

Spine Diagnostic Imaging Referral Guideline Supplementary files

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Appendix 1. Search Strategies

Spinal Conditions – Imaging

2024 Feb 20

Ovid Multifile

Database: Embase Classic+Embase <1947 to 2024 February

19>, Ovid MEDLINE(R) ALL <1946 to February 19, 2024>

Search Strategy:

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1  exp Spinal Diseases/ (470906)
2  exp Spinal Cord Diseases/ (511781)
3  ((spinal or spine?) adj3 (disease? or disorder? or
dysfunction? or syndrome?)).tw,kw,kf. (47046)
4  exp Leukoencephalopathies/ (46167)
5  (leukoencephalopath* or leuko-encephalopath* or
leuko-encephalo-path* or leukoencephalo-
path*).tw,kw,kf. (23154)
6  (ataxia? adj3 ((CNS or central nervous system) adj2
(hypomyelinat* or hypo-myelinat*))).tw,kw,kf. (103)
7  ((CACH or CACH VWM) adj3 (disease? or disorder? or
dysfunction? or syndrome?)).tw,kw,kf. (55)
8  ((white matter or VWM) adj3 (disease? or disorder? or
dysfunction? or syndrome?)).tw,kw,kf. (7917)
9  ((white matter or VWM) adj3 (leukodystroph* or
leuko-dystroph*)).tw,kw,kf. (262)
10 vanishing white matter?.tw,kw,kf. (793)
11 myelinosis centralis diffusa.tw,kw,kf. (0)
12 ((spinal cord? or spinal nerve?) adj3 (disease? or
disorder? or dysfunction? or neuropath* or neuro-path*
or syndrome?)).tw,kw,kf. (17279)
13 (myelopath* or myelo-path* or neuromyelopath or
neuro-myelopath or neuro-myelo-path* or neuromyelo-
path*).tw,kw,kf. (40731)
14 ((spine? or spinal) adj (neuropath* or neuro-
path*)).tw,kw,kf. (164)
15 ((noninfectious or non-infectious) adj3
myelitis).tw,kw,kf. (26)
16 exp Demyelinating Diseases/ (360186)
17 (demyelinati* or de-myelinati*).tw,kw,kf. (99814)
18 clinically isolated syndrome?.tw,kw,kf. (6297)
19 ((spine? or spinal) adj3 schistosomia*).tw,kw,kf. (208)
20 Tabes Dorsalis/ (1708)
21 (tabes adj (dorsalis or spinalis)).tw,kw,kf. (1307)
22 ((meningomyelitis* or meningo-myelitis* or spine? or
spinal) adj3 syphili*).tw,kw,kf. (222)
23 (myelosyphili* or myelo-syphili* or neurosyphili* or
neuro-syphili*).tw,kw,kf. (7194)
24 (locomotor ataxia* or loco-motor ataxia*).tw,kw,kf.
(152)
25 exp Central Nervous System Infections/ and (exp
Spine/ or Spinal Cord/) (8267)
26 (Bone Diseases, Infectious/ or Osteomyelitis/) and
exp Spine/ (4074)
27 ((disc or discs or disk or disks or vertebr* or spinal or
spine?) adj3 (infection? or inflam* or osteomyelit#s or
osteo-myelit#s)).tw,kw,kf. (20599)
28 Discitis/ (5244)

