

Supplementary

Table S1 Distribution of terminology labels in the validation set.

Old Terms	# of occurrences	Prevalence	New terms	# of occurrences	Prevalence
Annular tear	16	0.35%	Annular fissure	77	1.67%
Spondylosis deformans	58	1.26%	Degenerated disc	181	3.93%
Intervertebral osteochondrosis	96	2.08%	Degenerative disc changes	129	2.80%
Dehydration	333	7.23%	Protrusion	1,697	36.84%
Loss of height	216	4.69%	Extrusion	258	5.60%
Herniated nucleous pulposus (HNP)	71	1.54%	Bulging	94	2.04%
Ruptured disc	15	0.33%	Central	276	5.99%
Protruded disc	68	1.48%	Subarticular	68	1.48%
Prolapsed disc	16	0.35%	Foraminal	92	2.00%
Bulging disc	19	0.41%	Right central	32	0.69%
Right paracentral	57	1.24%	Right subarticular	76	1.65%
Right posterolateral	59	1.28%	Right foraminal	109	2.37%
Left paracentral	69	1.50%	Left central	46	1.00%
Left posterolateral	74	1.61%	Left subarticular	107	2.32%
			Left foraminal	197	4.28%

Table S2 Percentage and number of lumbar spine reports

Period	May 2010–Feb 2015		Mar 2015–Feb 2022	
	No. of reports	Percentage	No. of reports	Percentage
A	8,594	54.3%	5,424	29.7%
B	2,953	18.7%	10,383	56.9%
C	4,266	27.0%	2,444	13.4%

Table S3 Percentage and distribution of each term related to each main category

Cat.	Terms	Radiologist A				Radiologist B				Radiologist C				
		May 2010– Feb 2015		Mar 2015– Feb 2022		May 2010– Feb 2015		Mar 2015– Feb 2022		May 2010– Feb 2015		Mar 2015– Feb 2022		
		N	%	N	%	N	%	N	%	N	%	N	%	
1	Old	Annular tear	0	0	0	0	0	0	0	0	1	0.02	0	0
	New	Annular fissure	1	0.01	0	0	0	0	2	0.02	195	4.14	221	8.55
2	Old	Spondylosis deformans	0	0	0	0	0	0	0	0	0	0	0	0
		Intervertebral osteochondrosis	0	0	0	0	1532	31.28	1	0.01	0	0	0	0
	New	Dehydration	1291	14.41	2980	53.09	1682	53.43	1021	9.33	2296	44.41	936	30.73
		Loss of height	113	1.07	395	5.82	904	30.09	1096	9.39	2216	43.13	896	29.4
		Degenerated disc	834	8.96	27	0.46	80	2.1	24	0.15	2	0.05	9	0.38
		Degenerative disc changes	1	0.01	0	0	6	0.2	31	0.28	220	4.59	1084	36.78
3	Old	Herniated nucleus pulposus (HNP)	20	0.23	6	0.11	8	0.27	5	0.05	7	0.14	5	0.21
		Ruptured disc	0	0	0	0	0	0	0	0	0	0	0	0
		Protruded disc	0	0	0	0	112	2.75	26	0.17	1	0.02	1	0.04
		Prolapsed disc	0	0	0	0	0	0	0	0	0	0	0	0
		Bulging disc	0	0	0	0	0	0	0	0	0	0	0	0
	New	Protrusion	18813	89.31	17114	96.3	5964	78.6	32261	96.84	11140	94.21	6528	92.04
		Extrusion	31	0.2	82	0.87	45	0.81	9159	55.56	273	3.9	97	3.29
4	Old	Bulging	617	7.24	598	11.11	101	3.43	3431	33.17	137	3.24	584	24.35
		Right paracentral	1610	9.61	24	0.24	1	0.03	475	2.84	341	6.81	0	0
		Right posterolateral	3	0.04	8	0.11	450	8.11	3	0.02	457	8.25	9	0.29
		Left paracentral	1767	10.83	12	0.13	1	0.03	533	3.21	434	8.42	0	0
	New	Left posterolateral	9	0.06	8	0.11	546	9.91	5	0.04	472	8.16	10	0.38
		Central	12192	81.03	9546	80.86	201	3.09	6832	36.61	40	0.85	1597	50.33
		Subarticular	0	0	2090	18.42	33	0.54	2782	15.31	4	0.09	1155	36.45
		Foraminal	8511	58.3	6782	59.3	1604	25.17	7407	38.64	2291	38.9	1524	43.16
		Right central	10	0.07	513	4.87	41	0.68	380	1.98	2	0.05	2	0.04
		Right subarticular	0	0	692	6.63	8	0.14	1008	5.67	0	0	281	10.09
New	Right foraminal	961	5.58	1347	10.89	645	11.67	3650	23.17	862	17.45	662	23.69	
	Left central	11	0.08	584	5.65	42	0.68	367	1.9	2	0.05	2	0.08	
	Left subarticular	0	0	745	7.08	21	0.41	1217	6.76	1	0.02	359	12.43	
	Left foraminal	1201	6.8	1682	13.68	605	10.72	3429	21.97	733	15.25	615	21.73	