Complete Summary

GUIDELINE TITLE

Initiating exercise in adults with chronic illnesses.

BIBLIOGRAPHIC SOURCE(S)

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program. Initiating exercise in adults with chronic illness. Austin (TX): University of Texas at Austin, School of Nursing; 2004 May. 12 p. [8 references]

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

- Coronary heart disease
- Frailty
- Osteoporosis
- Obesity
- Lung disease

GUIDELINE CATEGORY

Evaluation
Management
Prevention

CLINICAL SPECIALTY

Cardiology
Family Practice
Geriatrics
Internal Medicine
Nursing
Physical Medicine and Rehabilitation
Preventive Medicine
Pulmonary Medicine

INTENDED USERS

Advanced Practice Nurses
Health Care Providers
Physician Assistants
Physicians

GUIDELINE OBJECTIVE(S)

- To initiate a clear process by which health care providers may safely recommend exercise to patients
- To provide practical strategies and exercise guidelines

TARGET POPULATION

Adults with the following chronic illnesses/conditions:

- Coronary heart disease
- Frailty
- Osteoporosis
- Obesity
- Lung disease

INTERVENTIONS AND PRACTICES CONSIDERED

1. Assessment: Completion of history and physical with identification of risk factors, functional status, and health problems of patient
2. Modality identification: Make decisions regarding the most appropriate form of exercise for the individual patient (aerobic exercise, balance training, strength/resistance training)
3. Practical instructions for initiation of exercise: Individualize exercise plan with clear guidelines and goals
4. Follow-up to evaluate compliance with exercise, patient's subjective response, and weight and body mass index

MAJOR OUTCOMES CONSIDERED

- Health-related quality of life measure
- Exercise tolerance and physical activity level
- Symptoms ratings

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

A literature search involving a full-text computer search of OVID, MEDLINE, and CINAHL using the terms exercise and chronic disease was conducted.

Criteria for admissible evidence included publication subsequent to 1995.

NUMBER OF SOURCE DOCUMENTS

8 documents were pooled as sources for guideline recommendations.

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Subjective Review
Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Levels of Evidence

Grade A: Randomized clinical trials
Grade B: Well-designed clinical studies
Grade C: Panel consensus

METHODS USED TO ANALYZE THE EVIDENCE

Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus
Informal Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

This guideline is the product of many months of consensus building among knowledgeable individuals. The process included contributions from Family Nurse Practitioners who work with chronic illness. These practice guidelines are derived from existing literature.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Strength of Recommendations

Level I: Usually indicated, always acceptable, and considered useful and effective.

Level IIa: Acceptable, of uncertain efficacy, and may be controversial. Weight of evidence is in favor of usefulness/efficacy.

Level IIb: Acceptable, of uncertain efficacy, and may be controversial. May be helpful, not likely to be harmful.

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Peer review was undertaken to evaluate the reliability and utility of the guideline in clinical practice. A draft of the guideline was developed by a group of Family Nurse Practitioner (FNP) students and submitted for review to the FNP program faculty for review. Revisions were made after recommendations were received.

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Clinical Application

Initiating an exercise program in patients with chronic illnesses requires the primary care provider to:

- Examine the patient profile.
- Gather patient history including cardiovascular history.
- Perform a complete physical examination.
- Consider risk factors and functional status of the patient prior to implementation of an exercise modality.

- Refer to a specialist prior to initiating an exercise program if the patient has uncontrolled hypertension, uncontrolled heart failure, ventricular irritability, unstable angina, unstable diabetes mellitus, or morbid obesity.
- Determine exercise modality:
    - Heart failure: Aerobic and resistance training
    - Coronary heart disease: Aerobic and resistance training
    - Frailty: Resistance and balance training
    - Osteoporosis: Resistance, aerobic, and balance training
    - Obesity: Aerobic and resistance training
    - Lung disease: Resistance training

Aerobic Exercise

- For improving and maintaining the condition of the cardiovascular system, decreasing obesity, and decreasing blood pressure
- Involves dynamic exercise of the large muscle groups
- Always warm-up prior to any aerobic exercise.
- The intensity target can be determined by two methods:
    - The "talking pace" - the intensity sufficient to feel one is working hard while being able to talk without feeling dyspneic.
    - Calculating your target heart rate and keeping your heart rate between 60 and 80% of your maximum heart rate. (This method is not ideal for patients on a nonselective beta blocker).

      220 – age = maximum heart rate

      maximum heart rate x 0.6 = low end of your target heart rate

      maximum heart rate x 0.8 = upper end of your target heart rate

- Progression of aerobic training should be gradual. Increase your training by 10% per week.
- Frequency: 3 to 7 days per week
- Examples:
    - Treadmill
    - Dance
    - Hiking
    - Stair climbing
    - Bicycling
    - Swimming
    - Elliptical

Balance Training

- Improves gait stability and balance and decreases fear of falling
- Frequency: 2 to 7 days per week
- Examples:
    - Yoga
    - Pilates
    - Tai Chi
    - Proprioceptive exercises
        - Standing and moving with eyes closed

