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## Tables

**Table 1. Stratified meta-analysis of ultrasound features for inter-rater reliability in knee OA**

Stratified meta-analysis		No. of studies	No. of patients	No. of joints	Kappa (95% CI)		Heterogeneity		
					Fixed	Random	P value	I <sup>2</sup>	Tau
Knee									
Kappa (Binary)	Effusion	6	242	281	<b>0.46(0.44-48)</b>	<b>0.75(0.41,1)</b>	<b>0.00</b>	<b>99</b>	<b>0.41</b>
	Synovial Hypertrophy	5	224	245	<b>0.37(0.34-0.40)</b>	<b>0.52(0.18,0.86)</b>	<b>0.00</b>	<b>98</b>	<b>0.38</b>
	Osteophyte	3	107	133	<b>0.89(0.83-0.95)</b>	<b>0.76(0.53,1)</b>	<b>0.00</b>	<b>83</b>	<b>0.19</b>
	Cartilage thickness	2	89	97	<b>0.98(0.95-1)</b>	<b>0.76(0.28,1)</b>	<b>0.00</b>	<b>95</b>	<b>0.34</b>
	Meniscal extrusion	4	211	219	<b>0.71(0.62-0.79)</b>	<b>0.66(0.49,0.83)</b>	<b>0.02</b>	<b>70</b>	<b>0.15</b>
	Baker's cyst	4	211	219	<b>0.92(0.83-1)</b>	<b>0.92(0.83,1)</b>	<b>0.58</b>	<b>0.00</b>	<b>0.00</b>
Kappa (Semi-quantitative)	Synovitis	2	24	48	<b>0.52(0.48-0.56)</b>	<b>0.63(0.36,0.90)</b>	<b>0.01</b>	<b>86</b>	<b>0.18</b>
	Effusion	1	11	22	<b>0.74(0.54-0.94)</b>				
	Osteophyte	4	150	174	<b>0.58(0.55-0.61)</b>	<b>0.66(0.50,0.82)</b>	<b>0.00</b>	<b>78</b>	<b>0.14</b>
	Cartilage thickness	2	47	60	<b>0.33(0.28-0.39)</b>	<b>0.44(0.15,0.74)</b>	<b>0.00</b>	<b>87</b>	<b>0.20</b>
	Meniscal extrusion	3	117	141	<b>0.84(0.81-0.87)</b>	<b>0.75(0.41,1)</b>	<b>0.00</b>	<b>98</b>	<b>0.30</b>
ICC	Effusion	2	63	81	<b>0.84(0.76-0.89)</b>	<b>0.84(0.74,0.90)</b>	<b>0.24</b>	<b>27</b>	<b>0.1</b>
	Osteophyte	1	45	45	<b>0.97(0.95-0.98)</b>				
	Cartilage thickness	5	236	254	<b>0.86(0.82-0.89)</b>	<b>0.86(0.53,0.97)</b>	<b>0.00</b>	<b>97</b>	<b>0.81</b>

	Meniscal extrusion	3	137	151	<b>0.94(0.92-0.96)</b>	<b>0.95(0.79,0.99)</b>	<b>0.00</b>	<b>95</b>	<b>0.65</b>
	Baker cyst	2	85	85	<b>0.95(0.92-0.97)</b>	<b>0.95(0.76,0.99)</b>	<b>0.00</b>	<b>93</b>	<b>0.60</b>

