

Figure 4a. Neck range of motion—flexion.

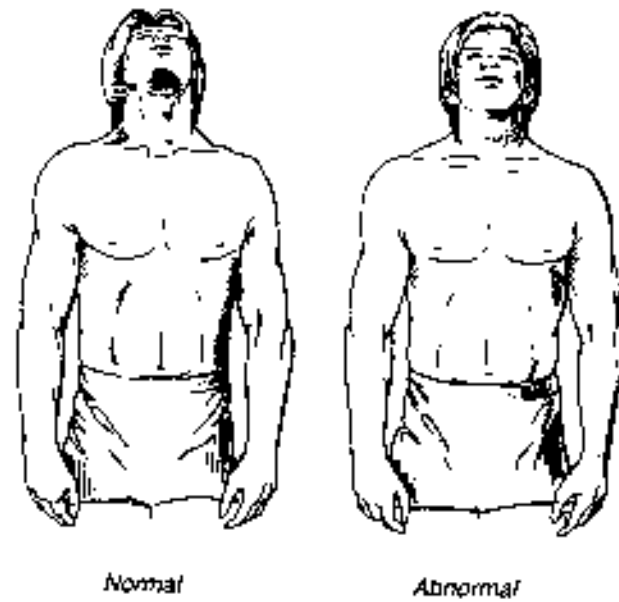


Figure 4b. Neck range of motion—extension.

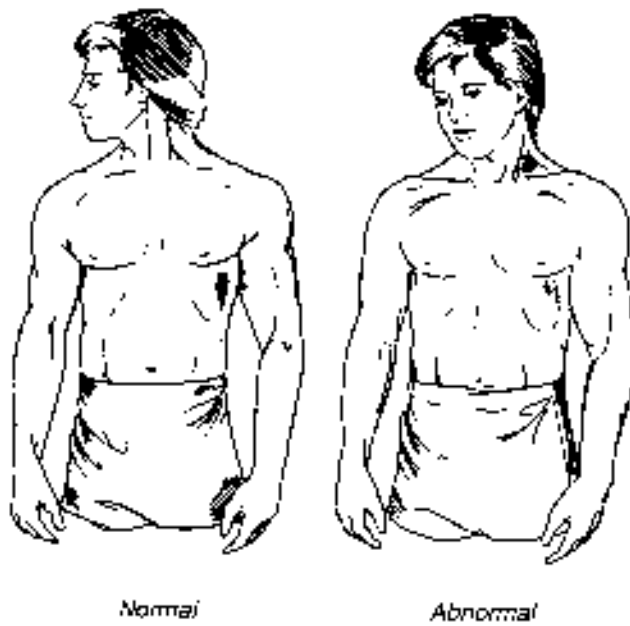


Figure 4c. Neck range of motion—left and right lateral rotation.

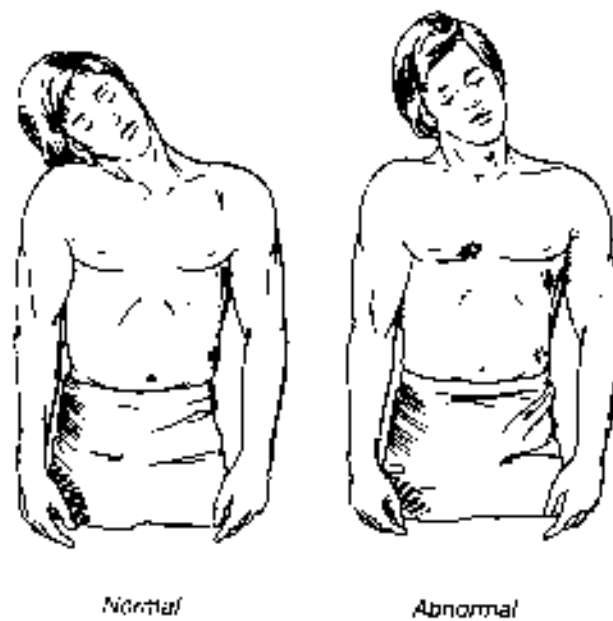
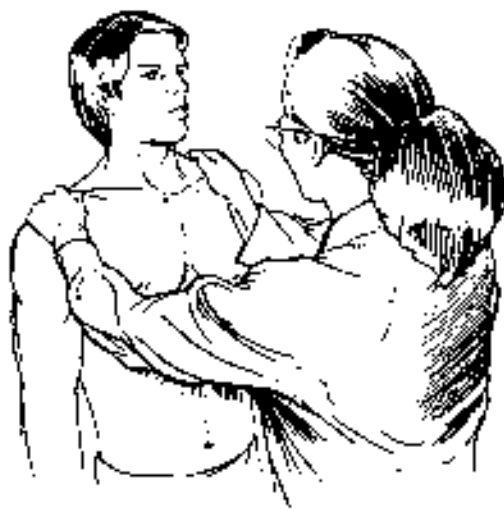
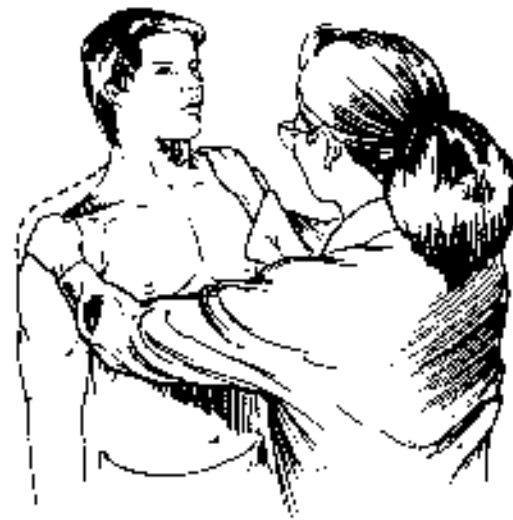


