



Heart Manual Facilitator Training

Day 2 Cardiac Rehabilitation: The Heart Manual and facilitation

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Before we start

Have open in the background or on another device:
D-HM
Training Workbook

Pen and paper

If you have problems with your signal try-
switching off camera during presentations (back on during
discussions)

Keep mic on mute and raise hand for comment during
presentations

Chat option- feel free to use as relevant

Contact no: 07941297049
HM Office no: 0131 537 9137

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Aim

•Overview of:

- Cardiac rehabilitation in the UK
- Guidelines and theory into practice
- CAD and its management

•Promote a facilitative approach by sharing
skills, knowledge and competence

•Discuss facilitation of the Digital Heart Manual
in relation to patient pathways, patient needs,
risk factors and lifestyle change

Address issues for staff and patients due to
current COVID-19 pandemic

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Cardiac Rehabilitation

'The co-ordinated sum of activities required to influence favourably the underlying cause of cardiovascular disease, as well as to provide the best possible physical, mental and social conditions, so that the patients may, preserve or resume optimal functioning in their community and through improved health behaviour, slow or reverse progression of disease.'

British Association of Cardiovascular Prevention and Rehabilitation(2017)

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Traditional Patient Pathway

Phase 1: Acute Event , Hospital stay
Manual Introduced, HAD score

Phase 2: Immediate discharge period
Manual educational content, goal setting & pacing
Week 1, 3 & 6, HAD score

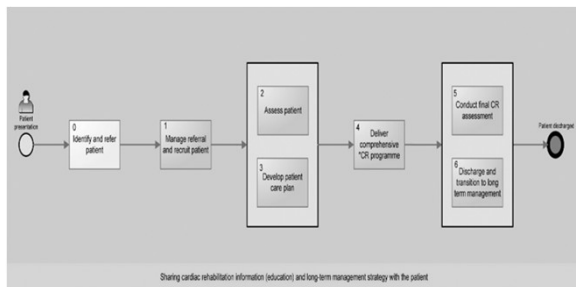
Phase 3: Community or hospital based programme
Week 6 – 18

Phase 4: Long term maintenance of lifestyle change

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DOH Cardiac Rehabilitation Pathway



*CR = cardiac rehabilitation

DoH Cardiac Rehabilitation Commissioning Pack 2010

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Current UK Key Guidance

SIGN
National Institute for Health and Care Excellence

- SIGN Guideline 150 - Cardiac Rehabilitation
- NICE Guideline (NG 185)- Acute coronary syndromes (ACS) (Nov 2020 change -includes early and longer-term (rehabilitation) management of acute coronary syndromes.)

“Begin cardiac rehabilitation as soon as possible after admission and before discharge from hospital. Invite the person to a cardiac rehabilitation session which should start within 10 days of their discharge from hospital”. (2013)

“Offer cardiac rehabilitation programmes in a choice of venues (including at the person’s home, in hospital and in the community) and at a choice of times of day, for example, sessions outside of working hours. Explain the options available.” (2013)

“A home-based programme validated for people who have had an MI (such as NHS Lothian’s heart manual) that incorporates education, exercise and stress management components with follow ups by a trained facilitator may be used to provide comprehensive cardiac rehabilitation”. (2007).

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NICE Clinical Guideline (CG) 185- Acute coronary syndromes: Secondary prevention summary

Cardiac rehabilitation and secondary prevention

Cardiac rehabilitation

- Start cardiac rehabilitation before hospital discharge
- Assessment appointment to take place in 10 days of discharge

Cardiac rehabilitation programme

- Physical activity tailored to clinical condition and ability
- Change advice, including advice on drinking, eating and sex
- Stress management
- Health education

Lifestyle changes

- Healthy eating: Mediterranean diet (brown bread, fruit, vegetables, fish and healthy oils) or plant diet
- Alcohol: limit drinking to no more than 14 units a week
- Regular physical activity: 150-300 minutes a week of light to moderate intensity duration and intensity gradually while gaining fitness
- Smoking and maintaining a healthy weight

Antithrombotic therapy for heart failure with reduced left ventricular ejection fraction

- Start 2 to 31 days after MI, preferably after ACE inhibitor
- Monitor renal function and potassium balance and adjust treatment if heart failure is present, before start or stop drug

Drug therapy for secondary prevention

- ACE inhibitor and/or statin (unless low risk)
- Do not withhold statin (regardless of cholesterol level) in 12 months
- Consider beta-blocker (regardless of acute major artery atherosclerotic reduction for secondary prevention)
- Beta-blocker (consider addition or upgrade if there are signs/symptoms of heart failure) (regardless of previous use) (consider after hospital discharge)
- Consider aspirin (regardless of previous use) (consider after hospital discharge)
- Consider a statin (regardless of previous use) (consider after hospital discharge)
- Consider a statin (regardless of previous use) (consider after hospital discharge)

Drug therapy

- ACE inhibitors: start as soon as possible (usually 12 to 24 hours) (consider within 4 to 8 weeks of hospital discharge)
- Monitor renal function and potassium balance and adjust treatment if ACE inhibitor or ARB and after 1 to 2 weeks
- Beta-blockers: start as the treatment is tolerated or target dose

Antithrombotic therapy with an indication for anticoagulation

- Start anticoagulation if there is an indication for anticoagulation
- Consider oral anticoagulation (OAC) (regardless of previous use) (consider after hospital discharge)
- Consider oral anticoagulation (OAC) (regardless of previous use) (consider after hospital discharge)
- Consider oral anticoagulation (OAC) (regardless of previous use) (consider after hospital discharge)
- Consider oral anticoagulation (OAC) (regardless of previous use) (consider after hospital discharge)

<https://www.nice.org.uk/guidance/ng185/resources/visual-summary-secondary-prevention-pdf-8900620813>

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Promoting Excellence in Cardiovascular Disease Prevention and Rehabilitation


The BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation 2017 (2nd Edition)

The BACPR Standards and Core Components for Cardiovascular Disease Prevention and Rehabilitation 3rd edition

