

心蓝图 去跨越



第四届心肺预防与康复培训课程

The 4th International Great Wall academic conference on cardiopulmonary prevention and rehabilitation

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主办单位：中国康复医学会心血管疾病预防与康复专业委员会 中国老年保健医学研究会老年健康教育分会
中国心脏联盟心血管疾病预防与康复专业委员会
协办单位：中华医学会心血管病学分会 中国医师协会康复科分会心脏康复专业委员会

General principles

▶ Cardiac disease / exercise prescription

- ▶ Individuals benefit from participation in regular exercise / lifestyle change
- ▶ Best performed through cardiac rehabilitation
- ▶ Types: inpatient and outpatient
- ▶ Efficient and cost-efficient approach

Inpatient cardiac rehabilitation programs

- ▶ Post-hospitalization or cardiac procedures, referral should be made for inpatient CR programme
- ▶ Focus:
 - ▶ Current clinical status assessment
 - ▶ Mobilization
 - ▶ Education
 - ▶ D/C planning (incl. outpatient CR)

Indications for inpatient & outpatient cardiac rehabilitation (1)

- ▶ Medically stable myocardial infarction
- ▶ Stable angina
- ▶ Coronary artery bypass graft surgery (CABG)
- ▶ Percutaneous transluminal coronary angioplasty (PTCA)
- ▶ Stable heart failure caused by either systolic or diastolic dysfunction (cardiomyopathy)
- ▶ Heart transplantation

Indications for inpatient & outpatient cardiac rehabilitation (2)

- ▶ Valvular heart disease / surgery
- ▶ Peripheral arterial disease
- ▶ At risk for coronary artery disease with diagnosis of diabetes mellitus, dyslipidemia, hypertension, or obesity
- ▶ Other patients who may benefit from structured exercises and / or patient education based on physician referral and consensus of the rehabilitation team

Contraindications for inpatient & outpatient cardiac rehabilitation (1)

- ▶ Unstable angina
- ▶ Uncontrolled hypertension (resting SBP>180 mm Hg or DBP>110 mm Hg)
- ▶ Orthostatic blood pressure drop (>20 mm Hg)
- ▶ Significant aortic stenosis (<1.0 cm²)
- ▶ Uncontrolled atrial or ventricular arrhythmias
- ▶ Uncontrolled sinus tachycardia (>120 beats/min)

Contraindications for inpatient & outpatient cardiac rehabilitation (2)

- ▶ Uncompensated cardiac failure
- ▶ Third-degree atrioventricular block without pacemaker
- ▶ Active pericarditis or myocarditis
- ▶ Recent embolism (pulmonary or systemic)
- ▶ Acute thrombophlebitis
- ▶ Aortic dissection

Contraindications for inpatient & outpatient cardiac rehabilitation (3)

- ▶ Acute systemic illness or fever
- ▶ Uncontrolled diabetes mellitus
- ▶ Severe orthopedic condition limiting exercise
- ▶ Other metabolic conditions (until adequately treated)
- ▶ Severe psychological disorder

Outpatient cardiac rehabilitation

- ▶ Outline:
 - ▶ Risk stratification
 - ▶ Cardiac rehabilitation team
 - ▶ Initial examination
 - ▶ Goals
 - ▶ Components
 - ▶ Exercise testing
 - ▶ Exercise prescription
 - ▶ Physical therapy in cardiac rehabilitation

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Outpatient cardiac rehabilitation: Risk stratification



EXERCISE PREPARTICIPATION HEALTH SCREENING RECOMMENDATIONS



THE **BIG CHANGE:**

Most people can exercise without visiting a doctor first.

Points to consider before starting to exercise or increasing exercise intensity:

- 1 Current activity level
- 2 Signs/symptoms of certain diseases
- 3 Planned exercise intensity

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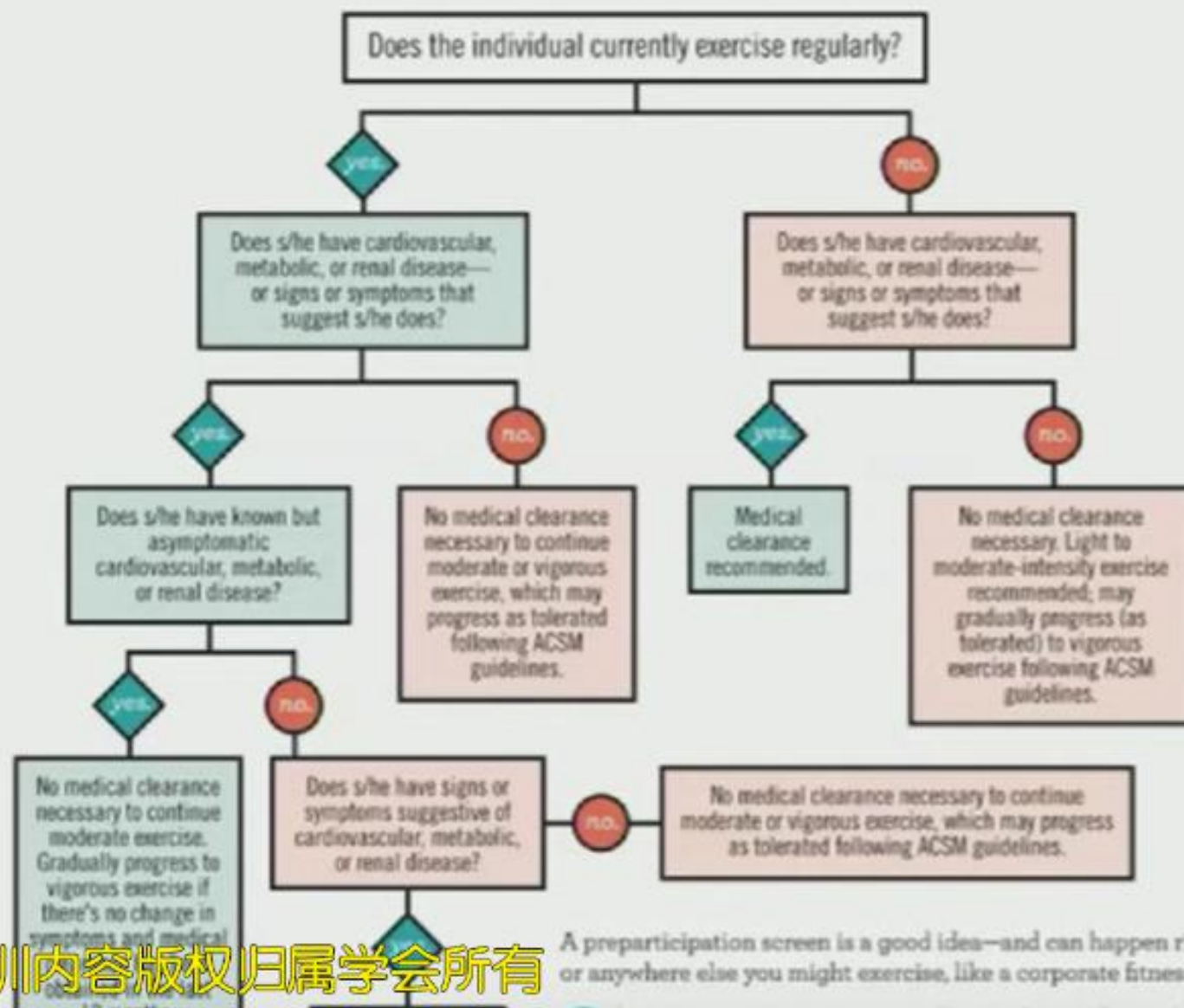
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MEDICAL EXAM/TEST

