Joint Tissue Activity and Damage Exam J.A.D.E. Practical Application Part 1

By Lena Volland PT, DPT

J.A.D.E Protocol

Joint Tissue Activity and Damage Exam

A concise, reproducible musculoskeletal ultrasound (MSKUS) protocol, which evaluates:

- 1. Joint Activity = Soft Tissue filling joint space (hypertrophy, displacement, expansion and other)
- 2. Joint Damage = Osteochondral Alterations
 - Cartilage thickness
 - Osteochondral interface

J.A.D.E. Protocol **General Overview**

Elbow: 3 views

Knee: 6 views

Ankle: 4 views

- Assessment of:
 - osteochondral interface irregularities
 - cartilage thickness
 - soft tissue expansion
- Evaluation of Power Doppler (PD) signals
- Effusion detection via sonopalpation

J.A.D.E. Protocol

Power Doppler Scoring

Doppler signal at tissue of interest **NOT** sample area

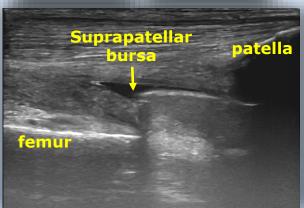
Power Doppler Score Elbow Olecranon **Fossa** 0: No signal 1: Small spots 2: Confluent vessels in Knee < 50% tissue of interest Medial 3: Confluent vessels in **Meniscus** > 50% tissue of interest (*) indicates effusion **Ankle** Tibio-Talar

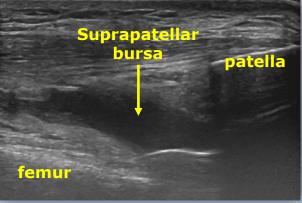
Bhat, V., Olmer, M., Joshi, S., Durden, D.L., Cramer, T., Barnes, R., Ball, S.T., Hughes, T.H., Silva, M., Luck, L.V., Moore, R., Mosnier, L.O. & von Drygalski, A. (2015). Vascular Remodeling Underlies Re-bleeding In Hemophilic Arthropathy. American Journal of Hematology, 90 (11), 1027-1035

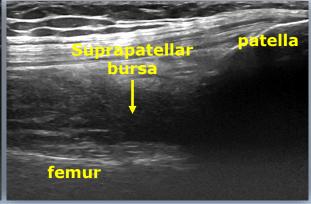
J.A.D.E. Protocol **Detection of Effusions**



Sonopalpation differentiates between compressible fluid and non-compressible soft tissue







Anechoic simple effusion (non bloody) in the suprapatellar bursa showing a black appearance and being fully compressible

Hypoechoic complex effusion (bloody) within the suprapatellar bursa displaying speckles and being compressible

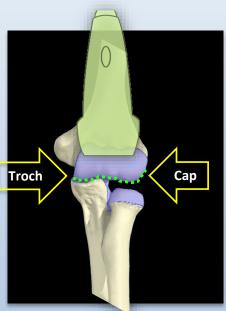
Soft tissue expansion into the suprapatellar bursa appearing echogenic, but being non compressible

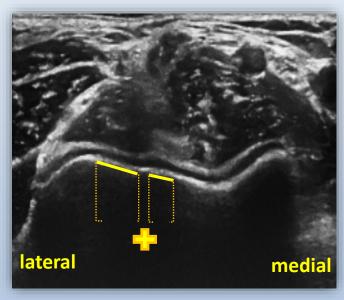
J.A.D.E. Protocol

ELBOW

J.A.D.E. Protocol: Elbow Anterior Elbow SAX Osteochondral Interface



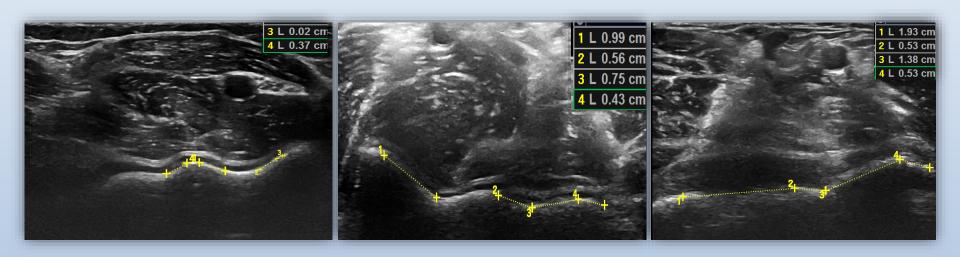




Measure any variation from hyperechoic, smooth, intact bony interface.

J.A.D.E. Protocol: Elbow

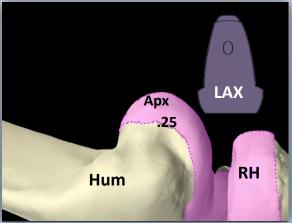
Examples: Anterior Elbow SAX Osteochondral Interface

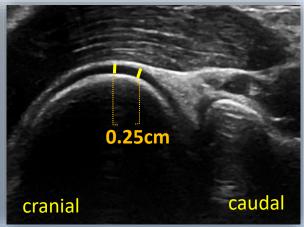


Total length: 0.39cm Total length: 2.73cm Total length: 4.37cm

J.A.D.E. Protocol: Elbow Anterior Elbow LAX Cartilage Thickness







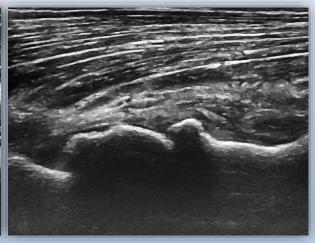
Assess cartilage thickness at the apex and 0.25cm caudally. Measurement is <u>perpendicular</u> to the bony margin.

J.A.D.E. Protocol: Elbow

Examples: Anterior Elbow LAX Cartilage Thickness







Apex: 0.11cm 0.25cm caudal: 0.11cm

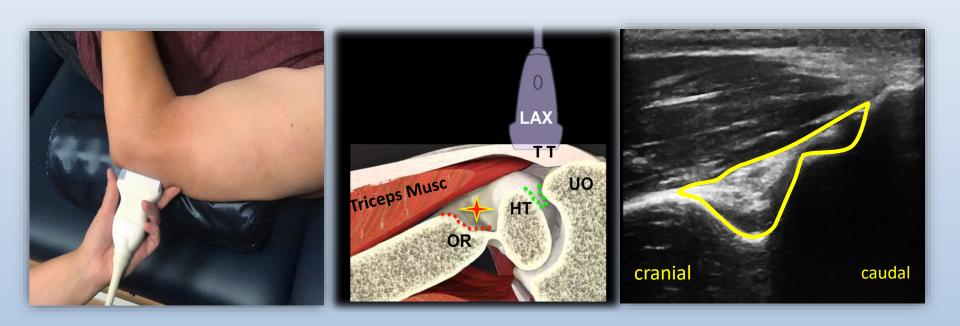
Apex: 0.05cm

0.25cm caudal: 0.07cm

Apex: 0.00cm

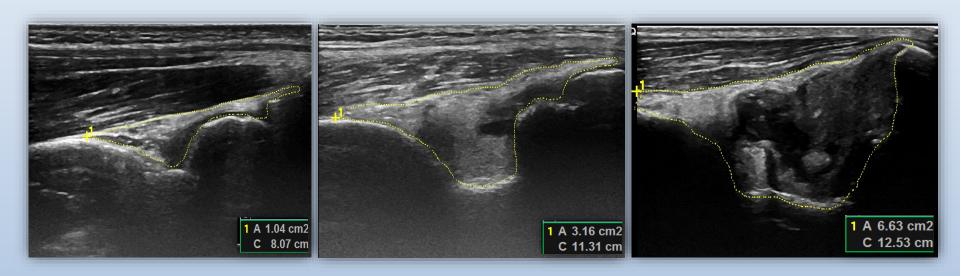
0.25cm caudal: 0.00cm

J.A.D.E. Protocol: Elbow Posterior Elbow LAX Fat Pad Area



Evaluation of Fat Pad Displacement <u>and</u> Fat Pad Cross Sectional Area. J.A.D.E. Protocol: Elbow

Examples: Posterior Elbow LAX Fat Pad Area

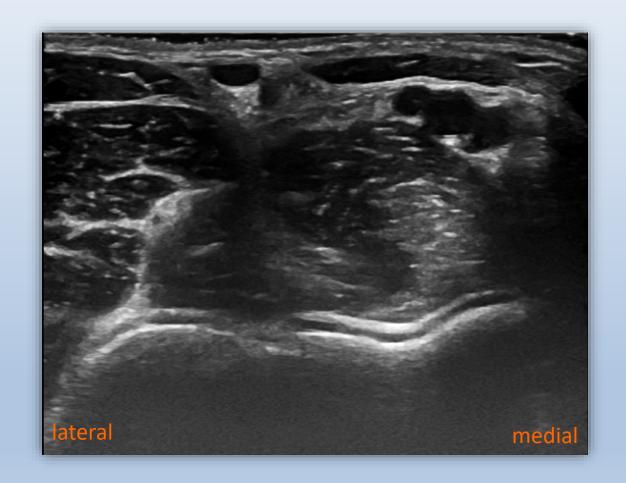


Area: 1.04cm² Area: 3.16cm² Area: 6.63cm²

Case Study

ELBOW

J.A.D.E. Protocol: Elbow Anterior Elbow SAX Osteochondral Interface Irregularities



Name:	Date:
Patient Number:	Person completing this form:

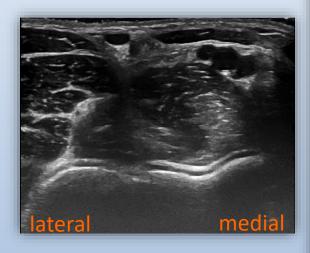
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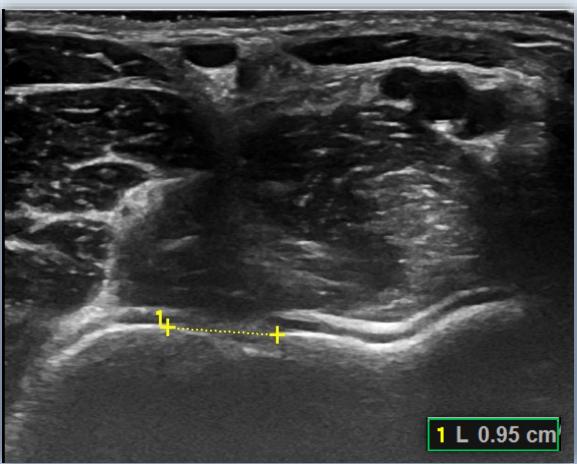
J.A.D.E. PROTOCOL

				ELBOW		
Purpose of Image	Description	Measurement	*Power Doppler	Compressibility	Position	Picture
Anterior Osteochondral Interface: Osteochondral Line	Joint Space content: Xnone □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation Xirregular bony margin □ obliterated joint space □ osteophytes □ other	Length of osteochondral alterations:	0 01 02 03	□ completely □ partially □ non compressible XN/A	Patient Position: Supine, palm up with bolster under the hand to limit elbow extension Axis: SAX Probe Position: In antecubital fossa Bony landmarks: Ulnar trochlea (medial) and humeral capitulum (lateral) Muscles: Brachialis (central), brachioradialis (lateral), pronator (medial), biceps brachialis tendon (superior to brachialis) Blood vessels: brachial artery and vein Nerves: radial nerve (lateral), median nerve (medial) Measurement: individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations.	lateral medial

^{*} Power Doppler Explanation on page 11

J.A.D.E. Protocol: Elbow Anterior Elbow SAX Osteochondral Interface Irregularities





Name:	Date:
Patient Number:	Person completing this form:

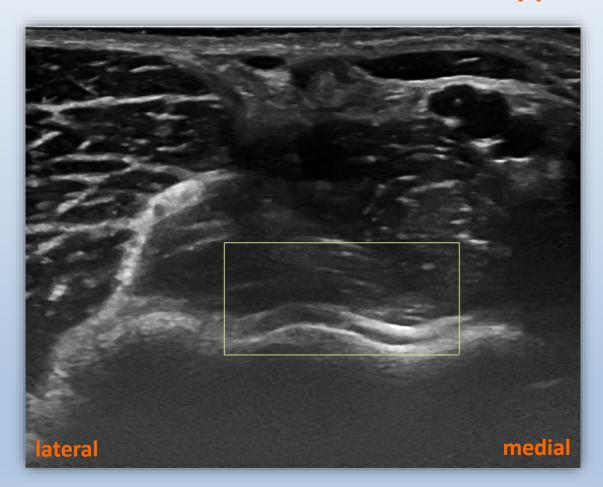
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J.A.D.E. PROTOCOL

				ELBOW		
Purpose of Image	Description	Measurement	*Power Doppler	Compressibility	Position	Picture
Anterior Osteochondral Interface: Osteochondral Line	Joint Space content:	Length of osteochondral alterations: 0.95 cm	_0 _1 _2 _3	□ completely □ partially □ non compressible ▼N/A	Patient Position: Supine, palm up with bolster under the hand to limit elbow extension Axis: SAX Probe Position: In antecubital fossa Bony landmarks: Ulnar trochlea (medial) and humeral capitulum (lateral) Muscles: Brachialis (central), brachioradialis (lateral), pronator (medial), biceps brachialis tendon (superior to brachialis) Blood vessels: brachial artery and vein Nerves: radial nerve (lateral), median nerve (medial) Measurement: individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations.	lateral medial

^{*} Power Doppler Explanation on page 11

J.A.D.E. Protocol: Elbow Anterior Elbow SAX Osteochondral Interface – Power Doppler



Name:	Date:
Patient Number:	Person completing this form:

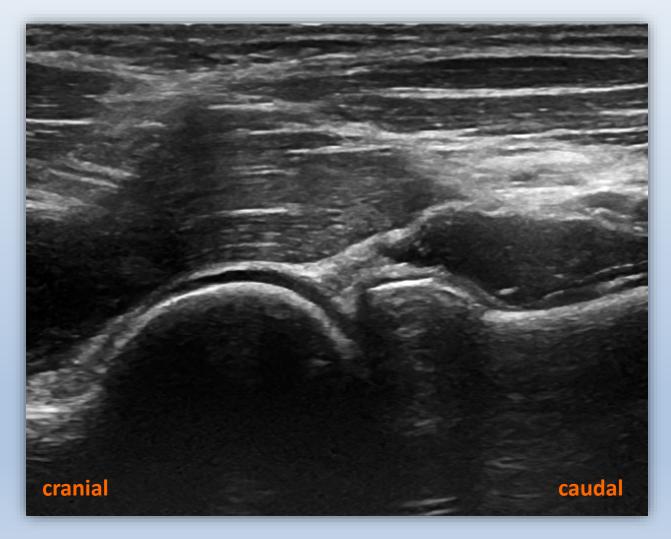
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J.A.D.E. PROTOCOL

				ELBOW		
Purpose of Image	Description	Measurement	*Power Doppler	Compressibility	Position	Picture
Anterior Osteochondral Interface: Osteochondral Line	Joint Space content: Xnone □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation Xirregular bony margin □ obliterated joint space □ osteophytes □ other	Length of osteochondral alterations: 0.95 cm	X0 □1 □2 □3	□ completely □ partially □ non compressible ★ N/A	Patient Position: Supine, palm up with bolster under the hand to limit elbow extension Axis: SAX Probe Position: In antecubital fossa Bony landmarks: Ulnar trochlea (medial) and humeral capitulum (lateral) Muscles: Brachialis (central), brachioradialis (lateral), pronator (medial), biceps brachialis tendon (superior to brachialis) Blood vessels: brachial artery and vein Nerves: radial nerve (lateral), median nerve (medial) Measurement: individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations.	lateral medial