- To provide a blueprint upon which all effective prevention and rehabilitation services are designed
- To provide a template to monitor and assess any variation in quality provision
- Aligned to DOH commissioning pack/ cardiac rehab pathway

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Six Standards for Cardiovascular Prevention and Rehabilitation Service

1. Delivery of 6 core components by a qualified and competent MDT, led by a clinical coordinator
2. Prompt identification, referral and recruitment of eligible patient populations
3. Early initial assessment of individual patient needs which informs agreed personalised goals that are reviewed regularly
4. Early provision of structured cardiovascular prevention and rehabilitation programme (CPRP) with defined pathway of care. Which meets individual's goals and aligned to patient choice
5. On programme completion, a final assessment of individual patient needs and demonstration of sustainable health outcomes
6. Registration/submission of data to National Audit of Cardiac Rehabilitation (NACR)

BACPR/BCS/BHF Statement on Cardiac rehabilitation services (June 2020)
<https://bjcardio.co.uk/2020/06/covid-19-and-cardiac-rehabilitation/>

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DISCUSS

- What are the challenges/ what do you think you can do better in your service?
- How can you make your services more accessible to patients?




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2018/19 NACR Recommendations

- Optimise recruitment into CR for post-MI patients
- Recruit more female patients and ensure that CR programmes are better tailored to the needs of female patients
- Consider patient co-morbidities as part of recruitment, assessment and intervention
- Complete a comprehensive CR assessment prior to, and on completion of CR
- Offer facilitated home-based modes of CR delivery for all CVD patients, including innovation in recruiting those with heart failure
- Deliver quality evidenced by 'certified' status

* The duration of CR should meet the minimum requirement of eight weeks.
 NACR 2017 7 KPIs for accreditation under the National Certification Programme



<http://www.cardiacrehabilitation.org.uk/NCP-CR.htm>

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British Association of Cardiovascular Prevention and Rehabilitation(2017)

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Six Core (Programme) Components

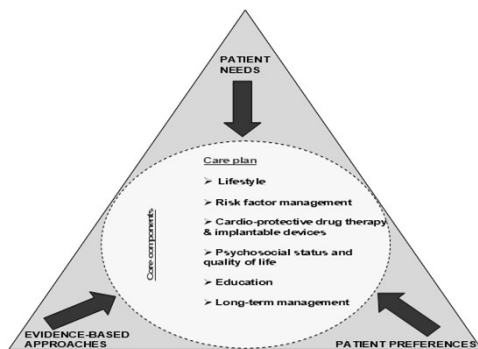
1. Health behaviour change and education
2. Lifestyle risk factor management
 - Physical activity and exercise
 - Diet
 - Smoking cessation
3. Psychosocial health
4. Medical risk management
5. Long-term management
6. Audit and evaluation



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Assessment – Care Planning



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Who should be offered CR?

High Priority:

- ACS - STEACS, NSTEMACS and unstable angina
- All those undergoing reperfusion - CABG, PCI or PPCI
- CHF of new diagnosis or with a step change in clinical presentation
- ICD or CRT or heart valve replacement and have a primary diagnosis of ACS or heart failure

Extend to:

- Those following heart transplant and ventricular assist devices
- People with ICD or CRT for reasons other than ACS or heart failure
- People with heart valve replacement for reasons other than ACS or heart failure
- People with a confirmed diagnosis of exertional angina

Assess suitability for either Post MI or Revascularisation HM

BACPR/BCS/BHF Statement on Cardiac rehabilitation services (June 2020)
<https://bjcardio.co.uk/2020/06/covid-19-and-cardiac-rehabilitation/>

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Today - Cardiac Rehabilitation Uptake

- MI + PCI – 57%
- MI med – 33%
- PCI elective – 49%
- CABG – 71%
- Total – 50%

Programmes vary in length, content and the place of delivery. Increasingly, there is a drive to offer people a choice such as home, community or hospital services.

NACR Annual Report 2018

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Addressing Engagement Issues

- Lack of interest or fear of exercise
- Transport difficulties
- Cost
- Dislike of group activities
- Physical co-morbidities
- Age
- Cultural issues
- Language problems
- Social deprivation
- Gender- Women
- Lack of personal support

How do you see the HM helping to address these issues?

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The Heart Manual: a facilitated self management tool

- Gain an understanding and acceptance of the condition
- Learn to prioritise and plan
- Set short, medium and long term goals
- Learn to pace appropriately and effectively
- Promote exercise and activity in a realistic manner
- Self-monitor one's own progress and condition changes
- Recognise and deal with common psychological responses
- Maintain behaviour change & deal with setbacks appropriately



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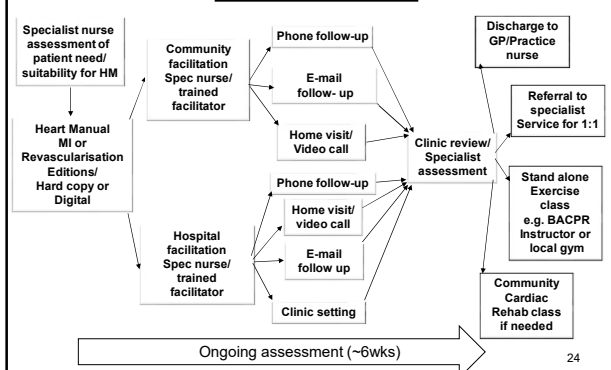
Exclusion Criteria for HM

- The Heart Manual is not suitable for patients with a very poor prognosis (cardiac or other) or those who have unstable conditions.
- The judgement as to who receives the manual is a clinical one.
- Patient safety should always be considered by the practitioner who prescribes and those who facilitate the manual.
- Additional considerations; communication barriers such as language or literacy and catchment area.