A doctor examines a patient for particular issues that may interfere with exercise.

PREPARTICIPATION HEALTH SCREENING

Updated for 2015 and beyond



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A preparticipation screen is a good idea—and can happen right in the gym or anywhere else you might exercise, like a corporate fitness program.



Vigorous exercise can cause complications from cardiovascular disease in rare cases, and we want to reduce that risk.

Cardiac Rehabilitation Team

- ▶ MD
- ▶ Nurses
- ▶ Physical Therapists
- ▶ Occupational Therapists
- ▶ Kinesiologists
- ▶ Nutritionists
- ▶ Psychologists
- ▶ (Respiratory Therapists)



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Outpatient cardiac rehabilitation: Initial examination

- ▶ Medical and surgical Hx
- ▶ Physical examination
- ▶ Review of recent cardiovascular tests and procedures
- ▶ Current Mx
- ▶ CVD risk factors (old and new factors or proxies)

Outpatient cardiac rehabilitation: Goals

- ▶ Patient's to conduct a regular exercise / lifestyle physical activity program
- ▶ Supervision and monitoring (able detecting change in medical status)
- ▶ Ongoing surveillance / enhancing medical management
- ▶ Vocational and recreational activities (past or new)
- ▶ Education / optimize secondary prevention

Outpatient cardiac rehabilitation: Components

- ▶ Cardiovascular risk factor assessment and counselling
- ▶ Education and support
- ▶ Development and implementation of a safe personalized exercise plan
- ▶ Monitoring with goal to improve BP, lipids / cholesterol & DM
- ▶ Psychological / stress assessment and counselling
- ▶ Interprofessional communication / optimal medical management
- ▶ Voluntary and structured recreational activities

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Outpatient cardiac rehabilitation: Exercise testing

- ▶ Symptoms-limited
- ▶ Standard exercise testing procedures
- ▶ Stable medications (according to G/L)
- ▶ Att.: * Ax of pts. On Beta-blockers*

Outpatient cardiac rehabilitation: Components: Exercise Prescription

▶ FITT:

- ▶ Frequency
- ▶ Intensity
- ▶ Time
- ▶ Type

▶ FITT-VP:

- ▶ Adding volume and progression

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Outpatient cardiac rehabilitation: Components: Exercise Prescription

▶ FITT: Aerobic

- ▶ Frequency: Min. 3-5 d./wk.
- ▶ Intensity: 40-80% of exercise capacity, resting HR + (20-30), Borg: 12-16 / 3-6 (modified scale)
- ▶ Time: 20–60 min
- ▶ Type: Arm /lower / dual action ergometer, upright and recumbent cycles, recumbent stepper, rower, elliptical, stair climber, treadmill, walking and other aerobic activities

Rating of Perceived Exertion (RPE)

Perceived Exertion Chart

10	Very Very Hard Activity <i>Completely out of breath, unable to talk</i>
9	Very Hard Activity <i>Can speak only one word at a time</i>
7-8	Hard Activity <i>Out of breath, can speak a sentence or two</i>
4-6	Moderate Activity <i>Can still carry a conversation</i>
2-3	Light Activity <i>Breathing is easy</i>
1	No Activity

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Physical Therapy in cardiac rehabilitation

- ▶ Holistic perspective
- ▶ Assessment of multiple systems
 - ▶ Cardiac
 - ▶ Respiratory
 - ▶ Musculoskeletal
- ▶ Primary and secondary prevention
- ▶ Treatment / discharge planning
- ▶ Education
- ▶ Communication and referral to other professionals



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Practical example: Université du Québec à Chicoutimi (UQAC)



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Conclusion

- ▶ Importance of structured cardiac rehabilitation continuum
- ▶ Multi-disciplinary approach
- ▶ Cardiac Rehabilitation: safe and cost-efficient
- ▶ Primary and secondary prevention
- ▶ Novel avenues...

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