Figure 4d. Neck range of motion—left and right lateral flexion.

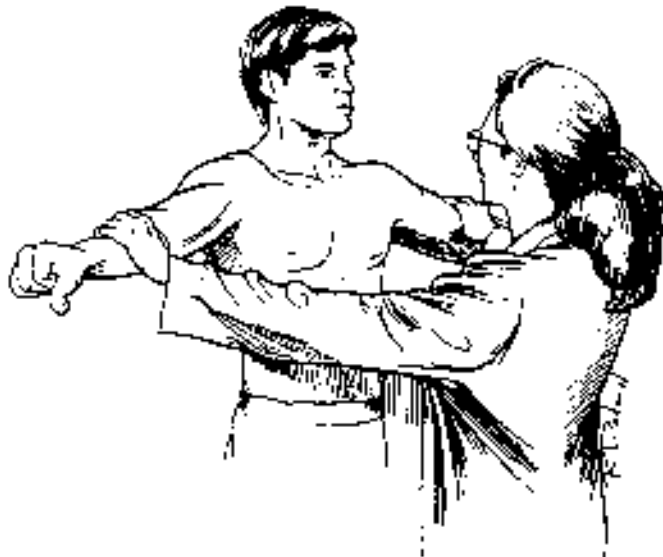


Normal

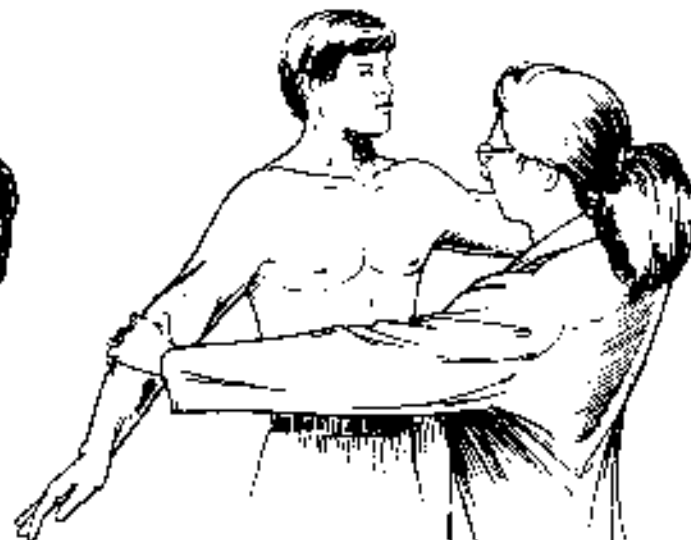


Abnormal

Figure 5. Resisted shoulder shrug—trapezius strength.

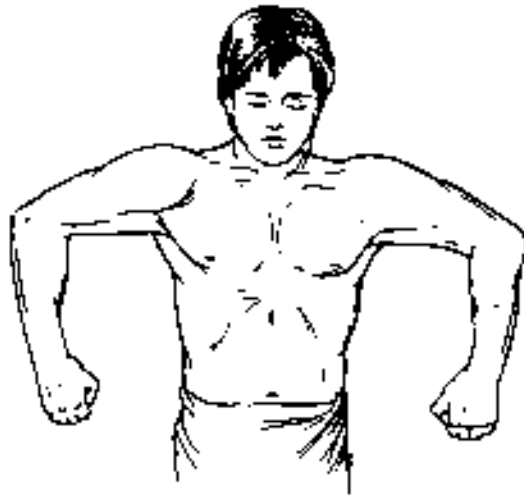


Normal



Abnormal

Figure 6. Resisted shoulder abduction—deltoid strength.

