

PRE EXERCISE EVALUATION

Pre exercise screening is used to identify people who may have medical conditions which put them at higher risk during physical exercises or activities. Pre exercise evaluation serves as a bridge between risk stratification, the fitness and clinical exercise testing concept.

RISK STRATIFICATION:

The process by which individuals are assigned to one of these risk categories is called risk stratification and is based on presence or absence of known cardiovascular, pulmonary and metabolic diseases. Appropriate recommendation for medical examination, physical activity, exercise testing and physician supervision are made based on risk stratification process that assigned individuals in one of these three risk categories;

Low risk - Asymptomatic less than one risk factor.

Moderate risk - Asymptomatic more than two risk factors.

High risk - Symptomatic or known cardiac, pulmonary and metabolic diseases.

A comprehensive pre exercise evaluation in the clinical setting generally include medical history, physical examination and laboratory tests.

MEDICAL HISTORY:

The essential components history include a thorough review for acute and chronic medical and orthopedic conditions, sports participation history, use of any medication and supplements, allergies and a menstrual history for female athletes.

Important components of history:

PAST HISTORY:

- Chronic medical conditions
- Hospitalization, surgeries
- Unpaired organ (eye, testicle, kidney)
- Medication, supplements.

CARDIOVASCULAR:

- Syncope
- Chest pain
- Heart murmur
- Palpitation
- High blood pressure
- Shortness of breath
- Family history of sudden cardiac death
- Family history of premature coronary disease
- Fatigue

ORTHOPEDIC:

- Injury (sprain or strain)
- Broken bones
- Dislocated joints or stress fracture
- Brace

NEUROLOGICAL:

- Head, facial or dental injury
- Confusion or memory loss after head injury
- Numbness, tingling or inability to move arms or legs after being hit
- Headache with or immediately after exercise

RESPIRATORY:

- Exercise related wheezing, cough and difficulty in breathing

ALLERGIES:

- Medication

- Foods
- Bees, wasps, others

INFECTIOUS DISEASES:

- Recent infectious mononucleosis
- Herpes skin infection

EYES:

- Glasses or contact lenses
- Use of protective eye wear

DIETARY:

- Weight gain or loss
- Dietary habits, limit or control certain foods
- Satisfaction with current weight

FEMALES:

- When menstruation commenced
- Last menstrual period, prior menstrual period
- How many menses in last 12 months

IMMUNIZATIONS:

- Tetanus
- Hepatitis A, B
- Meningococcal
- Influenza
- Others (depend on travel history)

HEALTH RISK BEHAVIOURS:

- Tobacco, alcohol, drugs

PHYSICAL EXAMINATION

The physical examination should be performed by skilled clinicians with particular focus on cardiovascular, neurological and orthopedic abnormalities that will lead to high risk of disability or death.

Important components of physical examination:

GENERAL:

- Height
- Weight

EYES, EAR, THROAT:

- Visual acuity
- Pupil symmetry
- Ear canals and tympanic membranes
- Nasal septum
- Teeth
- Throat lesions

LUNGS

- Breath sounds
- Chest expansion
- Contour of thoracic cage

CARDIOVASCULAR SYSTEM:

- Blood pressure in both arms
- Heart rate, rhythm
- Radial and femoral pulses
- Murmur

ABDOMEN:

- Tenderness
- Organomegaly
- Masses

SKIN:

- Rashes
- Lesions

GENITALIA:

- Testicles
- Hernia

MUSCULOSKELETAL (symmetry, ROM, strength, flexibility, balance):

- Neck
- Back
- Shoulder
- Elbow, wrist, hand
- Hip
- Knee
- Ankle, foot
- Gait

LABORATORY TESTS:

- Lipid profile
- Liver profile
- Kidney profile
- CBC
- ECG
- Hepatitis B, C
- HIV antibodies
- Bone mineral density
- Body fat composition
- Peak flow and pulmonary function test
- Gait assessment and biomechanical analysis