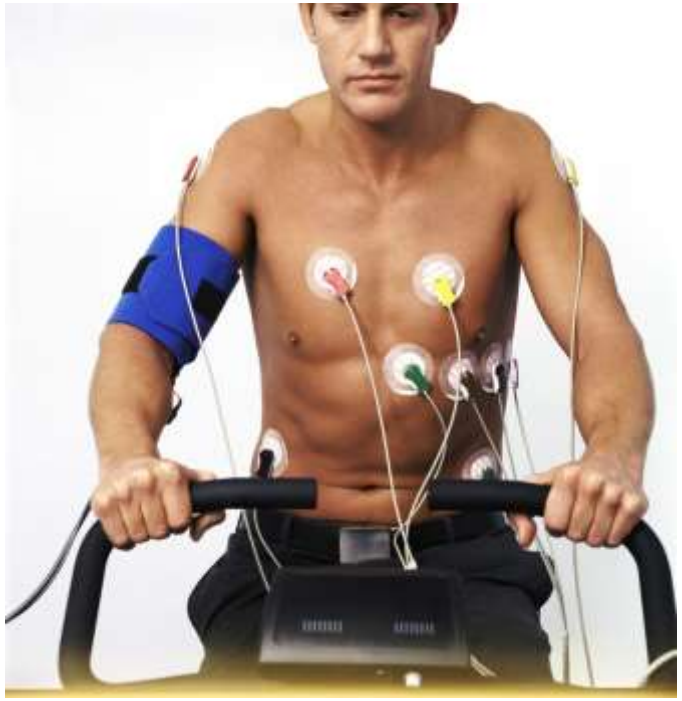

Cardiac Rehabilitation

دکتر حیدرپور

متخصص پزشکی ورزشی

- در تمامی افراد قبل از شروع برنامه ورزشی باید ارزیابی قلبی و طبقه بندی خطر قلبی انجام شود
- بر اساس این طبقه بندی انجمن قلب امریکا ۴ گروه اصلی را تشکیل می دهد
- هر فردی قبل از ورزش در کلاس مربوط به خود قرار گرفته و از گاید لاین ان کلاس طبعیت میکند

- قرار ندادن افراد در این دسته بندی بروز حوادث قلبی را افزایش می دهد اما رعایت پروتکل های علمی میتواند بروز حوادث جدی و مهم قلبی را تا یک مورد در ۸۰ هزار ساعت فعالیت ورزشی کاهش دهد

AHA Risk Stratification For EXERCISE in CR

- **Class A**
  - are individuals who are **apparently healthy** and in whom there is **no** clinical evidence of increased cardiovascular risk of exercise.

- **Class B**

  - individuals have established **CHD** that is clinically stable.

  - These individuals are at low risk of cardiovascular complications of vigorous exercise.

➢ Class C

- ➢ individuals are at moderate or high risk of cardiac complications during exercise by virtue of a history of multiple myocardial infarctions or cardiac arrest, NYHA class III or IV , exercise capacity of less than **6** METs, and significant ischemia on the exercise test.

- ✓ One metabolic equivalent (MET) is defined as 3.5 mL O2 uptake/kg per min, which is the resting oxygen uptake in a sitting position.

- **Class D**

  - patients are those with unstable disease who require restriction of activity and for whom exercise is contraindicated

class A

apparently healthy individuals

This classification includes:

1. Children, adolescents, men <45 years, and women <55 years who have **no** symptoms or known presence of heart disease or major coronary risk factors.
2. Men 45 years and women 55 years who have no symptoms or known presence of heart disease and with <2 major cardiovascular risk factors.
3. Men 45 years and women 55 years who have no symptoms or known presence of heart disease and with 2 major cardiovascular risk factors.

Activity guidelines: No restrictions other than basic guidelines.

Supervision required : None

ECG and blood pressure monitoring: Not required

class B

presence of known, stable cardiovascular disease with low risk for complications with vigorous exercise, but slightly greater than for apparently healthy individuals

This classification includes individuals with any of the following diagnoses:

1. Coronary artery disease (myocardial infarction, bypass surgery, angioplasty, angina pectoris, abnormal exercise test, and abnormal coronary angiograms) whose condition is stable.
2. Valvular heart disease, excluding severe valvular stenosis or regurgitation with the clinical characteristics as outlined below.
3. Congenital heart disease; risk stratification for patients with congenital heart disease should be guided by the 36th Bethesda Conference recommendations.
4. Cardiomyopathy: ejection fraction 30 percent; includes stable patients with heart failure with clinical characteristics as outlined below but not hypertrophic cardiomyopathy or recent myocarditis.
5. Exercise test abnormalities that do not meet any of the high risk criteria outlined in class C below.

Clinical characteristics (must include all of the following)

1. New York Heart Association class 1 or 2.

2. Exercise capacity = or>6 METs.

3. No evidence of congestive heart failure.

4. No evidence of myocardial ischemia or angina at rest or on the exercise test at or below 6 METs.

5. Appropriate rise in systolic blood pressure during exercise.

6. Absence of ventricular tachycardia at rest or with exercise.

Activity guidelines:

✓ Activity should be individualized

Supervision required:

➢ Medical supervision during initial prescription session is beneficial.