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29 (dis#itis or spondylodis#itis or spondylo-
dis#itis).tw,kw,kf. (9465)
30 Epidural Abscess/ (6147)
31 ((epidura* or extradura* or extra-dura* or spinal or
spine? or subdura* or sub-dura*) adj3 (abscess* or
empy?ema* or infection* or inflam*)).tw,kw,kf. (23890)
32 exp Myelitis/ (122890)
33 (myelitis or poliomyelitis or polio-myelitis or
postpoliomyelitis or post-poliomyelitis or post-polio-
myelitis or postpolio-myelitis or polio encephalitis or
infantile paraly#s).tw,kw,kf. (57286)
34 Atlanto-Axial Joint/ab [abnormalities] (248)
35 (atlantoaxial instabilit* or atlanto-axial instabilit* or
atlantoaxial subluxation? or atlanto-axial
subluxation?).tw,kw,kf. (4567)
36 (AAI and atlanto*).tw,kw,kf. (230)
37 ((misalign* or mis-align*) adj3 (cervical spine? or
cervical vertebra*)).tw,kw,kf. (17)
38 exp Back Pain/ (190238)
39 ((back or cervical or neck? or radicular* or radiculo*
or spinal or spine? or thora* or vertebr*) adj3 (ache? or
aching or pain*)).tw,kw,kf. (233802)
40 (backache? or neckache?).tw,kw,kf. (8573)
41 (cervicalgi* or cervicodyn*).tw,kw,kf. (656)
42 (radiculopath* or radiculit#s).tw,kw,kf. (22780)
43 Cauda Equina Syndrome/ (3617)
44 Cauda Equina/ and (disease? or disorder? or
dysfunction? or myelopath* or myeloneuropath* or
myeloneuro-path* or myelo-neuropath* or myelo-neuro-
path* or pain or syndrome?).ti,kw,kf. (1882)
45 ((cauda or caudal) adj2 syndrome).tw,kw,kf. (5738)
46 (Pain/ or Acute Pain/ or Chronic Pain/) and (exp
Spine/ or Spinal Cord/) (29150)
47 ((spinal or spine?) adj3 pain*).tw,kw,kf. (22125)
48 Polyradiculopathy/ (12210)
49 (polyradiculopath* or polyradiculopath* or
polyradiculit#s or poly-radiculit#s).tw,kw,kf. (2368)
50 Spinal Neoplasms/ (19250)
51 exp Spinal Cord Neoplasms/ (30948)
52 ((spinal or spine? or epidural*) adj3
(adenocarcinoma* or adeno-carcinoma* or cancer* or
carcinoma* or malignan* or mass$2 or neoplas* or
tumo?r*)).tw,kw,kf. (33175)
53 Astrocytoma/ (42316)
54 Ependymoma/ (18433)
55 Lipoma/ (32634)
56 Meningioma/ (62502)
57 exp Neurofibroma/ (50521)
58 Syringomyelia/ (11426)
59 (astrocytom* or astro-cytom* or ependymom* or
ependy-mom* or lipoma* or meningiom* or neurofibrom*
or neuro-fibrom* or hydrosyringomyeli* or hydro-
syringomyeli* or hydro-syringo-myeli* or hydrosyringo-
myeli* or syringomyelia* or syringo-myelia* or
syringomyelus or syringo-myelus).tw,kw,kf. (208198)
60 Pneumorrhachis/ (312)

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Appendix 1. Search Strategies

