kg/min)

Table 9: Programme Results – V02 Max (static testing)

9. PHQ 9

Total PHQ at start:	60
Total PHQ at end:	33
Total PHQ reduction:	27
Best individual reduction:	8

Table 10: Programme Results – PHQ 9

10. GAD 7

Total GAD at start:	47
Total GAD at end:	34
Total GAD reduction:	13
Best individual reduction:	6

Table 11: Programme Results – GAD 7

4.1 Summary of Key Themes & Findings

During our one-on-one discussions, several recurring themes emerged:

1. Most frequently, and expectedly, participants wanted to feel like they had more energy. This is a common issue with those who eat the wrong foods and at the wrong times.
2. Participants were acutely aware of the impact of their diet on their physical health but lacked the knowledge of where to start; quite often many would also engage in ‘fad’ diets due to trends on social media.
3. Most participants were aware of their risk of an impending myocardial infarction, or worsening coronary heart disease symptoms, this was reflected in the GAD 7 results. Upon completion of the course, showing participants their progress and reduction in risk, it was great to see a reduction in both the PHQ 9 & GAD 7 scores.
4. Participants felt they were often heavily reliant on medication to manage their condition and usually suffered from side effects. All these individuals wanted to reduce their reliance on medication.
5. Completing daily living tasks was quite a chore for those most at risk, this is directly associated with chronic cardiovascular issues, it was great to see all participants disclosing that they were now finding these tasks much easier to complete.
6. Losing weight was a very common theme, along with the belief that it may not be possible to achieve. Most participants believed they were terminally overweight, and nothing could be done after ‘trying everything and nothing worked’ – so it was great to see all but one participant had ultimately lost weight to some degree.

4.2 Participant Testimonials & Feedback

To complement the quantitative data, participant testimonials offer valuable insight into the lived experiences and personal journeys of those involved in the programme. These reflections provide a deeper understanding of the programme's impact beyond the numbers, capturing emotional, behavioural, and motivational shifts. To protect confidentiality, pseudonyms have been assigned to each participant, along with their age, to provide context while ensuring anonymity.

1. *“I feel really good, and the programme has helped me a lot. I do struggle with commitment due to my wife needing a lot of support. However, I am happy with the gains I have made, and I feel they are manageable, and I can continue with them. I found the nutrition stuff really interesting, and I enjoy counting the calories to reach my macro goals. I quite liked the exercise programmes too although they were challenging at times”* (Lloyd, aged 62)
2. *“I have enjoyed meeting new people although it was scary at first. I have enjoyed seeing different meals and tastes. I have improved my confidence, and I will focus on maintaining that. The group has made me feel like I have a purpose again. I can now climb the stairs in one attempt which is great for me. It is nice to know that I am working with someone who knows what they are talking about, and this has assured me to keep going, Shawn has been great at managing everyone’s wellbeing. I look forward to keeping on with this healthier lifestyle and the positive future.”* (Alice, aged 64)
3. *“I have noticed great improvements to my balance and flexibility, whereas before I was struggling to cut my toenails and tie my shoelaces. It makes me realise the effectiveness and necessity of completing these types of exercises classes. I am now much more aware about my nutrients and meal planning regarding my calorie intake and macros. I would recommend this to anybody, although it takes commitment to achieve these gains. Fortunately, Shawn gives plenty of encouragement which makes it easy to engage and complete.”* (Oscar, aged 76)

4. *“I have really enjoyed the programme, particular the mindfulness and meditation classes. Also, the sessions about the dietary advice were accurate and positive. As a previous cardiac nurse, it is reassuring to be reminded of a lot of the work I have completed during my career, I have always been interested in health and wellbeing and the programme has been very comprehensive. A lot of the exercises I have been able to complete at home too which I find very beneficial as I am a very active person. I have nothing negative to report about the programme.”* (Victor, aged 73)
5. *“When I started the programme I had social anxiety, however I attended all sessions and I now have built up my confidence enough to plan activities with people. Overall, I have enjoyed all the sessions, I don’t have anything negative to report. I have enjoyed supporting others in the chat group with my nutritional knowledge. I have even been for a coffee with Janet which I found beneficial. I am pleased to have achieved all my goals and I look forward to continuing with this healthy lifestyle and making further progress.”* (Edward, aged 31)
6. *“I have not been able to attend all fitness due to shoulder issues, I have completed the exercises at home at my own pace. I have gained lots of confidence with balance and arm strength and feel a lot more stable and confident moving around with daily activities. I have gained more knowledge around CVD and dietary requirements. I have gained knowledge and support from the group chat which has been very helpful along with meditation.”* (Tessa, aged 78)

4.3 Health Metric Results

The overall goal of the programme was to combat the associated symptoms of Cardiovascular Disease and build the knowledge and resilience of participants to ensure effective future prevention of reoccurrence. It is our professional opinion that these goals have been adequately achieved, and here we will discuss how by addressing each health metric result individually.

4.3.1 Weight

The combined weight of all six participants at the start of the programme was 538.6kg. At the end of the programme the combined weight was 527.9kg. This is a total weight reduction of 10.7kg (2% overall). Whilst some participants lost more than others, we only had one participant who had gained weight. We put this weight gain down to an indication that this particular participant was hardly consuming enough calories or meals prior to joining the programme. So, although this weight gain negatively impacted our overall potential scores and averages, we see this as a positive outcome as this individual is now being properly nourished.