^{*} Power Doppler Explanation on page 11

J.A.D.E. Protocol: Elbow Anterior Elbow LAX Cartilage Thickness

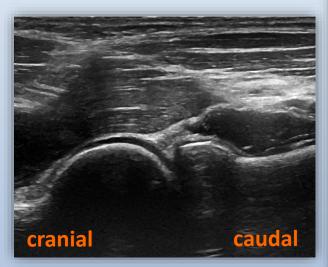


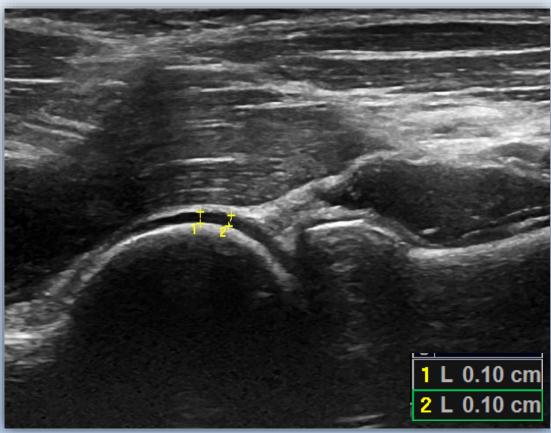
Name:	Date:
Patient Number:	Person completing this form:

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Anterior Lateral Joint: Cartilage Thickness	Joint space content: Xnone anechoic hypoechoic mixed signal Assessment: hypoechoic complex fluid anechoic simple fluid soft tissue proliferation Xirregular bony margin other	Cartilage Thickness: Apex: O.25cm caudal to apex:	_0 _1 _2 _3	□ completely □ partially □ non compressible ★ N/A	Patient Position: Supine, palm up with bolster under the hand to limit elbow extension Axis: LAX Probe Position: Lateral aspect of the antecubital fossa over the humeroradial joint space Bony landmarks: humeral capitulum (proximal) and radial head (distal) Muscles: brachioradialis (superior to humeroradial joint) Blood vessels: none Nerves: none Measurement: Assess cartilage thickness at the apex and 0.25cm caudally. Assure that measurement is perpendicular to the bony margin.	0.25cm caudal
Posterior Joint: Fat Pad Triceps Tendon	Fat Pad content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ displacement of fat pad □ tendon abnormality □ fat pad change of echogenicity □ other	Area cm²	_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, upper extremity in internal rotation and 90° elbow flexion and palm resting on abdomen; bolster underneath the elbow will provide support Axis: LAX Probe Position: posterior elbow superior to the olecranon Bony landmarks: humerus (proximal) and olecranon (distal) Muscles: triceps tendon (most superior/attaches to olecranon) and medial triceps belly (inferior to triceps tendon) Blood vessels: none Nerves: none	cranial caudal

J.A.D.E. Protocol: Elbow Anterior Elbow LAX Cartilage Thickness





Name:	Date:
Patient Number:	Person completing this form:

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Anterior	Joint space content:	Cartilage Thickness:	□0	□ completely	Patient Position: Supine, palm up	The second secon
Lateral Joint:	¥none	Apex:	-1	partially	with bolster under the hand to	
Cartilage	anechoic		□ 2	non compressible	limit elbow extension	
Thickness	□ hypoechoic		□3	X N/A	Axis: LAX	
	□ mixed signal	0.40			Probe Position: Lateral aspect of	
		0.10cm			the antecubital fossa over the	
	Assessment:				humeroradial joint space	
	☐ hypoechoic complex fluid				Bony landmarks: humeral	
	🗆 anechoic simple fluid				capitulum (proximal) and radial	
	□ soft tissue proliferation	0.25cm caudal to			head (distal)	
	Xirregular bony margin	apex:			Muscles: brachioradialis (superior	
	□ other				to humeroradial joint)	
					Blood vessels: none Nerves: none	
		0.10cm			Measurement: Assess cartilage	
		0.100111			thickness at the apex and 0.25cm	0.25cm
					caudally. Assure that	
					measurement is perpendicular to	
					the bony margin.	<u>cranial</u> caudal
Posterior Joint:	Fat Pad content:	Area cm²	□0	□ completely	Patient Position: supine, upper	
Fat Pad	□ none		□1	partially	extremity in internal rotation and	
Triceps Tendon	□ anechoic		□ 2	□ non compressible	90° elbow flexion and palm resting	
	□ hypoechoic		□3	□ N/A	on abdomen; bolster underneath	
	□ mixed signal				the elbow will provide support Axis: LAX	73-
	A				Probe Position: posterior elbow	
	Assessment: hypoechoic complex fluid				superior to the olecranon	
	anechoic simple fluid				Bony landmarks: humerus	
	displacement of fat pad				(proximal) and olecranon (distal)	
	tendon abnormality				Muscles: triceps tendon (most	
	fat pad change of				superior/attaches to olecranon)	Management of the Park of the
	echogenicity				and medial triceps belly (inferior to	
	🗆 other				triceps tendon)	
					Blood vessels: none	
					Nerves: none	
						cranial caudal
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J.A.D.E. Protocol: Elbow Anterior Elbow LAX Cartilage Thickness – Power Doppler

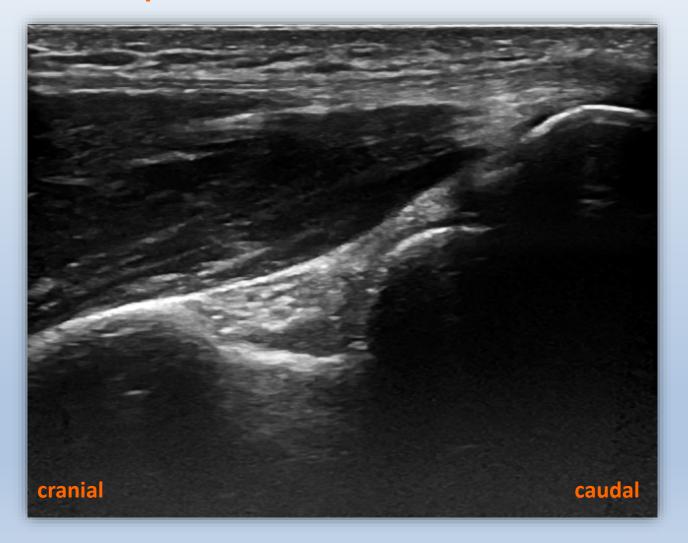


Name:	Date:
Patient Number:	Person completing this form:

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Anterior	Joint space content:	Cartilage Thickness:	χo	□ completely	Patient Position: Supine, palm up	
Lateral Joint:	Xnone	Apex:	□1	partially	with bolster under the hand to	
Cartilage	□ anechoic		□ 2	non compressible	limit elbow extension	
Thickness	□ hypoechoic		□3	XN/A	Axis: LAX	
	□ mixed signal	0.10cm			Probe Position: Lateral aspect of	
	l	0.100111			the antecubital fossa over the	
	Assessment:				humeroradial joint space	The second secon
	□ hypoechoic complex fluid				Bony landmarks: humeral	
	□ anechoic simple fluid □ soft tissue proliferation	0.25cm caudal to			capitulum (proximal) and radial head (distal)	
					Muscles: brachioradialis (superior	
	Xirregular bony margin	apex:			to humeroradial joint)	
	_ other				Blood vessels: none	
					Nerves: none	The second second
		0.10cm			Measurement: Assess cartilage	
		0.100111			thickness at the apex and 0.25cm	0.25cm
					caudally. Assure that	
					measurement is perpendicular to	
					the bony margin.	cranial caudal
					l l l l l l l l l l l l l l l l l l l	
Posterior Joint:	Fat Pad content:	Area cm²	□0	□ completely	Patient Position: supine, upper	
Fat Pad	□ none		□1	partially	extremity in internal rotation and	
Triceps Tendon	□ anechoic		□ 2	□ non compressible	90° elbow flexion and palm resting	
	□ hypoechoic		□ 3	□ N/A	on abdomen; bolster underneath	
	□ mixed signal				the elbow will provide support Axis: LAX	
					Probe Position: posterior elbow	
	Assessment: hypoechoic complex fluid				superior to the olecranon	
	anechoic simple fluid				Bony landmarks: humerus	
	□ displacement of fat pad				(proximal) and olecranon (distal)	
	tendon abnormality				Muscles: triceps tendon (most	
	□ fat pad change of				superior/attaches to olecranon)	NAME OF TAXABLE PARTY.
	echogenicity				and medial triceps belly (inferior to	
	other				triceps tendon)	
	a strict				Blood vessels: none	
					Nerves: none	
					THE TEST HOME	
						cranial caudal
						Caucai

J.A.D.E. Protocol: Elbow
Posterior Elbow LAX
Fat Pad Displacement and Olecranon Recess Area

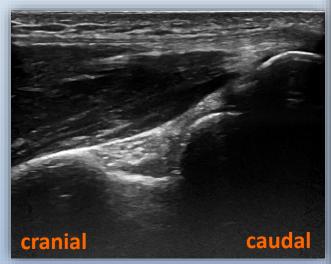


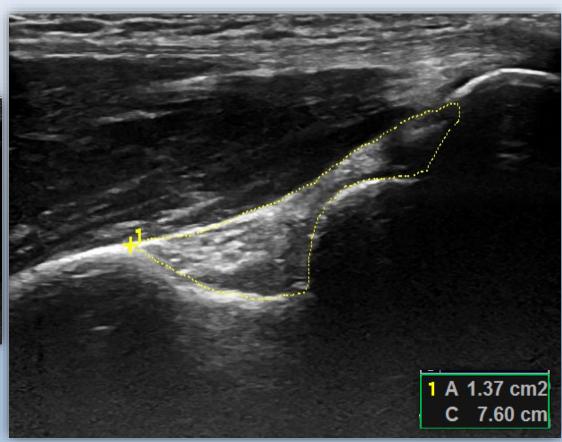
Name:	Date:
Patient Number:	Person completing this form:

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Anterior	Joint space content:	Cartilage Thickness:	Χo	□ completely	Patient Position: Supine, palm up	
Lateral Joint:	Xnone	Apex:	1	partially	with bolster under the hand to	
Cartilage	□ anechoic		□ 2	non compressible	limit elbow extension	
Thickness	□ hypoechoic		□ 3	X N/A	Axis: LAX	The second second
	□ mixed signal	0.40		**	Probe Position: Lateral aspect of	
		0.10cm			the antecubital fossa over the	
	Assessment:				humeroradial joint space	
	☐ hypoechoic complex fluid				Bony landmarks: humeral	
	□ anechoic simple fluid				capitulum (proximal) and radial	
	□ soft tissue proliferation	0.25cm caudal to			head (distal)	
	Xirregular bony margin	apex:			Muscles: brachioradialis (superior	
	_ other				to humeroradial joint)	
					Blood vessels: none Nerves: none	
		0.10cm			Measurement: Assess cartilage	
		0.100111			thickness at the apex and 0.25cm	0.25cm
					caudally. Assure that	
					measurement is perpendicular to	
					the bony margin.	cranial caudal
Posterior Joint:	Fat Pad content:	Area cm²	□0	□ completely	Patient Position: supine, upper	
Fat Pad	□ none		□1	partially	extremity in internal rotation and	
Triceps Tendon	□ anechoic		_ 2	non compressible	90° elbow flexion and palm resting	
	X hypoechoic		□3	XN/A	on abdomen; bolster underneath	
	□ mixed signal				the elbow will provide support Axis: LAX	
	Assessment:				Probe Position: posterior elbow	
	□ hypoechoic complex fluid				superior to the olecranon	
	anechoic simple fluid				Bony landmarks: humerus	
	□ displacement of fat pad				(proximal) and olecranon (distal)	
	tendon abnormality				Muscles: triceps tendon (most	
	Xfat pad change of				superior/attaches to olecranon)	Secretaria de la companya del companya de la companya del companya de la companya
	echogenicity				and medial triceps belly (inferior to	
	□ other				triceps tendon)	
					Blood vessels: none	
					Nerves: none	
						cranial caudal
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J.A.D.E. Protocol: Elbow Posterior Elbow LAX Fat Pad Displacement and Olecranon Recess Area





Name:	Date:
Patient Number:	Person completing this form:

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Anterior	Joint space content:	Cartilage Thickness:	Χo	□ completely	Patient Position: Supine, palm up	
Lateral Joint:	Xnone	Apex:	□1	□ partially	with bolster under the hand to	
Cartilage	□ anechoic		□ 2	□ non compressible	limit elbow extension	
Thickness	□ hypoechoic		□3	X N/A	Axis: LAX	
	□ mixed signal	0.10cm			Probe Position: Lateral aspect of	
		0.100111			the antecubital fossa over the	
	Assessment: hypoechoic complex fluid				humeroradial joint space Bony landmarks: humeral	
	anechoic simple fluid				capitulum (proximal) and radial	
	□ soft tissue proliferation	0.25cm caudal to			head (distal)	
	Xirregular bony margin	apex:			Muscles: brachioradialis (superior	
	other	-,			to humeroradial joint)	
					Blood vessels: none	
		0.100			Nerves: none	
		0.10cm			Measurement: Assess cartilage	0.25cm
					thickness at the apex and 0.25cm caudally. Assure that	
					measurement is perpendicular to	
					the bony margin.	cranial caudal
					the bony margin.	
Posterior Joint:	Fat Pad content:	Area cm²	□0	□ completely	Patient Position: supine, upper	
Fat Pad	□ none		□ 1	partially	extremity in internal rotation and	
Triceps Tendon	□ anechoic		□ 2 □ 2	□ non compressible	90° elbow flexion and palm resting	
	★ hypoechoic □ mixed signal	_	□3	XN/A	on abdomen; bolster underneath the elbow will provide support	
	Li Illixed Signal	1.37cm ²			Axis: LAX	1
	Assessment:				Probe Position: posterior elbow	
	□ hypoechoic complex fluid				superior to the olecranon	
	□ anechoic simple fluid				Bony landmarks: humerus	
	□ displacement of fat pad				(proximal) and olecranon (distal)	
	□ tendon abnormality				Muscles: triceps tendon (most	
	Xfat pad change of				superior/attaches to olecranon)	
	echogenicity				and medial triceps belly (inferior to	
	□ other				triceps tendon) Blood vessels: none	
					Nerves: none	
					Tel vest none	
						cranial caudal

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J.A.D.E. Protocol: Elbow

Posterior Elbow LAX

Fat Pad Displacement and Olecranon Recess Area - PD



Name:	Date:
Patient Number:	Person completing this form:

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Anterior	Joint space content:	Cartilage Thickness:	Χo	□ completely	Patient Position: Supine, palm up	The same of the sa
Lateral Joint:	Xnone	Apex:	<u>-1</u>	□ partially	with bolster under the hand to	
Cartilage	□ anechoic		□ 2	□ non compressible	limit elbow extension	
Thickness	□ hypoechoic		□ 3	X N/A	Axis: LAX	
	□ mixed signal	0.10cm			Probe Position: Lateral aspect of	
		0.100111			the antecubital fossa over the	
	Assessment: hypoechoic complex fluid				humeroradial joint space Bony landmarks: humeral	The second secon
	anechoic simple fluid				capitulum (proximal) and radial	
	□ soft tissue proliferation	0.25cm caudal to			head (distal)	
	Xirregular bony margin	apex:			Muscles: brachioradialis (superior	
	🗆 other	'			to humeroradial joint)	
					Blood vessels: none	
		0.100			Nerves: none	
		0.10cm			Measurement: Assess cartilage	0.25cm
					thickness at the apex and 0.25cm caudally. Assure that	
					measurement is perpendicular to	
					the bony margin.	cranial caudal
Posterior Joint:	Fat Pad content:	Area cm ²	□0	□ completely	Patient Position: supine, upper	
Fat Pad	□ none		X 1	partially	extremity in internal rotation and	
Triceps Tendon	□ anechoic		□ 2 □ 3	□ non compressible	90° elbow flexion and palm resting on abdomen; bolster underneath	
	X hypoechoic □ mixed signal		3	XN/A	the elbow will provide support	
	L ITIIXEU SIGNUI	1.37cm ²			Axis: LAX	
	Assessment:				Probe Position: posterior elbow	
	□ hypoechoic complex fluid				superior to the olecranon	
	□ anechoic simple fluid				Bony landmarks: humerus	
	□ displacement of fat pad				(proximal) and olecranon (distal)	
	tendon abnormality				Muscles: triceps tendon (most	
	Xfat pad change of				superior/attaches to olecranon)	
	echogenicity other				and medial triceps belly (inferior to triceps tendon)	
	Double				Blood vessels: none	
					Nerves: none	
						cranial caudal
	1				·	l .