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Facilitation of the Heart Manual: Patient Pathway



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Remote consultations

Options:

- Phone- familiar to patients, simple conversations, administrative or instructions, easy for patients
- Video- provides additional visual clues, therapeutic presence, useful for pts who need more support, have co-morbidities, complex circumstances, anxious
- Text, e-mail
- Apps, web-based platforms, videos

Be aware:

- Do your homework-PMH, index event, social circumstances
- First consultation- check identity-confirm name and DOB
- Background assessment-breathless when speaking, do they look or sound-anxious, pale unwell etc, check exercises, medicine
- Can/ is a partner/relative/other be there for consultation-e.g. for safety during exercise

<https://www.bmj.com/content/368/bmj.m1182>

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Remote Assessment and Review- During COVID-19

- Information pulled from medical records, referral info
- Careful history and simple questioning of patient
- Focus on change- progress, setbacks deteriorations, any physical symptoms, ease and comfort of speech or exercise
- Adapt, look for own solutions for your area/pts
- Other technology- fitness trackers, apps, step counts, mobile phone data
- Other validated tools- Rating of Perceived Exertion Scale (RPE) Duke Activity Status Index, TAM2,*Roth score , HAD, PHQ9

**NB-The Roth Score for breathlessness- debate over validity, but is used in some primary care settings. Is it useful as baseline indicator to assess change over time?*

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The Heart Manual Content

- **Part 1:** Your Heart Condition: the facts
Read during hospital stay, relaxation and FAQ CD's
- **Part 2:** The 6 weekly programme, community facilitated
Week 1 Getting home - getting better
Week 2 Feeling better, smoking
Week 3 Making progress, diet
Week 4 Getting better all the time, weight
Week 5 Feeling more like yourself, exercise
Week 6 The end...and the beginning, blood pressure

Daily – Relaxation, Walking, Exercise and Activity record

- **Part 3:** Facts and advice to aid recovery

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HM Facilitator Resources

Heart Manual facilitator on line training folder

Digital Post MI:
<https://www.heartmanual.scot.nhs.uk/>
 Digital Revasc:
<https://www.hmrevasc.scot.nhs.uk/>

HM Dept website:
<https://services.nhslothian.scot/TheHeartManual/Pages/default.aspx>

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Facilitating the HM: 5 Steps to Success

- Step 1 • Build a rapport
- Step 2 • Think about CAD
- Step 3 • Think about the risk factors
- Step 4 • Set goals & pace
- Step 5 • Sum it up

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Step 1 Build a Rapport

- Engage with the patient & partner
- Discuss your role as a facilitator
- Provide your/service contact details
- Review the patient's & partner's experience
- Normalise the recovery process or reaction to condition
- Outline the use of the HM (part 1, 2 & 3, CD)

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Early Intervention - Issues to consider

- Encouraging feelings of control over illness
- Deal with denial or rejection of the HM
- How to help partners, carers and families
- Marriage and relationship issues
- Dealing with overprotection
- Family demands or demanding families
- Guiding physical activity
- Returning to work

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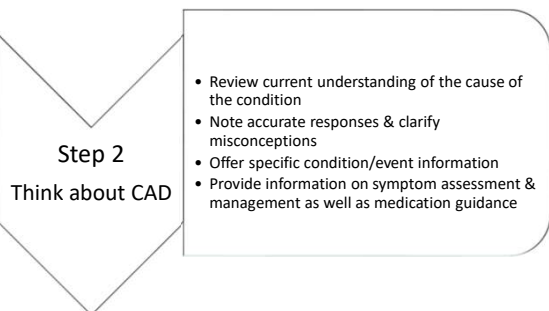
Theory to Adult Learning

- Adults have a need to know why they should learn.
 - Learning needs to be relevant and important.
- Adults prefer to be self-directed.
 - Deciding for themselves what they want to learn.
- Adults have a broad range of life and learning experiences.
 - This may influence new learning in both a positive and negative way.
- Adults can become ready to learn when they experience a life situation where they want to or need to develop understanding.
- Adults enter into the learning process with a task orientated aspect to learning.
- Adults are inspired by both intrinsic and extrinsic motivators.

Atherton J S. Learning and Teaching; Knowles' androgogy: an angle on adult learning.
<http://learningandteaching.info/learning/knowlesa.htm>

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HM signpost-
Part 1- Your Heart Attack- the facts (Pg7)

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Case study 1:
Dorothy Peacock
84 years of age

Increasing breathlessness and shoulder ache when walking the dog, recently diagnosed as angina
(Training workbook P28)

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DOROTHY PEACOCK – 85 YEARS

Reason for referral: Angina prior approximately 12 months, but more troublesome recently. Unable to do ETT but taken for elective PCI where she had DES x2 to RCA and LAD.

PMH: Previous MI 4 year ago, AF, Osteoporosis, Arthritis in knees/hips

Physical activity: BMI 28 Smoker 10/day Diet Chlo 6.2, BP on discharge: 130/84 Pulse 76 irregular. No HADS score. On all appropriate meds.

Social: Walked every day to local paper shop and back. Stick for outdoors. Approximately 15mins in total. Has to stop sometimes.

Care-giver: Daughter visits most days and takes shopping. Sees this as a warning and wants her mum to take it easy from now on.

First visit: Dorothy admits to feeling anxious about being home alone in case she takes unwell. She feels quite weepy sometimes. She's not sure but she thinks she has had another heart attack but has had an operation to repair it? She is not sure about what happens to the stent when she moves and is understandably cautious about overdoing it. She feels tired all the time and is still a bit breathless. She's reluctant to go out until she feels a bit stronger. Her medication has been changed and she's unsure it's all necessary at her age.

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Case Study Work Sheets A/B

Worksheet A (P31)

- Can you identify any educational needs?
 - What are the key physical and psychological needs of your patient and can you come up with potential solutions?
 - Identify areas in the Heart Manual and resources which may be able to help.
 - Identify possible support needs e.g. activities of living, social work, return to work etc. (Including caregiver)
- Worksheet B (p32)
 - How would you encourage self-management with regards to HBC/risk factor modification?
 - How would you assist in setting activity goals with your patient and what factors would you consider?
 - How would you monitor progress?
 - How would you deal with a set-back?