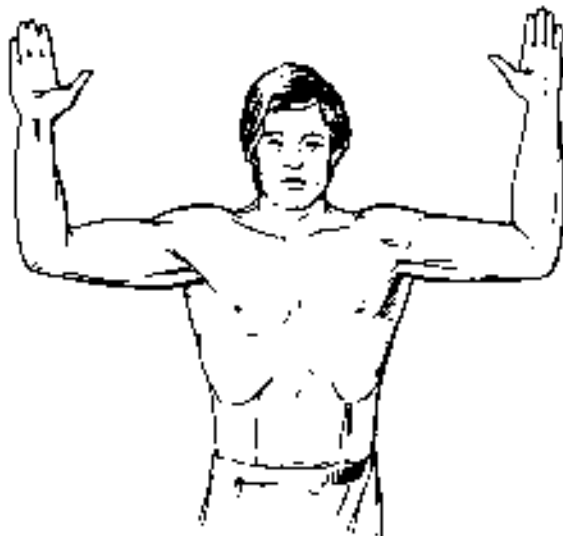


Normal

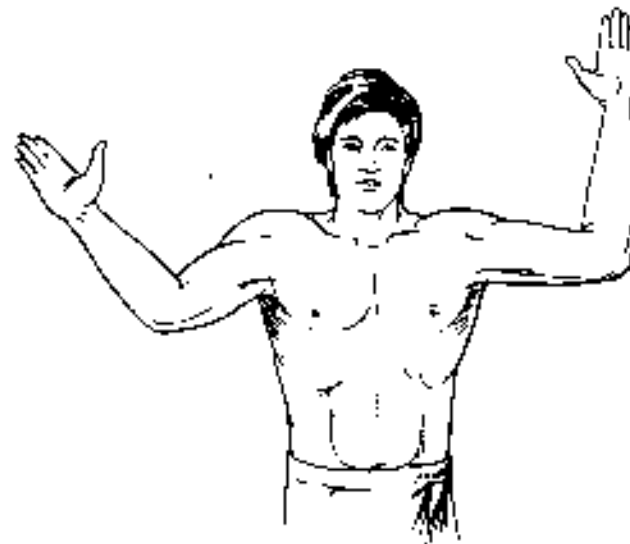


Abnormal

Figure 7a. Shoulder range of motion—internal rotation.



Normal



Abnormal

Figure 7b. Shoulder range of motion—external rotation.

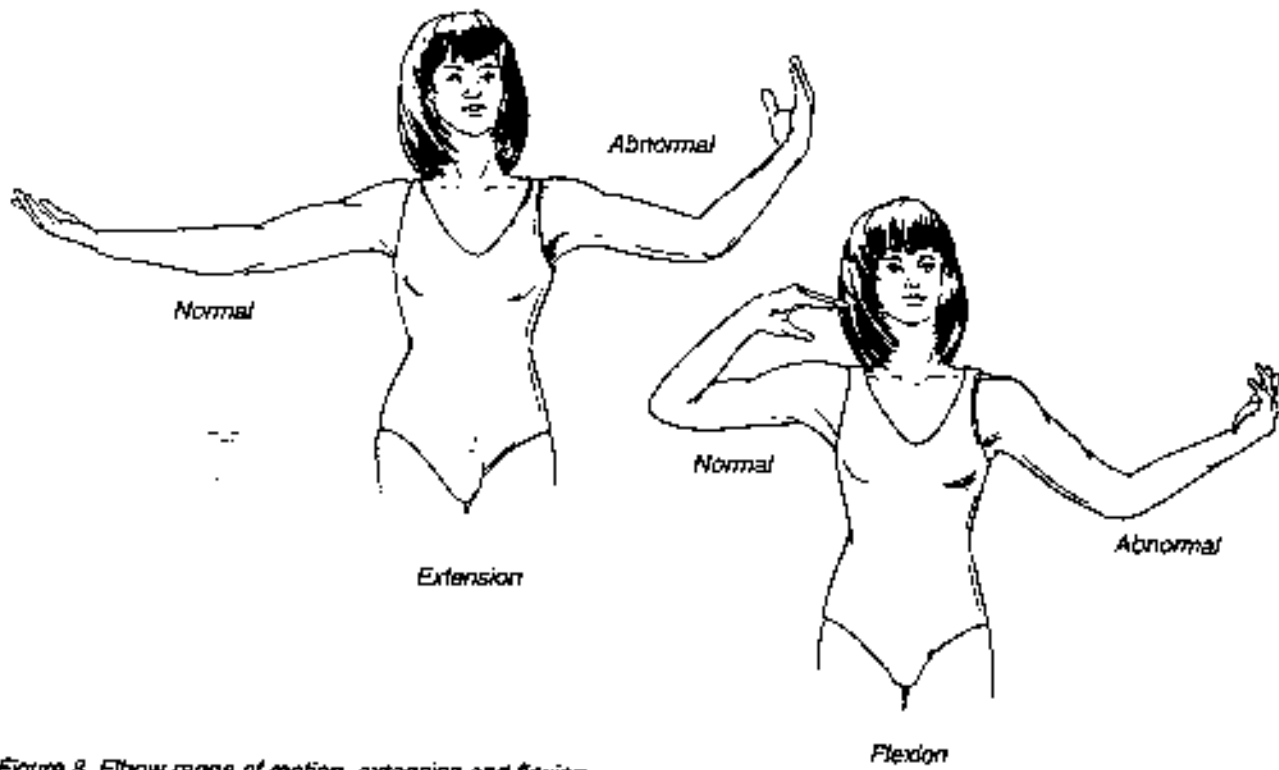


Figure 8. Elbow range of motion—extension and flexion.