**Table 2. Stratified meta-analysis of ultrasound features for intra-rater reliability in knee OA**

Stratified meta-analysis		No. of studies	No. of patients	No. of joints	Kappa (95% CI)		Heterogeneity		
					Fixed	Random	P value	I <sup>2</sup>	Tau
Knee									
Kappa (Binary)	Effusion	1	13	26	<b>0.56(0.47-0.65)</b>				
	Synovial Hypertrophy	1	13	26	<b>0.49(0.34-0.64)</b>				
Kappa (Semi-quantitative)	Synovitis	2	24	48	<b>0.69(0.60-0.77)</b>	<b>0.69(0.60-0.78)</b>	<b>0.30</b>	<b>7</b>	<b>0.02</b>
	Effusion	1	11	22	<b>0.78(0.55-1)</b>				
	Doppler Activity	2	28	28	<b>0.88(0.72-1)</b>	<b>0.88(0.65-1)</b>	<b>0.15</b>	<b>51</b>	<b>0.12</b>
	Osteophyte	5	309	333	<b>0.74(0.68-0.79)</b>	<b>0.74(0.67-0.81)</b>	<b>0.30</b>	<b>18</b>	<b>0.03</b>
	Cartilage thickness	2	172	185	<b>0.55(0.45-0.66)</b>	<b>0.55(0.45-0.66)</b>	<b>0.91</b>	<b>0.00</b>	<b>0.00</b>
	Meniscal extrusion	3	117	141	<b>0.80(0.69-0.90)</b>	<b>0.81(0.66-0.96)</b>	<b>0.18</b>	<b>42</b>	<b>0.09</b>
ICC (reported ICC for semi scale in some papers)	Effusion	3	108	121	<b>0.89(0.85-0.92)</b>	<b>0.90(0.74-0.96)</b>	<b>0.00</b>	<b>86</b>	<b>0.41</b>
	Synovial hypertrophy	3	108	121	<b>0.82(0.75-0.87)</b>	<b>0.82(0.73-0.89)</b>	<b>0.20</b>	<b>37</b>	<b>0.13</b>
	Doppler activity	1	45	45	<b>0.75(0.59-0.86)</b>				
	Osteophyte	2	126	176	<b>0.93(0.91-0.95)</b>	<b>0.89(0.49-0.98)</b>	<b>0.00</b>	<b>96</b>	<b>0.64</b>
	Cartilage thickness	3	114	114	<b>0.88(0.83-0.92)</b>	<b>0.80(0.05-0.97)</b>	<b>0.00</b>	<b>96</b>	<b>0.90</b>
	Meniscal extrusion	4	318	381	<b>0.91(0.89-0.93)</b>	<b>0.91(0.78-0.96)</b>	<b>0.00</b>	<b>95</b>	<b>0.48</b>
	JSN	1	81	131	<b>0.93(0.90-0.95)</b>				
	Baker cyst	3	113	113	<b>0.90(0.86-0.93)</b>	<b>0.90(0.53-0.98)</b>	<b>0.00</b>	<b>95</b>	<b>0.75</b>

**Table 3. Stratified meta-analysis of ultrasound features for construct validity in knee OA (Asymptomatic Control)**

Stratified meta-analysis	No. of studies	No. of patients	No. of joints	Odd ratio (95% CI)		Heterogeneity		
				Fixed	Random	P value	I <sup>2</sup>	Tau
Knee								
Synovitis	1	56	122	<b>10.53(3.42,32.44)</b>				
Effusion	5	421	598	<b>5.20(2.89,9.35)</b>	<b>7.46(2.56,21.70)</b>	<b>0.04</b>	<b>61</b>	<b>0.9</b>
Osteophyte	1	56	122	<b>3.23(0.20,53.47)</b>				
Meniscal extrusion	4	360	476	<b>2.38(1.21,4.69)</b>	<b>3.08(1.06,8.92)</b>	<b>0.14</b>	<b>45</b>	<b>0.70</b>
Infra-patella bursitis	1	101	101	<b>4.13(0.23,75.33)</b>				
Baker cyst	5	421	598	<b>2.87(1.73,4.75)</b>	<b>3.23(1.57,6.67)</b>	<b>0.15</b>	<b>41</b>	<b>0.52</b>
Pes Anserine bursitis	1	101	101	<b>2.95(0.16,55.53)</b>				