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Case study 2:
Scott Graham,
53 years of age

Admitted with central chest pain radiating to his jaw and left arm, diagnosed as STE-ACS

(Training Workbook p29)

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SCOTT GRAHAM – 53 YEARS

Reason for referral: Admitted to hospital by ambulance with central chest pain, radiating to jaw and arm. Diagnosed by SAS as acute STEMI and taken for primary PCI. BMS x2 to LAD and OM1. One episode of self-terminating VT in CCU. Troponin 3.2. BP on discharge: 110/60 Pulse 60 regular. Waist circumference 87 cm. **PMH:** Normally well. Had a few episodes of "indigestion" and feeling quite tired a few weeks prior to admission.

Risk factors for CAD: Chol 7.4 • Family history (father died of MI 52y) • Smoker 20-30/day • Reduced activity. On all appropriate medication. HAD Anxiety: 14 Depression: 9

Physical activity: Sedentary job. He went swimming with his son on his day off. 15-20 lengths.

Social: Self-employed taxi driver. Working long hours. Requesting urgent cardiology review to get permission to go back to work.

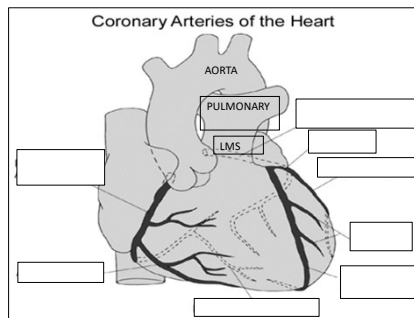
Care-giver: Wife witnessed the MI and called the ambulance. Very worried about Scott going back to work too soon. 7 year old son.

First visit

Scott is very anxious about his finances and young family. He thinks stress was the main factor in his MI. he doesn't see how he will have time to work through the HM as he is planning to go back to work soon, but he will try to read some of it. He is not sure about the relaxation CD. He says he is not happy about taking a beta blocker as he is worried about the side effects.

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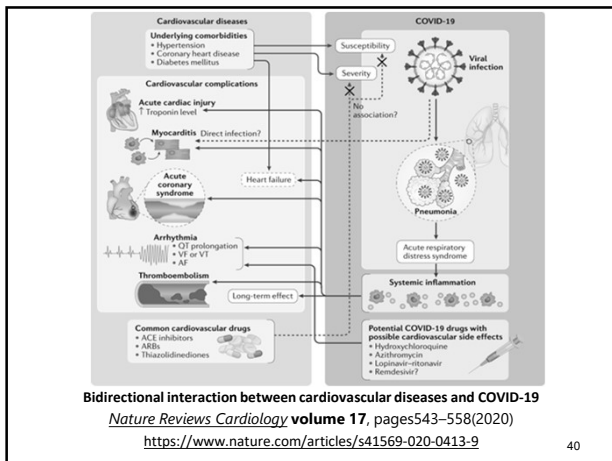
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Right coronary artery Acute marginal Posterior descending Left anterior descending Diagonals
Left coronary artery Circumflex Left main stem Oblique marginal

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What causes CAD?

Atherosclerosis: is a condition in which cellular and fatty materials collect along the walls of the arteries. This causes the vessel to narrow, harden and develop a fibrous cap. In some cases the atheroma may occlude the vessel completely, or the plaque may rupture causing a clot to form

HM signpost-
Part 2 Week 2- CAD (P46-48)

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- Inflammation / Injury
- Penetration of cholesterol and macrophages
- Immune response – macrophages devour cholesterol (foam cells)
- Build up of foam cells, lipids & necrotic debris
- Smooth muscle proliferation -fibrous cap

ENDOTHELIAL DYSFUNCTION	NOMENCLATURE AND MAIN HISTOLOGY	SEQUENCES IN PROGRESSION OF ATHEROSCLEROSIS		
		EARLIEST ONSET	MAIN GROWTH PERIOD	CLINICAL CORRELATION
	Initial lesion • histologically "normal" • macrophage infiltration • isolated foam cells			
	Fatty streak • mainly intracellular lipid accumulation	from first decade		clinically silent
	Intermediate lesion • intracellular lipid accumulation • small extracellular lipid pools		growth mainly by lipid addition	
	Atheroma • intracellular lipid accumulation • core of extracellular lipid	from third decade		
	Fibroatheroma • single or multiple lipid cores • fibrocytic layers		increased smooth muscle and collagen increases	clinically silent or event
	Complicated lesion • surface defect • hemorrhage • thrombosis	from fourth decade	thrombosis and/or embolism	

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Angina Pectoris

Angina is a symptom which may be described as a transient discomfort, tightness, pressure or heaviness in the chest. It may radiate to the arms, jaw, shoulders, back, upper abdomen or neck, and may be accompanied by shortness of breath

HM signpost-
Part 3- Chest pains
What causes angina (P143-144)

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Signs and Symptoms

Stable angina tends to Occur:

- During physical activity
- During cold or windy weather
- After a meal
- Under emotional stress.



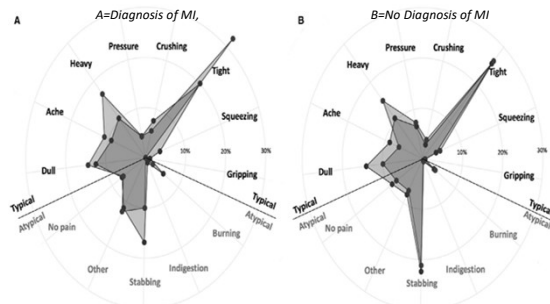
HM signpost-
Part 3- Chest pains (P143)
What brings on angina (P145-146)

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Symptoms and Sex Specific Diagnosis of MI

A/E attendance -Typical and atypical chest pain stratified by sex . M=Blue, F=Red



<https://www.ahajournals.org/doi/full/10.1161/JAHA.119.012307>

Ferry et al (2019)

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Diagnosis of Angina

- Clinical History– Canadian Cardiovascular Society Angina Classification I -IV

Canadian Cardiovascular Society grading of angina pectoris

Grade	Description
Grade I	Ordinary physical activity does not cause angina, such as walking and climbing stairs. Angina with strenuous or rapid or prolonged exertion at work or recreation
Grade II	Slight limitation of ordinary activity: walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, or in cold, or in wind, or under emotional stress, or only during the few hours after awakening; walking more than two blocks on the level and climbing more than one flight of ordinary stairs at a normal pace and in normal conditions
Grade III	Marked limitation of ordinary physical activity: walking one or two blocks on the level and climbing one flight of stairs in normal conditions and at normal pace
Grade IV	Inability to carry on any physical activity without discomfort, anginal symptoms may be present at rest