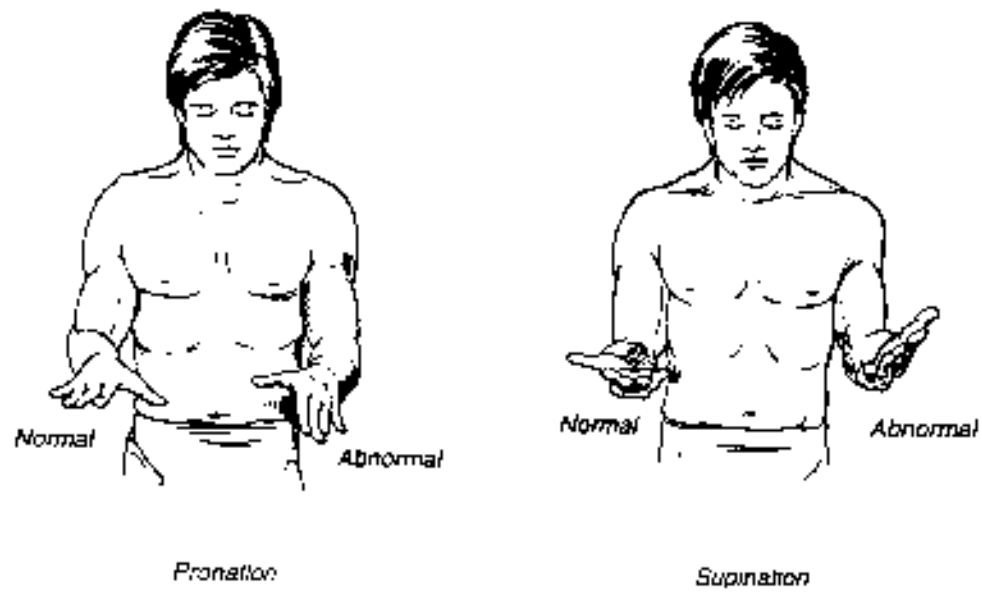


Figure 9. Elbow range of motion—pronation and supination.

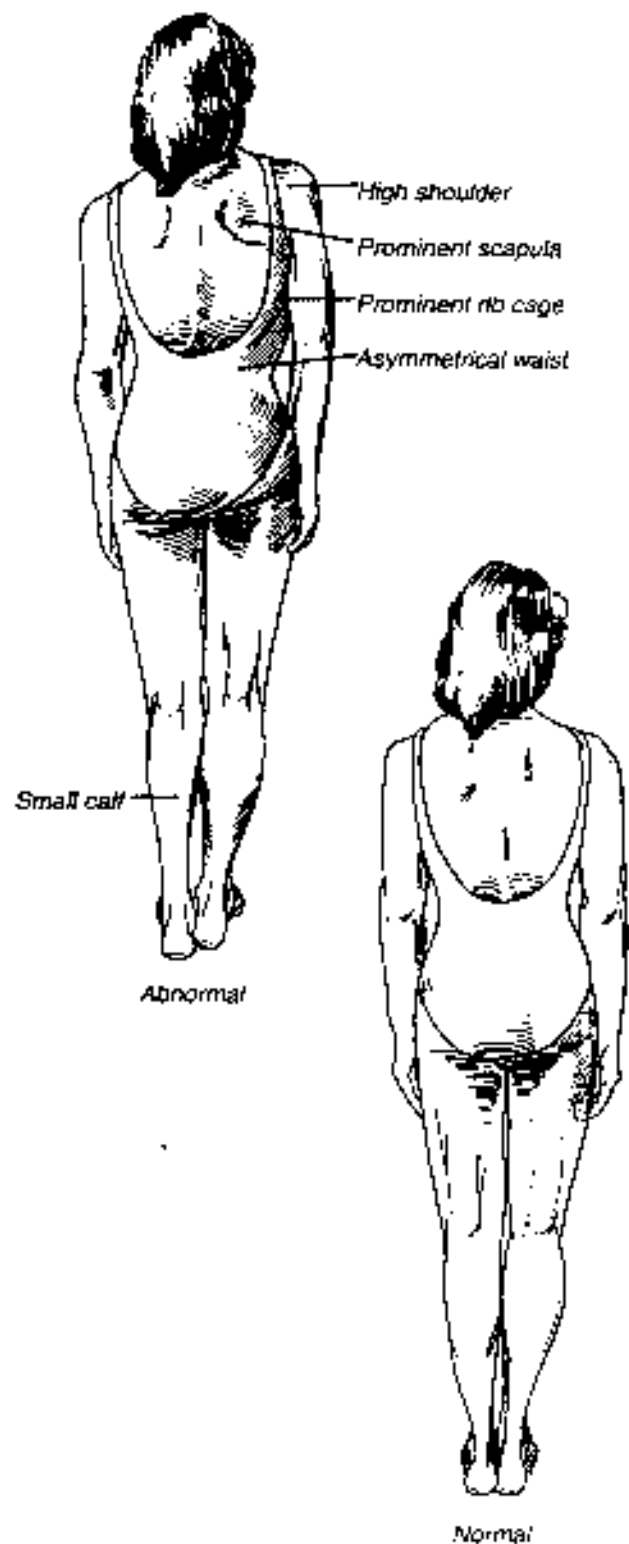
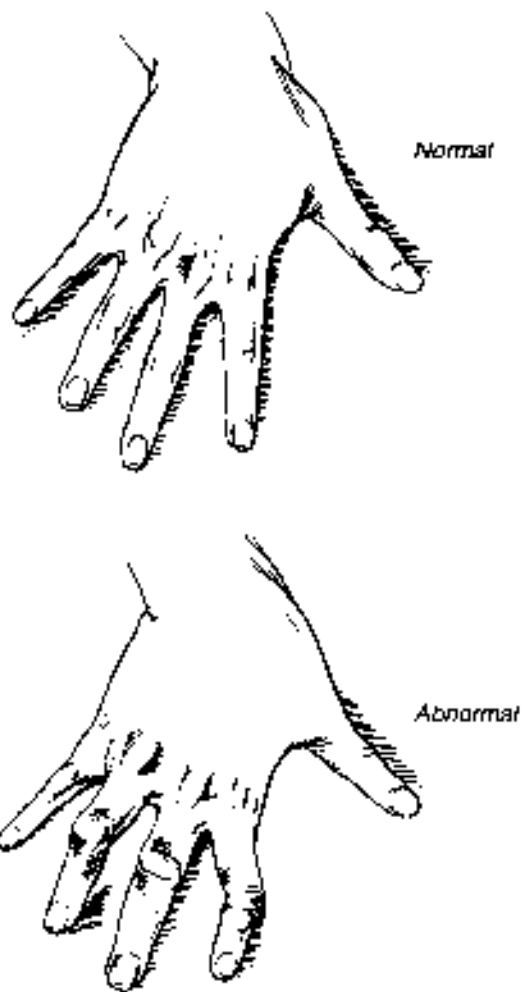
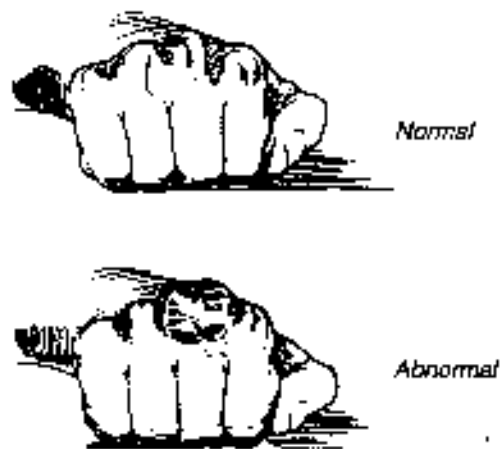


