

<b>Musculoskeletal (MSK) Tasks</b>	
<b>Anatomy and physiology</b>	<b>28%</b>
<i>Shoulder</i>	
Perform sonographic examination of anatomic structures	
Evaluate myofibrillar patterns	
Identify acromioclavicular joint spacing/separation	
Identify the acromioclavicular joint	
Identify the biceps tendon	
Identify the glenohumeral joint	
Identify the infraspinatus tendon	
Identify the posterior glenoid labrum	
Identify the rotator cuff interval	
Identify the spinoglenoid groove	
Identify the subscapularis tendon	
Identify the supraspinatus tendon	
Identify the teres minor	
<i>Elbow</i>	
Perform sonographic examination of anatomic structures	
Evaluate the annular recess	
Evaluate the fascicular structure of tendons	
Evaluate the lateral joint recess	
Evaluate the olecranon bone cortex adjacent to the triceps insertion	
Evaluate the olecranon bursa	
Evaluate the radial nerve	
Evaluate the ulnar nerve proximal and distal to the medial epicondyle	
Evaluate the vascularity of the common extensor tendon origin	
Evaluate the vascularity of the common flexor tendon origin	
Evaluate the vascularity of the synovial tissue	
Evaluate the vascularity of the triceps tendon	
Evaluate vascularity of the tendon	
Follow the ulnar nerve as it traverses under the membrane between the two heads of the flexor carpi ulnaris	
Identify the cartilage of the humerus in short axis	
Identify the common extensor tendon origin	
Identify the common flexor tendon origin	
Identify the distal biceps tendon	
Identify the humeroradial joint in long axis	
Identify the humeroulnar joint in long axis	
Identify the junction of the brachialis and brachioradialis as a landmark for the radial nerve	
Identify the medial collateral ligament	
Identify the posterior recess	
Identify the radiocapitellar joint	
Identify the triceps tendon and its insertion	
Identify the ulnar nerve in long axis	
Identify the ulnar nerve in short axis	
<i>Wrist and hand</i>	
Perform sonographic examination of anatomic structures	



Evaluate extensor compartment 1 extensor pollicis brevis and abductor pollicis longus
Evaluate extensor compartment 2 extensor carpi radialis longus and brevis
Evaluate extensor compartment 3 extensor pollicis longus
Evaluate extensor compartment 4 extensor digitorum communis and extensor indicis
Evaluate extensor compartment 5 extensor digiti minimi
Evaluate extensor compartment 6 extensor carpi ulnaris
Evaluate Guyon canal for the ulnar nerve
Evaluate the A1 pulley of the flexor mechanism of the hand
Evaluate the basal joint
Evaluate the carpal tunnel for median nerve
Evaluate the collateral ligaments of the digits
Evaluate the dorsal scapholunate ligament
Evaluate the first carpometacarpal (CMC) joint
Evaluate the first metacarpophalangeal (MCP) joint
Evaluate the flexor mechanism of the digits, profundus and superficialis
Evaluate the hook of the hamate
Evaluate the transverse carpal ligament
Evaluate the ulnar collateral ligament of the first metacarpophalangeal (MCP)
<i>Hip</i>
Perform sonographic examination of anatomic structures
Differentiate the conjoint hamstrings from the semimembranosus at the origin from the ischial attachment
Identify and assess the sciatic nerve in the posterior hip
Identify the iliopsoas tendon
Identify three distinct gluteal attachments
<i>Knee</i>
Perform sonographic examination of anatomic structures
Evaluate Hoffa's fat pad
Evaluate the biceps femoris tendon
Evaluate the common peroneal (fibular) nerve
Evaluate the fabella
Evaluate the iliotibial band
Evaluate the infrapatellar bursae
Evaluate the lateral collateral (fibular collateral) ligament
Evaluate the lateral gastrocnemius
Evaluate the lateral patellar retinaculum
Evaluate the lateral peripatellar recess
Evaluate the medial collateral (tibial collateral) ligament
Evaluate the medial gastrocnemius
Evaluate the medial patellar retinaculum
Evaluate the medial peripatellar recess
Evaluate the menisci
Evaluate the patellar tendon
Evaluate the pes anserinus tendons
Evaluate the popliteal fossa
Evaluate the popliteus tendon
Evaluate the proximal tibiofibular joint
Evaluate the quadriceps tendon