This total reduction in body weight will have various health benefits to participants, including finding activities of daily living easier to manage, increased energy levels, and increased confidence to name a few (Public Health England, 2018). The additional weight loss will also mean the heart has to work less, and it will also improve circulation, both of these are positively associated with reducing the risk of myocardial infarctions (British Heart Foundation, 2017).

4.3.2 Body Mass Index

At the start of the programme, the combined BMI was 202.3 (kg/m²), at the end the combined BMI was 199.6 (kg/m²). The deficit could have been much greater had we not had one participant who had actually gained weight. What we found most impressive is that one individual contributed over 60% of this figure by themselves by the tremendous weight loss they had achieved. This is highly indicative of the programme’s effectiveness when participants can apply the methods effectively, however, we understand that not everyone is as mentally prepared and self-motivated enough to fully apply the methods from the beginning. BMI is a commonly used health metric by health professionals, although it is important to take into account that individuals with great muscle-mass can register as obese with using this health metric. For the purpose

of our Healthy Hearts Programme, we anticipated this was going to be an unlikely occurrence, so we included this as part of our health assessments.

4.3.3 Basal Metabolic Rate (BMR)

At the start of the programme the total BMR for all six participants was 9290Kcal, and at the end of the programme the total BMR was 9255Kcal. This small deficit was again impacted by one participant who had actually gained weight and increased their BMR. In reality to this, We would still apply a calorie deficit to this individual during their meal planning to help them onwards with reducing their excess body weight. Finding a correlation between BMR and Cardiovascular Disease is not as straight forward as one may think, however research by the American Heart Association has shown a link can be established, and this link is backed up by utilising Mendelian Randomisation in studies (Zhoa et al., 2024). What these studies have indicated is that the higher your resting energy consumption, the higher the risk of developing Coronary Heart Disease, particularly when coupled with a poor diet.

4.3.4 Resting Heart Rate

Total Resting Heart Rate at the start of the programme was 384bpm, and total Resting Heart Rate at the end of the programme was 377bpm. We highlight at this point that RHR can fluctuate quite dramatically on a person-by-person basis due to things such as the levels of anxiety on that day, any caffeine they may have consumed on the day, and also their ability to bring themselves to rest in general after making their way to the appointment. In an ideal situation, RHR would be recorded after the recommended period of rest - 5-15mins, or ideally first thing in the morning. The best individual reduction in RHR was 12bpm, and this is indicative of a much-improved cardiovascular system and reduction in heart attack risks. RHR is directly linked to Cardiovascular disease as the average heart rate is between 60-100bpm, anything above this is a common indicator of CVD .

4.3.5 Peak Flow Test

At the start of the programme, the total Peak Flow scores were 2420L/min, at the end of the programme the total peak flow scores were 2640L/min. This gave a total peak flow gain of 220L/min, and the best individual Peak Flow gain of 170L/min. Whilst peak flow testing is not directly linked to Cardiovascular Disease, there are common links between reduced lung function and the development of CVD. Recent literature on peak flow has shown an increase in these stats is directly linked to overall reduced mortality (Hansen et al., 2001).

4.3.6 Blood Pressure

For the purpose of showing the impact of the programme with a small cohort of six participants, we chose to accumulate the total blood pressure scores. Therefore, the totals look very dissimilar to what we would expect to see when measuring systolic and diastolic blood pressures; however unconventional this may seem to the average health professional, we affirm it shows the great impact of the programme with such a small data pool.

At the start of the programme, the total blood pressure scores were 876/541 (mmHg), at the end of the programme the total blood pressure scores were 772/382 (mmHg). This gave a total blood pressure reduction of 104/159 (mmHg), and the best individual reduction of 41/65 (mmHg). The average Blood pressure of the group at the start of the programme was 146/90 (mmHg), and the average Blood pressure at the end of the programme was 128/63 (mmHg). This shows an average reduction of 12% and 30%, respectively.

We had two individuals attending the programme who were at stage 3 hypertensive which is considered severe, and both had a previous incidence of myocardial infarction and transient ischemic attack, at the end

of the programme both of these individual where at Stage 1 Hypertensive. This drastically reduced their risk of a future occurrence of Cardiovascular injury.

Cardiovascular disease is known as the silent killer because the most important indicators such as hypertension rarely shows any signs before it becomes a very serious problem (House of Commons Library, 2025). Hypertension will lead to heart attacks and strokes by damaging the blood vessels and the brain. Hypertension will lead to atherosclerosis, which is a narrowing and hardening of the arteries, this puts the arteries at risk of bulges (aneurysm) and blockages (embolisms). All of this contributes to the very serious risk of arterial ruptures which are often fatal (Tada et al., 2014).

Reducing hypertension in a safe and effective manner will reduce the risk of fatal cardiovascular incidents and improve quality of life.

4.3.7 Blood Lipids

The total cholesterol scores at the start of the programme were 21.99 (mg/dL). The total scores at the end of the programme were 20.52 (mg/dL). This was a total reduction of 1.47 (mg/dL). The best individual reduction in Cholesterol was 2.41(mg/dL). One participant actually increased their total blood cholesterol which lowered the overall potential deficit, however, there was one individual who made an impressive reduction in blood lipids, highlighting the effectiveness of the programme when followed effectively.

The total High-Density Lipoproteins (HDL) at the start of the programme was 4.19 (mg/dL), the total HDL at the end of the programme was 5.07 (mg/dL), this gave a total HDL gain of 0.88 (mg/dL), and the best individual gain of 0.68 (mg/dL). These scores were impacted by one participant who had reduced their overall total cholesterol, including a correlated reduction in their HDL's. This could be associated with the fact they are on experimental medication in a scientific study which aims at artificially increasing HDL's. All but one individual had an overall increase in HDL's.