Figure 10. Hand and finger range of motion (patient making a fist and spreading fingers).

Figure 11. Symmetry of upper and lower extremities and trunk (patient facing away from examiner).

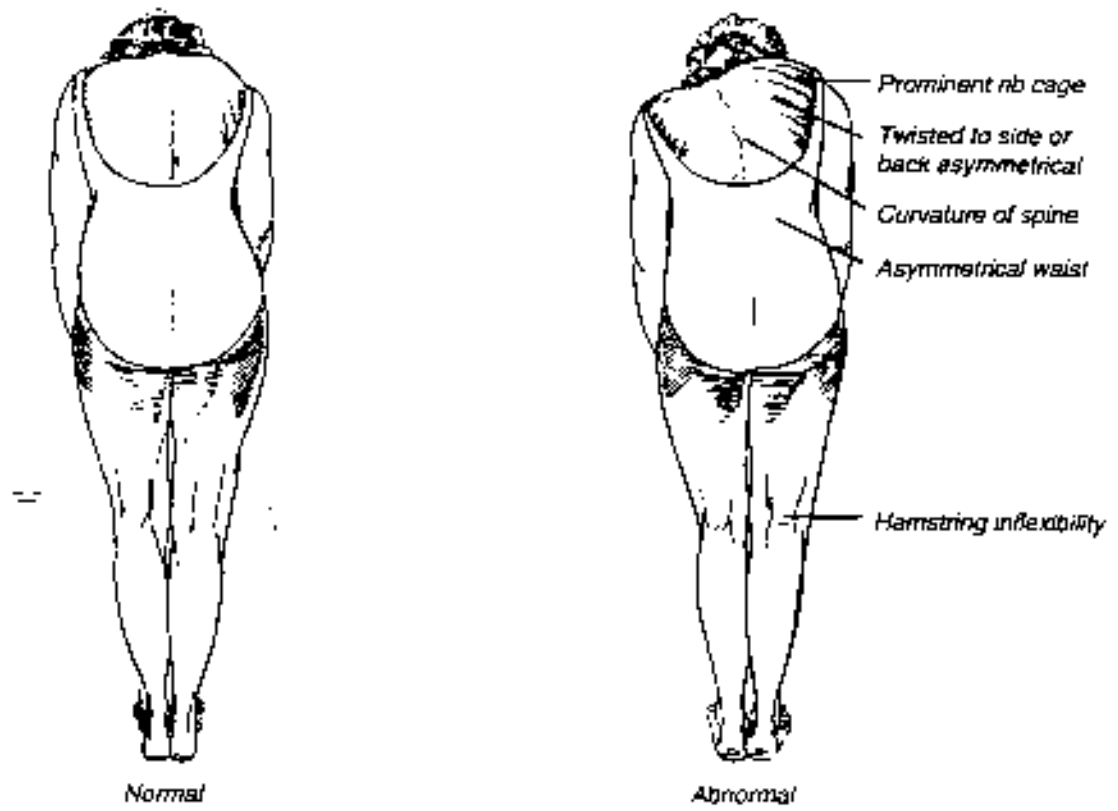


Figure 12a. Back flexion with knees straight (patient facing away from examiner).

