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Preassessment Screening

CHAPTER OUTLINE

Rationale for Preassessment Screening

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- Explanation of Procedures

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 - Data Collection
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RATIONALE FOR PREASSESSMENT SCREENING

Health-related physical fitness (HRPF) assessment procedures range from those requiring no exercise to those necessitating vigorous or even maximal physical exertion. The risk associated with conducting assessments can range from no risk at all to a serious risk to the individual. If the assessments are limited to nonexercise procedures posing no risk (*e.g.*, a skinfold measurement for body composition), there would be no need to perform a preassessment screening. However, because exercise-based assessments pose both cardiovascular (CV) and musculoskeletal injury risks, an HRPF assessment requiring exercise will also require a preassessment screening. The individual risks are related to both the intensity of the exercise and the activity habits of the client. The *ACSM's Guidelines for Exercise Testing and Prescription, Tenth Edition (GETP10)* emphasizes this point stating, "The risk of an exercise related event such as sudden cardiac death or acute myocardial infarction (MI) is greatest in those individuals performing unaccustomed physical activity, and is greatest with vigorous intensity, physical activity." More specific information about cardiovascular disease (CVD) risks associated with exercise resides in Chapter 1 of the *ACSM's GETP10*, with summarized data about event rates found in that text's Tables 1.3, 1.4, and 1.5. Similarly, the risks of musculoskeletal injuries are greater in those individuals with known musculoskeletal diseases or previous injuries, as well

as those who are inactive. It is therefore critical to know the health and activity history of all individuals who will be performing HRPF assessments involving exercise.

INFORMED CONSENT

The first step in the process of a HRPF assessment is completion of the informed consent. Therefore, the first contact most individuals have with a program is with the person who administers the informed consent and conducts the risk screening. A client's impression of a program may thus depend on this first contact with the staff. Thinking about fitness testing may create anxiety in the client, and the test results may create other unpleasant feelings. Every effort should be made to help the client relax and focus on the beneficial information afforded from the results of the HRPF assessment. Although the exact approach may vary somewhat depending on the client's personality, performing this initial stage of the assessment with calm professionalism is recommended.

Completion of the informed consent must precede the health risk appraisal because determination of the health risk status will require the exchange of private health information and may require procedures that involve physical risk (*e.g.*, blood testing). Additionally, if the HRPF assessment requires exercise, there are risks involved.

The essential steps in executing the informed consent are the following:

- Explaining the purpose of the assessments
- Describing the procedures to be used
- Describing the risks and discomforts associated with the assessments
- Describing the benefits obtained from the assessments
- Describing alternatives (if any)
- Describing the responsibilities required of the client
- Encouraging the client to ask questions at any time
- Explaining how data will be handled (confidentiality)
- Explaining that the client can withdraw his or her consent and stop the assessment process at any time

An example of an informed consent form is provided in Box 2.1; however, there are many variations of informed consent available from different sources. All professionals performing assessments should take the time to find a standard form that closely matches a given facility's needs and assessments. Modifications to the form can be made to fit specific needs of the HRPF assessment program, and it is recommended that legal counsel review the final form to limit the chances of legal liability. Finally, it is essential that different informed consent forms be used for each different component of a program (*i.e.*, assessments and exercise programs).

The Informed Consent Process

The informed consent is not just a form requiring a signature. Rather, it is a process of documentation that attests to the fact that clear communications have taken place between the individual who is desiring to have the HRPF assessment and the professional who will be administering the assessments. It is through the process of articulating the purposes, risks, and benefits of the assessment that professionals help their clients have the knowledge and understanding needed to make informed decisions about whether to complete the HRPF assessment. Although the evidence suggests that for most people expected benefits of performing the assessment outweigh the associated risks, each client needs to make an informed decision on the basis of personal factors.

Box 2.1 Sample of Informed Consent Form for a Symptom-Limited Exercise Test

Informed Consent for an Exercise Test

1. Purpose and Explanation of the Test

You will perform an exercise test on a cycle ergometer or a motor-driven treadmill. The exercise intensity will begin at a low level and will be advanced in stages depending on your fitness level. We may stop the test at any time because of signs of fatigue or changes in your heart rate, electrocardiogram, or blood pressure or because of symptoms you may experience. It is important for you to realize that you may stop when you wish because of feelings of fatigue or any other discomfort.