The total Low-Density Lipoproteins (LDL) at the start of the programme was 9.15 (mg/dL), and the total LDL's at the end of the programme was 6.13 (mg/dL). This gave a total LDL reduction of 3.03(mg/dL), and the best individual reduction of 2.43 (mg/dL). All participants with high LDL's had reduced their scores to some extent, with one individual halving their total LDL scores which we found to be extremely impressive and shows the potential benefits of following the programme content effectively.

Whilst having cholesterol in the blood is essential for effective hormone transportation, cognitive function, and regeneration of new cells; it is essential to keep LDL's low, and HDL's high for cardiovascular health (Nordestgaard & Langsted, 2016). We can inadvertently increase our LDL's by consuming a diet that is high in animal products as they are the source of LDL's. To combat this, we must increase our soluble fibre in our diet. LDL's take cholesterol from our liver and deposit in our arteries, whereas HDL's 'sweep' it back up to be transported back to the liver. The more we reduce animal produce in our diet, the lower we reduce our risk of overall mortality (Tan et al., 2024).

4.3.8 V02 Max – Static Testing

Due to participants being at risk of myocardial infarction, we decided to measure V02 Max using 'static testing'. This was done by applying an equation that is based on the resting heart rate and the maximum heart rate of each participant (see Appendix 8.8). We note again that unless we have the most accurate resting heart rate, which is usually taken first thing in the morning or overnight using a smart watch for example, then these scores are closer to averages rather than absolutes.

The total V02 Max at the start of the programme was 230.95 (mL/kg/min), the total V02 Max at the end of the programme was 253 (mL/kg/min). This gave a total V02 Max gain of 4.05 (mL/kg/min) and the best individual V02 Max gain was 8.3 (mL/kg/min). The best individual gain score as you may note is greater

than the total V02 Max gain, this highlights an issue with using this static testing method using a resting heart rate which can fluctuate. However, there was one individual who really put the effort in during the fitness classes, and this reflected with a great reduction in their resting heart rate, and consequently a great increase in their V02 Max by using this equation method.

For a more accurate application of this method, participants would ideally have smart watches that would track their resting heart rates overnight so we can see a more accurate comparison between the start of the programme and the end.

4.3.9 PHQ 9 – Depression

The total PHQ 9 score at the start of the programme was 60, and the total PHQ 9 score at the end of the programme was 33. This gave a total score reduction of 27 points which is almost a 50% reduction in depressive thoughts, and the best individual reduction was 8 points.

Depression is intrinsically linked to the development of cardiovascular disease (Harshfield et al., 2020), owing to the habit formation from people who quite often eat foods that are unhealthy for them, purely for the dopamine hit they receive from them (Volkow et al., 2003). During our educational content, we helped participants understand this connection between food and their mood, and we helped them find more productive ways of accessing dopamine along with other happy hormones.

Achieving almost a 50% reduction in depression scores is indicative of our success in helping participants find healthier and more beneficial sources of dopamine. We also applied behaviour change methods from the transtheoretical model to ensure long-lasting new habits when it comes to choosing food.

4.3.10 GAD 7 – Anxiety

The total GAD score at the start of the programme was 47, and the total GAD score at the end of the programme was 34. This gave a total GAD score reduction of 13, with the best individual reduction of 6 points.

Anxiety is extrinsically linked to cardiovascular disease due to individuals feeling their condition is beyond their control, or that another cardiac event could occur at any moment without warning (Roest et al., 2010). We saw all participants reduce their anxiety to some degree, with one participant contributing the overall score by almost 50%.

We helped participants manage their anxieties with educational content based on the mechanisms of anxiety, mindfulness, and meditations. Overall, we are confident that if participants carry on with all that they have learnt, their risk will continue to reduce along with their anxieties.

In the next section, we reflect on the overall impact and effectiveness of the Healthy Hearts programme, drawing on both quantitative results and qualitative feedback.

5.0 Discussion: Reflections on Programme Effectiveness

Delivering accurate nutritional guidance tailored to cardiovascular disease was essential in helping participants understand the necessity to make dietary changes, as their lack of dietary knowledge was the main underpinning causation in the development of cardiovascular disease. Educating participants on their need for a calorie deficit, and how to count calories was also essential in achieving their goals of weight management. It was useful to show participants how to use modern technology to accomplish this, as there is a plethora of calorie counting apps on the market which are essential for those who lack the mathematical skills to complete this task by themselves.

Developing a peer-support group became an essential tool for helping the least motivated participants feel more engaged in the programme. There were natural leaders within the group who delivered a lot of the support and guidance within the group, however it is essential to monitor the interactions for accuracy of content, and not allowing participants to become too prescriptive with their peer-support. Quite often people tend to develop poor eating habits due to the feeling of worthlessness born in isolation®; developing friendships in a peer-support setting where they do not feel judged but feel supported helped maintain the efficacy of the programme 'out of hours'.

Whilst having multiple health metrics to monitor can potentially seem daunting to individuals who have never considered themselves to be 'fit and healthy' it was also a great opportunity to show participants that they had more chance of success with having more than one goal to aim for. It was essential to help participants feel confident in their capacity to achieve small yet manageable goals. This was reinforced with behaviour change guidance using the transtheoretical model and SMART goals and an essential part of the behaviour change model is helping participants understand that 'relapse' is a common aspect of behaviour change, and a relapse is only terminal if they 'give up'. With the correct guidance and encouragement from facilitators and peers, there will likely be no terminal relapses.