- One-leg balances
- Toe walking
- Forward-backward leg swings with knee flexed

Strength/Resistance Training

- Improves and maintains muscle fitness, increases bone density, mobility, and agility, and decreases obesity
- Warm up prior to any strength/resistance training.
- Start with light weights that can be lifted comfortably through a full range of motion using good posture and mechanics then progress to the next heavier weight that can be lifted comfortably.
- Perform a single set of 8 to 10 different exercise sets (chest press, shoulder press, triceps extension, biceps curl, pull-down, abdominal crunch, quadriceps extension, leg curls, leg press or calf raise) with 8 to 15 repetitions.
- Frequency: 2 days per week

Process of Care

Initiation of Treatment

The provider will conduct a baseline health assessment and identify key health problems for each patient. The provider will record weight and body mass index (BMI), along with usual pattern of exercise. Having identified a client in need of exercise therapy, the provider will:

- Outline preferred modes of exercise based on the patient's health problems
- Counsel the patient on an interval introduction of exercise
- Prescribe length and intensity parameters based on the patient´s current state of health
- Instruct the patient to keep a log of exercise

Continuation of Treatment

The provider will conduct health assessments and compare findings with baseline. On an ongoing basis the provider will:

- Monitor weight and BMI
- Monitor improvement in exercise tolerance
- Monitor improvement in health status

Follow-up Visits

At intervals deemed appropriate for the individual patient the provider will:

- Evaluate compliance with exercise regimen
- Evaluate patient's subjective responses to exercise and review exercise log
- Evaluate weight and BMI and compare with expectations, discuss with patient
- Recommend modifications in exercise regimen as indicated
- Offer alternatives or solutions to obstacles the patient encounters

Intervention

- Three 30-minute counseling visits, with a detailed agenda that focuses on initiation, recording progress, modifications, monitoring fatigue, and symptoms of overexertion
- One interval 15 minute visit to follow progress and evaluate program.

Visit 1 (30 minutes)

The provider will conduct a baseline health assessment and identify key health problems for each patient. The provider will record weight and BMI, along with usual pattern of exercise and patient resources for exercise modalities (access to gym or pool, machines at home, etc.). The provider and patient then choose the most appropriate exercise method. The Health-Related Quality-of-Life Measure Tool and Six Minute Walk Test are completed. The provider instructs the patient on the recommended mode of exercise and how to advance in intervals to goal. Specific daily plans and goals are set. The patient is instructed to keep a log of exercise, including barriers, feelings, and concerns. Return in 4 weeks.

Visit 2 (15 minutes)

The provider will review the patient's exercise log and discuss compliance with regimen. The provider offers alternatives or solutions to obstacles the patient encounters. The provider asks for patient input in the prescribed regimen and makes adjustments as appropriate. Return in 2 months for follow up.

Visit 3 (30 minutes)

The provider will conduct a health assessment and compare findings with baseline. The provider will compare weight and BMI with baseline. The provider will review the patient's exercise log. The provider will discuss compliance to exercise regimen, document progression, and be attentive to patient's concerns and experience. The provider will make recommendations based upon assessment and evaluation and provide motivation and encouragement. Return in 2 to 3 months for 6-month evaluation.

Visit 4 (30 minutes)

The provider will conduct a health assessment and compare findings with baseline. The provider will compare weight and BMI with baseline. The provider will review exercise log, discuss compliance to exercise regimen, document progression, and be attentive to patient's concerns and experience. The Health-Related Quality-of-Life Measure Tool and Six Minute Walk Test are completed. The provider will make recommendations based upon assessment and evaluation and provide motivation and encouragement. Follow up as needed.

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of evidence supporting each recommendation is not specifically stated.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Regular exercise may modify progression of chronic illness by providing an increase in functional capacity, quality of life, and independence, and a decrease in depression, falls in the elderly, weight, and risk of metabolic disorders.

POTENTIAL HARMS

Orthopedic injuries and cardiovascular complications

CONTRAINDICATIONS

CONTRAINDICATIONS

- Uncontrolled hypertension (systolic $\geq$160 mmHg; diastolic $\geq$100 mmHg)
- Uncontrolled heart failure (New York Heart Association [NYHA] Class IV or during exacerbation of symptoms)
- Ventricular irritability (need cardiac physician clearance)
- Unstable diabetes mellitus (blood sugar >300 or frequent fluctuations)
- Morbid obesity (body mass index [BMI] $\geq$30: need cardiac clearance)
- Unstable angina

QUALIFYING STATEMENTS

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Exercise programs should be individualized to address the specific needs of the patient. This guideline is not intended to direct the treatment of pediatric or pregnant patients or patients who otherwise would not be within the scope of practice of a Primary Care Provider. This guideline should be implemented within the specified group of patients in collaboration with appropriate specialties.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Living with Illness
Staying Healthy

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

2004 May

GUIDELINE DEVELOPER(S)

University of Texas at Austin School of Nursing, Family Nurse Practitioner Program - Academic Institution

SOURCE(S) OF FUNDING

University of Texas at Austin, School of Nursing, Family Nurse Practitioner Program

GUIDELINE COMMITTEE

Practice Guidelines Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Electronic copies: None available

Print copies: Available from the University of Texas at Austin, School of Nursing. 1700 Red River, Austin, Texas, 78701-1499

AVAILABILITY OF COMPANION DOCUMENTS

None available

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on August 26, 2004. The information was verified by the guideline developer on November 12, 2004.

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