- Risk factors
- ECG
- Exercise tolerance test
- Myocardial perfusion scan
- Coronary angiography

HM signpost-
Part 3- Hospital tests (P149)

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Angina Management

- Aspirin
- Sublingual Glycerol Trinitrate for immediate relief of symptoms or before performing an activity which may induce symptoms
- Beta blockers or rate limiting calcium channel blockers or long acting nitrate or nicorandil
- Statin & ACE inhibitor
- Revascularisation

HM signpost-
Part 3- Medicines (P135-142)

* Patients with unstable symptoms should not receive the HM

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Revascularisation: Stent or Surgery?

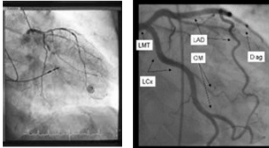
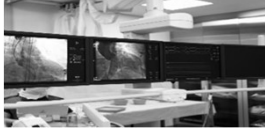
- Symptoms & overall heart function
- Severity & extent of the disease
- Size & place of vessels involved
- Triple vessel disease
- Other co-morbidities
- Calcification of the vessel
- Availability of grafts to harvest
- Other cardiac conditions requiring surgery

HM signpost-
Part 3- Treatments
Angioplasty (P150) CABG (P151)

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Percutaneous Coronary Intervention



- PCI may include; angioplasty, stent, thromboectomy
- The catheter is positioned next to the lesion and the balloon tip inflated for approximately 30-90 seconds at high pressure
- A residual stenosis of around 20% is considered an optimal result
- The balloon may need to be inflated and deflated several times to obtain a good result.

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Angioplasty and Stent



- Two main forms of stent used; bare metal stents and drug eluting stents
- Bio-absorbable stents –new treatment option
- Stent thrombosis acute (first 24 hours)
- Re-stenosis 3-12 months, or sub-acute phases (first 30 days)
- Sheath removal complication; haematoma, bleeding, arteriovenous fistula and pseudoaneurysm
- Insertion site; small lump, ecchymosis, infection, avoid flexion (48hrs), strenuous activity (at least 1 wk), pallor or sensation change
- Closure device – collagen plugs, 6 weeks -90 days to fully absorb, T-band

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Case study 2:
Scott Graham,
53 years of age

Admitted with central chest pain radiating to his jaw and left arm, diagnosed as STE-ACS

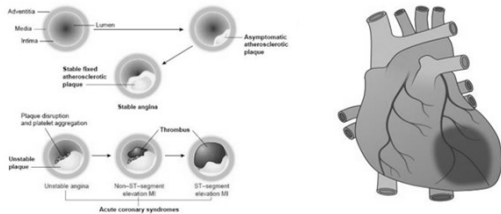
(Training Workbook p29)

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Acute Coronary Syndrome

Pathogenesis of coronary heart disease (CHD)



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Acute Coronary Syndrome Definitions

- ACS encompasses the spectrum of unstable CAD from unstable angina to transmural myocardial infarction
- Unstable angina, N-STEMI or STEMI
- The definition of ACS depends on specific characteristics relating to:
 - Clinical presentation- commonly severe chest pain often radiating to jaw/neck/back/arm, sweating, nausea, SOB,
 - ECG changes: presence or absence of ST segment elevation or Q waves
 - Biochemical cardiac markers- cardiac troponin (hs-cTnI/T)

<https://www.nice.org.uk/guidance/ng171/chapter/3-Diagnosing-acute-myocardial-injury-in-patients-with-suspected-or-confirmed-COVID-19>

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Classification of MI

- 5 categories of MI
- Type 1: Spontaneous MI related to ischaemia due to a primary coronary event e.g. plaque rupture
- Type 2: Secondary to ischaemia due to either increased oxygen demand or decreased supply e.g. coronary spasm, coronary embolism, anaemia, arrhythmias, hyper or hypotension, respiratory failure
- Type 3: Coronary thrombus on angiography or autopsy (type 3)
- Type 4: PCI related MI
- Type 5: CABG related MI

<https://academic.oup.com/eurheartj/article/40/3/237/5079081#190638259>

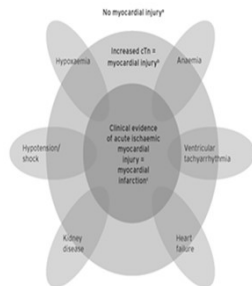
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Universal Definition Of MI

Criteria for acute MI (Type1, 2, 3)

- Evidence of myocardial injury* with evidence of myocardial ischemia with the detection of rise and/or fall of cTn (cardiac Troponin) values above the URL and at least 1 of the following:
 - Symptoms of ischaemia
 - New ischaemic ECG changes
 - Development of pathological Q waves on ECG
 - Imaging evidence of new loss of myocardium



*Myocardial injury=evidence of myocardial injury confirmed by elevated cTN- not specifically as a result of ischaemia)
(4th Universal Definition of Myocardial Infarction Consensus Document)

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Initial ACS Management

- ECG & Cardiac monitoring
- Analgesia, Anti-emetic, GTN, Aspirin & Clopidogrel (other P2Y antagonist, LMWH or Fondaparinux (pentasacchirides)
- Bloods :Troponin, admission & 12 hrs post symptoms
- Oxygen therapy: only if SpO2 < 94%. (Aim 88-92% if COPD)

STEMI:PPCI < 120 mins from diagnostic ECG or within 12hours of symptoms or >12hours if ongoing pain and evidence of ischaemia

If not meeting criteria, thrombolysis should be offered with option of rescue PCI if failure to reperfuse

N-STEMI : Medical mx and early PCI with glycoprotein 2b/3a inhibitors in mod to high risk patients

SIGN 148 ACS (2016), NICE 167 (2013)/NICE 95 (2016) 56

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Secondary Prevention Medication