Both nutritional changes and exercises (isometrics particularly) are needed for effective management of blood pressure. Participants are often surprised to discover the role natural salt plays in hydration, and consequently blood pressure regulation; too much, too little, or processed salt will be a major contributor to blood pressure increases. Similarly, participants were often surprised to discover that simple low-intensity exercises included in the isometric fitness classes play an effective, and sometimes superior role in blood pressure management. During an isometric contraction, blood flow to the working muscles is temporarily reduced due to the sustained tension compressing blood vessels. When the contraction is released, there's a sudden surge of blood flow back into the relaxed muscles. This rush of blood sends signals that tell the blood vessels to relax and widen (vasodilation). This widening of blood vessels reduces overall resistance to blood flow, leading to a sustained decrease in blood pressure after the exercise. This phenomenon is known as "post-exercise hypotension

What we can draw from our results is that the programme's design and execution was a resounding success. Where participants followed the guidance and support, tremendous health benefits were achieved, and their risk of developing further cardiovascular injuries or fatalities was drastically reduced. The result of this is less burdening on the NHS, and the likelihood of passing on much healthier habits to future generations with accurate knowledge about how to spot the signs of, and how to combat Cardiovascular Disease has increased. It is our professional opinion that if the NHS invested more in comprehensive Cardiovascular Disease reduction programmes, such as our Healthy Hearts programme, they would ultimately achieve their goal of cutting back costings without falling short of helping those most at risk of this severely debilitating disease.

6.0 Recommendations

To gain more accurate results from the Resting Heart Rate and V02 Max testing, it would be useful for facilitators to have Smart Watches that the participants can borrow for the duration of the programme. These would not have to be overly complicated; something as simple as a Fitbit watch would suffice. These would also give participants additional information to be used as motivation, such as step counting and calories burned, for example.

Ensuring effective personalisation of the programme by facilitators on an individual basis is fundamental to the success of delivering this content. There will be insurmountable differences between each individual participant which has led up to them developing their current health condition, and taking the time to understand this will ensure effective deliverance. There will never be a 'one size fits all' to these programmes. Taking the time to understand your client, and the things that are holding them back in life will be essential to helping them overcome any obstacles they face along the journey.

Staying up to date on current medications and their side effects on an individual basis is paramount to facilitators in helping participants stay engaged with the fitness routine of the programme. Overlooking this aspect or not asking the right questions will lead to participants having a much more uncomfortable experience of fitness than necessary by exasperating their contraindications to exercise and will likely lead to them ultimately disengaging from the programme. They must be allowed to partake at their own comfortable pace and not be encouraged to 'keep up' with the progress of others.

It was found that one education class per week and two fitness classes per week was an adequate duration for optimal engagement. It is recommended that facilitators do not exceed this unless participants ask for more. This can then be considered on a 1-2-1 basis. Any additional physical activity was encouraged to be completed at home, such as longer walks with family, pets, or alone.

It is recommended for facilitators to alternate the fitness content between having a week of adequate cardiovascular training and having a week of isometric training with proprioceptive exercises. This was to ensure participants do not get bored with an overly repetitive programme, and the isometric exercise week was often described as 'having a week off', although this type of exercise was working wonders for their blood pressure.

Facilitators should always ensure participants have had adequate nutrition and hydration prior to attending exercise classes. Although this is a basic principle, it can be quite easily overlooked and participants who are looking to reduce body weight can be tempted to arrive in an overly fasted state.

Health care professionals should consider a clients ability to engage with such a programme before prescribing a multitude of pharmaceuticals which treat the symptoms without treating the root cause of their ill health. Whilst medication does have a role to play in the reduction in severity, and the prevalence of Cardiovascular Disease in society; comprehensive interventions such as our Healthy Hearts programme address the underlying causes of this ailment and its associated symptoms.

Westernised societies are constantly bombarded with advertisements of foods and drinks that contribute massively to the development of Cardiovascular Disease. If we are serious about making future generations healthy; it is recommended health ministers and politicians consider a policy change that completely bans the advertisement of anything that contributes to Cardiovascular Disease from TV, Radio, or in and around town centres.

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8.0 Appendices

8.1 Appendix 1: Physical Activity Readiness Questionnaire (PARQ)

Physical activity readiness questionnaire (PARQ)

Regular physical activity is fun and healthy, and increasingly more people are starting to become more active every day. Being more active is very safe for most people. However, some people should check with their doctor before they start becoming much more physically active.

If you are planning to become much more physically active than you are now, start by answering the seven questions in the box below. If you are between the ages of 15 and 69, the PAR-Q will tell you if you should check with your doctor before you start. If you are over 69 years of age, and you are not used to being very active, check with your doctor.

Common sense is your best guide when you answer these questions. Please read the questions carefully and answer each one honestly: check **YES** or **NO**.

	Question	YES	NO
1	Has your doctor ever said that you have a heart condition and that you should only do physical activity recommended by a doctor?		✓
2	Do you feel pain in your chest when you do physical activity?		✓
3	In the past month, have you had chest pain when you were not doing physical activity?		✓
4	Do you lose your balance because of dizziness, or do you ever lose consciousness?		✓
5	Have you ever suffered from unusual shortness of breath at rest or with mild exertion?		✓
6	Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?		✓
7	Are your doctor currently prescribing drugs (for example, water pills) for your blood pressure or heart conditions?		✓
8	Are you pregnant or have you had a baby in the past six months (female only)?		✓
9	Do you know of any other reason why you should not do physical activity?		✓

If you answered YES to one or more questions:

Talk with your doctor by phone or in person BEFORE you start becoming much more physically active or BEFORE you have a fitness appraisal. Tell your doctor about the PAR-Q and identify which questions you answered YES.