- 61 pneumor?hachis.tw,kw,kf. (506)
62 Spinal Cord Compression/ (32185)
63 ((spinal or spine?) adj3 compress*).tw,kw,kf. (27271)
64 (myelopath* adj3 compress*).tw,kw,kf. (2587)
65 (Conus Medullaris adj (disease? or disorder? or syndrome?)).tw,kw,kf. (229)
66 Spinal Fractures/ (34238)
67 ((spinal or spine?) adj3 (break* or broke? or fractur*)).tw,kw,kf. (22140)
68 compress* fracture?.tw,kw,kf. (14516)
69 exp Spinal Cord Vascular Diseases/ (14511)
70 ((spinal or spine?) adj3 isch?emi*).tw,kw,kf. (8987)
71 (hematomyelia? or hemato-myelia? or spinal artery dissection? or spinal artery syndrome?).tw,kw,kf. (1038)
72 exp Muscular Atrophy, Spinal/ (80351)
73 ((spinal or spine? or progressive) adj3 (muscular atroph* or amyotroph* or amyotroph*)).tw,kw,kf. (21810)
74 ((bulbospinal or bulbo-spinal or hereditary motor) adj3 (neuropath* or neuro-path*)).tw,kw,kf. (203)
75 exp Spinocerebellar Degenerations/ (17846)
76 ((spine or spinal or spino* or cerebellar or cerebellar or cerebello-lental) adj degeneration?).tw,kw,kf. (7594)
77 ((cerebellar or cerebellar or hereditary or Marinesco-Garland) adj3 ataxia?).tw,kw,kf. (21529)
78 ((Garland-Moorhouse or Marinesco-Garland or Marinesco-Sjogren or Marinesco-Sjogren-Garland) adj (disease? or disorder? or syndrome?)).tw,kw,kf. (444)
79 Stiff-Person Syndrome/ (2166)
80 (stiff adj (baby or limb or limbs or man or person or trunk)).tw,kw,kf. (3156)
81 stiffman.tw,kw,kf. (43)
82 ((familial or family or hereditary or inherited) adj (hyperekplexia? or hyper-ekplexia?)).tw,kw,kf. (158)
83 ((Moersch-Woltmann or Startle) adj (disease? or disorder? or syndrome?)).tw,kw,kf. (424)
84 Subacute Combined Degeneration/ (703)
85 ((subacute or sub-acute) adj2 combined adj2 degenerati*).tw,kw,kf. (1581)
86 Amyotrophic Lateral Sclerosis/ (74989)
87 amyotrophic lateral sclero*.tw,kw,kf. (74094)
88 (ALS and (amyotrophic or lateral or sclero*)).tw,kw,kf. (51825)
89 (charcot adj (disease? or disorder? or syndrome?)).tw,kw,kf. (95)
90 (Gehrig* adj (disease? or disorder? or syndrome?)).tw,kw,kf. (528)
91 Guam Disease.tw,kw,kf. (13)
92 ((spine or spinal or disc? or disk?) adj3 (degenerat* or degrad* or displac* or hernia* or protrud* or protrusi* or prolaps* or slipped)).tw,kw,kf. (87142)
93 Ossification of Posterior Longitudinal Ligament/ (2885)
94 (posterior longitudinal ligament? adj3 (calcif* or calcinos* or ossif*)).tw,kw,kf. (4737)
95 Platybasia/ (1867)
96 (platybasia* or platy-basia* or basilar impression?).tw,kw,kf. (1443)
97 Posterior Cervical Sympathetic Syndrome/ (71)
98 (posterior cervical sympathetic adj (disease? or disorder? or syndrome?)).tw,kw,kf. (121)
99 (Barre-Lieou adj3 (disease? or disorder? or syndrome?)).tw,kw,kf. (275)
100 exp Spinal Curvatures/ (357210)
101 ((spinal or spine?) adj3 (curvature? or deform*)).tw,kw,kf. (28962)
102 (hyperkyphos#s or hyper-kyphos#s or kyphos#s or lordos#s or scolios#s).tw,kw,kf. (97024)
103 (Scheuermann* adj (disease? or disorder? or syndrome?)).tw,kw,kf. (1223)
104 exp Spinal Osteochondrosis/ (2587)
105 ((spinal or spine?) adj3 (osteochondro* or osteochondro*)).tw,kw,kf. (908)
106 exp Spinal Osteophytosis/ (4250)
107 ((spinal or spine?) adj3 (osteophytos#s or osteophytos#s)).tw,kw,kf. (140)
108 Spinal Stenosis/ (14984)
109 ((spinal or spine?) adj3 stenosis#s).tw,kw,kf. (20444)
110 exp Spondylitis/ (129975)
111 spondylit#s.tw,kw,kf. (57372)
112 exp Spondylosis/ (20218)
113 (spondylos#s or spondylolys#s or spondylolisthes#s or spondylolisthes#s or spondylo-listhes#s or olisthes#s).tw,kw,kf. (28389)
114 or/1-113 [SPINAL CONDITIONS OF INTEREST] (1959459)
115 Diagnostic Imaging/ (302152)
116 dg.fs. [diagnostic imaging] (1481052)
117 (diagnos* adj3 (image? or imaging)).tw,kw,kf. (148257)
118 (x-ray* or xray*).tw,kw,kf. (1013646)
119 Image Interpretation, Computer-Assisted/ (92275)
120 exp Imaging, Three-Dimensional/ (224450)
121 ((3D or 3-D or 3-dimension* or three dimension*) adj (image? or imaging)).tw,kw,kf. (52047)
122 exp Ultrasonography/ (1532653)
123 (ultrasound* or ultrasonograph* or ultrasonograph* or ultrasonic* or ultra-sonic*).tw,kw,kf. (1189680)
124 (echograph* or echo-graph* or echotomograph* or echo-tomograph* or echosonograph* or echo sonograph*).tw,kw,kf. (26765)
125 exp Radiography/ (2736590)
126 (radiograph* or radiographic imag* or roentgenograph* or roentgeno-graph*).tw,kw,kf. (657740)
127 (fluoroscop* or fluoro-scop*).tw,kw,kf. (95356)
128 exp Radionuclide Imaging/ (458991)
129 ((radionuclide* adj2 imag*) or (radio-nuclide* adj2 imag*) or (radionuclide* adj2 scan*) or (radio-nuclide* adj2 scan*) or (radioisotope* adj2 imag*) or (radioisotope* adj2 scan*) or (radio-isotope* adj2 scan*) or scintigra* or scinti-gra* or scintiphotograph* or scinti-photograph* or scintiscan* or scinti-scan* or scanograph* or lymphoscintigra* or lympho-scintigra*).tw,kw,kf. (160590)
130 exp Tomography/ (3578100)