THANK YOU

Joint Tissue Activity and Damage Exam J.A.D.E. Practical Application Part 2

By Lena Volland PT, DPT

J.A.D.E. Protocol

KNEE

J.A.D.E. Protocol

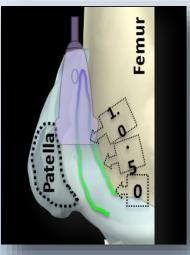
RECOMMENDED VIEWS

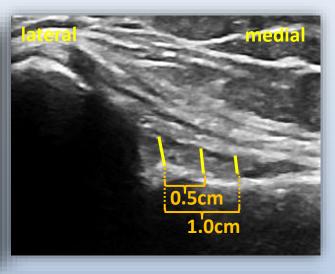
J.A.D.E. Protocol: Knee

Medial/Lateral Patellofemoral Recess

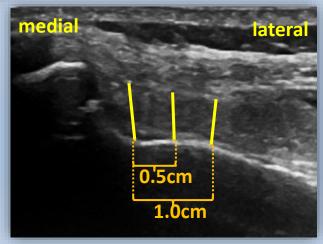




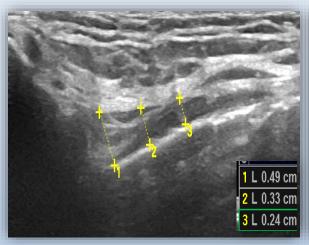


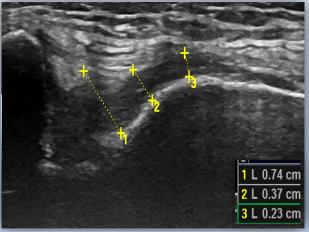


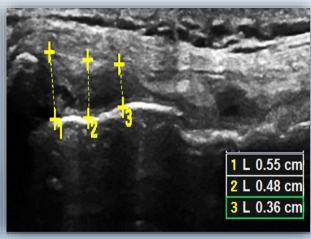
Measure the expansion of the recess at the origin of the femoral cortex and at 0.5 cm and 1.0 cm from the origin of the femoral cortex. Measurement is *perpendicular* to the bony margin.



Examples: Medial Patellofemoral Recess







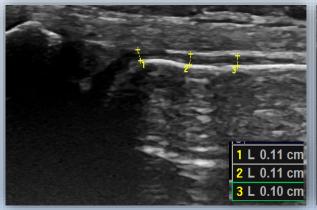
Femoral cortex: 0.49cm

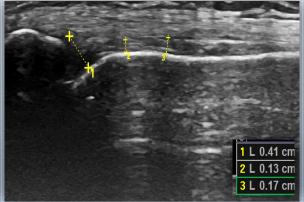
0.5cm: 0.33cm 1cm: 0.24cm Femoral cortex: 0.74cm

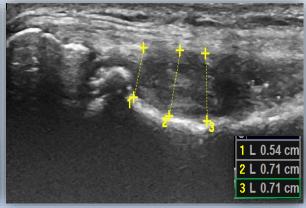
0.5cm: 0.37cm 1cm: 0.23cm Femoral cortex: 0.55cm

0.5cm: 0.48cm 1cm: 0.36cm

Examples: Lateral Patellofemoral Recess







Femoral cortex: 0.11cm

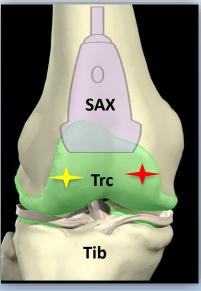
0.5cm: 0.11cm 1.0cm: 0.10cm Femoral cortex: 0.41cm

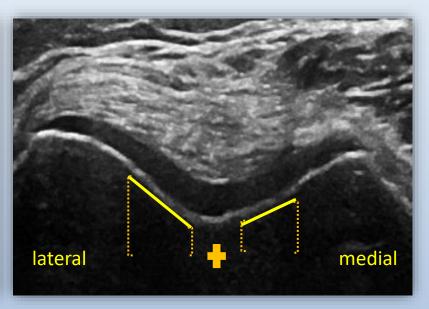
0.5cm: 0.13cm 1.0cm: 0.17cm Femoral cortex: 0.54cm

0.5cm: 0.71cm 1.0cm: 0.71cm

Sunrise View Osteochondral Interface Irregularities







Measure any variation from the hyperechoic, smooth, intact bony interface.

Sunrise View

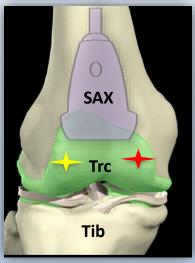
Examples: Osteochondral Interface Irregularities

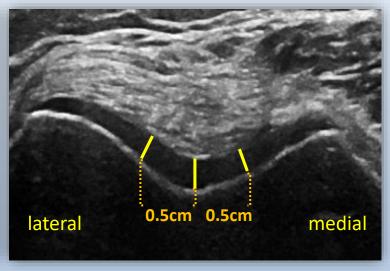


Total length: 2.49cm Total length: 3.06cm Total length: 3.65cm

J.A.D.E. Protocol: Knee Sunrise View Cartilage Thickness





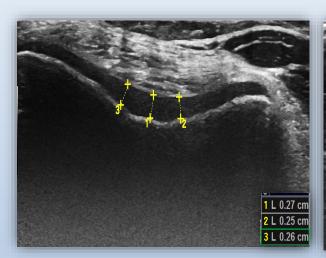


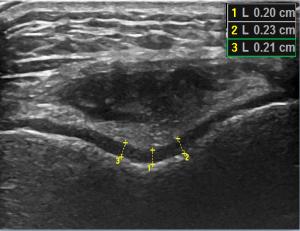
Assess cartilage thickness at the lowest point of the trochlea and 0.5cm medially and laterally.

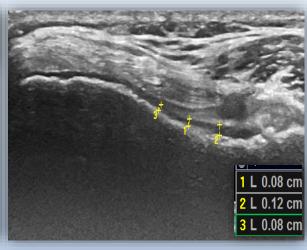
Measurement is *perpendicular* to the bony margin.

Sunrise View

Examples: Cartilage Thickness







Trochlea: 0.27cm

0.5cm medial: 0.25cm

0.5cm lateral: 0.26cm

Trochlea: 0.20cm

0.5cm medial: 0.23cm

0.5cm lateral: 0.21cm

Trochlea: 0.08cm

0.5cm medial: 0.12cm

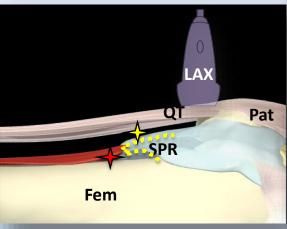
0.5cm lateral: 0.08cm

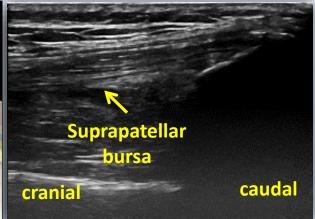
J.A.D.E. Protocol

ADDITIONAL VIEWS

Suprapatellar Recess LAX







Sonopalpation

Possible content of recess:

Complex fluid
Fatty tissue
Synovial hypertrophy
Blood by-product

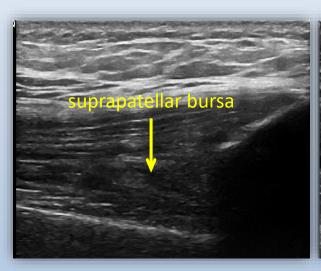
Differentiation by sonopalpation/compressibility of the bursal contents and NOT echotexture

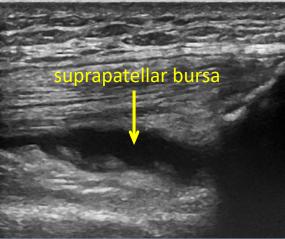
Suprapatellar recess findings can be non-specific relative to content

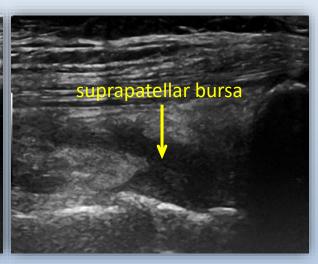
von Drygalski, A., Moore, R.E., Nguyen, S., Volland, L.M., Cramer, T.J., Hughes, T.H., Du, J., Chang, E.Y. (2018). Advanced Hemophilic Arthropathy: Sensitivity of Soft Tissue Discrimination with Musculoskeletal Ultrasound. Journal of Ultrasound in Medicine, 37 (8), 1945-1956

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Examples: Suprapatellar Recess LAX





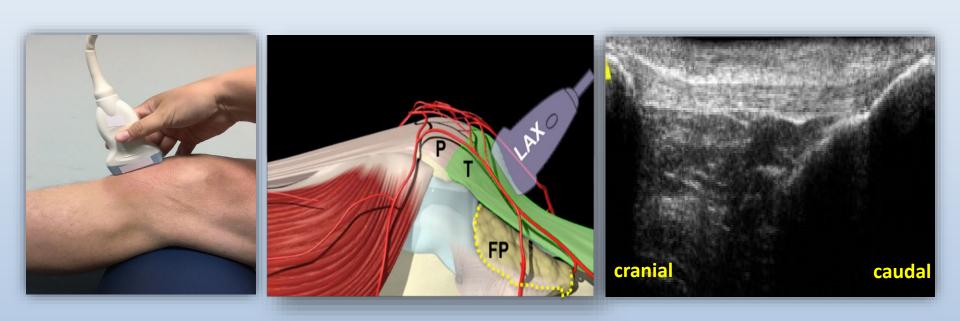


Normal suprapatellar bursa

Suprapatellar bursa with protruding soft tissue and compressible anechoic simple effusion

Suprapatellar bursa with non compressible mixed echogenicity indicative of soft tissue expansion

J.A.D.E. Protocol: Knee Infrapatellar Recess



Evaluation of Hoffa fat pad and patella ligament

Examples: Infrapatellar Recess





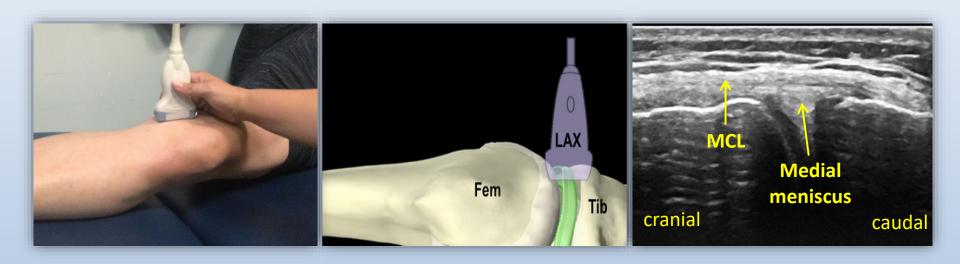


Normal Hoffa fat pad and patella ligament

<u>Abnormal</u> tendinous structure and Hoffa fat pad

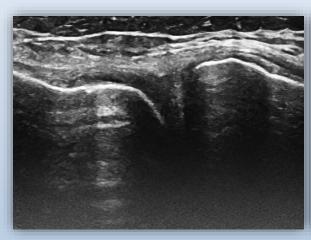
Abnormal tendinous structure and Hoffa fat pad with positive power doppler

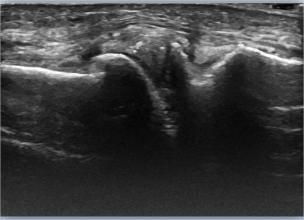
Medial Meniscus and Medial Collateral Ligament LAX

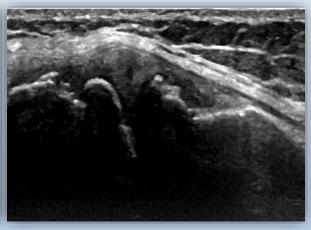


Assessment of the continuity of the medial meniscus and MCL

Examples: Medial Meniscus and Medial Collateral Ligament LAX







Mild changes in echogenicity of meniscus

Abnormal meniscus echogenicity with changes of regularity in meniscus, bone and MCL

Significant irregularities of meniscus, MCL and bone

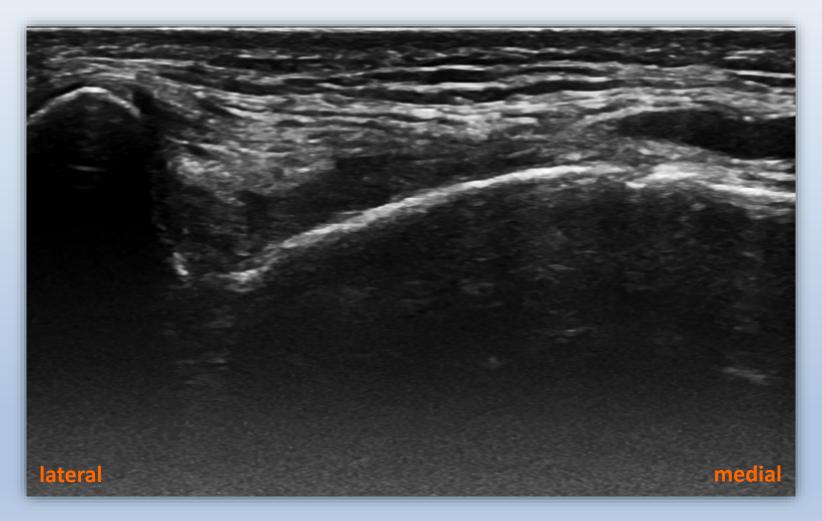
Case Study

KNEE

J.A.D.E. Protocol

RECOMMENDED VIEWS

J.A.D.E. Protocol: Knee Medial Patellofemoral Recess



Name:	Date:
Patient Number:	Person completing this form:

	KNEE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic ★ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation ★ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm:		□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	O.5cm 1.0cm				
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:		□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm				

