



CASE STUDY

OF A PATIENT WITH
CORONARY ARTERY DISEASE

PATIENT PROFILE

Thomas is a 61 year old male diagnosed with coronary artery disease (CAD) and stable angina. He was been diagnosed with hypertension with a blood pressure reading of 160/90. All conditions are managed via the following medications: statins (for cholesterol); nitrates (for vasodilation); ACE inhibitors (for blood pressure); glyceryl trinitrate spray (or GTN, to treat angina attacks); and beta blockers (to slow the heart rate down to reduce angina attacks).

Thomas is obese with a body mass index of 35 and is pre-diabetic. He is currently sedentary and has a sedentary job role as the director of an information technology firm - mostly desk work. Thomas enjoys regular evening drinks at the pub and often entertains clients at events where alcohol is consumed in excess. He is married with 2 children.

SCREENING & EXERCISE TESTING RECOMMENDATIONS

Exercise testing and programme must only commence once safety has been confirmed by the patients GP. The GP will usually have commenced an exercise stress test and if the patient is deemed as tolerant, a cardiac fitness programme may commence.

SCREENING:

PARQ.

Blood pressure, to ensure medication is working correctly.

AEROBIC FITNESS TEST:

6 minute walk test. Use pain claudication scale and terminate when patient reaches 3 out of 4. Explain RPE and terminate if patient reaches RPE of 12 on BORG scale.

MUSCULAR FITNESS TEST:

5 repetition sit to stand test for time: Encourage breathing or avoidance of valsalver manoeuvre to avoid sudden increases in blood pressure.

BEHAVIOR CHANGE CONSIDERATIONS

The patient is sedentary and drinks excessive alcohol socially and in relation to work. The following interventions have been useful for patients with Cardiovascular disease:

1. Assess for readiness to change using transtheoretical model for change.
2. Discuss barriers to change and work with patient to address solutions.
3. Set SMART Goals to change behaviours.
4. Provide information about improving health status.
5. Maintain regular, bi-weekly contact via text or phone over 12 months.

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KEY ISSUES THAT MIGHT AFFECT PROGRAMME DESIGN:

The patient is taking a significant number of medications that can impact on exercise response. The patient also has angina and hypertension, although controlled considerations must be made.

- Avoid exercises that place the arms overhead to avoid excessive increases in blood pressure.
- Avoid floor based exercises where there is a risk of postural hypotension upon standing.
- Avoid breath holding or the valsalver manoeuvre to avoid sudden hypertension.
- Statins may increase the risk for muscular injury. Proceed with caution and refer patient back to GP if needed.
- Use BORG RPE scale for measuring intensity as beta blockers impact upon the heart rate response.
- Patient is presenting with multiple conditions :- CAD, angina, hypertension, impaired glucose tolerance (IGT). ACSM physical activity guidelines differ for each condition. Guidelines pertaining to CAD and angina are being followed as a priority whilst attention is paid to guidelines for hypertension and IGT guidelines.

PROGRAMME RECOMMENDATIONS:

Walking has been recommended in this program but any aerobic exercise can be included such as elliptical, arm ergometer or cycling, with special attention paid to intensities.

- Goal 1:** To walk for 5-10 minutes several times per day. **RPE 11-13.**
- Goal 2:** To increase the length of time walking by 10-20% each week or as tolerated. Increases may happen over several weeks as opposed to weekly. Assessment must happen for additional symptoms on each session. **RPE 11-13.**
- Goal 3:** Once 30 minutes continuous walking has been achieved, perform 30 minutes of walking on 3-5 days per week. **RPE 11-13.**
- Goal 4:** Once 1 month of this has been achieved, gradually increase over a period of weeks to **RPE to 12-16**.
- Goal 5:** Once 3 months of this continuous exercise has been achieved, include 2 resistance exercise sessions in per week. **See below.**

RESISTANCE EXERCISE

Perform on 2-3 days per week.

- Goal 1:** Begin with 1 set of 10-15 repetitions for 8-10 exercises, working every major muscle group. Perform to relative fatigue, not exhaustion.
- Goal 2:** Progress gradually, over time period of 6-8 weeks to 2 then 3 sets per muscle group, as tolerated.
- Exercises to include:** resistance band deadlift, chest press, row, lateral steps, lateral raise, palof press; sit to stand.