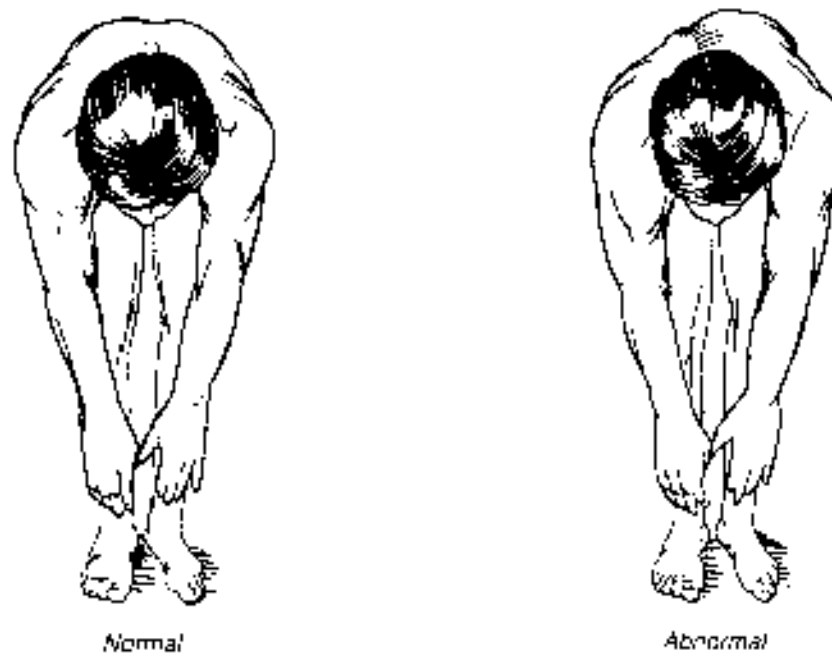
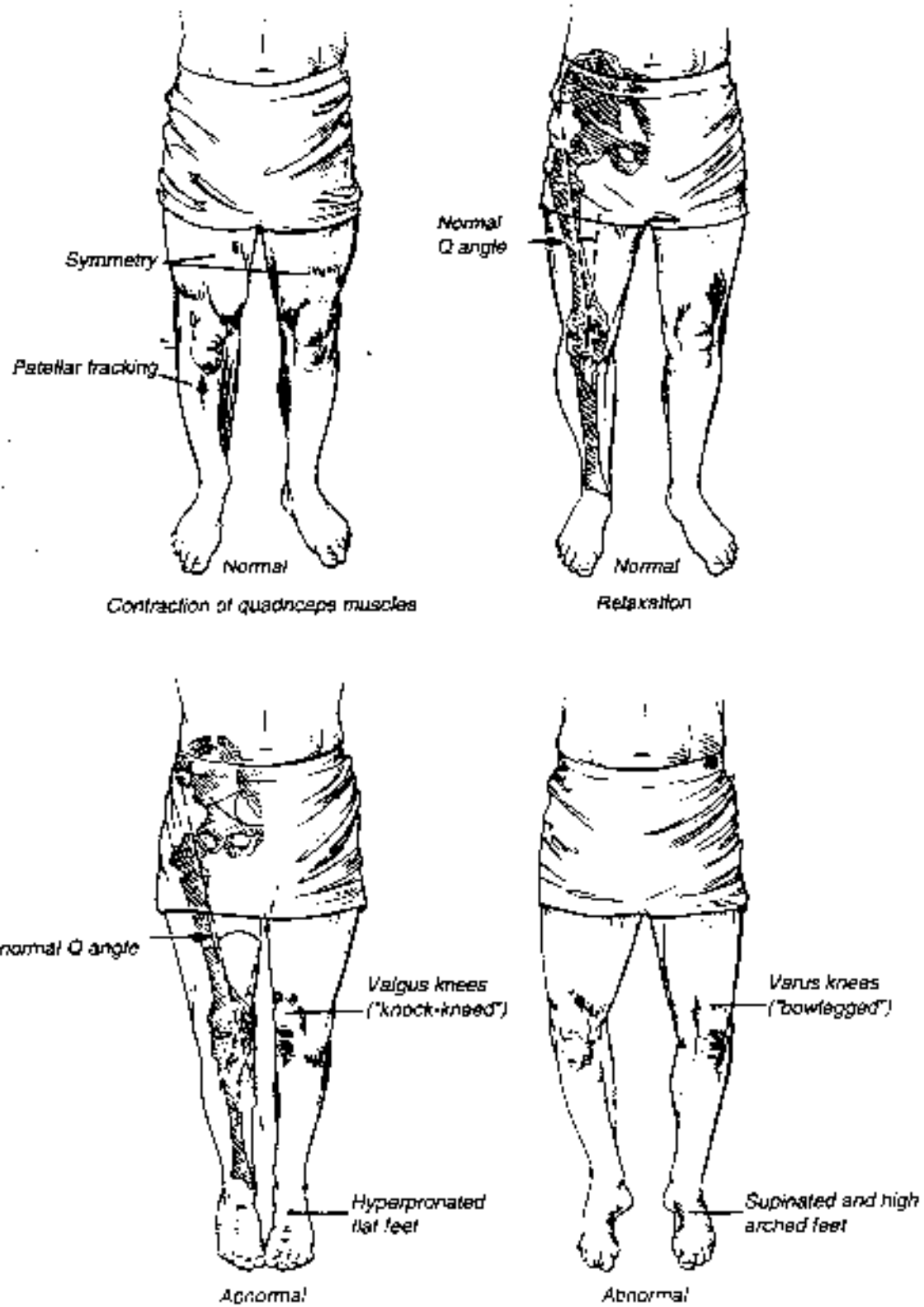