- You may be able to do any activity you want as long as you start slowly and build up gradually. Or you may need to restrict your activities to those which are safe for you.

- PLEASE NOTE: If your health changes so that you then answer YES to any of the above questions, tell your fitness or health professional. Ask whether you should change your physical activity plan.

Name:		Date:	
Signature:		Witness:	
Signature of parent / guardian:			

Informed consent

Fitness assessment

The purpose of the fitness assessment is to provide individualised exercise programmes, offering greater safety and benefit to you. The tests are sub-maximal, but you will exercise at a moderately high level for a short period of time and may become hot and breathe more quickly than normal. In participating in these activities, you may be at risk of injury and even the possibility of death.

A range of appropriate tests will be selected and may include.

- A suitable cardiovascular fitness assessment
- Strength, power, and endurance assessment
- Flexibility and mobility assessment
- Body composition analysis
- Blood pressure & heart rate
- V02 max
- Blood Glucose
- Hypercholesterolemia
- Peak-flow lung function.

All tests will be explained to you prior to commencement. You will have the opportunity to ask any questions about the test and are free to withdraw at any time. All information will be kept confidential. All of the tests are performed in such a way as to minimise any risk of injury. Please inform the trainer of any reason why you should not participate in exercise, such as illness or any injury which could be aggravated by exercise. If at any time you feel undue pain or discomfort, stop the test, and inform the trainer of your symptoms.

Exercise programme.

Following the tests, an individualised exercise programme will be designed for you.

This will involve activities to progressively challenge your cardiorespiratory and musculoskeletal systems (heart, lungs, muscles, and joints). You may feel tired during and following the exercise sessions, and occasionally experience some soreness, but this is not unusual, and you will be monitored closely. Please consult your trainer if you have any concerns.

Declaration

I hereby state that I have read, understood, and answered honestly the questions on the PAR-Q, and that the fitness tests and assessments have been explained to me.

I am willing to participate in physical activities that may include aerobic exercise, resistance exercise and flexibility exercises. I realise that in participating in these activities I may be at risk of injury and even the possibility of death.

I hereby confirm that I am participating voluntarily and understand that I can withdraw at any time.

Client's name		Date	
Client's signature			
Trainer's name		Date	
Trainer's signature			

Lifestyle referral form

All areas must be completed as fully as possible.

Surname:				NHS No:							
First Name:				D.O.B. / Age:		Sex: M/F					
Address:		Home Tel No:									
		Family Status:									
		Occupation:									
		Name of GP:									
Post Code:				Practice:							
Referred By:				Referrers Signature							
Please tick:		GP	<input checked="" type="checkbox"/>	HV/Community Nurse	<input type="checkbox"/>	Physio	<input type="checkbox"/>	Stroke Team	<input type="checkbox"/>	Another Lifestyle Advisor	<input type="checkbox"/>
		PN	<input type="checkbox"/>	Cardiac Rehab	<input type="checkbox"/>	Dietician	<input type="checkbox"/>	Self-Referral (Smoking)	<input type="checkbox"/>	Other (please specify)	<input type="checkbox"/>

Please tick service(s) required:

Please check current medication and medical history before agreeing suitability for product, tick box and sign below:

Smoking cessation:	NRT	<input type="checkbox"/>	Bupropion (Zyban)	<input type="checkbox"/>	Yarenicline (Champix)	<input type="checkbox"/>	None	<input type="checkbox"/>
Tel:					Signed (GP):			

<p>Exercise referral scheme</p> <p>Reason for referral & co-morbidities:</p>	
--	--

Relevant medical history (surgery dates, etc?) & Implications of health tests (BP, etc?):		
Current medication:		
Medication side effects & exercise implications:		Practice Stamp:
Hobbies / social interests:		Date:
<p>Data Protection Information Declaration:</p> <p>All the information collected on the Patient Record will be dealt with confidentially by the Lifestyles Teams under the Data Protection Act 2018 and GDPR legislation. Information will only be used by the Lifestyles Team to audit outcomes, plan further services, and offer patient follow up if required. All information will be anonymous.</p> <p>Data Protection Patient Declaration</p> <p>I agree to the above YES Signed:</p>		

Lifestyle questionnaire						
Name		Date of birth		Age		Gender
Q1	What would you like to achieve from taking part in the personal training programme?					

Q2		Please describe your training history in the last two years					
Frequency	Cardiovascular Training	Resistance Training				Other	
Intensity							
Time							
Type						n	
Q3		Please describe your current training					
Frequency	Cardiovascular Training	Resistance Training				Other	
Intensity							
Time							
Type							
Q4		Outline your availability to take part in physical activity/exercise (tick as applicable)					
Day	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Morning							
Afternoon							
Evening							
Q5		Do you have any particular equipment or exercise likes or dislikes?					