**Table 4. Stratified meta-analysis of ultrasound features for construct validity in knee OA (Pain)**

Stratified meta-analysis	No. of studies	No. of patients	No. of joints	Correlation coefficient (95% CI)		Heterogeneity		
				Fixed	Random	P value	I <sup>2</sup>	Tau
Knee								
Synovitis	2	287	287	<b>0.27(0.16,0.38)</b>	<b>0.27(0.16,0.38)</b>	<b>0.72</b>	<b>0</b>	<b>0</b>
Effusion	7	1006	1092	<b>0.12(0.06,0.18)</b>	<b>0.12(0.06,0.18)</b>	<b>0.46</b>	<b>0</b>	<b>0</b>
Synovial hypertrophy	2	71	85	<b>0.20(0.07,0.32)</b>	<b>0.20(0.07,0.32)</b>	<b>0.43</b>	<b>0</b>	<b>0</b>
Power Doppler	1	41	41	<b>0.37(0.07,0.61)</b>				
Osteophyte	2	353	353	<b>0.15(0.05,0.25)</b>	<b>0.15(0.05,0.25)</b>	<b>0.83</b>	<b>0</b>	<b>0</b>
Meniscal extrusion	2	238	238	<b>0.17(0.04,0.29)</b>	<b>0.17(0.04,0.29)</b>	<b>0.99</b>	<b>0</b>	<b>0</b>
Cartilage thickness	4	287	295	<b>0.22(0.11,0.33)</b>	<b>0.22(0.11,0.33)</b>	<b>0.45</b>	<b>0</b>	<b>0</b>
Baker cyst	3	264	264	<b>0.13(0.00,0.24)</b>	<b>0.13(0.00,0.24)</b>	<b>0.68</b>	<b>0</b>	<b>0</b>
Pes Anserine bursitis	2	257	414	<b>0.02(-0.08,0.12)</b>	<b>0.02(-0.08,0.12)</b>	<b>0.83</b>	<b>0</b>	<b>0</b>

**Table 5. Stratified meta-analysis of ultrasound features for construct validity in knee OA (X rays)**

Stratified meta-analysis	No. of studies	No. of patients	No. of joints	Correlation coefficient (95% CI)		Heterogeneity		
				Fixed	Random	P value	I <sup>2</sup>	Tau
Knee								
Synovitis	1	45	45	<b>0.39(0.11,0.62)</b>				
Effusion	2	139	139	<b>0.55(0.42,0.66)</b>	<b>0.54(0.37,0.68)</b>	<b>0.21</b>	<b>35</b>	<b>0.10</b>
Synovial hypertrophy	1	94	94	<b>0.70(0.58,0.79)</b>				
Osteophyte	3	94	102	<b>0.60(0.45,0.71)</b>	<b>0.60(0.45,0.71)</b>	<b>0.43</b>	<b>0</b>	<b>0</b>
Meniscal protrusion	2	111	212	<b>0.48(0.37,0.58)</b>	<b>0.48(0.34,0.60)</b>	<b>0.22</b>	<b>34</b>	<b>0.07</b>
Cartilage thickness	2	60	68	<b>0.35(0.12,0.55)</b>	<b>0.35(0.12,0.55)</b>	<b>0.37</b>	<b>0</b>	<b>0</b>
Baker cyst	1	94	94	<b>0.30(0.10,0.47)</b>				
Pes Anserine bursitis	2	242	484	<b>0.12(0.03,0.21)</b>	<b>0.13(0.00,0.26)</b>	<b>0.15</b>	<b>52</b>	<b>0.07</b>

**Table 6. Stratified meta-analysis of ultrasound features for internal responsiveness in knee OA (paired sample)**

Stratified meta-analysis	No. of studies	No. of patients	No. of joints	Correlation coefficient (95% CI)		Heterogeneity		
				Fixed	Random	P value	I <sup>2</sup>	Tau
Knee								
Effusion	2	73	73	<b>0.28(0.00,0.56)</b>	<b>0.28(0.00,0.56)</b>	<b>0.63</b>	<b>0</b>	<b>0</b>
Synovial hypertrophy	2	63	63	<b>0.30(0.05,0.56)</b>	<b>0.30(0.05,0.56)</b>	<b>0.61</b>	<b>0</b>	<b>0</b>
Cartilage thickness	3	136	157	<b>0.20(0.04,0.36)</b>	<b>0.20(0.04,0.36)</b>	<b>0.61</b>	<b>0</b>	<b>0</b>
Baker cyst	4	128	128	<b>0.58(0.40,0.77)</b>	<b>0.58(0.40,0.77)</b>	<b>0.78</b>	<b>0</b>	<b>0</b>
Quadriceps thickness	1	66	132	<b>0.32(0.17,0.47)</b>				