Evaluate the rectus femoris
Evaluate the semimembranosus-medial gastrocnemius bursa
Evaluate the suprapatellar recess
Evaluate the tibial nerve
Evaluate the vastus intermedius
Evaluate the vastus lateralis
Evaluate the vastus medialis
<b>Ankle and foot</b>
Perform sonographic examination of anatomic structures
Evaluate Achilles tendon from myotendinous junction to insertion
Evaluate first metatarsophalangeal joint (MPJ) dorsally to evaluate synovitis, effusion arthritic changes
Evaluate joint stability and function
Evaluate metatarsophalangeal joints (MPJs) from the plantar aspect
Evaluate peroneal tendons from myotendinous junction to insertion
Evaluate posterior aspect of calcaneus
Evaluate retrocalcaneal bursa
Evaluate sural nerve
Evaluate the ankle joint (anterior, posterior, lateral, and medial)
Evaluate the anterior syndesmotomic ligament of the ankle
Evaluate the anterior tibial tendon from myotendinous junction to insertion
Evaluate the articulations of the bases of the metatarsals
Evaluate the deltoid ligament (deep and superficial)
Evaluate the dorsal surface of the lesser tarsus and articulations
Evaluate the extensor digitorum longus tendon(s) from myotendinous junction to insertion
Evaluate the flexor digitorum longus tendon from myotendinous junction to insertion
Evaluate the flexor hallucis longus tendon from myotendinous junction to insertion
Evaluate the lateral collateral ligaments, anterior talofibular ligament (ATFL) and calcaneofibular ligament (CFL)
Evaluate the plantar fascia (medial, central and lateral bands)
Evaluate the plantar fat pad
Evaluate the plantar surface of the metatarsal phalangeal joints (2,3,4,5) to evaluate the flexor tendons
Evaluate the posterior tibial tendon from myotendinous junction to insertion
Evaluate the tarsal tunnel
<b>Soft tissue</b>
Perform sonographic examination of anatomic structures
Evaluate the entire muscle of concern
<b>Pathology 28%</b>
<b>Shoulder</b>
Perform sonographic examination of anatomic structures
Assess subacromial impingement
Evaluate subchondral erosion
Identify capsulitis, bursitis
Identify hemarthrosis
Identify myositis, tendinosis
Identify rotator cuff tears
Identify subchondral arthritic changes in the humeral head, clavicle, etc.
Identify subluxing/dislocating biceps brachii long head tendon



<b>Elbow</b>
Perform sonographic examination of anatomic structures
Demonstrate the presence of loose bodies in the elbow joint
Evaluate for a distended bicipitoradial bursa in patients with anterior elbow pain
Evaluate for presence of enthesophytes
Evaluate for presence of fluid within the olecranon bursa
Evaluate for presence of hypoechoic defects within the tendon
Evaluate for the presence of an enlarged bicipitoradial bursa
Evaluate for the presence of bursal thickening
Evaluate for the presence of enthesitis
Evaluate for triceps displacement of the ulnar nerve
Evaluate for ulnar nerve subluxation
Evaluate Soft tissue abnormalities at the extensor surface of the elbow
Evaluate the adjacent bony structures for erosions
Evaluate the bony cortex for irregularities
Evaluate the joint recesses for presence of fluid
Evaluate the joint recesses for presence of synovial hypertrophy
Identify erosions at the humeral capitellum or trochlea
Identify prestenotic dilation of the ulnar nerve
Identify rheumatoid nodules at the elbow
Identify the presence of erosions at the annular head of the radius
Identify tophaceous deposits at the elbow
<b>Wrist and hand</b>
Perform sonographic examination of anatomic structures
Evaluate first extensor compartment for de Quervain disease
Evaluate for bifid median nerve
Evaluate the A1 pulley for trigger finger
Evaluate the distal carpal row for synovitis
Evaluate the distal median nerve for compression in carpal tunnel syndrome
Evaluate the first carpometacarpal (CMC) joint for synovitis
Evaluate the first metacarpophalangeal (MCP) joint for gamekeeper's thumb
Evaluate the first metacarpophalangeal (MCP) joint for synovitis
Evaluate the first metacarpophalangeal (MCP) joint ulnar collateral ligament for Stener lesion
Evaluate the proximal carpal row for synovitis
Evaluate the second and third extensor compartments for crossover syndrome
Evaluate the Soft tissues of the hand and wrist for Soft tissue tumors
Evaluate wrist for bone and articular cartilage erosions
Identify dynamic instability of extensor carpi ulnaris tendon
Identify extensor carpi ulnaris tear and synovitis
Identify extensor pollicis longus tenosynovitis effusion proximal to Lister tubercle and distal to extensor carpi radialis longus crossing
Identify flexor carpi radialis (FCR) tenosynovitis in a patient with lateral volar wrist pain and lump
Identify flexor carpi radialis (FCR) tenosynovitis in a patient with thenar eminence tingling
Identify hyperechoic foci in flexor carpi ulnaris (FCU) tendon in a patient with pisiform tenderness
Identify hypoechoic area between tendons of first and second extensor compartments at the crossing
<b>Hip</b>
Perform sonographic examination of anatomic structures