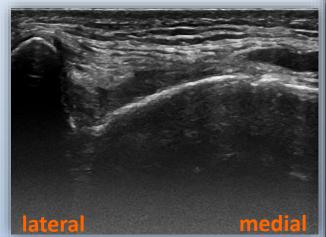
J.A.D.E. Protocol: Knee Medial Patellofemoral Recess

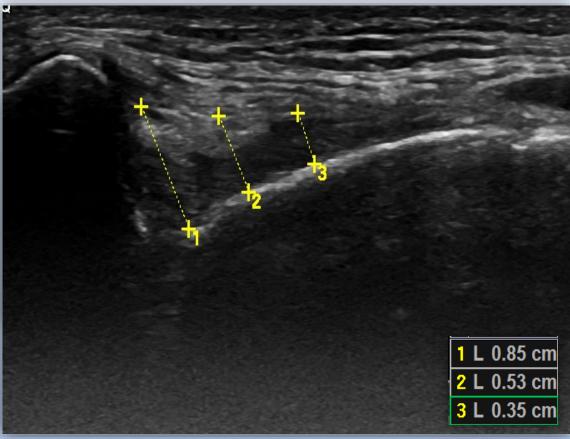


Name:	Date:
Patient Number:	Person completing this form:

	KNEE								
	Recommended Views								
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture			
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic ※mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation ※irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm:		□ completely □ partially ■ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	O.Scm 1.0cm			
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:	0 0 1 0 2 0 3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	raedial lateral			

J.A.D.E. Protocol: Knee Medial Patellofemoral Recess





Name:	Date:
Patient Number:	Person completing this form:

	KNEE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic ※mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation ※irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm		□ completely □ partially ■ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	triccol medial O.5cm 1.0cm				
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:	_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm				

Medial Patellofemoral Recess – Power Doppler

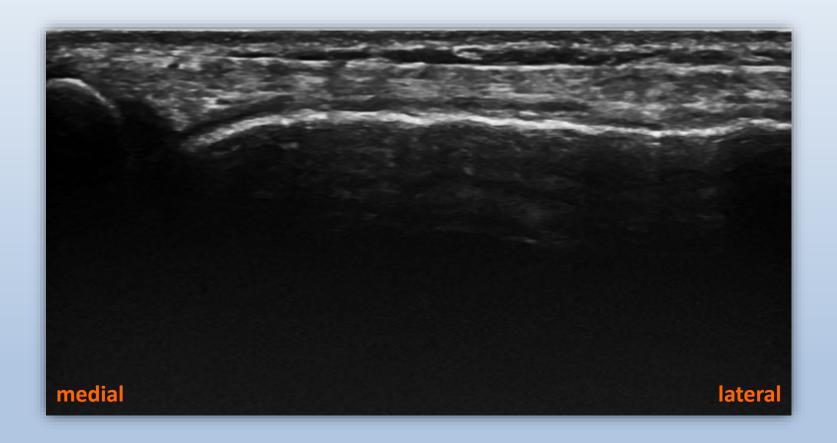


Name:	Date:
Patient Number:	Person completing this form:

$UC\,San\,Diego\,Health$

	KNEE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic ▼mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation ▼irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm	00 X 1 02 03	□ completely □ partially ▼ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	triccol medial O.5cm 1.0cm				
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:	_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm				

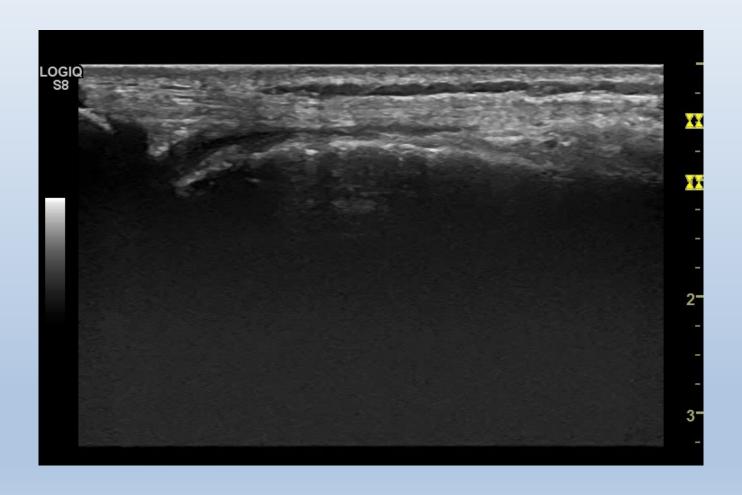
J.A.D.E. Protocol: Knee Lateral Patellofemoral Recess



Name:	Date:
Patient Number:	Person completing this form:

	KNEE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm	0 X 1 0 2 0 3	□ completely □ partially ▼ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	O/Scm 1.0cm				
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid X anechoic simple fluid X soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:		□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm				

Lateral Patellofemoral Recess – Compressibility

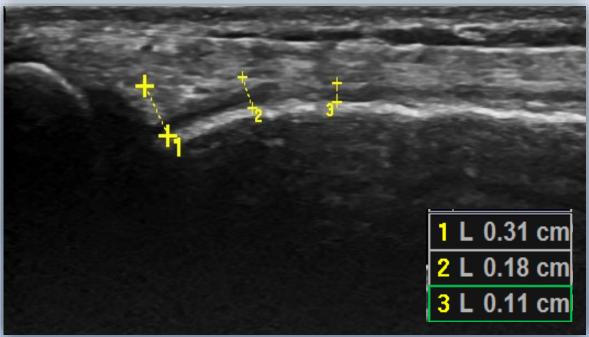


Name:	Date:
Patient Number:	Person completing this form:

	KNEE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm	0 X 1 0 2 0 3	□ completely □ partially ▼ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	O/Scm 1.0cm				
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid X anechoic simple fluid X soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.5cm: 1.0cm:	0 1 2 3	□ completely □ partially ★ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm				

J.A.D.E. Protocol: Knee Lateral Patellofemoral Recess

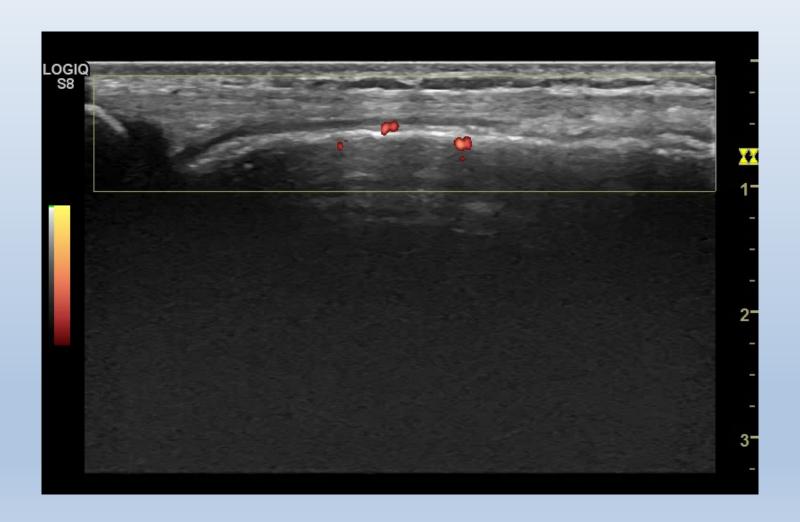




Name:	Date:
Patient Number:	Person completing this form:

KNEE						
Recommended Views						
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic ★ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation ★ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm	0 X 1 0 2 0 3	□ completely □ partially ▼ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	totacel medial 0/5cm
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid X anechoic simple fluid X soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.31cm 0.5cm: 0.18cm 1.0cm: 0.11cm	_0 _1 _2 _3	□ completely X partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm

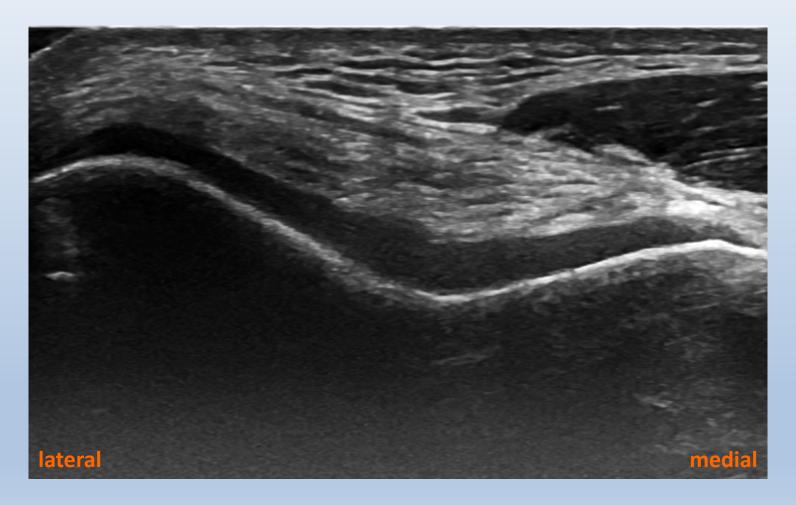
Lateral Patellofemoral Recess – Power Doppler



Name:	Date:
Patient Number:	Person completing this form:

KNEE						
Recommended Views						
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture
Medial Recess Soft Tissue Expansion	Medial recess content: □ none □ anechoic □ hypoechoic X mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation X irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.85cm 0.5cm: 0.53cm 1.0cm: 0.35cm	©0 X 1 ©2 ©3	□ completely □ partially ■ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: medial mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	o'Scm 1.0cm
Lateral Recess Soft Tissue Expansion	Lateral Recess Content: □ none □ anechoic □ hypoechoic ★ mixed signal Assessment: □ hypoechoic complex fluid ★ anechoic simple fluid ★ soft tissue proliferation ★ irregular bony margin □ other	Soft tissue measurement during compression: Femoral cortex (start at cortical bone) 0cm: 0.31cm 0.5cm: 0.18cm 1.0cm: 0.11cm	□0 □1 X 2 □3	□ completely X partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: SAX Probe Position: lateral mid patella Bony landmarks: patella (medial) and femur (lateral) Muscles: none Blood vessels: none Nerves: none Other: retinaculum (medial to patella) Measurement: Assess soft tissue expansion by measuring the height of the recess at the origin of the femoral cortex and at 0.5 and 1.0 cm from the origin of the femoral cortex. Assure that measurement is perpendicular to the bony margin.	medial lateral 0.5cm

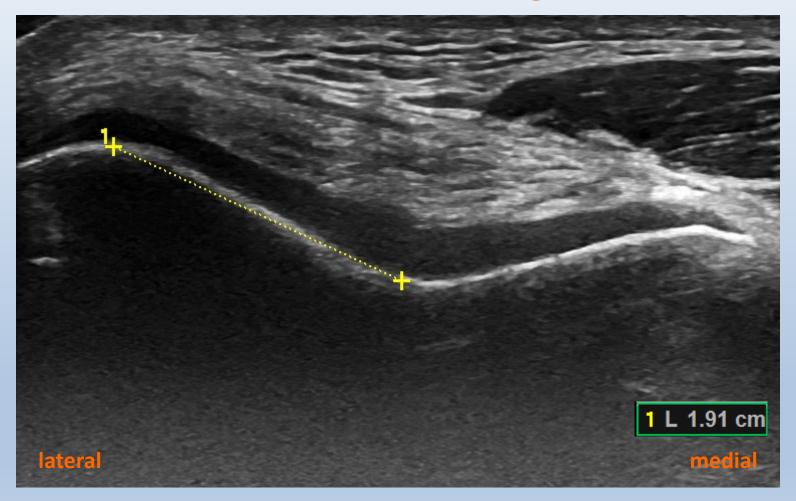
J.A.D.E. Protocol Knee Sunrise View Osteochondral Interface Irregularities



Name:	Date:
Patient Number:	Person completing this form:

Sunrise:		Length of	□0	□ completely	Patient Position: supine, knee at	
Osteochondral	□ osteophytes	osteochondral	-1	□ partially	90° flexion, foot planted	
Line	□ other	alterations:	□2	□ non compressible	Axis: SAX	**************************************
Cartilage			□3	XN/A	Probe Position: proximal to patella	
Thickness					Bony landmarks: femoral trochlea	
					Muscles: quadriceps tendon	
					(superior) and vastus medialis	
					(medial) Blood vessels: none	
					Nerves: none	
		Cartilage Thickness:			Measurement (osteochondral	
		Trochlea:			alteration): individually measure	
					any variation from hyperechoic,	
					smooth, intact bony interface.	
					Then add the values together for	
					the total length of alterations.	
		0.5cm med:			Measurement (cartilage	1000
					thickness): Assess cartilage thickness at the lowest point of	
					the trochlea and 0.5cm medially	(2) 1000 1000 1000 1000 1000 1000 1000 10
					and laterally. Assure that	
		0.5cm lat:			measurement is perpendicular to	
					the bony margin.	
						lateral medial
						100 - 100 -
						0.5cm 0.5cm
						lateral medial

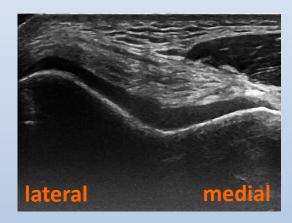
J.A.D.E. Protocol Knee Sunrise View Osteochondral Interface Irregularities

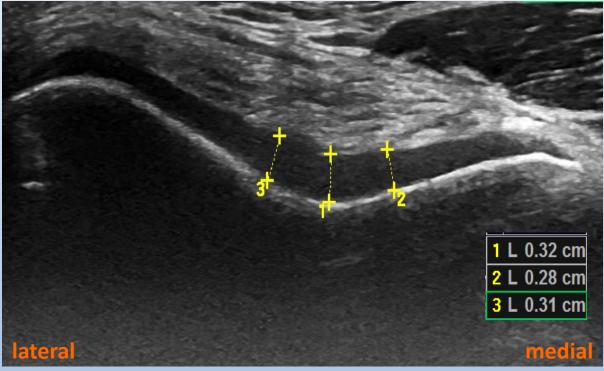


Name:	Date:
Patient Number:	Person completing this form:

Sunrise: Osteochondral Line Cartilage Thickness	irregular bony margin □ osteophytes □ other	Length of osteochondral alterations:	0 01 02 03	□ completely □ partially □ non compressible XN/A	Patient Position: supine, knee at 90° flexion, foot planted Axis: SAX Probe Position: proximal to patella Bony landmarks: femoral trochlea	
		1.91cm			Muscles: quadriceps tendon (superior) and vastus medialis (medial) Blood vessels: none Nerves: none	
		Cartilage Thickness: Trochlea:			Measurement (osteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for	
		0.5cm med:			the total length of alterations. Measurement (cartilage thickness): Assess cartilage thickness at the lowest point of the trochlea and 0.5cm medially	
		0.5cm lat:			and laterally. Assure that measurement is perpendicular to the bony margin.	lateral medial
						0.5cm 0.5cm medial
						200300

J.A.D.E. Protocol: Knee Sunrise View Cartilage Thickness





Name:	Date:
Patient Number:	Person completing this form:

UC San Diego Health

Sunrise:	Xirregular bony margin	Length of	□0	□ completely	Patient Position: supine, knee at	
Osteochondral	□ osteophytes	osteochondral	□1	□ partially	90° flexion, foot planted	
Line	□ other	alterations:	□ 2	□ non compressible	Axis: SAX	12 A
Cartilage			□3	XN/A	Probe Position: proximal to patella	
Thickness					Bony landmarks: femoral trochlea	
		4.04			Muscles: quadriceps tendon	
		1.91cm			(superior) and vastus medialis	
					(medial)	
					Blood vessels: none Nerves: none	
		Cartilage Thickness:			Measurement (osteochondral	
		Trochlea:			alteration): individually measure	
		Trocillea.			any variation from hyperechoic,	
		0.00			smooth, intact bony interface.	
		0.32cm			Then add the values together for	
					the total length of alterations.	
		0.5cm med:			Measurement (cartilage	
					thickness): Assess cartilage	State of the state
		0.28cm			thickness at the lowest point of	
		0.280111			the trochlea and 0.5cm medially	
					and laterally. Assure that	
		0.5cm lat:			measurement is perpendicular to	
					the bony margin.	
		0.21600				the state of the s
		0.31cm				lateral medial
						100000000000000000000000000000000000000
						(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
						0.5cm 0.5cm
						lateral medial
1				1		

J.A.D.E. Protocol: Knee Sunrise View Cartilage Thickness – Power Doppler



Name:	Date:
Patient Number:	Person completing this form:

UC San Diego Health

Sunrise: Osteochondral	Xirregular bony marı □ osteophytes
Line Cartilage	🗆 other
Thickness	

Length of osteochondral alterations:

1.91cm

Cartilage Thickness:

0.32cm

0.28cm

0.31cm

Trochlea:

0.5cm med:

0.5cm lat:

X0 □1 □2 □3 □ completely
□ partially
□ non compressible
XN/A

Patient Position: supine, knee at 90° flexion, foot planted Axis: SAX Probe Position: proximal to patel

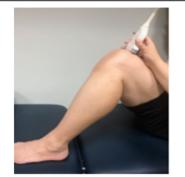
Probe Position: proximal to patella Bony landmarks: femoral trochlea Muscles: quadriceps tendon (superior) and vastus medialis (medial)

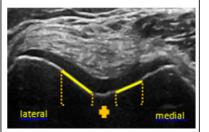
Blood vessels: none Nerves: none

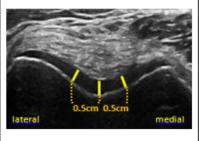
Measurement (osteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations.