Appendix 1. Search Strategies

- 131 (tomograph* or tomo-graph*).tw,kw,kf. (1262144)
132 (CAT scan* or CT scan* or PET scan* or PET imag* or PT scan* or PT imag*).tw,kw,kf. (428568)
133 (SPECTCT or SPECT CT or "SPECT/CT").tw,kw,kf. (19601)
134 (magnetic resonance imag* or MRI or MRIs or fMRI or fMRIs or NMR imag* or chemical shift imag* or magneti#ation transfer contrast imag* or spin echo imag* or zeugmatograph* or zeugmato-graph*).tw,kw,kf. (1369490)
135 (cineradiograph* or cine-radiograph* or cinefluorograph* or cine-fluorograph* or radiocinematograph* or radio-cinematograph*).tw,kw,kf. (4250)
136 Nuclear Medicine/ (46433)
137 ((nuclear or atomic) adj1 medicine?).tw,kw,kf. (50609)
138 (nuclear adj1 radiolog*).tw,kw,kf. (1424)
139 (sialogra* or salivogra* or sialoscintigra* or sialo-scintigra*).tw,kw,kf. (3406)
140 (enteroclys* or enterogra*).tw,kw,kf. (6696)
141 (esophagra* or oesophagra* or esophagogra* or oesophagogra*).tw,kw,kf. (7594)
142 ((CT or virtual) adj colonoscop*).tw,kw,kf. (1972)
143 (contrast adj (study or studies or medium)).tw,kw,kf. (48124)
144 (cholangiopancreatogra* or cholangio-pancreatogra* or ERCP or MRCP).tw,kw,kf. (60699)
145 cholecystogra*.tw,kw,kf. (5503)
146 (angiograph* or angio-graph* or angiogram* or angio-gram*).tw,kw,kf. (602023)
147 (perfusion adj3 (image? or imaging)).tw,kw,kf. (45039)
148 or/115-147 [IMAGING] (8857475)
149 114 and 148 [SPINAL CONDITIONS OF INTEREST AND IMAGING] (602236)
150 exp Animals/ not Humans/ (17735021)
151 149 not 150 [ANIMAL-ONLY REMOVED] (488775)
152 (case reports or address or autobiography or bibliography or biography or comment or dictionary or directory or editorial or "expression of concern" or festschrift or historical article or interactive tutorial or lecture or legal case or legislation or news or newspaper article or patient education handout or personal narrative or portrait or video-audio media or webcast or (letter not (letter and randomized controlled trial))).pt. (7137060)
153 151 not 152 [IRRELEVANT PUBLICATION TYPES REMOVED] (396221)
154 exp Guidelines as Topic/ (909768)
155 exp Clinical Protocols/ (317129)
156 Guideline.pt. (16379)
157 Practice Guideline.pt. (31142)
158 standards.fs. (767752)
159 Consensus Development Conference.pt. (12377)
160 Consensus Development Conference, NIH.pt. (801)
161 (consensus or guideline* or guidance? or standards or recommendation*).ti,kw,kf. (575876)
162 (expert consensus or consensus statement* or consensus conference* or clinical guideline? or practice guideline? or treatment guideline? or practice parameter* or position statement* or policy statement* or CPG or CPGs).tw,kw,kf. (328280)
163 or/154-162 [GUIDELINE FILTER] (2333576)
164 153 and 163 [GUIDELINES] (10192)
165 limit 164 to yr="2019-current" [DATE LIMIT APPLIED] (4228)
166 165 use medall [MEDLINE RECORDS] (820)
167 exp spine disease/ (327413)
168 exp spinal cord disease/ (511781)
169 ((spinal or spine?) adj3 (disease? or disorder? or dysfunction? or syndrome?)).tw,kw,kf. (47046)
170 leukodystrophy/ (3388)
171 leukoencephalopathy/ (11615)
172 vanishing white matter disease/ (2813)
173 (leukoencephalopath* or leuko-encephalopath* or leuko-encephalo-path* or leukoencephalo-path*).tw,kw,kf. (23154)
174 (ataxia? adj3 ((CNS or central nervous system) adj2 (hypomyelinat* or hypo-myelinat*))).tw,kw,kf. (103)
175 ((CACH or CACH VWM) adj3 (disease? or disorder? or dysfunction? or syndrome?)).tw,kw,kf. (55)
176 ((white matter or VWM) adj3 (disease? or disorder? or dysfunction? or syndrome?)).tw,kw,kf. (7917)
177 ((white matter or VWM) adj3 (leukodystroph* or leuko-dystroph*)).tw,kw,kf. (262)
178 vanishing white matter?.tw,kw,kf. (793)
179 myelinosis centralis diffusa.tw,kw,kf. (0)
180 ((spinal cord? or spinal nerve?) adj3 (disease? or disorder? or dysfunction? or neuropath* or neuro-path* or syndrome?)).tw,kw,kf. (17279)
181 (myelopath* or myelo-path* or neuromyelopath or neuro-myelopath or neuro-myelo-path* or neuromyelo-path*).tw,kw,kf. (40731)
182 ((spine? or spinal) adj (neuropath* or neuro-path*)).tw,kw,kf. (164)
183 ((noninfectious or non-infectious) adj3 myelitis).tw,kw,kf. (26)
184 exp demyelinating disease/ (360186)
185 (demyelinati* or de-myelinati*).tw,kw,kf. (99814)
186 clinically isolated syndrome?.tw,kw,kf. (6297)
187 ((spine? or spinal) adj3 schistosomia*).tw,kw,kf. (208)
188 tabes dorsalis/ (1708)
189 (tabes adj (dorsalis or spinalis)).tw,kw,kf. (1307)
190 ((meningomyelitis* or meningo-myelitis* or spine? or spinal) adj3 syphili*).tw,kw,kf. (222)
191 (myelosyphili* or myelo-syphili* or neurosyphili* or neuro-syphili*).tw,kw,kf. (7194)
192 (locomotor ataxia* or loco-motor ataxia*).tw,kw,kf. (152)
193 exp central nervous system infection/ and (exp spine/ or exp spinal cord/) (9046)
194 (bone infection/ or exp osteomyelitis/) and exp spine/ (4916)
195 exp spinal cord infection/ (2102)