- **Dual antiplatelet therapy (DAPT)**- Aspirin 75mg & Ticagrelor or Prasugrel or Clopidogrel. (Clopidogrel where bleeding risk)
- **Beta-Blocker**- Titrated up to MTD (contraindicated in asthmatics, COPD, heart block, bradycardia, hypotension etc, caution with DM)
- **ACE inhibitor**-(Ramipril, Lisinopril) **or ARBs** (Losatran, Candesartan) **if intolerant of ACE**
- **Statin** (Atorvastatin, Simvastatin etc)- **Fibrates used if intolerant to statin** (Fenofibrate, Bezafibrate)
- **Mineralo-corticoid receptor antagonist**-(Spironolactone /Eplerenone) if LVSD/clinical HF in context of MI

SIGN 148 (2016) / NICE CG172

HM signpost- Part 3
Medicines P135-142 (Chart on P141)

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Coronary Artery Bypass Grafting

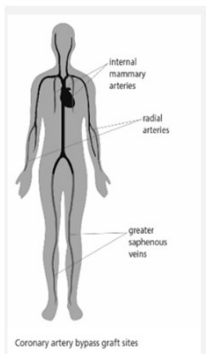
Coronary Artery Bypass Graft: (CABG) is a surgical procedure which is done to bypass a narrowing or blockage within the artery/arteries. The saphenous vein from the leg, radial artery from the arm, or the internal mammary arteries from the chest are used to carry blood as a bridge around the narrowing

HM signpost- Revasc HM
Part 1- Your Procedure CABG (P17)

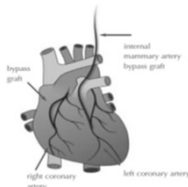
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Coronary Artery Bypass Graft



- Heart-Lung perfusion pump (On-pump)
- Port Access Surgery –avoids cutting open the breast bone
- Off Pump Surgery-beating heart surgery



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Surgical Issues

- Pain: (Internal Mammary Arteries (IMA) & Thoracotomy) Paracetamol, Dihydrocodeine, avoid NSAIDs, Physiotherapy techniques & relaxation
- Wound care: avoid lotions or potions, fluid often at sternal notch, monitor for infection (early management), consider patients with impaired healing; IMA, legs, co-morbidities, medication, etc.
- Sternal healing – take 8-10 weeks to heal, chest support (heart huggers, bras), monitor for ↑pain and disassociated breathing patterns – urgent referral to surgeons if on going issues

HM signpost- Revasc HM
Part 1- How will I feel afterwards (P18)
Some common concerns (P19-21)

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- Oedema or swelling, numbness – hands, legs and left breast
- TEDs for 6 weeks if prescribed, leg elevation, remove at night or as directed
- Arrhythmias, palpitations
- Chest – Pleural effusions, chest infections, Shortness of breath
- Visual disturbance (eye testing 3 months)
- Impaired cognitive function
- Altered taste and smell
- Mood swings
- Sleep disturbance – vivid dreams
- Altered body image

HM signpost- Revasc HM
Part 1-Some common concerns (P19-21)

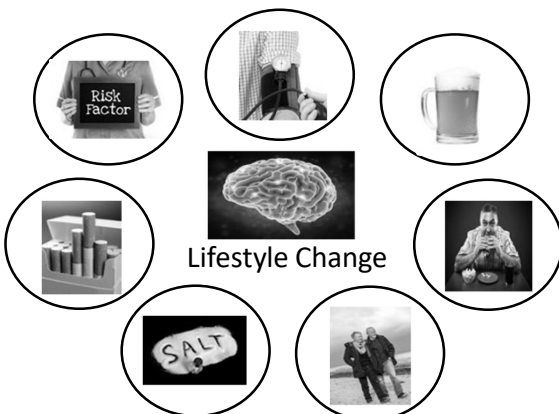
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CABG General Information

- Short ITU stay, discharged after 5-7 days if no complications
- Discharge medication/ letter, Follow-up appointments
- Under the care of the GP, review 2-3 weeks or as requested, Bloods, BP & P check, other symptoms
- Wound care, Practice or District Nurse
- Avoid any form of heavy lifting
- Avoid large arm movements e.g. hoovering, golfing or swimming
- Avoid pushing up with the arms

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The only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd rather not

Mark Twain

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- Review the patient & partners understanding of the modifiable & non-modifiable risk factors
- Note accurate responses & reinforce the benefits of changes already made
- Ask if the patient has any risk factors that they would like to address
- Offer risk factor information utilising the manual content
- Consider motivation or readiness to change

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Risk Factors

Non-modifiable

- Advancing age
- Male
- Ethnicity
- Family history
- Socio-economic group

Modifiable bio-medical

- Hypertension
- Dyslipidaemia
- Diabetes mellitus

Modifiable lifestyle

- Smoking
- Alcohol
- Diet
- Stress
- Sedentary /Exercise

Risk factors are bad news

The more risk factors you have, the more likely it is that you will have coronary artery disease that may lead to heart attacks, strokes, kidney and hearing problems. Your lifestyle can significantly reduce the chance of you having another heart attack.

What makes risk factors worse is that they don't follow the normal rules of arithmetic. Having one or two may have only a factor of 2 or 3, but add together they may give you a risk factor of 10.

You can see from this example that the risk of having a heart attack can be twice as high if you have high blood pressure, but up to ten times greater if you smoke as well.

...but here's the good news - you can fight back

The good news is that the arithmetic is just as strange the other way round. Here's what happens if you give up smoking:

High Blood Pressure	2	Smoking	10	Risk Factor	20
High Blood Pressure	2	Smoking	1	Risk Factor	2

Every risk factor you get rid of or lower, can have a major effect on lowering your risk.