Figure 12b. Back flexion with knees straight (patient touching toes, facing examiner).



Figures 13a and 13b Examination of lower extremities.

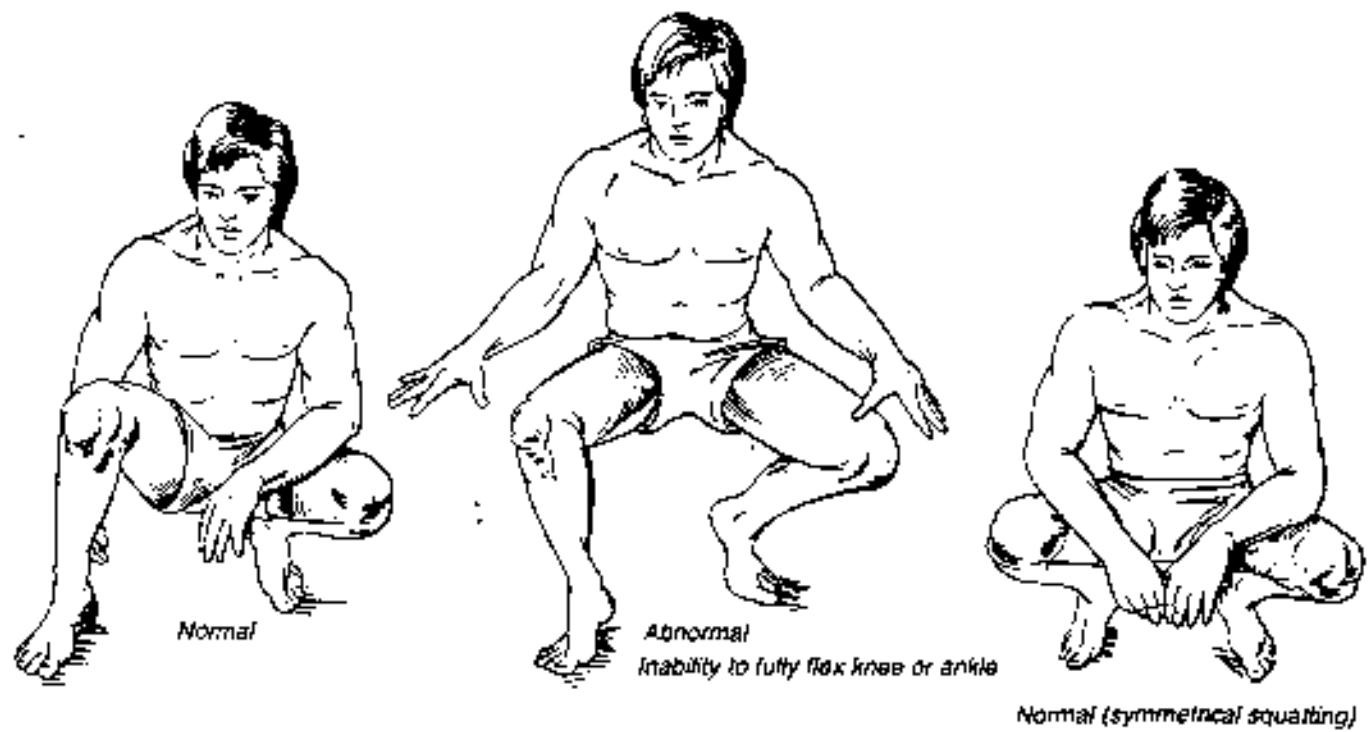


Figure 14. Squat and "duck walk."