Appendix 1. Search Strategies

- 196 ((disc or discs or disk or disks or vertebr* or spinal or spine?) adj3 (infection? or inflam* or osteomyelit#s or osteo-myelit#s)).tw,kw,kf. (20599)
- 197 diskitis/ (6223)
- 198 (dis#itis or spondylodis#itis or spondylo-dis#itis).tw,kw,kf. (9465)
- 199 exp epidural abscess/ (6284)
- 200 ((epidura* or extradura* or extra-dura* or spinal or spine? or subdura* or sub-dura*) adj3 (abscess* or empyema* or infection* or inflam*)).tw,kw,kf. (23890)
- 201 exp myelitis/ (122890)
- 202 (myelitis or poliomyelitis or polio-myelitis or postpoliomyelitis or post-poliomyelitis or post-polio-myelitis or postpolio-myelitis or polio encephalitis or infantile paraly#s).tw,kw,kf. (57286)
- 203 (atlantoaxial instabilit* or atlanto-axial instabilit* or atlantoaxial subluxation? or atlanto-axial subluxation?).tw,kw,kf. (4567)
- 204 (AAI and atlanto*).tw,kw,kf. (230)
- 205 ((misalign* or mis-align*) adj3 (cervical spine? or cervical vertebra*)).tw,kw,kf. (17)
- 206 exp backache/ (144301)
- 207 ((back or cervical or neck? or radicular* or radiculo* or spinal or spine? or thora* or vertebr*) adj3 (ache? or aching or pain*)).tw,kw,kf. (233802)
- 208 (backache? or neckache?).tw,kw,kf. (8573)
- 209 (cervicalgi* or cervicodyn*).tw,kw,kf. (656)
- 210 cauda equina syndrome/ (3617)
- 211 cauda equina/ and (disease? or disorder? or dysfunction? or myelopath* or myeloneuropath* or myeloneuro-path* or myelo-neuropath* or myelo-neuro-path* or pain or syndrome?).ti,kw,kf. (1882)
- 212 ((cauda or caudal) adj2 syndrome).tw,kw,kf. (5738)
- 213 (pain/ or exp chronic pain/) and (exp spine/ or exp spinal cord/) (33107)
- 214 spinal pain/ (4480)
- 215 ((spinal or spine?) adj3 pain*).tw,kw,kf. (22125)
- 216 radiculopathy/ (19104)
- 217 radicular pain/ (5576)
- 218 exp polyradiculoneuropathy/ (37754)
- 219 (polyradiculopath* or polyradiculopath* or polyradiculit#s or poly-radiculit#s).tw,kw,kf. (2368)
- 220 (radiculopath* or radiculit#s).tw,kw,kf. (22780)
- 221 spine tumor/ (6200)
- 222 exp spinal cord tumor/ (30948)
- 223 ((spinal or spine? or epidural*) adj3 (adenocarcinoma* or adeno-carcinoma* or cancer* or carcinoma* or malignan* or mass\$2 or neoplas* or tumor?r*)).tw,kw,kf. (33175)
- 224 exp astrocytoma/ (161821)
- 225 exp ependymoma/ (19566)
- 226 exp lipoma/ (46321)
- 227 exp meningioma/ (63800)
- 228 exp neurofibroma/ (50521)
- 229 exp syringomyelia/ (11473)