Assess adductor longus continuity in the injured hip
Assess hypoechoic masses with color Doppler
Assess the anterior hip for the presence of an iliopsoas bursa
Evaluate hip tears of the gluteus minimus and medius in patients with trochanteric syndrome
Use right-left comparison to diagnose adductor tendinitis
Use right-left comparison to diagnose hamstring tendinosis
<b>Knee</b>
Perform sonographic examination of anatomic structures
Evaluate for bipartite patellae
Evaluate for the presence of popliteal artery aneurysm
Evaluate for the presence of popliteus venous thrombosis
Evaluate knee infections
<b>Ankle and foot</b>
Perform sonographic examination of anatomic structures
Evaluate the dorsal surface of the metatarsal phalangeal joints for pathology (e.g., synovitis, effusions, arthritic changes)
Identify Achilles tendon rupture (partial or full)
Identify ankle joint effusions
Identify ankle ligament rupture with and without instability
Identify foreign bodies
Identify fracture of osseous structures that make up the ankle, which should include displacement and/or deformity (angulation)
Identify gas production and to what level
Identify hematoma at area of injury
Identify hematoma formation
Identify if the infection has a predilection to spread, i.e., via tendon sheath
Identify if the infection-ulceration extends to bone
Identify laceration of tendon, nerve (with location of tendons that have retracted post laceration)
Identify myoseptal tear/separation of muscles of the leg
Identify stress fracture of metatarsals
Identify which structures are involved and/or damaged
<b>Soft tissue</b>
Perform sonographic examination of anatomic structures
Assess normal vs. abnormal anatomy and pathology of Soft tissue structures
Differentiate between abscess formation and cellulitis
Evaluate intrabursal Soft tissue collections
Evaluate scar formation
Identify cysts, tumors, foreign objects
<b>Patient care 2%</b>
<b>General</b>
Communicate with the patient
Vary communication style and content based on the patient's age, language, ability to learn, disability, etc.
Create and maintain a safe environment and universal precautions
Know body mechanics and safely moving patients
Know proper hygiene
Ensure patient privacy
Know legal rights and patient confidentiality guidelines



Identify the patient
Record patient data
Know musculoskeletal (MSK) anatomy and pathology to document proper patient history
Maintain patient confidentiality and legal rights
Maintain patient safety
Know body mechanics and the safe moving of patients
Know proper hygiene
Take a patient history
Know musculoskeletal (MSK) anatomy and pathology to document proper patient history
Obtain pertinent clinical history from patient and medical record
<b>Integration of data      8%</b>
<i>Shoulder</i>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Correlate with x-ray if cortical irregularities are identified
Correlate with x-ray if hyperechoic foci are identified within a tendon
Perform ultrasound without correlating x-ray
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<i>Elbow</i>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<i>Wrist and hand</i>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<i>Hip</i>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Have the ability to correlate other imaging modalities in assessing fluid around hip arthroplasty
Routinely confirm whether an x-ray is available prior to starting a hip ultrasound



Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<b><i>Knee</i></b>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<b><i>Ankle and foot</i></b>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Know normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<b><i>Soft tissue</i></b>
Correlate information with previous tests
Confirm findings with other imaging modalities
Correlate information from previous diagnostic procedures
Understand and have basic knowledge of other imaging modalities for correlation with ultrasound
Correlate sonographic findings with clinical presentation
Knowledge of normal vs. abnormal anatomy and pathology
Obtain pertinent clinical history from patient and medical record
Tailor the exam based on situation/findings
<b>Protocols 15%</b>
<b><i>Shoulder</i></b>
Assess the physical condition of the patient, focusing on the area to be examined
Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Evaluate for greater tuberosity clearance under the acromion process during abduction
Evaluate the muscle dynamically during contraction
Evaluate the supraspinatus with both internal and modified internal rotation
Evaluate with both static and dynamic imaging
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures



Obtain measurements of pathologic conditions
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform measurements
Measure tears in longitudinal and transverse planes
Measure the size of the supraspinatus
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology
<b>Elbow</b>
Assess the physical condition of the patient focusing on the area to be examined
Knowledge of normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Demonstrate tears of the ulnar collateral ligament by stress testing
Evaluate the distal biceps tendon with the arm in maximal supination
Evaluate the muscle dynamically during contraction
Identify the triceps adjacent to the ulnar nerve while flexing the elbow
Identify the ulnar nerve while flexing the elbow
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform dynamic testing to evaluate the radial head
Perform measurements
Measure the ulnar nerve in short axis
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology



<b>Wrist and hand</b>
Assess the physical condition of the patient focusing on the area to be examined
Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Evaluate the muscle dynamically during contraction
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions
Utilize dynamic imaging, cine clips, for evaluation of the dorsal scapholunate ligament
Utilize dynamic imaging, cine clips, to evaluate for tendon subluxation or dislocation in the wrist
Utilize dynamic imaging, cine clips, to evaluate for tendon subluxation or dislocation of the hand
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform measurements
Obtain measurements of anatomic structures
Utilize color flow Doppler to evaluate for synovitis
Utilize color flow Doppler to evaluate the hand
Utilize color flow Doppler to evaluate the wrist
Utilize power Doppler imaging to evaluate for synovitis
Utilize power Doppler imaging to evaluate the hand
Utilize power Doppler imaging to evaluate the wrist
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology
<b>Hip</b>
Assess the physical condition of the patient focusing on the area to be examined
Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Apply Valsalva maneuver in real-time assessment of the femoral canal
Create images in multiple scan planes
Evaluate the muscle dynamically during contraction
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions



Rotate the hip to assess for small intraarticular fluid collections
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform measurements
Measure the capsule-bone distance in assessing for intraarticular fluid
Measure the pseudo capsule-bone distance in assessing for fluid in hip arthroplasty
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology
<i>Knee</i>
Assess the physical condition of the patient focusing on the area to be examined
Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Knowledge of billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Evaluate the muscle dynamically during contraction
Flex the knee to evaluate the distal femoral cartilage
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions
Utilize Doppler to evaluate the popliteal vessels
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform stress testing to evaluate the medial collateral ligament
Perform measurements
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Understand and have basic knowledge of other imaging modalities for the purpose of correlating information with ultrasound
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology
<i>Ankle and foot</i>
Assess the physical condition of the patient focusing on the area to be examined



Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Evaluate the muscle dynamically during contraction
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform measurements
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order
Know normal vs. abnormal anatomy and pathology
<i>Soft tissue</i>
Assess the physical condition of the patient focusing on the area to be examined
Know normal vs. abnormal anatomy and pathology
Communicate ultrasound findings
Document and confirm procedures and codes for billing
Know billing and coding
Follow ultrasound imaging protocols for musculoskeletal (MSK) related studies
Create images in multiple scan planes
Evaluate the muscle dynamically during contraction
Interrogate the area of concern at various insonation angles
Obtain measurements of anatomic structures
Obtain measurements of pathologic conditions
Utilize graded compression
Utilize standard protocols when imaging anatomy
Generate an initial plan for the examination
Perform measurements
Obtain measurements of anatomic structures
Position patient and ultrasound machine
Utilize modified patient positioning when needed
Recognize the limitations of the prescribed examination based on the findings
Tailor the exam based on situation/findings
Set up the equipment and the examination room
Utilize a standoff pad
Verify the appropriateness of the order



Know normal vs. abnormal anatomy and pathology
<b>General</b>
Assess patient status during examination and take appropriate action if needed
Initiate a code when a patient becomes unresponsive
Knowledge of vasovagal responses
Perform data entry
Position yourself
Know ergonomics and body mechanics
Use electronic medical records systems
Know medical records systems
<b>Physics and instrumentation 7%</b>
<b>Shoulder</b>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<b>Elbow</b>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<b>Wrist and hand</b>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<b>Hip</b>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<b>Knee</b>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<b>Ankle and foot</b>



Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<i>Soft tissue</i>
Manipulate probe positioning for optimal image acquisition
Interrogate the area of concern at various insonation angles
Use 2-D, real-time, gray-scale imaging (i.e., B-mode)
Use knowledge of reflectors to modify scanning technique
Use linear array transducer
Identify a specific transducer type based on the area being scanned
<i>General</i>
Annotate images
Ensure proper equipment hygiene/clean the equipment
Clean and disinfect transducers in accordance with manufacturer's guidelines
Perform basic cleaning (e.g., cleaning filters) of the ultrasound system
Formally document the ultrasound examination by using the ultrasound machine to store images
Knowledge of picture archiving and communication system (PACS) or hard copy image acquisition
Record digital video clips
Identify potential risks related to performing the exam
Know ALARA (As Low As Reasonably Achievable) principles
Inspect machine for damage
Maintain equipment safety checks
Perform quality assurance checks on equipment
Manually optimize the image
Adjust color angle to flow
Adjust color gain
Adjust color scale
Adjust Doppler angle to flow
Adjust Doppler gain
Adjust Doppler scale
Adjust dynamic range
Adjust edge enhancement
Adjust overall gain
Adjust persistence
Adjust the depth of focus
Adjust the display depth based on exam being performed
Adjust the gray-scale map
Adjust the number of focal zones during the exam
Adjust time gain compensation
Heel toe to overcome anisotropy
Modify the exam based on color artifacts
Modify the exam based on Doppler artifacts
Modify the exam based on gray-scale artifacts
Select equipment parameters to optimize axial resolution