HM signpost- Part 2- Week 2 : CAD/You can fight back by reducing your risk factors (P47-53)

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Top Tips to support lifestyle change

- Be sympathetic to the individuals situation
- Ensure an understanding of the relationship between the lifestyle and the disease
- Gain commitment to change
- Allow the individual to identify the risk factor to change
- Plan
- Explore the possible barriers
- Be realistic and encourage
- Recognise any effort to change
- Monitor progress and follow up
- Involve others- family, health team

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Step 4 Set goals & pace

Assess readiness to change (importance & confidence) focus on building confidence
Identify goals & prioritise
Identify targets by utilising the SMART goal setting principles
Outline the principles of pacing – scaling 1 – 10, “too easy – too hard”
Discuss a normal day, encourage the patient to identify pacing strategies (discuss exercises, walking, relaxation & activity record)

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Scales

Effort scale: Pacing

Too Easy Fairly Easy Fairly Hard Too Hard

Importance / Confidence scale: Behaviour change

Importance/ Confidence

Importance:
On a scale from 0 to 10, where 0 is “not at all important” and 10 is “very important”, how important is it for you to ...?

0 1 2 3 4 5 6 7 8 9 10

Confidence:
On a scale from 0 to 10, where 0 is “not at all confident” and 10 is “very confident”, how confident are you that you could make these changes if you decided to?

https://motivationalinterviewing.org/sites/default/files/nyc_values_scale_cards.pdf

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Agenda Setting Chart

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Smoking Cessation – The five R’s & A’s

To increase motivation to quit:

- Relevance- to health
- Risks- if continue
- Rewards- if stop
- Roadblocks- to stopping
- Repetition- reassess readiness

For those ready to quit

- Ask- smoking habit
- Assess- ready to change
- Advise- impact on health
- Assist- facilitate
- Arrange- ongoing support

Relapse prevention: problem solving, anticipate threat, practice scenarios WHO 2014

HM signpost-
Week 2- This weeks risk factor: Smoking (p54-58)

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UK Govt Alcohol Guidance

- No “safe” limit.
- Recommended 14 units max/week for men and women.
- If you regularly drink more than 14 units/week best to spread evenly over 3 or more days.
- The risk of developing a range of health problems, including stroke and some cancers, increases the more you drink regularly.
- If you wish to cut down, try to have several alcohol free days in the week, and limit intake on any one occasion.

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Why include PA in the HM?

Exercise can:

<p>Help...</p> <ul style="list-style-type: none"> increase blood flow to your heart muscle reduce stress, make you feel happier and sleep better lose weight, but you must change your eating habits lower your cholesterol reduce angina and breathlessness 	<p>Reduce your chances of...</p> <ul style="list-style-type: none"> type II diabetes heart problems in the future falls, depression etc. joint and back pain cancers (colon and breast)
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- Lack of physical activity is a risk factor
- The patient is in control
- Helps learn the principles of pacing
- Combats the misconception that rest is good
- Prevents feelings of weakness
- Helps promote cardiac function
- Gets the family involved
- CR programme completers more likely to meet PA recommendations and maintain up to 12 mths

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Activity: what do the guidelines say?

- Aim for 150 minutes (2.5 hours) of moderate intensity activity per week
- Approximately 30 minutes of activity most days of the week (5 out of 7 days)
- Or 75 minutes of vigorous activity across the week
- Bouts of activity any length and can be 1-2 sessions per week will still have a beneficial effect
- Strength exercises 2 or more days per week that work the major muscles (legs/hips, back, abdomen, chest shoulders and arms)

UK Chief Medical Officers' Physical Activity Guidelines (Sept 2019)

HM signpost-
Week 3- Exercise/ Activity
Plan- Gradually building up
your plan (p64)



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Exercise and the HM

Clinical considerations for exercise pacing and the HM:

- Index event –un/complicated MI, CABG or angioplasty
- Any left ventricular dysfunction (below 50%)
- PMH- co-morbidities, unstable patient arrhythmias, BP management
- How long since index event
- Starting level for exercise - Functional capacity (7 MET's for most centre based exercise -HM aims to work at 2-3 METS initially)

http://www.bacpr.com/resources/BACPR_EPG_Guidance_Doc_CV19_FINAL_FINAL.pdf

Use clinical judgement on the suitability of HM as an intervention. Keep this under review throughout facilitation and act on relevant clinical changes.

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The HM Exercises/Walking programme

- Discuss baseline activity with the patient and set individual goals, including how to pace
- Encourage SMART goal –setting and advise how to build up gradually
- Consider co-morbidities when setting goals
- Encourage use of exercises as a starting point, in addition to the walking programme, or as stand alone depending on the needs of the patient
- Explain the importance of documenting progress and rating the level of effort
- **Set a time for review to assess progress**

HM signpost-
 Wk1-Why is exercise important (p24-28)
 Wk1-6- Exercise /Activity Plan/Walking Record/ Daily Activity Record
 Wk5- This weeks risk factor- Lack of Exercise (p114-118)
 The Home Exercise Plan- (p169-173)

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Driving and travel

- Allow time for recuperation- identify any vocational drivers
- Is a medical review/opinion needed?
- Car & Travel Insurance companies- specific cover needed?

Flying:

Medical Information -Fitness to fly for passengers with CVD (BCS 2010)

Assessing fitness to fly-Guidelines for medical professionals from the Aviation Health Unit, UK CAA (2011) See www.caa.co.uk

Driving:

DVLA-Assessing fitness to drive –a guide for medical professionals (March 2020)

The DVLA will require exercise evaluation at regular intervals not to exceed 3 years if there is established coronary heart disease for vocational drivers.

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Driving Standards

Acute Coronary Syndrome (Unstable angina, NSTEMI-ACS, STEMI-ACS)

Group 1 (Car and Motorcycle)

If successfully treated by coronary intervention (PCI), driving may recommence after 1 week provided:

- No other URGENT revascularisation is planned (within 4/52).
- LVEF is at least 40% prior to hospital discharge

If not successfully treated by coronary angioplasty, driving may recommence after 4 weeks

In both cases: there must be no other disqualifying condition. DVLA need not be notified.

Group 2 (Vocational) (Bus/Lorry/)

All ACS's must not drive for at least 6 weeks.

Re-license if:

- Requirements for exercise or other functional tests met (incl LVEF of at least 40%)
- There is no other disqualifying condition.

