

*Psychological and Physical  
Outcomes, satisfaction ratings,  
Cardiac Rehabilitation*

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## *Three strands to presentation*

- ❖ Physical and Psychological outcomes, and how the results compare to Cochrane Collaboration findings.
- ❖ Patient satisfaction ratings
- ❖ Review and audit of the psychological services input in CR across Ireland.

# *Cardiac care at the Mater*

- ❖ The MMUH is a National and Tertiary referral centre for heart surgery and cardiac diagnostic and revascularisation.
- ❖ 70% - coronary artery disease
- ❖ 30% - valve disease
  - arrhythmia
  - cardiomyopathy
  - congenital heart disease

# *Cardiac Rehabilitation Definition*

**Cardiac Rehabilitation is the process by which Patients with cardiac disease, in partnership with a multidisciplinary team of health professionals, are encouraged and supported to achieve and maintain optimal physical and psychosocial health**

*Comprehensive cardiac rehab of Chronic Disease Management (CDM). Programme includes:*

- ❖ Baseline patient assessment
- ❖ Physical assessment & guidance
- ❖ Structured exercise as a therapeutic intervention
- ❖ Nutritional Counselling
- ❖ Risk factor management (lipids, hypertension, weight, diabetes and smoking)
- ❖ Expert Psychological Management
- ❖ Clinical Pharmacy counselling
- ❖ Vocational counselling

# *Key to Cardiac Rehabilitation Success*

- ❖ To educate and demonstrate to the patient how to modify their own “risk profile” \* Lipids, B.P.
- ❖ Increasing physical fitness (METS)
- ❖ Smoking Cessation & moderation of alcohol
- ❖ Managing ‘risky’ psychological styles (Anxiety, Depression, Vital exhaustion, Emotional avoidance & Hostility: HADS)
- ❖ Learning relaxation (reduce Anx, BP, and HR)
- ❖ Aiming to reduce BMI
- ❖ Changing eating habits: Lipid levels, portion size, higher Omega 3.
- ❖ Improved understanding of medicines.

# *Exercise*



- ❖ Physical activity:
  1. Deconditioning
  2. Reduces risk of CHD two-fold ((Pate)
- Structured exercise-therapeutic intervention
- Daily exercise encouraged as part of active living philosophy

*Warm-up*



# *Exercise*



# *Exercise programme*



- ❖ Pre- treadmill test
- ❖ Structured exercise twice per week over ten weeks or three times per week over 8 weeks
- ❖ Monitored circuit
- ❖ Individual exercise prescription based on assessment
- ❖ Post treadmill test
- ❖ DCU (long-term exercise)

# *Physical Measure: METS*

All activities have an energy rating.

Metabolic equivalents (Mets), measure the energy level of daily activities: examples –

15

12.1 squash, rope skipping

8 heavy housework, scrubbing floors

5.5 climbing stairs, hills

2.5 self-care, bathing, preparing food, walking on level, office work.

When we test each person on an exercise test, we look at how long the test lasted for that individual, and why the test had to stop – and the end result would include the individual’s **maximum** capacity at that time.

Your number will be marked on this page, and you should be comfortable carrying out activities below your number – and not yet fit enough for those activities above your number.

MET's - Metabolic equivalents	Energy costs for each activity
15	
14	
13	
12	Squash 12.1 Rope skipping
11	
10	
9	
8	Heavy housework, scrubbing floors, moving heavy furniture 8.0 Run a short distance, hill climbing.
7	Strenuous sports, swimming (fast), singles tennis 7.5 football, skiing
6	Moderate activities, golf, bowling, dancing (fast), football 6.0 Cycling moderately
	Climb a flight of stairs, walk up a hill 5.5 Sexual activity 5.25
5	
4	Yard work, raking leaves, weeding, pushing a power mower 4.5 Swimming (slowly)
	Moderate housework, vacuuming, sweeping floors carrying in groceries 3.5
3	Slow ballroom dancing, cycling leisurely
	Self-care, eat dress, bathe. Walking on level ground 2.75 Light house work, dusting, washing dishes 2.70
2	
1	Walking indoors, 1.75

# *Benefits of exercise training*

COCHRANE REVIEW, 2000

Men and women, all ages:

- Reduced all-cause mortality by 27%
- Cardiac death by 31%
- Non-fatal MI and revascularisation by 19%

Benefits accrued over 2.4 years\*.