Measurement (cartilage

thickness): Assess cartilage thickness at the lowest point of the trochlea and 0.5cm medially and laterally. Assure that measurement is perpendicular to the bony margin.



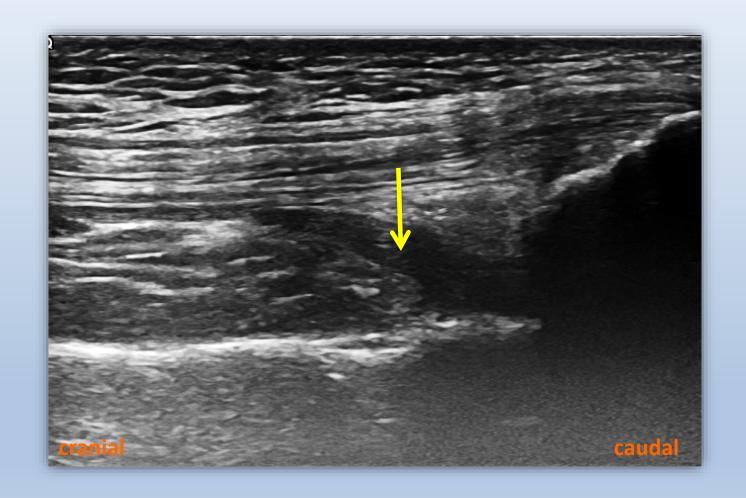




J.A.D.E. Protocol

ADDITIONAL VIEWS

J.A.D.E. Protocol: Knee **Suprapatellar Recess LAX**



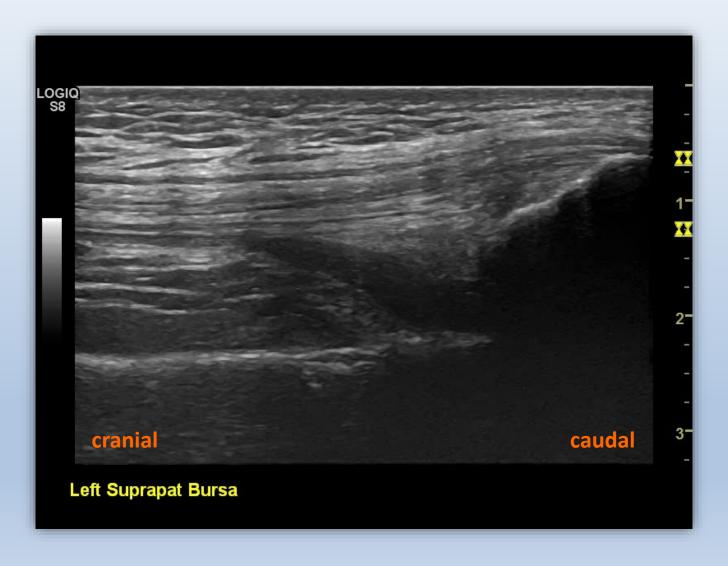
Name:	Date:
Patient Number:	 Person completing this form:

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	VAICE							
	KNEE Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Suprapatellar Recess: Suprapatellar Bursa and structures	Suprapatellar bursa content: none none none none none none none no			□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion Axis: LAX Probe Position: proximal to the patella and in midline of the knee joint Bony landmarks: femur (proximal) and patella (distal) Muscles: quadriceps tendon (superior) Blood vessels: none Nerves: none Other: suprapatellar bursa and fat pad between femur and quadriceps	Suprapatellar bursa caudal		
Infrapatellar Recess: Hoffa Fat Pad	Infrapatellar Fat Pad content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ tendon abnormality □ other		_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: LAX Probe Position: distal to patella Bony landmarks: patella (proximal) and tibia (distal) Muscles: patellar tendon (central between patella and tibia) Blood vessels: none Nerves: none Other: Hoffa fat pad inferior to patellar tendon	crantal caudal		

J.A.D.E. Protocol: Knee

Suprapatellar Recess LAX – Compressibility



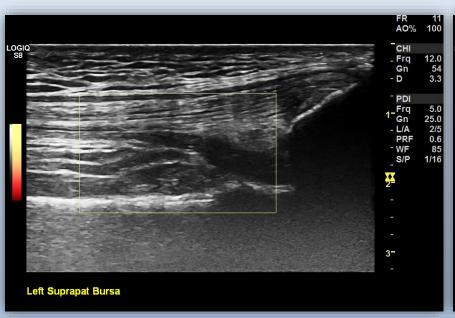
Name:	Date:
Patient Number:	Person completing this form:

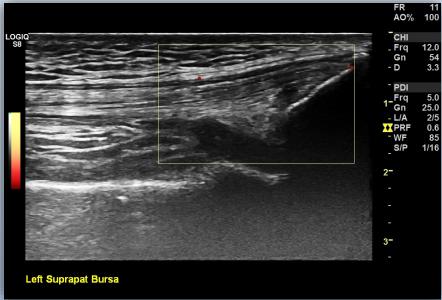
 $UC\,San\,Diego\,Health$

	VAICE							
	KNEE Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Suprapatellar Recess: Suprapatellar Bursa and structures	Suprapatellar bursa content: none anechoic hypoechoic mixed signal Assessment: Hypoechoic complex fluid Anechoic simple fluid X soft tissue proliferation X tendon abnormality X other Irregular bony margin of the patella			□ completely □ partially ★non compressible □ N/A	Patient Position: supine, knee at 30° flexion Axis: LAX Probe Position: proximal to the patella and in midline of the knee joint Bony landmarks: femur (proximal) and patella (distal) Muscles: quadriceps tendon (superior) Blood vessels: none Nerves: none Other: suprapatellar bursa and fat pad between femur and quadriceps	Suprapatellar bursa caudal		
Infrapatellar Recess: Hoffa Fat Pad	Infrapatellar Fat Pad content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ tendon abnormality □ other			□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: LAX Probe Position: distal to patella Bony landmarks: patella (proximal) and tibia (distal) Muscles: patellar tendon (central between patella and tibia) Blood vessels: none Nerves: none Other: Hoffa fat pad inferior to patellar tendon	crantal		

J.A.D.E. Protocol: Knee

Suprapatellar Recess LAX – Power Doppler



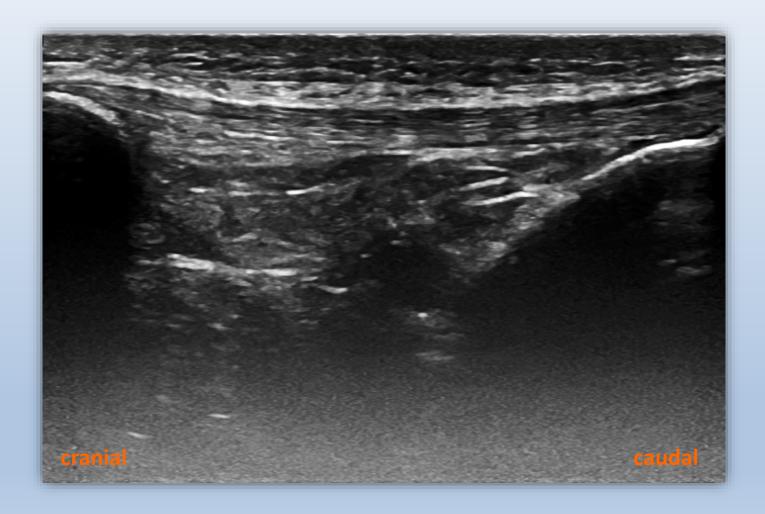


Name:	Date:
Patient Number:	Person completing this form:

 $UC\,San\,Diego\,Health$

	KNEE							
	KNEE Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Suprapatellar Recess: Suprapatellar Bursa and structures	Suprapatellar bursa content: none anechoic hypoechoic mixed signal Assessment: Hypoechoic complex fluid Anechoic simple fluid X soft tissue proliferation X tendon abnormality X other Irregular bony margin of the patella		X0 =1 =2 =3	□ completely □ partially ★non compressible □ N/A	Patient Position: supine, knee at 30° flexion Axis: LAX Probe Position: proximal to the patella and in midline of the knee joint Bony landmarks: femur (proximal) and patella (distal) Muscles: quadriceps tendon (superior) Blood vessels: none Nerves: none Other: suprapatellar bursa and fat pad between femur and quadriceps	Suprapatellar bursa caudal		
Infrapatellar Recess: Hoffa Fat Pad	Infrapatellar Fat Pad content: □ none □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ tendon abnormality □ other			□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, Axis: LAX Probe Position: distal to patella Bony landmarks: patella (proximal) and tibia (distal) Muscles: patellar tendon (central between patella and tibia) Blood vessels: none Nerves: none Other: Hoffa fat pad inferior to patellar tendon	crantal		

J.A.D.E. Protocol: Knee Infrapatellar Recess

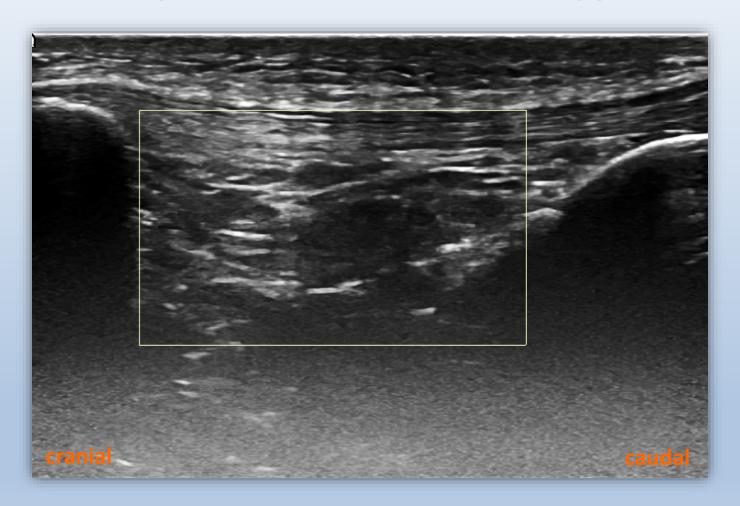


Name:	Date:
Patient Number:	Person completing this form:

 $UC\,San\,Diego\,Health$

	KNEE							
	Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Suprapatellar Recess: Suprapatellar Bursa and structures	Suprapatellar bursa content: none anechoic Xhypoechoic mixed signal Assessment: Hypoechoic complex fluid Anechoic simple fluid X soft tissue proliferation X tendon abnormality X other Irregular bony margin of the patella		X 0 1 2 3	□ completely □ partially ■ non compressible □ N/A	Patient Position: supine, knee at 30° flexion Axis: LAX Probe Position: proximal to the patella and in midline of the knee joint Bony landmarks: femur (proximal) and patella (distal) Muscles: quadriceps tendon (superior) Blood vessels: none Nerves: none Other: suprapatellar bursa and fat pad between femur and quadriceps	Suprapatellar bursa caudal		
Infrapatellar Recess: Hoffa Fat Pad	Infrapatellar Fat Pad content: Xnone anechoic hypoechoic mixed signal Assessment: hypoechoic complex fluid anechoic simple fluid Xtendon abnormality other			□ completely □ partially □ non compressible XN/A	Patient Position: supine, knee at 30° flexion, Axis: LAX Probe Position: distal to patella Bony landmarks: patella (proximal) and tibia (distal) Muscles: patellar tendon (central between patella and tibia) Blood vessels: none Nerves: none Other: Hoffa fat pad inferior to patellar tendon	cranial		

J.A.D.E. Protocol: Knee Infrapatellar Recess – Power Doppler



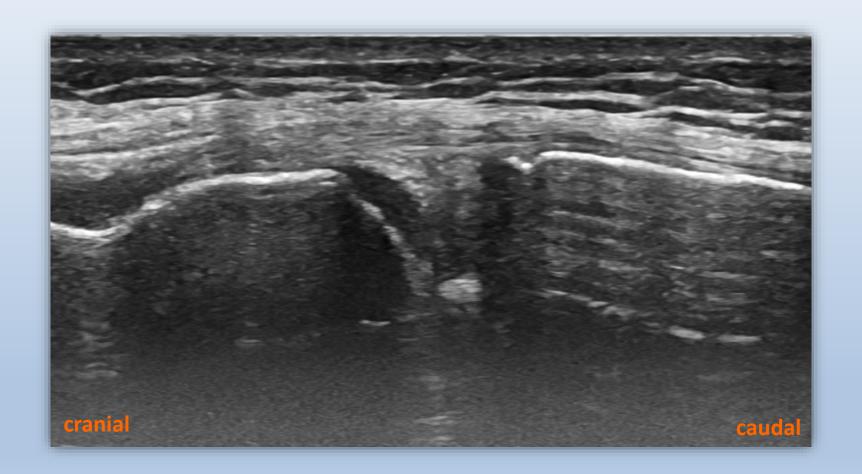
Name:	Date:
Patient Number:	Person completing this form:

