

Table S1 – Summary characteristics of studies included which tested the ICDAS in assessment of caries lesion severity

Study	Reference	Type of Tooth	Surface	Setting	Examiner (experience/training*)	Sample size	D1		D3	
							Sens	Spec	Sens	Spec
Achilleos EE et al, 2013	histology	permanent	Occlusal	laboratorial	intermediate + training	38	0.80	0.50	-	-
Braga MM et al, 2009b	histology	primary	approximal	laboratorial	intermediate + training	131	0.89	0.84	0.50	0.97
Braga MM et al, 2009a	histology	primary	Occlusal	laboratorial	experienced	98	0.92	0.79	0.78	0.94
Braga MM et al, 2010	histology	primary	Occlusal	clinical	experienced	50	0.85	0.79	0.64	0.82
Bussaneli DG et al, 2015	histology	primary	Occlusal	laboratorial	experienced	77	0.87	0.45	0.42	0.95
Castilho LS et al., 2016	histology	permanent	Occlusal	clinical	intermediate + training	43	0.71	0.50	1.00	0.82
Chawla N et al, 2012	histology	primary	approximal	laboratorial	experienced	135	0.26	0.92	0.36	0.57
Cotta F et al., 2015	histology	permanent	Occlusal	clinical	intermediate + training	49	0.7	0.44	0.57	0.95
Diniz MB et al, 2009	histology	permanent	Occlusal	laboratorial	Experienced	163	1.00	0.99	0.69	1.00
Diniz MB et al, 2011	histology	permanent	Occlusal	laboratorial	Experienced	104	0.79	0.83	-	-
Diniz MB et al, 2012	histology	permanent	Occlusal	clinical	Experienced	105	0.93	0.60	0.52	0.77
Ekstrand KR et al, 2011 (1)	histology	primary	approximal	laboratorial	intermediate + training	112	1.00	0.60	0.93	0.97

Ekstrand KR et al,2011 (2)	histology	permanent	approximal	laboratorial	intermediate + training	151	1.00	0.48	0.87	0.97
Ekstrand KR et al., 2007	histology	permanent	Occlusal	laboratorial	Experienced	139	0.98	0.92	0.91	0.94
Freitas LA et al., 2016	histology	primary	Proximal	clinical	Unclear	166	0.55	0.73	-	-
Gomes J et al, 2013	histology	permanent	Occlusal	laboratorial	intermediate + training	112	0.90	0.87	0.87	0.95
Graye M et al, 2012	histology	permanent	Occlusal	laboratorial	intermediate	41	0.72	0.65	0.68	1.00
Holtzman JS et al, 2014	histology	permanent	Occlusal	laboratorial	intermediate + training	120	0.92	0.83	-	-
Jablonski-Momeni A, 2008	histology	permanent	Occlusal	laboratorial	Experienced	93	0.71	0.91	0.79	0.90
Jablonski-Momeni A, 2012	operative intervention	permanent	Occlusal	laboratorial	Experienced	84	1.00	1.00	0.70	0.96
Jablonski-Momeni A, 2013	histology	permanent	Occlusal	laboratorial	intermediate	101	0.97	0.80	0.71	0.96
Jallad M et al., 2015	histology	permanent	Occlusal	laboratorial	unclear + training	60	0.82	0.86	-	-
Ko HY et al, 2015	histology	permanent	Proximal	laboratorial	intermediate + training	95	0.80	0.68	0.64	0.68
Kuhnisch J et al., 2016	operative intervention	permanent	Proximal	clinical	experienced	127	-	-	0.02	nc
Luz PB et al., 2015	visual examination	permanent	Occlusal	clinical	undergraduated + training	2861	0.46	0.97	0.50	0.98
Markowitz K et al, 2013	histology	permanent	Occlusal	laboratorial	intermediate	31	-	-	0.65	0.82
Matos R et al, 2011	operative intervention	primary	Occlusal	clinical	intermediate + training	407	-	-	0.86	0.98
Melo M et al., 2015	operative intervention	permanent	Occlusal	clinical	unclear	32	-	-	0.75	0.75