- 230 (astrocytom* or astro-cytom* or ependymom* or ependy-mom* or lipoma* or meningiom* or neurofibrom* or neuro-fibrom* or hydrosyringomyeli* or hydro-syringomyeli* or hydro-syringo-myeli* or hydrosyringo-myeli* or syringomyelia* or syringo-myelia* or syringomyelus or syringo-myelus).tw,kw,kf. (208198)
- 231 pneumorachis/ (251)
- 232 pneumor?hachis.tw,kw,kf. (506)
- 233 spinal cord compression/ (32185)
- 234 ((spinal or spine?) adj3 compress*).tw,kw,kf. (27271)
- 235 (myelopath* adj3 compress*).tw,kw,kf. (2587)
- 236 (Conus Medullaris adj (disease? or disorder? or syndrome?)).tw,kw,kf. (229)
- 237 exp spine fracture/ (40293)
- 238 ((spinal or spine?) adj3 (break* or broke? or fractur*)).tw,kw,kf. (22140)
- 239 compress* fracture?.tw,kw,kf. (14516)
- 240 exp spinal cord vascular disease/ (14511)
- 241 ((spinal or spine?) adj3 isch?emi*).tw,kw,kf. (8987)
- 242 (hematomyelia? or hemato-myelia? or spinal artery dissection? or spinal artery syndrome?).tw,kw,kf. (1038)
- 243 exp spinal muscular atrophy/ (80351)
- 244 ((spinal or spine? or progressive) adj3 (muscular atroph* or amyotroph* or amyotroph*).tw,kw,kf. (21810)
- 245 ((bulbospinal or bulbo-spinal or hereditary motor) adj3 (neuronopath* or neuronopath*).tw,kw,kf. (203)
- 246 spinocerebellar degeneration/ (8472)
- 247 ((spine or spinal or spino* or cerebellar or cerebellar or cerebello-lental) adj degeneration?).tw,kw,kf. (7594)
- 248 ((cerebellar or cerebellar or hereditary or Marinesco-Garland) adj3 ataxia?).tw,kw,kf. (21529)
- 249 ((Garland-Moorhouse or Marinesco-Garland or Marinesco-Sjogren or Marinesco-Sjogren-Garland) adj (disease? or disorder? or syndrome?)).tw,kw,kf. (444)
- 250 stiff man syndrome/ (2740)
- 251 (stiff adj (baby or limb or limbs or man or person or trunk)).tw,kw,kf. (3156)
- 252 stiffman.tw,kw,kf. (43)
- 253 ((familial or family or hereditary or inherited) adj (hyperekplexia? or hyper-ekplexia?)).tw,kw,kf. (158)
- 254 ((Moersch-Woltmann or Startle) adj (disease? or disorder? or syndrome?)).tw,kw,kf. (424)
- 255 subacute combined degeneration/ (703)
- 256 ((subacute or sub-acute) adj2 combined adj2 degenerati*).tw,kw,kf. (1581)
- 257 amyotrophic lateral sclerosis/ (74989)
- 258 amyotrophic lateral sclero*.tw,kw,kf. (74094)
- 259 (ALS and (amyotrophic or lateral or sclero*)).tw,kw,kf. (51825)
- 260 neuropathic joint disease/ (3095)
- 261 (charcot adj (disease? or disorder? or syndrome?)).tw,kw,kf. (95)
- 262 (Gehrig* adj (disease? or disorder? or syndrome?)).tw,kw,kf. (528)
- 263 Guam Disease.tw,kw,kf. (13)
- 264 exp intervertebral disk hernia/ (31342)