Select equipment parameters to optimize elevational resolution
Select equipment parameters to optimize lateral resolution
Select equipment parameters to optimize temporal resolution
Use extended field of view
Use frequency compounding
Use harmonic imaging
Use knowledge of reflectors to modify scanning technique
Use spatial compounding
Utilize power Doppler imaging
Minimize the risk for any potential ultrasound bioeffects during the examination
Monitor the displayed mechanical index during the examination
Monitor the displayed thermal index during the examination
Record images on a picture archiving and communication system (PACS)
Posses knowledge of picture archiving and communication system (PACS) or hard copy image acquisitions
Record images on digital media (e.g., external media, etc.)
Posses knowledge of picture archiving and communication system (PACS) or hard copy image acquisitions
Select appropriate transducer and presets
Adjust transducer frequency based on area being scanned
Decrease output power when appropriate
Identify a specific transducer type based on the area being scanned
Use linear array transducers
Use phased array transducers
Select proper ultrasound imaging mode for examination
Adjust transducer frequency based on area being scanned
Identify a specific transducer type based on the area being scanned
Use color flow imaging
Adjust color angle to flow
Adjust color gain
Adjust color scale
Modify the exam based on color artifacts
Use curvilinear array transducer
Use phased array transducer
Use phased array transducer
Use power Doppler
Knowledge of power Doppler imaging
Use pulsed wave Doppler
Adjust Doppler angle to flow
Adjust Doppler gain
Adjust Doppler scale
Modify the exam based on Doppler artifacts
<b>Treatment 10%</b>
<i>Shoulder</i>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies



Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<i>Elbow</i>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<i>Wrist and hand</i>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<i>Hip</i>
Assist/support during sonographic guidance for interventional procedures
Assess cell count on the aspirate obtained from the hip under ultrasound guidance
Inject the iliopsoas bursa under ultrasound guidance
Request Gram stain on the fluid when evaluating for hip inflammation
Use spinal needles for hip aspiration
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<i>Knee</i>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Evaluate for postoperative periarticular fluid collections
Evaluate postoperative knee effusions
Evaluate the patellar tendon following knee arthroplasty
Evaluate the patellar tendon following rupture repair
Evaluate the quadriceps tendon following knee arthroplasty
Evaluate the quadriceps tendon following rupture repair
Know implant materials and postsurgical anatomy/structures
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<i>Ankle and foot</i>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams



Follow postsurgical repairs and implants for response and potential complications
Evaluate ligament repair
Evaluate postsurgical cyst formation
Evaluate tendon repair
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<b>Soft tissue</b>
Follow course of disease with serial ultrasound exams
Posses knowledge and ability to correlate with serial ultrasound exams
Follow postsurgical repairs and implants for response and potential complications
Know implant materials and postsurgical anatomy/structures
Know physiological response to treatments/therapies
Perform preintervention sonographic evaluation of patient and target structure
Know normal vs. abnormal anatomy and pathology
<b>General</b>
Assist/support during sonographic guidance for interventional procedures
Know interventional procedures
Know sterile technique procedure
Know ultrasound imaging appearance of interventional/surgical instruments (e.g., needles, etc)
Assist/support during sonographic guidance for surgical procedures
Know sterile technique procedure
Know surgical procedures
Know ultrasound imaging appearance of interventional/surgical instruments (e.g., needles, etc)
Provide/perform sonographic guidance for interventional procedures
Know interventional procedures
Know sterile technique procedure
Know ultrasound imaging appearance of interventional/surgical instruments (e.g., needles, etc)
Provide/perform sonographic guidance for surgical procedures
Know sterile technique procedure
Know surgical procedures
Know ultrasound imaging appearance of interventional/surgical instruments (e.g., needles, etc)
<b>Other 2%</b>
<b>General</b>
Create incident reports when required
Recognize ultrasound findings that require immediate action
Know normal vs. abnormal anatomy and pathology