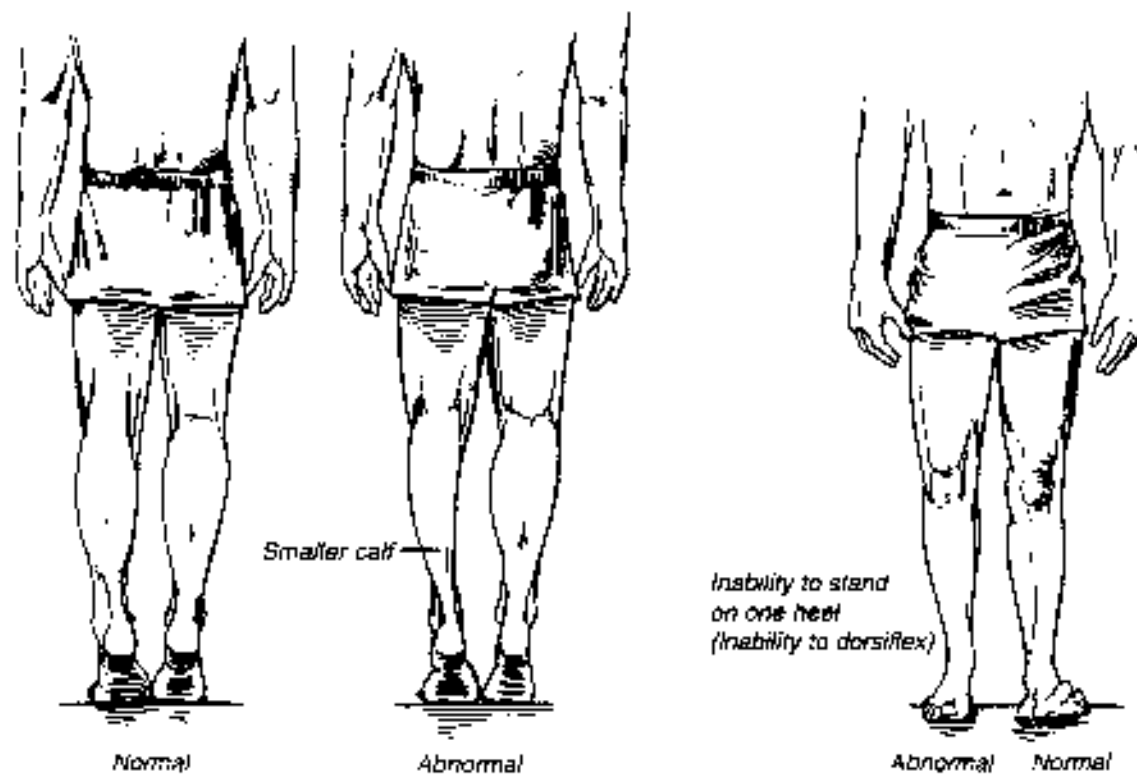


Figure 15a. Examination of lower extremities (patient standing on toes, facing away from examiner).

Figure 15b. Examination of lower extremities (patient standing on heel, facing examiner).

Table 7. Recommendations for Participation in Competitive Sports

	Contact			Noncontact	
	Contact/collision	Limited contact/collision	Strenuous	Moderately strenuous	Nonstrenuous
Atlantoaxial instability *Swimming (no butterfly, breast-stroke or diving starts)	No	No	Yes*	Yes	Yes
Acute illnesses *Needs individual assessment (e.g., contagiousness to others, risk of worsening illness)	-	-	-	-	-
Cardiovascular					
Coronary	No	No	No	No	No
Hypertension					
Mild	Yes	Yes	Yes	Yes	Yes
Moderate	-	-	-	-	-
Severe	-	-	-	-	-
Congenital heart disease	†	†	†	†	†
*Needs individual assessment †Patients with mild forms can be allowed a full range of physical activities; patients with mild or severe forms or who are postoperative should be evaluated by a physician					
Eyes					
Absence or loss of function of one eye	-	-	-	-	-
Detached retina	†	†	†	†	†
*Availability of American Society for Testing Materials approved eye guards may allow competitor to participate in most sports, but this must be judged on an individual basis †Consult ophthalmologist					
Inguinal hernia	Yes	Yes	Yes	Yes	Yes
Kidney (absence of one)	No	Yes	Yes	Yes	Yes
Liver (enlarged)	No	No	Yes	Yes	Yes
Musculoskeletal disorders *Needs individual assessment	-	-	-	-	-
Neurologic					
History of serious head or spine trauma, repeated concussions or craniotomy	-	-	Yes	Yes	Yes
Convulsive disorder					
Well controlled	Yes	Yes	Yes	Yes	Yes
Poorly controlled	No	No	Yes†	Yes	Yes†
*Needs individual assessment †No swimming or weight lifting ‡No archery or riflery					
Ovary (absence of one)	Yes	Yes	Yes	Yes	Yes
Respiratory					
Pulmonary insufficiency	-	-	-	-	Yes
Asthma	Yes	Yes	Yes	Yes	Yes
*May be allowed to compete if oxygenation remains satisfactory during a graded stress test					
Sickle cell trait	Yes	Yes	Yes	Yes	Yes
Skin (boils, herpes, impetigo, scabies) *No gymnastics with mats, martial arts, wrestling or contact sports until no longer contagious	-	-	Yes	Yes	Yes
Spleen (enlarged)	No	No	No	Yes	Yes
Testicle (absent or undescended) *Certain sports may require protective cup	Yes*	Yes*	Yes	Yes	Yes