Q6	How would you describe the following factors in your lifestyle?
Nutrition	
Sleep	
Stress	
Relaxation	
Smoking	
Alcohol intake	
Q7	Describe barriers which would prevent you from achieving your goals (e.g., finance, injury, motivation) and how you may overcome them

Height	Weight	Age	BMI	BMR	Waist Circumference

Health and fitness assessment					
Resting Heart Rate (3 consecutive days)			Blood pressure	Systolic	Diastolic
Reading 1	Date:		Date:		
Reading 2	Date:		Date:		
Reading 3	Date:		Lowest reading		
Lowest reading			Classification		

Peak Flow	Blood Glucose	Cholesterol	Notes (cross reference with tests)

Good alignment	Lordosis	Kyphosis	Notes (cross reference with flexibility tests)

Test	Result				Notes
Straight leg raise test	Optimal 90°		Normal 80°		Poor <80°
Thomas test	Optimal 90°		Short rectus femoris		Short iliopsoas
Prone trunk extension test			Good		Poor
Pectoralis major (sternal portion) shortness test			Normal		Short
Pectoralis major (clavicular portion) shortness test			Normal		Short
Latissimus dorsi shortness test			Normal		Short

Abdomen		Body fat %	
Hip			

SMART Goals

Goals of the Patient	
What does your patient hope to achieve (physical, behavioural and nutritional goals where applicable) from this initial 6-week programme and in the medium to long term (e.g., in 6 months)? (Please ensure your goals are SMART and agreed and cover medical management. Agree a review date on goals and progress.)	
Short-Term Goals	
S	
M	
A	
R	
T	
S	
M	
A	
R	
T	

Long Term-Goals	
S	
M	
A	
R	
T	
S	
M	
A	
R	
T	

NOTES

Waiver

ASSUMPTION OF RISK, WAIVER AND RELEASE OF LIABILITY, AND INDEMNITY AGREEMENT

DECLARATIONS: This Agreement is entered into between personal trainer _____ ("Trainer") and the undersigned ("Client"). The provision of personal training services by Trainer to Client, and Client's use of any premises, facilities or equipment are contingent upon this Agreement.

ASSUMPTION OF RISK: You agree that if you engage in any physical exercise or activity, including personal training, or enter our premises or use any facility or equipment on our premises for any purpose, you do so at your own risk and assume the risk of any and all injury and/or damage you may suffer, whether while engaging in physical exercise or not. This includes injury or damage sustained while and/or resulting from using any premises or facility, or using any equipment, whether provided to you by Trainer or otherwise, including injuries or damages arising out of the negligence of Trainer, whether active or passive, or any of Trainer's affiliates, employees, agents, representatives, successors, and assigns.

Your assumption of risk includes, but is not limited to, your use of any exercise equipment (mechanical or otherwise), sports fields, courts, or other areas, locker rooms, sidewalks, parking lots, stairs, pools, whirlpools, saunas, steam rooms, lobby or other general areas of any facilities, or any equipment.

You assume the risk of your participation in any activity, class, program, instruction, or event, including but not limited to weightlifting, walking, jogging, running, aerobic activities, aquatic activities, tennis, basketball, volleyball, racquetball, or any other sporting or recreational endeavor.

You agree that you are voluntarily participating in the aforementioned activities, and assume all risk of injury, illness, damage, or loss to you or your property that might result, including, without limitation, any loss or theft of any personal property, whether arising out of the negligence of Trainer or otherwise.

RELEASE: You agree on behalf of yourself (and all your personal representatives, heirs, executors, administrators, agents, and assigns) to release and discharge Trainer (and Trainer's affiliates, related entities, employees, agents, representatives, successors, and assigns) from any and all claims or causes of action (known or unknown) arising out of the negligence of Trainer, whether active or passive, or any of Trainer's affiliates, employees, agents, representatives, successors, and assigns.

This waiver and release of liability includes, without limitation, injuries which may occur as a result of (a) your use of any exercise equipment or facilities which may malfunction or break, (b) improper maintenance of any exercise equipment premises or facilities, (c) negligent instruction or supervision, including personal training, (d) negligent hiring or retention of employees, and/or (e) slipping or tripping and falling while on any portion of a premises or while traveling to or from personal training, including injuries resulting from Trainer's or anyone else's negligent inspection or maintenance of the facility or premises.

INDEMNIFICATION: By execution of this agreement, you hereby agree to indemnify and hold harmless Trainer from any loss, liability, damage, or cost Trainer may incur due to the provision of personal training by Trainer to you.

ACKNOWLEDGMENTS: You expressly agree that the foregoing release, waiver, assumption of risk and indemnity agreement is intended to be as broad and inclusive as permitted by the law in the State of California and that if any portion thereof is held invalid, it is agreed that the balance shall, notwithstanding, continue in full legal force and effect.

You acknowledge that Trainer offers a service to his/her clients encompassing the entire recreational and/or fitness spectrum. Trainer is not in the business of selling weightlifting equipment, exercise equipment, or other such products to the public, and the use of such items is incidental to the service provided by Trainer.

You acknowledge and agree that Trainer does not place such items into the stream of commerce. This release is not intended as an attempted release of claims of gross negligence or intentional acts. You acknowledge that you have carefully read this waiver and release and fully understand that it is a release of liability, express assumption of risk and indemnity agreement.

You are aware and agree that by executing this waiver and release, you are giving up your right to bring a legal action or assert a claim against trainer for trainer's negligence, or for any defective product used while receiving personal training from trainer. You have read and voluntarily signed the waiver and release and further agree that no oral representations, statements, or inducement apart from the foregoing written agreement have been made.