Table 1. Summary of the studies included in the meta-analysis										
Study	Study design	Study type	Site	Setting	Operator	n	Prevalence	Prevalence	Prevalence	Prevalence
							(%)	(%)	(%)	(%)
Mitropoulos P et al, 2010	histology	permanent	approximal	laboratorial	experienced	40	0.96	0.50	1.00	0.41
Neuhaus KW et al, 2011	histology	primary	Occlusal	laboratorial	experienced	37	0.82	0.65	0.83	0.85
Neuhaus KW et al, 2015a	histology	permanent	approximal	laboratorial	intermediate + training	118	0.33	0.84	0.04	0.89
Neuhaus KW et al., 2015b (1)	histology	permanent	Occlusal	laboratorial	experienced	98	0.74	0.58	0.47	0.84
Neuhaus KW et al., 2015b (2)	histology	permanent	Occlusal	laboratorial	undergraduated + training	98	0.83	0.26	0.60	0.78
Noaves TF et al, 2012	histology	primary	Occlusal	laboratorial	experienced	113	0.97	0.18	0.53	0.99
Novaes TF et al, 2009	visual examination**	primary	approximal	clinical	intermediate + training	621	0.21	0.95	0.30	1.00
Novaes TF et al, 2010	visual examination**	primary	approximal	clinical	experienced	592	0.66	0.73	0.23	0.99
Ozkan G et al., 2015	histology	permanent	Occlusal	laboratorial	experienced	60	0.94	0.55	0.74	0.97
Ozturk & Sinanoglu, 2015	histology	permanent	Occlusal	laboratorial	experienced	121	-	-	0.76	0.91
Parviainen H et al, 2013	histology	permanent	Occlusal	laboratorial	experienced	27	-	-	0.78	0.87
Patel SA et al., 2014	histology	permanent	Occlusal	laboratorial	intermediate + training	264	0.92	0.43	-	-
Piovesan C et al, 2013(1)	histology	primary	approximal	laboratorial	intermediate + training	134	0.66	0.93	0.84	0.99
Piovesan C et al, 2013(2)	histology	primary	Smooth	laboratorial	intermediate + training	134	0.64	0.94	0.67	0.99
Piovesan C et al, 2013(3)	histology	primary	Occlusal	laboratorial	intermediate + training	28	0.72	0.84	0.56	0.92
Rodrigues JA et al, 2013	histology	permanent	Occlusal	laboratorial	intermediate	170	0.80	0.64	0.74	0.81

Rodrigues JA et al, 2008	histology	permanent	Occlusal	laboratorial	experienced	119	0.95	1.00	0.65	0.73
Shoaib L et al, 2009 ⁽¹⁾	histology	primary	Occlusal	laboratorial	experienced	107	0.75	0.90	0.63	0.93
Shoaib L et al, 2009 ⁽²⁾	histology	primary	approximal	laboratorial	experienced	224	0.66	0.85	0.58	0.94
Souza JF et al, 2013	histology	primary	Occlusal	laboratorial	experienced	79	0.75	0.74	0.94	0.64
Soviero VM et al, 2012	histology	primary	approximal	laboratorial	experienced	48	0.82	0.88	0.44	0.97
Teo TK et al, 2014 ⁽¹⁾	histology	primary	Occlusal	clinical	experienced	64	0.89	0.61	0.95	0.61
Teo TK et al, 2014 ⁽²⁾	histology	primary	occlusal	laboratorial	experienced	102	0.91	0.71	0.98	0.60
Zandona AG et al, 2009 ⁽¹⁾	histology	permanent	Occlusal	laboratorial	novice + training	60	0.92	0.86	1.00	0.86
Zandona AG et al, 2009 ⁽²⁾	histology	permanent	Occlusal	laboratorial	intermediate + training	60	0.90	0.86	0.97	0.86
Zandona AG et al, 2009 ⁽³⁾	histology	permanent	Occlusal	laboratorial	experienced	60	0.91	0.86	0.97	0.86

Sens= sensitivity, Spec= Specificity

* if training is not reported is because it was not mentioned in the paper/ **after tooth separation/nc=non calculable

Different numbers between parentheses for a same study represent different samples or settings.

See in the Appendix the complete references of included papers.