ECG and blood pressure monitoring:

✓ Useful during the early prescription phase of training, usually 6 to 12 sessions

class C

those at moderate-to-high risk for cardiac complications during exercise and/or unable to self-regulate activity or to understand recommended activity level

* Class C patients who have successfully completed a series of supervised exercise sessions may be reclassified to Class B providing that the safety of exercise at the prescribed intensity is satisfactorily established by appropriate medical personnel and that the patient has demonstrated the ability to self-monitor.

✓**This classification includes individuals with any of the following diagnoses:**

1. Coronary artery disease with the clinical characteristics outlined below.

2. Valvular heart disease, excluding severe valvular stenosis or regurgitation with the clinical characteristics as outlined below.

3. Congenital heart disease; risk stratification for patients with congenital heart disease should be guided by the 27th Bethesda Conference recommendations.

4. Cardiomyopathy: ejection fraction <30 percent; includes stable patients with heart failure with clinical characteristics as outlined below but not hypertrophic cardiomyopathy or recent myocarditis.

5. Complex ventricular arrhythmias not well controlled.

✓Clinical characteristics (any of the following):

1. NYHA class 3 or 4.(NYHA: New York Heart Association.)

2. Exercise test results Exercise capacity <6 METs

- •Angina or ischemic ST depression at a workload <6 METs
- •Fall in systolic blood pressure below resting levels during exercise
- •Nonsustained ventricular tachycardia with exercise

3. Previous episode of primary cardiac arrest (ie, cardiac arrest that did not occur in the presence of an acute myocardial infarction or during a cardiac procedure).

4. A medical problem that the physician believes may be life-threatening.

✓**Activity guidelines:**

- Activity should be individualized, with exercise prescription provided by qualified individuals and approved by primary healthcare provider.

✓**Supervision**

- Medical supervision during all exercise sessions until safety is established.

✓**ECG and blood pressure monitoring:**

- Continuous during exercise sessions until safety is established, usually= or> 12 sessions

class D

class D unstable disease with activity restriction

Exercise for conditioning purposes is not recommended

- **This classification includes individuals with any of the following:**

1. Unstable ischemia.

2. Severe and symptomatic valvular stenosis or regurgitation.

3. Congenital heart disease; criteria for risk that would prohibit exercise conditioning in patients with congenital heart disease should be guided by the 27th Bethesda Conference recommendations.

4. Heart failure that is not compensated.

5. Uncontrolled arrhythmias.

6. Other medical conditions that could be aggravated by exercise.

Activity guidelines:

1. No activity is recommended for conditioning purposes.

2. Attention should be directed to treating the patient and restoring the patient to Class C or better.

3. Daily activities must be prescribed on the basis of individual assessment by the patient's personal physician.

CARDIAC REHAB

- در منیج بیماریهای کرونری قلب موارد زیر الزامیست

  – درمان دارویی
  – ارزیابی قلبی
  – پیشگیری ثانویه
  – روسکولاریزاسیون

- **بازتوانی قلبی مهمترین روش در پیشگیری ثانویه بیماری قلبی است**

CHD mortality

- بیماری کرونر مهمترین علت مرگ در جهان است
- تخمین زده میشود سالانه ۳,۸ میلیون مرد و ۳,٤ میلیون زن در جهان به علت CHD میمیرند
- در UK از هر ٥ مرد و ٦ زن یک نفر به علت CHD میمیرند

CHD MORBIDITY

- بر اساس مطالعات میزان بروز موربیدیتی CHD ۲ تا ۲,۵ برابر مورتالیتی است
- میزان شیوع MI با افزایش سن بالاتر میرود
- شیوع MI در مردان بیشتر از زنان است
- موثرترین روش پیشگیری ثانویه درMI بازتوانی است

Patient Groups in CR

- Acute Cronary syndromes
- Post-revascularisation
- Stable angina
- Chronic heart failure
- Cardiac transplantation
- Valve surgery
- Congenital heart disease
- Implanted cardioverter defibrillators

Content of CR

- EDUCATION
- EXERCISE
- PSYCHOLOGICAL SUPPORT
- NUTRITIONAL SUPPORT

- **هدف CR** ← تسریع در ریکاوری//دستیابی به سلامت بهتر//
کاهش عوارض بیماری //کاهش مرگ و میر بیماران قلبی//بهبود کیفیت زندگی// کاهش یا کم اثر کردن ریسک فاکتورهای قلبی

BENEFIT of CR

بازتوانی قلبی بطور کلی موجب کاهش ریسک مورتالیتی با هر علت و همچنین مورتالیتی با علل قلبی میشود

Physiological Benefits

- ✓ Improvement in functional capacity
- ✓ Improved in cardiovascular efficency
- ✓ Reduction in atherogenic and thrombotic risk factors
- ✓ Impovement in coronary blood flow
- ✓ Reduced myocardial ischaemia and severity of coronary atherosclerosis
- ✓ Reduction in risk of cardiovascular disease mortality

Psychosocial Benefits

- Reduction in depression and anxiety
- Enhanced mood status
- Enhanced self-efficacy
- Restoration of self-confidence
- Decreased illness behaviour
- Increased social interaction
- Resumption of sexual activities
- Return to work

Phases of C.R

- Phase I --inpatient period
- Phase II– early post discharge
- Phase III –supervised out-patient programme
- Phase IV– long-term maintenance of exercise and other lifestyle changes