Print Name: _____ Sign Name: _____

_____ Date: __

Morgan and Irwin risk stratification tool - traffic light system

Green – low risk	
Overweight	No complications
High normal blood pressure	(130-139/85-89) not medication controlled
Deconditioned	Due to age or inactive lifestyle
Type 2 diabetes	Diet controlled
Older people aged >65	No more than 2 CHD risk factors and not at risk of falls
Antenatal	No symptoms of pre-eclampsia/no history of miscarriage
Post-natal	Provided 6/52 check complete and no complications
Osteoarthritis	Mild where physical activity will provide symptomatic relief
Mild bone density changes	BMD > 1SD and <2.5 SD below young adult mean
Exercise-induced asthma	Without other symptoms
Smoker	One other CHD risk factor and no known impairment or respiratory function
Stress/mild anxiety	Asymptomatic
Seropositive HIV	

Amber – medium risk	
Hypertension stage 1	(140-159/90-99). Medication controlled
Type 2 diabetes	Medication controlled
Type 1 diabetes	With adequate instructions regarding modification of insulin dosage depending on timing of exercise and warning signs
Physical disabilities	No other risk factors
Moderate OA/RA	With intermittent mobility problems
Clinical diagnosis Osteoporosis	BMD -2.5 at spine, hip or forearm or ≥ 4 on Fracture index, with no history of previous low trauma fracture
Surgery – pre and post	General or orthopaedic, not cardiac

Intermittent claudication	No symptoms or cardiac dysfunction
Stroke/TIA	> 1 year ago. Stable CV symptoms. Mobile, no assistance required
Asthma	Mild (ventilator limitation does not refrain submaximal exercise)
COPD	Without ventilator limitation but would benefit from optimisation of respiratory
Neurological conditions	system mechanics and correction of physical deconditioning such as young onset Parkinson's disease (stable); multiple sclerosis
Early symptomatic HIV	Moderately diminished CD4 cells, intermittent or persistent signs and symptoms such as fatigue, weight loss, fever, lymphadenopathy
Chronic fatigue syndrome	Significantly deconditioned due to longstanding symptoms
Depression	Mild to moderate
Fibromyalgia	Associated impaired functional ability, poor physical fitness, social isolation, neuroendocrine and autonomic system regulation in disorders

Red – high risk	
Older people >65 years at risk of falls. Frail older people with osteoporosis and history of fracture Unstable and uncontrolled cardiac disease Claudication with cardiac dysfunction	Refer direct to falls service (BMD) >-2.5 at spine, hip or forearm in the presence of one or more documented low trauma or fragility fractures)
Orthostatic hypotension	Fall SBP -20mg/Hg or DBP -10mg/Hg within 3 minutes of standing
Stroke/TIA	Recent (>3 months ago but under 1 year ago)
Severe osteoarthritis/rheumatoid arthritis	With associated mobility
Type 1 or Type 2 diabetes (advanced)	With associated immobility


Moderate to severe arthritis	With accompanying autonomic neuropathy, advanced retinopathy
COPD/emphysema	With true ventilatory limitation
AIDS	With accompanying neuromuscular complications severe depletion of CD4 cells, malignancy or opportunistic infection
Psychiatric illness/cognitive impairment/ dementia	AMT score <8



Shawn Duckers
Exergonic Coaching
07737135735

8.2 Appendix 2: Digital Scales

Salter Digital Scales – Amazon purchase



Salter 9049 BK3R Max Digital Bathroom Scale – Weighing Scales For Body Weight, Supersize LCD Display, 250kg / 39st 6 lb, Includes Carpet Feet & Battery, Step On Instant Weight Readings, Compact Design




Visit the Salter Store
4.4 ★★★★★ 7,377 ratings | Search this page
800+ bought in past month

-5% **£23.79**
RRP: £24.99

FREE Returns

Available at a lower price from [other sellers](#) that may not offer free Prime delivery.

Colour Name: **Black**

 £23.79 £24.99	 £38.19 £39.99	 £27.00
---	---	---

Brand	Salter
Colour	Black
Recommended uses for product	Adults
Special feature	Large Display, Easy Read, Fitness Scale, Digital, Max 250kg, Measure In Metric & Imperial, Includes Carpet Feet & Battery
Display type	LCD

Roll over image to zoom in

8.3 Appendix 3: BMI Calculator

<https://www.calculator.net/bmi-calculator.html>


BMI Calculator

Modify the values and click the Calculate button to use

US Units	Metric Units	Other Units
Age: 25 (ages: 2 - 120)		
Gender: <input checked="" type="radio"/> Male <input type="radio"/> Female		
Height: 180 cm		
Weight: 65 kg		
Calculate	Clear	

Result

BMI = 20.1 kg/m² (Normal)



- Healthy BMI range: 18.5 kg/m² - 25 kg/m²
- Healthy weight for the height: 59.9 kg - 81 kg
- BMI Prime: 0.8
- Ponderal Index: 11.1 kg/m³

The Body Mass Index (BMI) Calculator can be used to calculate BMI value and corresponding weight status while taking age into consideration. Use the "Metric Units" tab for the International System of Units or the "Other Units" tab to convert units into either US or metric units. Note that the calculator also computes the Ponderal Index in addition to BMI, both of which are discussed below in detail.

BMR Calculator

The *Basal Metabolic Rate (BMR) Calculator* estimates your basal metabolic rate—the amount of energy expended while at rest in a neutrally temperate environment, and in a post-absorptive state (meaning that the digestive system is inactive, which requires about 12 hours of fasting).

Modify the values and click the Calculate button to use

US Units **Metric Units** **Other Units**

Age: ages 15 - 80


Gender: male female

Height: cm

Weight: kg

[+ Settings](#)

Calculate **Clear**

Result 

BMR = 1,605 Calories/day

Daily calorie needs based on activity level

Activity Level	Calorie
Sedentary: little or no exercise	1,926
Exercise 1-3 times/week	2,207
Exercise 4-5 times/week	2,351
Daily exercise or intense exercise 3-4 times/week	2,488
Intense exercise 6-7 times/week	2,769
Very intense exercise daily, or physical job	3,050


Exercise: 15-30 minutes of elevated heart rate activity.
Intense exercise: 45-120 minutes of elevated heart rate activity.
Very intense exercise: 2+ hours of elevated heart rate activity.