Inform DVLA

DVLA-Assessing fitness to drive –a guide for medical professionals (March 2020)

<https://www.gov.uk/government/publications/assessing-fitness-to-drive-a-guide-for-medical-professionals>

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Elective PCI (Angioplasty ± stent) elective	
Group 1 (Car/Motorcycle) Driving must cease for at least 1week. Driving may resume after 1week providing no other disqualifying condition. DVLA need not be notified.	Group 2 (Bus/Lorry/) Disqualified at least 6weeks. Driving may resume after 6 weeks if: • Requirements for exercise / functional test met and no other disqualifying condition. Inform DVLA.
CABG	
Group 1 (Car and Motorcycle) Driving must cease for at least 1month. Driving may resume after 1 month providing no other disqualifying condition. DVLA need not be notified.	Group 2 (Bus/Lorry/) Disqualified for at least 3 months. Driving may resume after 3 months if: • No evidence of significant LVF impairment ≥ 40% • Requirements for exercise / functional test met and no other disqualifying condition. Inform DVLA.

DVLA March 2020 88

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Fitness to Fly

Condition	Additional	Recommendations
Angina	CCS I & II CCS III CCS IV Chest pain at rest or change in symptoms and or medication	No restrictions Assistance, O2 as required Defer travel until stable or travel with medical escort and in-flight oxygen available
Post STE-ACS and NSTEMI-ACS	Low risk (EF >45%) age, reperfusion	3 days
	Medium risk (EF>40%) no symptoms or further investigations	10 days
	High risk (EF <40%) symptomatic, awaiting investigation/treatment	Defer until condition stable
Elective PCI Uncomplicated		2 days
Elective CABG uncomplicated	Allow for intra-thoracic gas to be absorbed	10 days

BCS, 2010
https://www.bcs.com/documents/BCS_FITNESS_TO_FLY_REPORT.pdf 89

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Vocational Issues

- How long depends on many factors- 4weeks +/-
- Returning to work should be discussed on an individual basis with phased return encouraged/ considered
- Individuals should also discuss this with their GP/ Cardiologist, employer & Occupational Health Services.
- Simulated work testing may be useful if vocational rehabilitation services are available.
- Options-work from home, phased return, reduce work hours, lighter duties, reduced workload, take more breaks

- Draw up a work plan and set goals/targets and reevaluate
- Address anxieties, consider +/-ve thoughts on ability to return to work
- General workplace changes to promote wellbeing

HM signpost-
Wk6- Back to work (p129)

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Step 5

Sum it up

- Summarise the main points
- Identify daily objectives
- Reiterate the principles of pacing
- Highlight the importance of not sharing the manual with others with cardiac conditions
- Ensure the patient has had their concerns addressed
- Arrange a follow up

HM signpost-
Week 6- What has happened over the last 6 weeks (p130-132)

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Taking the next step: further contacts

- Continue to monitor signs and symptoms
- Review the goals and assess the targets
- Evaluate the pacing strategies – over activity & overprotection
- Tackle the tricky subjects – misconceptions & denial
- Returning to normal activity – social interaction, sex and vocational needs
- Think about the future – maintaining change
- Ongoing needs – referring on. Find out who to contact in your own area

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Facilitating the HM: Summary of steps

Step 1

• Build a rapport

Step 2

• Think about CAD

Step 3

• Think about the risk factors

Step 4

• Set goals & pace

Step 5

• Sum it up

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Digital HM 2020
"The manual is a very important part of the recovery. It has helped me a lot."
"I would advise anyone with a heart condition to take time to read it, and found the telephone appointments very supportive and helpful"
"I've become more aware of my heart and the need for healthy eating and regular exercise, even though I was exercising fairly regularly before"
"Because of medical issues awaiting surgery not able to do all exercises, but able to adapt some aerobic exercises"

The Manual was an enormous help in the aid to start my recovery and has been a constant source to my family for information as like me they were unsure of why this had happened and what we needed to do to reduce the risk of it happening again, not just to me but the WHOLE family

The exercises plan was a tremendous help...and helped with the whole concept of doing what you feel comfortable with and doing a bit more if it felt right


Its the best thing to have for recovery, if you follow it, and keep it close by. Reading the manual several times over helped me greatly. Will keep it handy to read over and over.

I have always been a workaholic and this manual has made me realise that there is more to life than spending so much time trying to be the best at what I do. I realise now that I do a pretty good job now and always have done so my stress levels have gone down so much with relaxation techniques and my whole life...will change when I return to work




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Questions? Thank you



Psychology Day Evaluation Form:
<https://nhslothiansurveys.onlinesurveys.ac.uk/heartmanual-psychology>

Nurse Day Evaluation Form & Post Training Needs Questionnaire:
<https://nhslothiansurveys.onlinesurveys.ac.uk/heartmanual-nurse-post-tna>

www.theheartmanual.com

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FURTHER INFORMATION

Home-Based Cardiac Rehabilitation: A Scientific Statement From the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Heart Association, and the American College of Cardiology
<https://www.ahajournals.org/doi/10.1161/CIR.0000000000000663>

HOPE study- Heart Outcomes Prevention Evaluation (2000)
[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(05\)72257-1/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(05)72257-1/fulltext)

FOURIER Trial-Evolucomab and clinical outcomes in patients with cardiovascular disease
<https://www.nejm.org/doi/full/10.1056/NEJMoa1615664>

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ASSOCIATIONS

ESC

- ACNAP-Association of Cardiovascular Nursing and Allied Health Professionals
<https://www.escardio.org/Sub-specialty-communities/Association-of-Cardiovascular-Nursing-&-Allied-Professions/Education>
- EAPC-European association of Preventative Cardiology
<https://www.escardio.org/Sub-specialty-communities/European-Association-of-Preventive-Cardiology-%28EAPC%29>
- BACPR-British Association of Cardiovascular Prevention and Rehabilitation
www.bacpr.com
- NACR- National Audit of Cardiac Rehabilitation Audit programme is as a collaboration between BHF and NHS Digital and is run through the University of York
<http://www.cardiacrehabilitation.org.uk/>
- ICCPR-International Council of Cardiovascular Prevention and Rehabilitation
<https://www.globalcardiacrehab.com>

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