2. Attendant Risks and Discomforts

There exists the possibility of certain changes occurring during the test. These include abnormal blood pressure; fainting; irregular, fast, or slow heart rhythm; and, in rare instances, heart attack, stroke, or death. Every effort will be made to minimize these risks by evaluation of preliminary information relating to your health and fitness and by careful observations during testing. Emergency equipment and trained personnel are available to deal with unusual situations that may arise.

3. Responsibilities of the Participant

Information you possess about your health status or previous experiences of heart-related symptoms (*e.g.*, shortness of breath with low-level activity; pain; pressure; tightness; heaviness in the chest, neck, jaw, back, and/or arms) with physical effort may affect the safety of your exercise test. Your prompt reporting of these and any other unusual feelings with effort during the exercise test itself is very important. You are responsible for fully disclosing your medical history as well as symptoms that may occur during the test. You are also expected to report all medications (including nonprescription) taken recently and, in particular, those taken today to the testing staff.

4. Benefits To Be Expected

The results obtained from the exercise test may assist in the diagnosis of your illness, in evaluating the effect of your medications, or in evaluating what type of physical activities you might do with low risk.

5. Inquiries

Any questions about the procedures used in the exercise test or the results of your test are encouraged. If you have any concerns or questions, please ask us for further explanations.

6. Use of Medical Records

The information that is obtained during exercise testing will be treated as privileged and confidential as described in the Health Insurance Portability and Accountability Act of 1996. It is not to be released or revealed to any individual, except your referring physician, without your written consent. However, the information obtained may be used for statistical analysis or scientific purposes with your right to privacy retained.

7. Freedom of Consent

I hereby consent to voluntarily engage in an exercise test to determine my exercise capacity and state of cardiovascular health. My permission to perform this exercise test is given voluntarily. I understand that I am free to stop the test at any point if I so desire.

I have read this form, and I understand the test procedures that I will perform and the attendant risks and discomforts. Knowing these risks and discomforts, and having had an opportunity to ask questions that have been answered to my satisfaction, I consent to participate in this test.

Date

Signature of Patients

Date

Signature of Witness

Date

Signature of Physician or Authorized Delegate



Figure 2.1 An important aspect of the informed consent process is reviewing key elements with the client and answering any questions the client may have.

To begin the informed consent process, the client should carefully read the entire form or have the form read aloud while following along. Next, the professional should review some of the key elements of the assessment, including purpose, risks and benefits, and overview of procedures (Fig. 2.1). One key point of emphasis is that the client will play an important role in the process. Specifically, the client has the responsibility of informing test administrators of any problems experienced (past, present, and during the physical fitness assessment) that may increase the risk of the test or preclude participation. This information is essential to minimize the risks involved with the assessment and can also optimize the benefits. Finally, the client should be allowed and encouraged to ask questions before signing the informed consent.

Explanation of Procedures

The professional should be prepared to provide a brief description of each assessment to be performed and answer client questions in detail. The following are examples of some common HRPF assessments and sample explanations of each. Detailed reviews of all the HRPF assessments are provided in Chapters 4 to 8.

- Anthropometry or body composition: “This test is being performed to obtain an estimate of your total body fat percentage. We will determine your body fat percentage by taking measurements with a set of calipers at different sites on your body. We do this by pinching and pulling on the skin at these different locations. We will also measure some body girths with a tape measure to provide an indication of fat distribution on your body.”

- **Cardiorespiratory fitness:** “This test is being performed to obtain an estimate of your cardiorespiratory fitness. The test will require you to exercise on a stationary cycle for 6 to 12 min. The intensity of the test will be limited to a level below your maximal exertion point. Your heart rate and blood pressure response will be monitored throughout the duration of the test.”
- **Flexibility:** “While there is no one test that can measure your total range of motion, this test is being performed to obtain a measure of the flexibility of your lower back and legs. We will measure how far you can reach, to or beyond your toes, while sitting with your legs straight.”
- **Muscular fitness:** “While there is no one test that can measure your total muscular fitness, this test is being performed to obtain a measure of your muscle strength by having you squeeze a hand grip dynamometer as hard as you can. We will also measure muscle endurance by having you perform as many curl-ups as you can in a 1-min time period.”

