Sonography Physical & Psychomotor Abilities

The following list was developed by the ACC Sonography Programs as a resource for potential applicants and to enhance understanding of the physical and psychomotor abilities and skills required for learning and performing sonographic scans/exams.

Definition of Psychomotor Learning: demonstrating physical skills such as movement, coordination, manipulation, dexterity, grace, strength, speed; actions which demonstrate the fine motor skills such as use of precision instruments or tools. *Examples of Sonography functions are in italics.*

Strength and Endurance

a. Dynamic Strength – The ability to exert muscle force repeatedly or continuously over time (including walking, standing or being upright continuously for 8–12 hours). *For Sonographers, this also means exerting up to 40 pounds of sustained transducer pressure during the scan/exam.*

b. Stamina – The ability to exert yourself physically over long periods of time without getting winded or out of breath. *Students and sonographers will spend 45 minutes or more of continuous scanning during a practice or performance of a sonographic scan/exam.*

c. Static Strength – The ability to exert maximum muscle force to lift, push, pull, or carry objects. *Sonographers must be able to lift patients, push and pull equipment into place, push the transducer across the body or on a single location as needed for the type sonographic scan/exam, and carry equipment needed for the scan/exam.*

d. Trunk Strength – The ability to use your abdominal and lower back muscles to support part of the body repeatedly or continuously over time without “giving out” or fatiguing. *Sonograms are performed with the sonographer standing or sitting for the duration of a scan/exam.*

Movement/Control (before, during, and after a sonographic scan/exam)

a. Arm-Hand Steadiness – The ability to keep your hand and arm steady while moving your arm or while holding your arm and hand in one position. *Echocardiography scans and certain Medical and Vascular sonography scans/exams require the transducer to be applied to a single location for several minutes at a time.*

b. Control Precision – The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions. *This includes positioning the transducer at a correct location during a scan/exam.*

c. Dynamic Flexibility – The ability to quickly and repeatedly bend, stretch, twist or reach out with your body, arms, and/or legs; *use proper scanning ergonomics but be able to adapt scanning to patient condition and/or type of scan/exam or procedure performed.*

d. Extent Flexibility – The ability to bend, stretch, twist, or reach with your body, arms, and/or legs: *use proper scanning ergonomics but be able to adapt scanning to patient condition and/or type of scan/exam or procedure performed.*

e. Finger Dexterity – The ability to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects. *During a sonogram, the sonographer must manipulate the transducer with one hand while the other hand simultaneously adjusts controls on the ultrasound unit.*
f. Manual Dexterity – The ability to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects. During a sonogram, the sonographer must manipulate the transducer with one hand while the other hand simultaneously adjusts controls on the ultrasound unit.

g. Multi-limb Coordination – The ability to coordinate two or more limbs while sitting, standing or lying down.

h. Reaction Time – The ability to quickly respond to a signal when it appears such as patient complications during a scan/exam and/or procedure.

i. Speed of Limb Movement – The ability to quickly move arms and legs

Auditory

a. Auditory Attention – The ability to focus on a single source of sound in the presence of other distracting sounds: use of Doppler ultrasound and attention to patient communication during a scan/exam or procedure.

b. Hearing Sensitivity – The ability to detect or tell the differences between sounds that vary in pitch and loudness: use of spectral Doppler during a scan/exam.

c. Sound Localization – The ability to tell the direction from which a sound originated: patient communication and Doppler ultrasound.

Visual

a. Near and Far Vision – The ability to see objects at both close range and at a distance: adequately visualize the sonographic appearances of the anatomy on the monitor while simultaneously viewing and using the control panel of an ultrasound unit; able to read and view images on glossy paper used in sonography texts

b. Ability to work in low light settings The sonographer must be able to view all features and functions of the ultrasound unit, observe patient condition during the scan, and assess still and dynamic images of scans during case reviews (all sonographic scans/exams are performed in very low light settings)

c. Visual Color Discrimination – The ability to match or detect differences between colors, including shades of color and brightness: use of color Doppler during a scan/exam.

https://www.onetonline.org/find/descriptor/browse/Abilities/1.A.3/

http://www.ccri.edu/rehabhealth/phta/ess_skills.html