 $UC\,San\,Diego\,Health$

	KNEE							
Additional Views								
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Suprapatellar Recess: Suprapatellar Bursa and structures	Suprapatellar bursa content: none anechoic Xhypoechoic mixed signal Assessment: Hypoechoic complex fluid Anechoic simple fluid Xsoft tissue proliferation X tendon abnormality X other Irregular bony margin of the patella		X 0 1 2 3	□ completely □ partially ■ non compressible □ N/A	Patient Position: supine, knee at 30° flexion Axis: LAX Probe Position: proximal to the patella and in midline of the knee joint Bony landmarks: femur (proximal) and patella (distal) Muscles: quadriceps tendon (superior) Blood vessels: none Nerves: none Other: suprapatellar bursa and fat pad between femur and quadriceps	Suprapatellar bursa cranial caudal		
Infrapatellar Recess: Hoffa Fat Pad	Infrapatellar Fat Pad content: Xnone anechoic hypoechoic mixed signal Assessment: hypoechoic complex fluid anechoic simple fluid Xtendon abnormality other		X0 =1 =2 =3	□ completely □ partially □ non compressible XN/A	Patient Position: supine, knee at 30° flexion, Axis: LAX Probe Position: distal to patella Bony landmarks: patella (proximal) and tibia (distal) Muscles: patellar tendon (central between patella and tibia) Blood vessels: none Nerves: none Other: Hoffa fat pad inferior to patellar tendon	crantal		

J.A.D.E. Protocol Knee

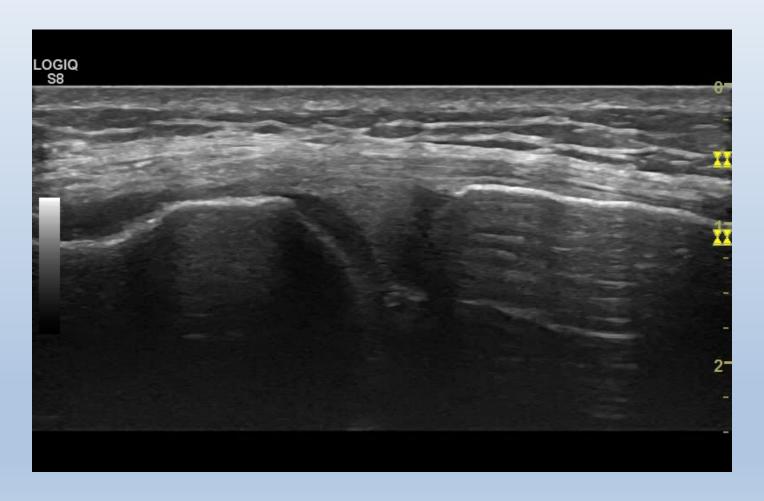
Medial Meniscus and Medial Collateral Ligament LAX



Name:		_ Date:				
Patient Number:		Person	completing this fo	UCSan Diego Health		
Medial meniscus and MCL	MCL abnormality X medial meniscus abnormality X irregular bony margin □ other Meniscus abnormality Description: X tear X irregularities □ altered echogenicity			□ completely □ partially □ non compressible □ N/A	Patient Position: supine, knee at 30° flexion, external rotation of the hip Axis: LAX Probe Position: medial joint space Bony landmarks: femur (proximal) and tibia (distal) Muscles: none Blood vessels: none Nerves: none Other: medial meniscus (between femur and tibia) and MCL (superior to meniscus)	MCI. Medial meniscus

J.A.D.E. Protocol Knee

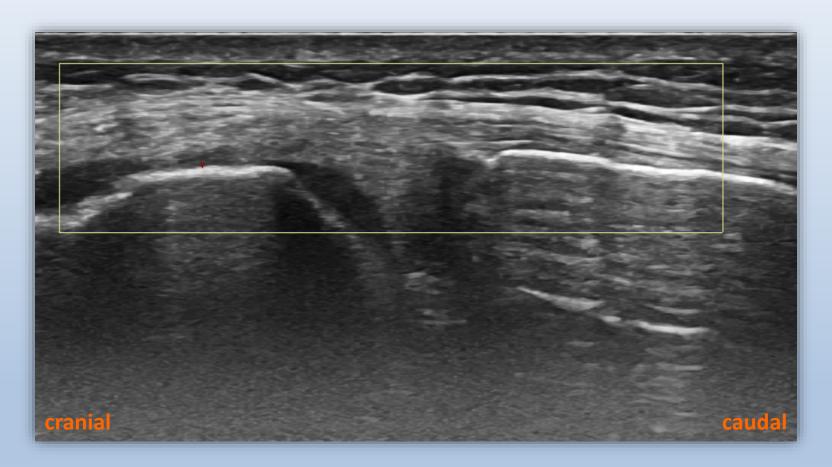
Medial Meniscus and Medial Collateral Ligament LAX - Compressibility



Name:			_Date:			
Patient Number:		Person	completing this fo	UC San Diego Health		
Medial meniscus and MCL	MCL abnormality X medial meniscus abnormality X irregular bony margin X other SOft tissue expa Meniscus abnormality Description: X tear X irregularities altered echogenicity		Person (completing this fo	Patient Position: supine, knee at 30° flexion, external rotation of the hip Axis: LAX Probe Position: medial joint space Bony landmarks: femur (proximal) and tibia (distal) Muscles: none Blood vessels: none Nerves: none Other: medial meniscus (between femur and tibia) and MCL (superior to meniscus)	UC San Diego Health
						MCL T Medial meniscus

J.A.D.E. Protocol Knee

Medial Meniscus and Medial Collateral Ligament LAX – Power Doppler



Name:			_Date:			
Patient Number:		Person	completing this fo	UC San Diego Health		
Medial meniscus and MCL	XMCL abnormality X medial meniscus abnormality X irregular bony margin X other Soft tissue expa MCL and withir Meniscus abnormality Description: X tear X irregularities altered echogenicity		X0	□ completely □ partially ★non compressible □ N/A	Patient Position: supine, knee at 30° flexion, external rotation of the hip Axis: LAX Probe Position: medial joint space Bony landmarks: femur (proximal) and tibia (distal) Muscles: none Blood vessels: none Nerves: none Other: medial meniscus (between femur and tibia) and MCL (superior to meniscus)	MCL Medial meniscus cranial caudal

THANK YOU

Joint Tissue Activity and Damage Exam J.A.D.E. Practical Application Part 3

By Lena Volland PT, DPT

J.A.D.E. Protocol

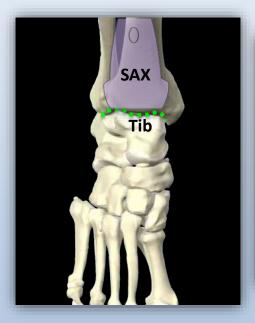
ANKLE

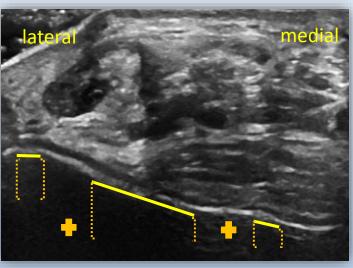
J.A.D.E. Protocol

RECOMMENDED VIEWS

J.A.D.E. Protocol: Ankle Anterior Ankle SAX Osteochondral Interface Irregularities



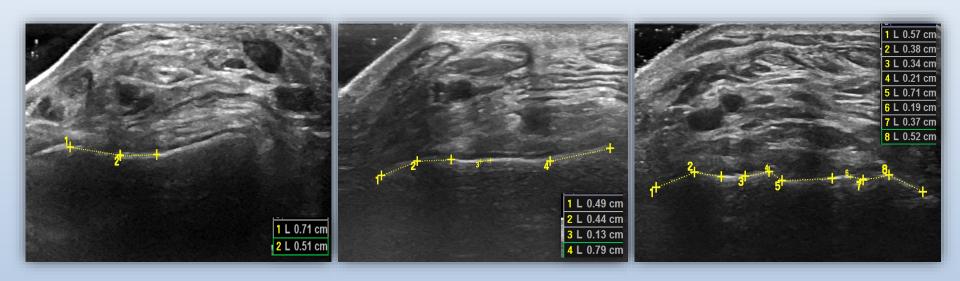




Measure any variation from hyperechoic, smooth, intact bony interface.

J.A.D.E. Protocol: Ankle

Examples: Anterior Ankle SAX Osteochondral Interface Irregularities



Total length: 1.22cm Total length: 1.85cm Total length: 3.63cm

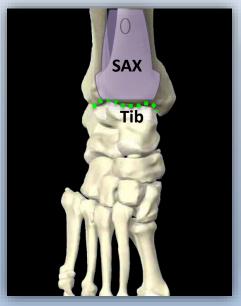
J.A.D.E. Protcol: Ankle

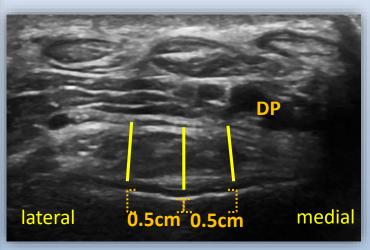
Anterior Ankle SAX Capsular Interface Thickness

The Tibio-Talar Joint contains an <u>extra-synovial</u> yet <u>intra-capsular</u> Fat Pad

Capsule + Fat Pad = Combined Interface





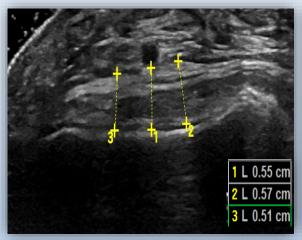


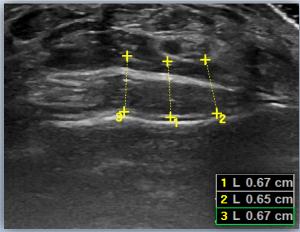
Measure the thickness of the capsular interface from the beginning of the synovial membrane to the height of the Dorsalis Pedis artery at the lowest point of the trochlea and 0.5cm medially and laterally.

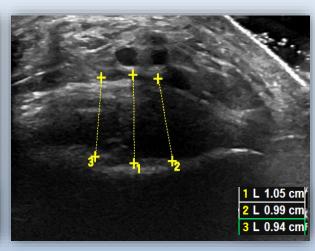
Measurement is *perpendicular* to the bony margin.

J.A.D.E. Protcol: Ankle

Examples: Anterior Ankle SAX Capsular Interface Thickness







Trochlea: 0.55cm

0.5cm medial: 0.57cm 0.5cm lateral: 0.51cm

Trochlea: 0.67cm

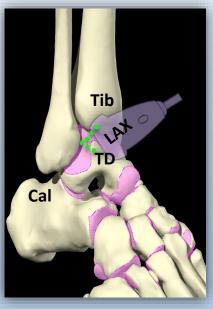
0.5cm medial: 0.65cm 0.5cm lateral: 0.67cm

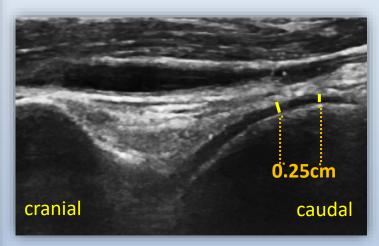
Trochlea: 1.05cm

0.5cm medial: 0.99cm 0.5cm lateral: 0.94cm

J.A.D.E. Protocol: Ankle Anterior Ankle LAX Cartilage Thickness





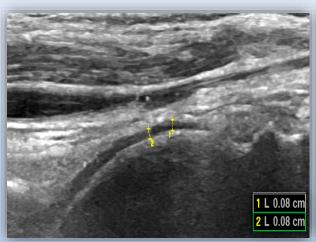


Measure cartilage thickness at the Apex and 0.25 cm cranially on the talar dome.

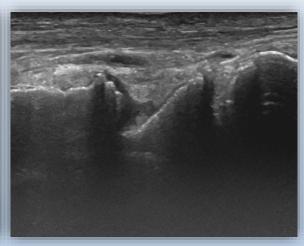
Measurement is *perpendicular* to the bony margin.

J.A.D.E. Protocol: Ankle

Examples: Anterior Ankle LAX **Cartilage Thickness**







Apex: 0.08cm 0.25cm cranial: 0.08cm Apex: 0.04cm

0.25cm cranial: 0.05cm

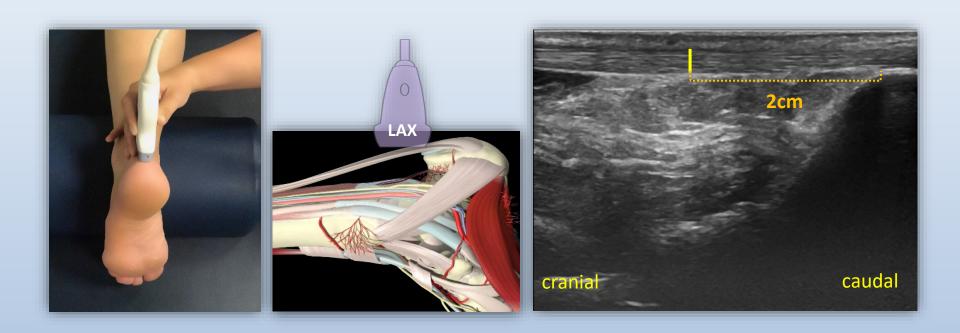
Apex: 0.00cm

0.25cm cranial: 0.00cm

J.A.D.E. Protocol

ADDITIONAL VIEWS

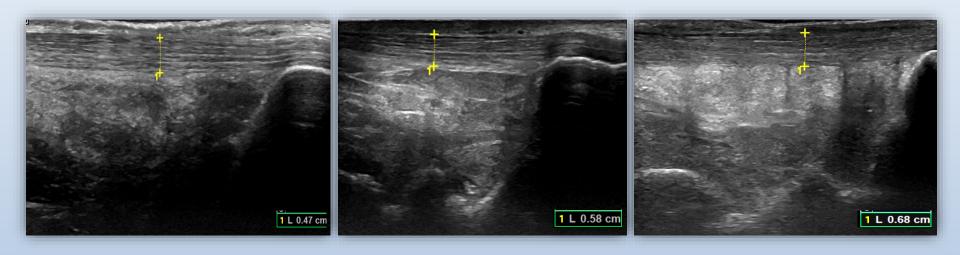
J.A.D.E. Protocol: Ankle Achilles Tendon LAX



Assess tendon thickness by measuring *perpendicularly* at 2cm cranially from the attachment of the Achilles tendon on the calcaneus.