SCREENING PROCEDURES

Preassessment screening is the next step in the process of HRPF assessment. Preassessment screening is a process of gathering a client’s demographic and health-related information along with some health risk/medical assessments (see Chapter 3). This information may be used for determining the individual’s risk for chronic disease and risk related to physical activity participation. As noted earlier, there are risks associated with physical activity, particularly when it is of vigorous intensity.

*Chapter 2 of the ACSM’s GETP10 provides a thorough overview of what is termed preparticipation health screening process. Although very similar to the preassessment screening, preparticipation screening procedures are designed principally to provide guidance for previously inactive individuals who wish to initiate a regular exercise program or for those who perform moderate or irregular exercise but desire to increase the vigor and regularity of their exercise. ACSM supports the idea that regular physical activity is a key public health tool, and that any preparticipation health screening process should be free of unwarranted barriers, so that adopting a physically active lifestyle is attainable for all. Indeed, the 2008 *Physical Activity Guidelines for Americans* provided the following guidance:*

The protective value of a medical consultation for persons with or without chronic diseases who are interested in increasing their physical activity level is not established. People without diagnosed chronic conditions (such as diabetes, heart disease, or osteoarthritis) and who do not have symptoms (such as chest pain or pressure, dizziness, or joint pain) do not need to consult a health-care provider about physical activity (9).

Whereas preparticipation screening is typically incorporated for the person beginning an exercise program, preassessment screening is employed for the person wanting to perform a comprehensive HRPF assessment. Although the decision-making process in these two situations may be similar, there are key differences between the two with respect to risk. As stated earlier, physical activity–related risks are influenced by both the intensity of the activity and the activity habits of the client. Some HRPF assessments require vigorous-to-maximal intensity exercise, and it is not uncommon to perform these measures on clients who have not been regularly active. In these circumstances, the preassessment health screening process may need to be more involved.

The preassessment screening, like the informed consent, is a dynamic process, and will vary in its scope and components depending on the client’s health and medical status (*e.g.*,

Box 2.2 Contraindications to Exercise Testing

Absolute

- A recent significant change in the resting electrocardiogram suggesting significant ischemia, recent myocardial infarction (within 2 d), or other acute cardiac event
- Unstable angina
- Uncontrolled cardiac dysrhythmias causing symptoms or hemodynamic compromise
- Symptomatic severe aortic stenosis
- Uncontrolled symptomatic heart failure
- Acute pulmonary embolus or pulmonary infarction
- Acute myocarditis or pericarditis
- Suspected or known dissecting aneurysm
- Acute systemic infection, accompanied by fever, body aches, or swollen lymph glands

Relative^a

- Left main coronary stenosis
- Moderate stenotic valvular heart disease
- Electrolyte abnormalities (*e.g.*, hypokalemia, hypomagnesemia)
- Severe arterial hypertension (*i.e.*, systolic blood pressure of >200 mm Hg and/or a diastolic blood pressure of >110 mm Hg) at rest
- Tachydysrhythmia or bradydysrhythmia
- Hypertrophic cardiomyopathy and other forms of outflow tract obstruction
- Neuromotor, musculoskeletal, or rheumatoid disorders that are exacerbated by exercise
- High-degree atrioventricular block
- Ventricular aneurysm
- Uncontrolled metabolic disease (*e.g.*, diabetes, thyrotoxicosis, myxedema)
- Chronic infectious disease (*e.g.*, HIV)
- Mental or physical impairment leading to inability to exercise adequately

^aRelative contraindications can be superseded if benefits outweigh the risks of exercise. In some instances, these individuals can be exercised with caution and/or using low-level endpoints, especially if they are asymptomatic at rest. Modified from (4) cited 2017 June 15. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/12356646>

health conditions or diseases) and the physical activity or exercise program goals of the individual (*e.g.*, moderate intensity vs. vigorous intensity). In fact, there are many reasons why clients should be screened before involvement in a HRPF assessment program, including:

- To identify those with a medical contraindication (exclusion), as outlined in Box 2.2, to performing specific HRPF assessments
- To identify those who should receive a medical evaluation conducted by a physician before performing specific HRPF assessments
- To identify those who should only perform some specific (vigorous) HRPF assessments administered by professionals with clinical experience (and possibly in a clinical facility with physician availability)