8.4 Appendix 4: Resting Heart Rate

Blood Pressure Machine

8.5 Appendix 5: Peak Flow

Clement Clarke Peak Flow Meter – Amazon purchase



Roll over image to zoom in

Clement Clarke 3103387 Mini Wright Standard Peak Flow Meter, Standard Range

Brand: Haag-Streit
4.7 ★★★★★ 1,859 ratings | [Search this page](#)

Amazon's Choice

400+ bought in past month




-9% £10⁰⁰
RRP: £10.95

FREE Returns

Save 5% on any 4 Qualifying items | [Terms](#)

- Ideal for taking the measurement of the peak flow
- Supplied with a standard plastic (washable) mouth piece - ideal for clinic use
- Lightweight yet durable design
- Easy to use
- EU standard scale

[Report an issue with this product](#)

 Temtop Air Quality...  Temtop Air Quality...  [Shop Temtop](#)

8.6 Appendix 6: Blood Pressure

A&D Medical Blood Pressure Monitor – Amazon purchase



The image shows a white A&D Medical UA-611 blood pressure monitor with a black cuff. The monitor's display shows a reading of 137/76/69 mmHg for systolic, diastolic, and pulse respectively. It also features a 'START' button and a small heart icon on the display.

A&D Medical Blood Pressure Monitors BIHS Approved UK Blood Pressure Machines UA-611

Visit the A&D Medical Store
4.6 ★★★★★ 44,727 ratings | Search this page

Amazon's Choice

7K+ bought in past month

Limited time deal
-56% **£16⁸⁹**
RRP: £37.99

FREE Returns

Save 5% on any 4 Qualifying items | Terms

Available at a lower price from other sellers that may not offer free Prime delivery.

Brand	A&D Medical
Included components	Battery
Power source	Battery Powered
Display type	Digital

Roll over image to zoom in

8.7 Appendix 7: Blood Lipids

Mission Cholesterol Blood Lipid testing 3-in1

<https://sterlingmedical.uk/products/mission-cholesterol-meter>



The image shows a blue Mission Cholesterol Meter Kit. The device has a digital display showing '12-03 09:00', 'No. 082', and a large '5.90' reading. Below the display are navigation buttons and a test strip slot.

By Connect

Mission Cholesterol Meter Kit - 1 Meter + Control Cassettes

★★★★★

£268.99 GBP ex. VAT
£322.78 GBP inc. VAT

Taxes and Shipping calculated at checkout.

Spend **£50.00 GBP** more to reach **Free Shipping!** 0%

Quantity: 1

Add to cart Buy with **shop Pay** More payment options

Add to compare

8.8 Appendix 8: VO2 Max

Static Testing Equation - <https://www.wikihow.com/Measure-VO2-Max>

Method
1
Calculating VO₂ Max Without a Fitness Test
PDF Download Article

if
 $HR_{max} = 195$ and $HR_{min} = 80$

$VO_2 \text{ max} = 15 \times (HR_{max} / HR_{rest})$

$VO_2 \text{ max} = 15 \times (195 / 80)$

Solve: $VO_2 \text{ max} = 15 \times 2.44$
 $= 36.56 \text{ mL/kg/min}$

[wikiHow to Measure VO2 Max](#)

8.9 Appendix 9: PHQ 9 & GAD 7

NHS Foundation Trust – Gloucestershire - <https://www.gloshospitals.nhs.uk/>

Foundation Trust
For Gloucestershire

IAPT Questionnaire 1

PHQ-9

Over the last 2 weeks, on how many days have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1 Little interest or pleasure in doing things	0	1	2	3
2 Feeling down, depressed or hopeless	0	1	2	3
3 Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4 Feeling tired or having little energy	0	1	2	3
5 Poor appetite or overeating	0	1	2	3
6 Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7 Trouble concentrating on things, such as reading the newspaper or watching television	0	1	2	3
8 Moving or speaking so slowly that other people could have noticed, or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9 Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3
A11 – PHQ-9 Total Score				<input style="width: 50px;" type="text"/>

IAPT Questionnaire 2

GAD-7

Over the last 2 weeks, on how many days have you been bothered by any of the following problems?	Not at all	Several days	More than half the days	Nearly every day
1 Feeling nervous, anxious or on edge	0	1	2	3
2 Not being able to stop or control worrying	0	1	2	3
3 Worrying too much about different things	0	1	2	3
4 Trouble relaxing	0	1	2	3
5 Being so restless it is hard to sit still	0	1	2	3
6 Becoming easily annoyed or irritable	0	1	2	3
7 Feeling afraid as if something awful might happen	0	1	2	3
A12 – GAD-7 Total Score				<input style="width: 50px;" type="text"/>

Healthy Heart Programme funded by Bay Medical Group



The Arndale Centre
Morecambe, United Kingdom
LA4 5DG

Reducing chronic illness & disease

We have 15 spaces available to join our programme starting 24th February 2025. Learn how to manage and reduce the symptoms associated with various chronic health conditions with professional support and guidance.



Bay Veterans Association Social Hub

This will be a free 12-week programme. You will receive an in-depth health assessment, advice and education tailored to your condition, chair-based exercise classes, and peer support from the development of a social group of friends with similar health conditions.

If you would like to join our program please contact Bay Veterans Association to reserve you place today