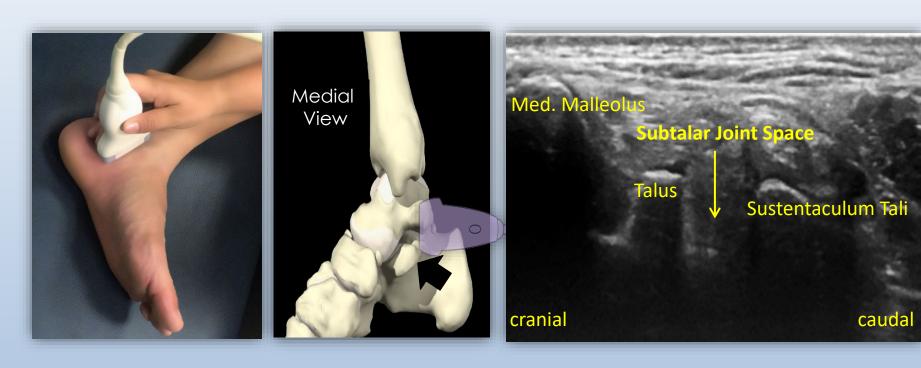
J.A.D.E. Protocol: Ankle

Examples: Achilles Tendon LAX



2cm from calcaneus: 0.47cm 2cm from calcaneus: 0.58cm 2cm from calcaneus: 0.68cm

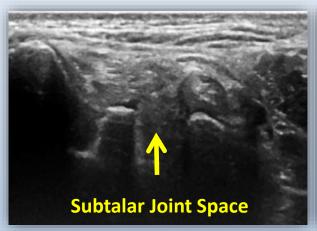
J.A.D.E. Protocol: Ankle **Subtalar Joint Medial Approach**

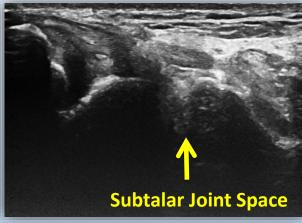


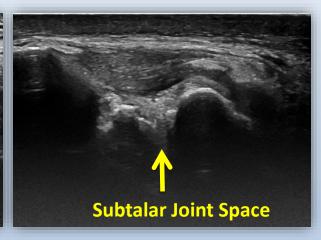
Assessment of subtalar joint abnormalities, considering bony irregularities and soft tissue expansion

J.A.D.E. Protocol: Ankle

Examples: Subtalar Joint Medial Approach







Mild irregularities

Irregular bony margin and soft tissue proliferation

Significant irregular bony margin and soft tissue expansion

Case Study

ANKLE

J.A.D.E. Protocol

RECOMMENDED VIEWS

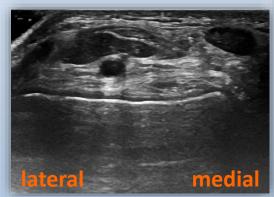
J.A.D.E. Protocol: Ankle Anterior Ankle SAX Osteochondral Interface Irregularities

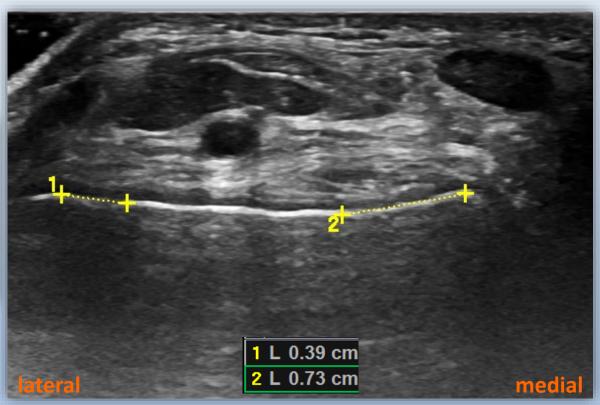


Name:	Date:
Patient Number:	Person completing this form:

	ANKLE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Anterior Joint Space SAX: Osteochondra I Line and Capsular Thickness	Joint Space content:	Length of osteochondral alterations: Capsular Thickness (from synovial membrane to EDL): Midpoint: 0.5cm med: 0.5cm lat: New: Capsular thickness should include all soft tissue between the synovial membrane (inferior margin) and the Extensor Digitorum Longus (EDL) (superior margin)	O 1 2 3	□ completely □ partially □ non compressible ▼N/A	Patient Position: supine, foot rests on bolster Axis: SAX Probe Position: across anterior tibiotalar joint Bony landmarks: talus Muscles: superior to tibia, Extensor digitorum longus (lateral), Extensor Hallucis Longus (center), Tibialis Anterior (medial) Blood vessels: dorsalis pedis artery and vein Nerves: deep peroneal nerve Measurement (osteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations. Measurement (capsular interface): measure the thickness of the capsular interface from the beginning of the synovial membrane to the height of the Extensor Hallucis Longus muscle at the lowest point of the trochlea and 0.5cm to the medially and laterally. Assure that measurement is perpendicular to the bony margin.	lateral medial				

J.A.D.E. Protocol: Ankle Anterior Ankle SAX Osteochondral Interface Irregularities

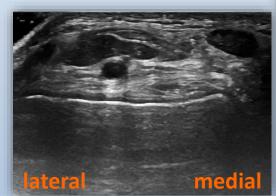


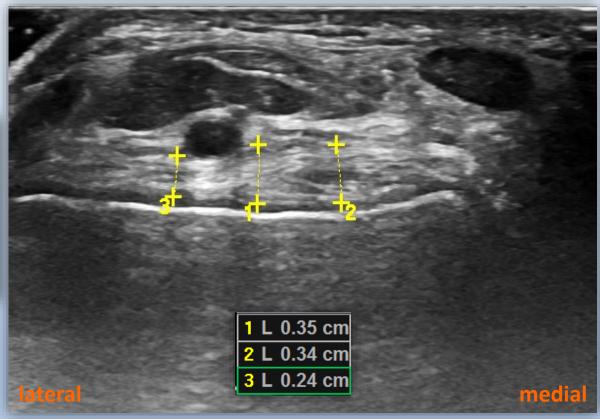


Name:	Date:
Patient Number:	Person completing this form:

	ANKLE Recommended Views								
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture			
Anterior Joint Space SAX: Osteochondra I Line and Capsular Thickness	Joint Space content: Xnone □ anechoic □ hypoechoic □ mixed signal Assessment: □ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation Xirregular bony margin □ diminished joint space □ osteophytes □ other	Length of osteochondral alterations: 1.12cm Capsular Thickness (from synovial membrane to EDL): Midpoint: 0.5cm med: 0.5cm lat: New: Capsular thickness should include all soft tissue between the synovial membrane (inferior margin) and the Extensor Digitorum Longus (EDL) (superior margin)	00 01 02 03	□ completely □ partially □ non compressible ▼N/A	Patient Position: supine, foot rests on bolster Axis: SAX Probe Position: across anterior tibiotalar joint Bony landmarks: talus Muscles: superior to tibia, Extensor digitorum longus (lateral), Extensor Hallucis Longus (center), Tibialis Anterior (medial) Blood vessels: dorsalis pedis artery and vein Nerves: deep peroneal nerve Measurement (osteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations. Measurement (capsular interface): measure the thickness of the capsular interface from the beginning of the synovial membrane to the height of the Extensor Hallucis Longus muscle at the lowest point of the trochlea and 0.5cm to the medially and laterally. Assure that measurement is perpendicular to the bony margin.	lateral medial medial			

J.A.D.E. Protocol: Ankle Anterior Ankle SAX Capsular Interface

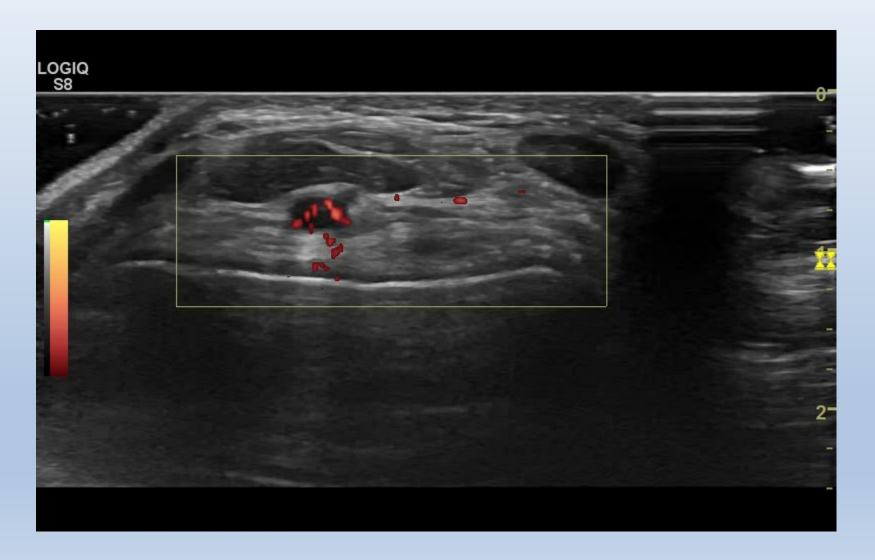




Name:	Date:
Patient Number:	Person completing this form:

	ANKLE									
	Recommended Views									
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture				
Anterior Joint Space SAX: Osteochondra I Line and Capsular Thickness	Joint Space content:	Length of osteochondral alterations: 1.12cm Capsular Thickness (from synovial membrane to EDL): Midpoint: 0.35cm 0.5cm med: 0.34cm 0.5cm lat: 0.24cm New: Capsular thickness should include all soft tissue between the synovial membrane (inferior margin) and the Extensor Digitorum Longus (EDL) (superior margin)	_0 _1 _2 _3	□ completely □ partially □ non compressible ▼N/A	Patient Position: supine, foot rests on bolster Axis: SAX Probe Position: across anterior tibiotalar joint Bony landmarks: talus Muscles: superior to tibia, Extensor digitorum longus (lateral), Extensor Hallucis Longus (center), Tibialis Anterior (medial) Blood vessels: dorsalis pedis artery and vein Nerves: deep peroneal nerve Measurement (asteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations. Measurement (capsular interface): measure the thickness of the capsular interface from the beginning of the synovial membrane to the height of the Extensor Hallucis Longus muscle at the lowest point of the trochlea and 0.5cm to the medially and laterally. Assure that measurement is perpendicular to the bony margin.	lateral medial				

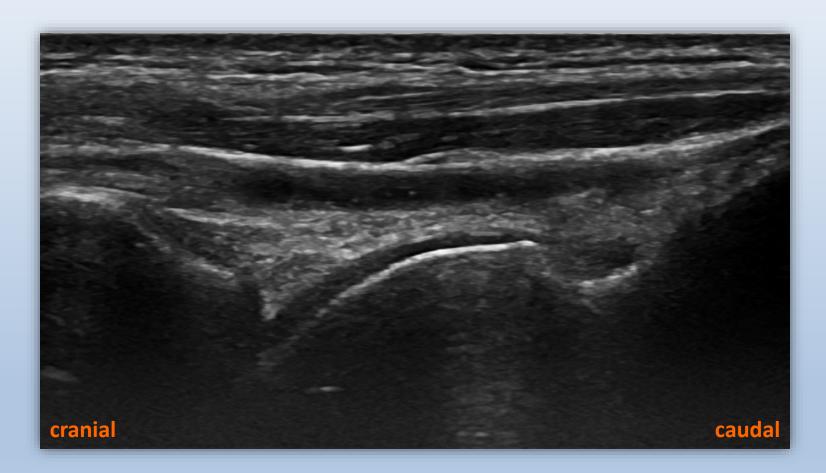
J.A.D.E. Protocol: Ankle Anterior Ankle SAX - Power Doppler



Name:	Date:
Patient Number:	Person completing this form:

	ANKLE Recommended Views								
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture			
Anterior Joint Space SAX: Osteochondra I Line and Capsular Thickness	Joint Space content: none	Length of osteochondral alterations: 1.12cm Capsular Thickness (from synovial membrane to EDL): Midpoint: 0.35cm 0.5cm med: 0.34cm 0.5cm lat: 0.24cm New: Capsular thickness should include all soft tissue between the synovial membrane (inferior margin) and the Extensor Digitorum Longus (EDL) (superior margin)	X0 =1 =2 =3	□ completely □ partially □ non compressible ▼N/A	Patient Position: supine, foot rests on bolster Axis: SAX Probe Position: across anterior tibiotalar joint Bony landmarks: talus Muscles: superior to tibia, Extensor digitorum longus (lateral), Extensor Hallucis Longus (center), Tibialis Anterior (medial) Blood vessels: dorsalis pedis artery and vein Nerves: deep peroneal nerve Measurement (osteochondral alteration): individually measure any variation from hyperechoic, smooth, intact bony interface. Then add the values together for the total length of alterations. Measurement (capsular interface): measure the thickness of the capsular interface from the beginning of the synovial membrane to the height of the Extensor Hallucis Longus muscle at the lowest point of the trochlea and 0.5cm to the medially and laterally. Assure that measurement is perpendicular to the bony margin.	lateral medial			

J.A.D.E. Protocol: Ankle
Anterior Ankle LAX
Cartilage Thickness

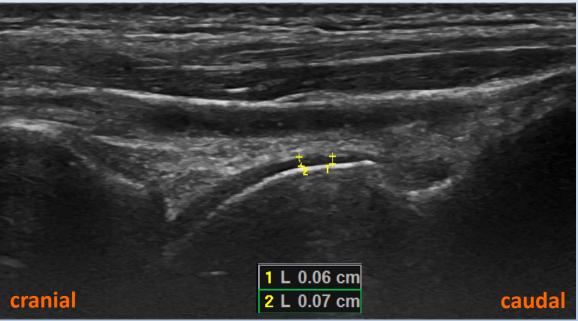


Name:	Date:
Patient Number:	Person completing this form:

						OC San Diego Health
Anterior Joint Space LAX: Cartilage Thickness	Joint Space content: Xnone anechoic hypoechoic mixed signal Assessment: hypoechoic complex fluid anechoic simple fluid soft tissue proliferation Xirregular bony margin diminished joint space other	Cartilage Thickness: Apex: 0.25cm cranial:	_0 _1 _2 _3	□ completely □ partially □ non compressible XN/A	Patient Position: supine, foot rests on bolster Axis: LAX Probe Position: across anterior talocrural joint Bony landmarks: tibia (proximal), talar dome (center), and talar head (medial) Muscles: Blood vessels: dorsalis pedis artery Nerves: none Other: fat pad anterior to talocrural joint space Measurement: Assess cartilage thickness perpendicularly to the bony margin at the apex and 0.25cm cranially.	0.25cm cranial caudal

J.A.D.E. Protocol: Ankle
Anterior Ankle LAX
Cartilage Thickness

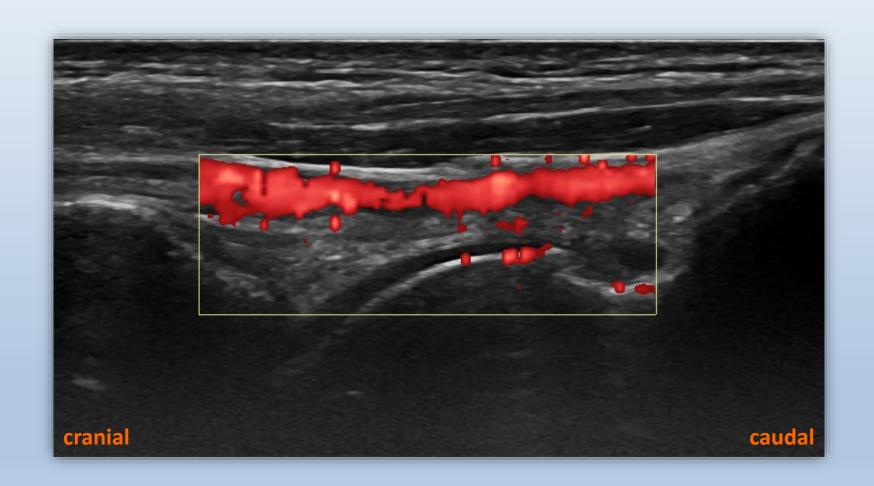




Name:	Date:
Patient Number:	Person completing this form:

						OC San Diego Fleaith
Anterior Joint Space LAX: Cartilage Thickness	Joint Space content: \(\)\(\)\(\)\(\)\(\)\(\)\(\)\(Cartilage Thickness: Apex: 0.06cm 0.25cm cranial: 0.07cm	0 01 02 03	□ completely □ partially □ non compressible XN/A	Patient Position: supine, foot rests on bolster Axis: LAX Probe Position: across anterior talocrural joint Bony landmarks: tibia (proximal), talar dome (center), and talar head (medial) Muscles: Blood vessels: dorsalis pedis artery Nerves: none Other: fat pad anterior to talocrural joint space Measurement: Assess cartilage thickness perpendicularly to the bony margin at the apex and 0.25cm cranially.	O.25cm cranial caudal
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J.A.D.E. Protocol: Ankle Anterior Ankle LAX - Power Doppler