\* Additional to the benefits of thrombolysis, preventive meds and direct revascularisation

# *Psychological measurements*

- ❖ Hospital Anxiety and Depression Scale (HADS), a generic 14 item questionnaire with separate subscales for anxiety and depression.
- ❖ Scores of 0-7 normal
- ❖ Scores of 8-10 borderline
- ❖ Scores of 11, >11 indicate clinically significant case

# *Psychological treatment approaches include:*

- ❖ Individual psychological interventions
- ❖ Stress management
- ❖ Relaxation & mindfulness
- ❖ Goal setting
- ❖ Referral to psychiatric and other support services
- ❖ Alleviate anxiety, eg. non-cardiac chest pain

# *Psychological treatments*

- ❖ Meta-analysis (Philips & Leclerc, 2007) found that men benefit in relation to mortality. 27 percent reduction in mortality at two year follow-up. 43 percent reduction in cardiac events after two years.
- ❖ Best to commence around two months after a cardiac event.
- ❖ Psychological distress and poor social support are powerful indicators of outcome following MI, independent of the degree of physical impairment.

# *Statistics*

- Physical and psychological well-being were measured on entering the CR programme and were then measured at its conclusion.
- Three dependent t-tests were used to analyse the statistical significance in the change, if any, from start to finish of programme. Effect sizes were then calculated.

# *N? = 2358 Patients!*

SEX: Male 71% Female 29%

- ❖ Mean age 62 (SD 12yrs)
- ❖ Age range 17 to 88 years.
- ❖ 35 and younger 2% Aged 36-65 54%
- ❖ Aged 66 and over 44%
- ❖ Stenting: 2025 CABG: 841
- ❖ Approximately 350 patients per year
- ❖ Two thirds seen within 17 weeks of initial cardiac intervention.
- ❖ DNA=319 patients

# *METS*

- ❖ A statistically significant increase in patients METS scores was found ( $p < .05$ ).
- ❖ METS PRE 6.99 (SD 3.04)
- ❖ POST 8.94 (SD 3.24)
- ❖ The effect size calculated was: .62.
- ❖ This was a medium effect size meaning that 74% of patients were better than before having attended rehabilitation.

# *METS (n=988)*

METS 0-5 PRE CR 22.3%	METS 5 – 10 PRE CR 54.5%	METS 10 + PRE CR 23.2%
METS 0-5 POST CR 7.1%	METS 5-10 POST CR 45.5%	METS 10+ POST 47.4%

# *HADS (n=977)*

0-7 (n)

8 – 10

11 +

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Anxiety: Pre	66.7%	16.9%	13.3%
Post	75.5%	17.7%	6.9%

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Depression: Pre	86.2%	9.2%	2.9%
Post	88.5%	8.0%	2.3%

# *Anxiety and Depression*

- ❖ The effect size of those depressed or anxious prior to the cardiac rehabilitation treatment were the same as those for the METS (.62)
- ❖ When we assessed our stress-management group (6wk x 1.5hours) we found a moderate effect size for both anxiety and depression with 79 percent and 60 percent improving respectively.
- ❖ Want a dot?

# *Patient-rated evaluation*

- ❖ 200 random samples from 900
- ❖ Rating scale of 1 – 10.
- ❖ > 90% gave the CR programme a rating of 9-10 on how useful they found the programme.
- ❖ 55% rated exercise first, 18% as second
- ❖ 17% rated talks first, 33% as second
- ❖ 9% group support first, 10% as second
- ❖ Free comments: 32 remarked on the “open, professional and supportive nature of the specialist nursing staff as an important part of programme.”

## *Emerging factors?*

- ✿ Audit of 40 patients referred for individual therapy with psychologist in 2009 revealed hidden factors affecting psychological well-being which are not usually evaluated in standard research.

How do predisposing, precipitating and maintaining life-factors such as domestic violence, history of CSA, complicated grief & suicide, on-going relationship difficulties, caring for chronic illness, and unexpressed sexuality - affect treatment input and outcome?

It seems that the more psychologists work in this area the more the psychology of cardiac illness will become apparent.

## *Value of individual structured interview*

- ❖ Nurse specialists
- ❖ Outlining individual risk factors and results
- ❖ At Mater – patient-held record
- ❖ Final report to chart and G.P.
- ❖ Opportunity for confidential discussion, home life, any personal, financial, social, vocational issues.
- ❖ Attention to raised H.A.D.s, prepare for referral – normalize symptoms and treatments.

# *Discussion*

- ❖ Improve the percentage of people who have cardiac difficulties attending Rehabilitation
- ❖ Highlight those who need intervention for anxiety and depression and evaluate the effectiveness of the intervention above and beyond the group treatment effect
- ❖ Next phase of research: How do psychological factors such as locus of control and defence styles affect both physical and psychological wellbeing (N=100)?
- ❖ Everybody loves DOTS!!!!!!

## *Cardiac*

- ❖ IACR: 38 CR sites in Ireland, only 11 have a psychologist – very few hours in some.
- ❖ None in West of Ireland
- ❖ Need to develop specialist networks in order to disseminate knowledge
- ❖ Centre of Excellence Model
- ❖ Agree minimum standards

## *Comment*

- ❖ In the current and future climate of severe fiscal shortage, it will be difficult to maintain what we have built. However it is essential to maintain standards based on scientific and best practice guidelines.
- ❖ Thank you.