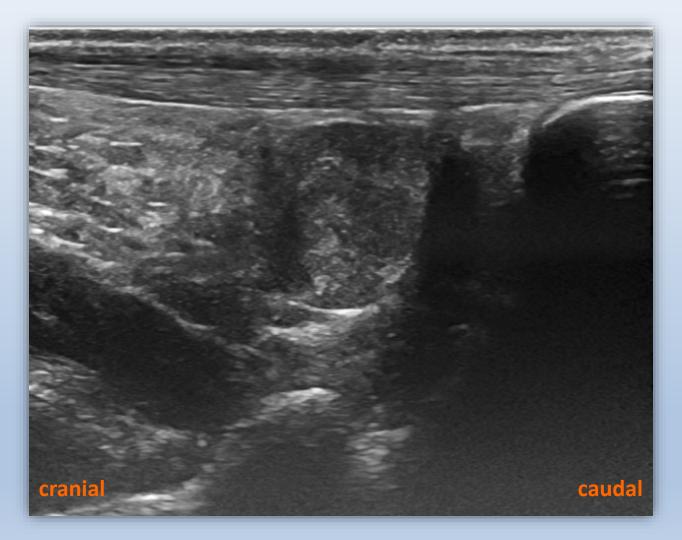
Name:	Date:
Patient Number:	Person completing this form:

Cartilage Thickness: **X**0 □ 1 Anterior Joint Joint Space content: □ completely Patient Position: supine, foot □ partially Space LAX: **X**none Apex: rests on bolster □ anechoic Cartilage □2 □ non compressible Axis: LAX □ hypoechoic Probe Position: across anterior Thickness □3 X/N/A 0.06cm □ mixed signal talocrural joint Bony landmarks: tibia (proximal), talar dome (center), and talar Assessment: ☐ hypoechoic complex fluid 0.25cm cranial: head (medial) □ anechoic simple fluid Muscles: Blood vessels: dorsalis pedis □ soft tissue proliferation 0.07cm ¥irregular bony margin artery diminished joint space Nerves: none other _____ Other: fat pad anterior to talocrural joint space Measurement: Assess cartilage thickness perpendicularly to the bony margin at the apex and 0.25cm cranially. cranial

J.A.D.E. Protocol

ADDITIONAL VIEWS

J.A.D.E. Protocol: Ankle Achilles Tendon LAX

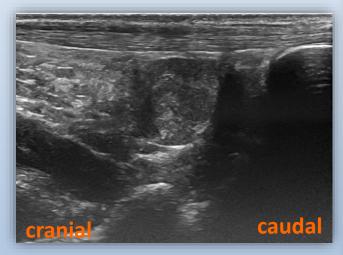


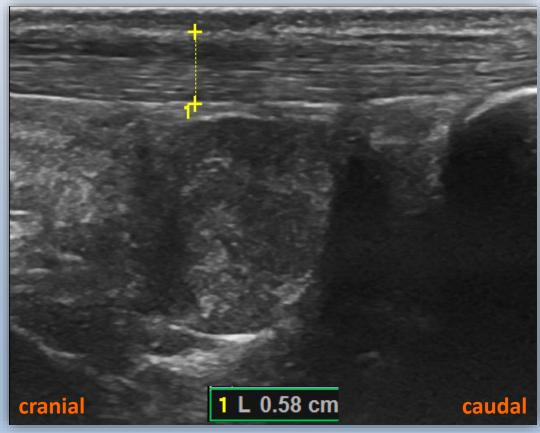
Name:	Date:
Patient Number:	Person completing this form:

	ANKLE							
	Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Achilles tendon Thickness Kager's Fat Pad	Kabnormal tendon fibers □ irregular bony margin (calcaneus) □ other □	Tendon thickness measurement: 2.0cm from calcaneus:		□ completely □ partially □ non compressible X N/A	Patient Position: prone, foot resting on a bolster Axis: LAX Probe Position: distal Achilles tendon Bony landmarks: tibia (proximal) and calcaneus (distal) Muscles: Achilles tendon (superior), Tibialis Posterior tendon (superior to tibia), and Flexor Digitorum tendon (superior to tibialis posterior) Blood vessels: none Nerves: none Other: Kager's fat pad (inferior to Achilles tendon), retro-calcaneal bursa (between Achilles tendon and calcaneus) Measurement: Assess tendon thickness by measuring perpendicularly at 2cm cranially from the end of the calcaneus.	crartal caudal		
Subtalar Joint	□ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ other			□ completely □ partially □ non compressible □ N/A	Patient Position: supine, foot rests on bolster, external rotation of the hip Axis: LAX Probe Position: connecting medial malleolus with calcaneus Bony landmarks: medial malleolus (proximal), sustentaculum tali (center), calcaneus (medial) Muscles: none Blood vessels: none Nerves: none	Statislar Joint Space cranial caudal		

J.A.D.E. Protocol: Ankle



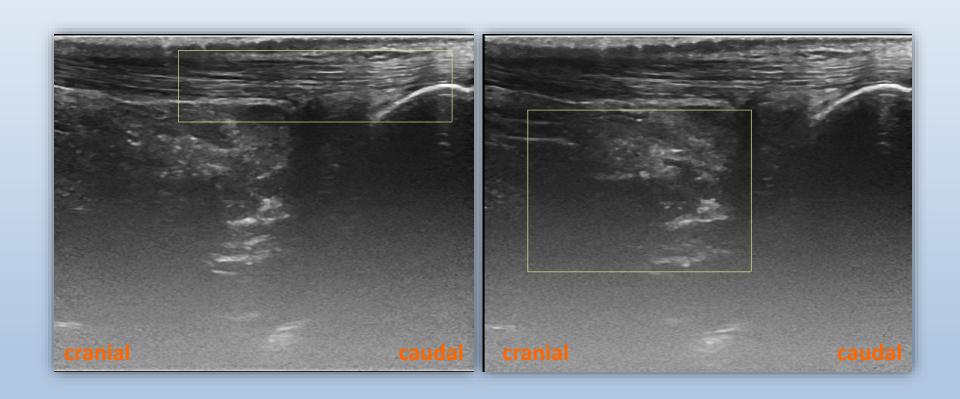




Name:	Date:
Patient Number:	Person completing this form:

	ANKLE							
	Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Achilles tendon Thickness Kager's Fat Pad	Xabnormal tendon fibers □ irregular bony margin (calcaneus) □ other	Tendon thickness measurement: 2.0cm from calcaneus: 0.58cm		□ completely □ partially □ non compressible X N/A	Patient Position: prone, foot resting on a bolster Axis: LAX Probe Position: distal Achilles tendon Bony landmarks: tibia (proximal) and calcaneus (distal) Muscles: Achilles tendon (superior), Tibialis Posterior tendon (superior to tibia), and Flexor Digitorum tendon (superior to tibialis posterior) Blood vessels: none Nerves: none Other: Kager's fat pad (inferior to Achilles tendon), retro-calcaneal bursa (between Achilles tendon and calcaneus) Measurement: Assess tendon thickness by measuring perpendicularly at 2cm cranially from the end of the calcaneus.	crartal caudal		
Subtalar Joint	□ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ other		_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, foot rests on bolster, external rotation of the hip Axis: LAX Probe Position: connecting medial malleolus with calcaneus Bony landmarks: medial malleolus (proximal), sustentaculum tali (center), calcaneus (medial) Muscles: none Blood vessels: none Nerves: none	Subtalar Joint Space cranial caudal		

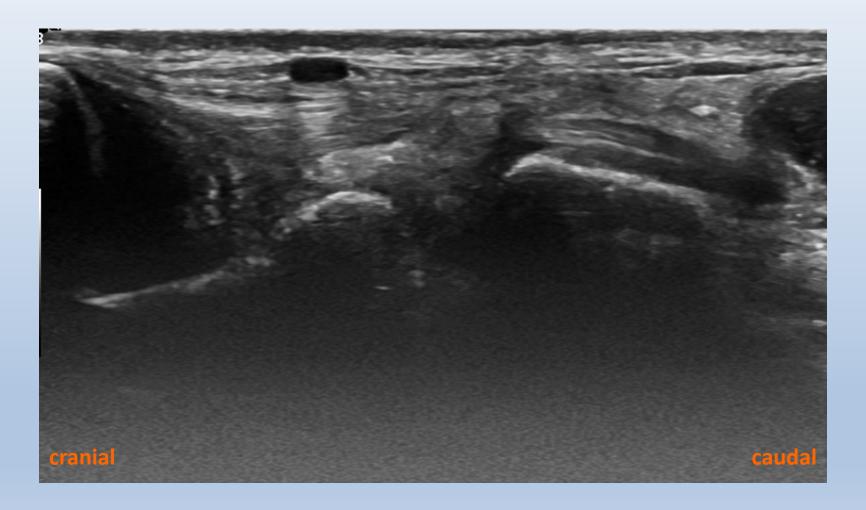
J.A.D.E. Protocol: Ankle Achilles Tendon LAX – Power Doppler



Name:	Date:
Patient Number:	Person completing this form:

	ANKLE							
	Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Achilles tendon Thickness Kager's Fat Pad	Xabnormal tendon fibers □ irregular bony margin (calcaneus) □ other	Tendon thickness measurement: 2.0cm from calcaneus: 0.58cm	X0 =1 =2 =3	□ completely □ partially □ non compressible X N/A	Patient Position: prone, foot resting on a bolster Axis: LAX Probe Position: distal Achilles tendon Bony landmarks: tibia (proximal) and calcaneus (distal) Muscles: Achilles tendon (superior), Tibialis Posterior tendon (superior to tibia), and Flexor Digitorum tendon (superior to tibialis posterior) Blood vessels: none Nerves: none Other: Kager's fat pad (inferior to Achilles tendon), retro-calcaneal bursa (between Achilles tendon and calcaneus) Measurement: Assess tendon thickness by measuring perpendicularly at 2cm cranially from the end of the calcaneus.	caudal caudal		
Subtalar Joint	□ hypoechoic complex fluid □ anechoic simple fluid □ soft tissue proliferation □ other		_0 _1 _2 _3	□ completely □ partially □ non compressible □ N/A	Patient Position: supine, foot rests on bolster, external rotation of the hip Axis: LAX Probe Position: connecting medial malleolus with calcaneus Bony landmarks: medial malleolus (proximal), sustentaculum tali (center), calcaneus (medial) Muscles: none Blood vessels: none Nerves: none	Subtalar Joint Space cranial caudal		

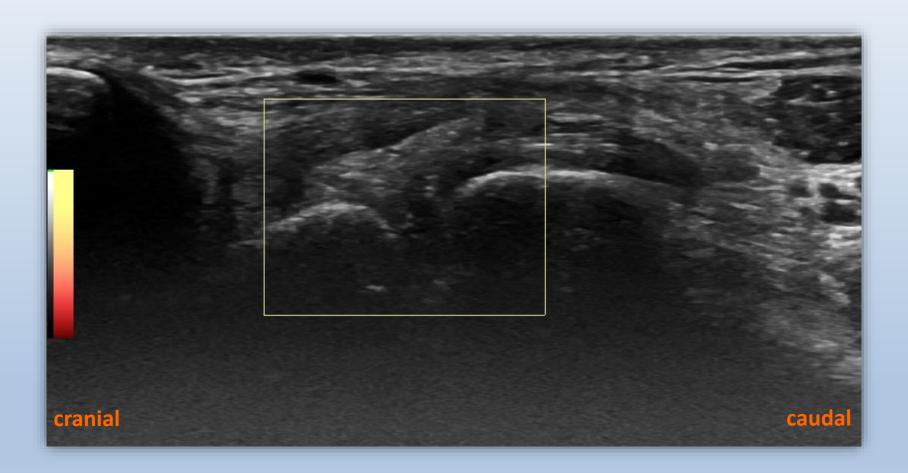
J.A.D.E. Protocol: Ankle **Subtalar Joint Medial Approach**



Name:	Date:
Patient Number:	Person completing this form:

	ANKLE Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Achilles tendon Thickness Kager's Fat Pad	Xabnormal tendon fibers □ irregular bony margin (calcaneus) □ other	Tendon thickness measurement: 2.0cm from calcaneus: 0.58cm	X0 □1 □2 □3	□ completely □ partially □ non compressible X N/A	Patient Position: prone, foot resting on a bolster Axis: LAX Probe Position: distal Achilles tendon Bony landmarks: tibia (proximal) and calcaneus (distal) Muscles: Achilles tendon (superior), Tibialis Posterior tendon (superior to tibia), and Flexor Digitorum tendon (superior to tibialis posterior) Blood vessels: none Nerves: none Other: Kager's fat pad (inferior to Achilles tendon), retro-calcaneal bursa (between Achilles tendon and calcaneus) Measurement: Assess tendon thickness by measuring perpendicularly at 2cm cranially from the end of the calcaneus.	Ziem.		
Subtalar Joint	□ hypoechoic complex fluid □ anechoic simple fluid ★ soft tissue proliferation □ other			□ completely □ partially ★ non compressible □ N/A	Patient Position: supine, foot rests on bolster, external rotation of the hip Axis: LAX Probe Position: connecting medial malleolus with calcaneus Bony landmarks: medial malleolus (proximal), sustentaculum tali (center), calcaneus (medial) Muscles: none Blood vessels: none Nerves: none	Subtalar Joint Space cranial caudal		

J.A.D.E. Protocol: Ankle **Subtalar Joint Medial Approach – Power Doppler**



Name:	Date:
Patient Number:	Person completing this form:

	ANKLE							
	Additional Views							
Purpose of Image	Description	Measurement	Power Doppler	Compressibility	Position	Picture		
Achilles tendon Thickness Kager's Fat Pad	Xabnormal tendon fibers □ irregular bony margin (calcaneus) □ other	Tendon thickness measurement: 2.0cm from calcaneus: 0.58cm	X0 □1 □2 □3	□ completely □ partially □ non compressible ■ N/A	Patient Position: prone, foot resting on a bolster Axis: LAX Probe Position: distal Achilles tendon Bony landmarks: tibia (proximal) and calcaneus (distal) Muscles: Achilles tendon (superior), Tibialis Posterior tendon (superior to tibia), and Flexor Digitorum tendon (superior to tibialis posterior) Blood vessels: none Nerves: none Other: Kager's fat pad (inferior to Achilles tendon), retro-calcaneal bursa (between Achilles tendon and calcaneus) Measurement: Assess tendon thickness by measuring perpendicularly at 2cm cranially from the end of the calcaneus.	cranial caudal		
Subtalar Joint	□ hypoechoic complex fluid □ anechoic simple fluid ★ soft tissue proliferation □ other		X0 =1 =2 =3	□ completely □ partially X non compressible □ N/A	Patient Position: supine, foot rests on bolster, external rotation of the hip Axis: LAX Probe Position: connecting medial malleolus with calcaneus Bony landmarks: medial malleolus (proximal), sustentaculum tali (center), calcaneus (medial) Muscles: none Blood vessels: none Nerves: none	Subtalar Joint Space cranial caudal		

THANK YOU