- 265 ((spine or spinal or disc? or disk?) adj3 (degenerat* or degrad* or displac* or hernia* or protrud* or protrusi* or prolaps* or slipped)).tw,kw,kf. (87142)
- 266 ligament calcinosis/ (2338)
- 267 (posterior longitudinal ligament? adj3 (calcif* or calcinos* or ossif*)).tw,kw,kf. (4737)
- 268 basilar impression/ (1907)
- 269 (platybasia* or platy-basia* or basilar impression?).tw,kw,kf. (1443)
- 270 posterior cervical sympathetic syndrome/ (71)
- 271 (posterior cervical sympathetic adj (disease? or disorder? or syndrome?)).tw,kw,kf. (121)
- 272 (Barre-Lieou adj3 (disease? or disorder? or syndrome?)).tw,kw,kf. (275)
- 273 exp spine malformation/ (20051)
- 274 ((spinal or spine?) adj3 (curvature? or deform*)).tw,kw,kf. (28962)
- 275 (hyperkyphos#s or hyper-kyphos#s or kyphos#s or lordos#s or scolios#s).tw,kw,kf. (97024)
- 276 Scheuermann disease/ (2538)
- 277 (Scheuermann* adj (disease? or disorder? or syndrome?)).tw,kw,kf. (1223)
- 278 ((spinal or spine?) adj3 (osteochondro* or osteo-chondro*)).tw,kw,kf. (908)
- 279 spinal osteophytosis/ (3469)
- 280 ((spinal or spine?) adj3 (osteophytos#s or osteo-phytos#s)).tw,kw,kf. (140)
- 281 exp vertebral canal stenosis/ (17082)
- 282 ((spinal or spine?) adj3 stenosis#s).tw,kw,kf. (20444)
- 283 exp spondylitis/ (129975)
- 284 spondylitis#s.tw,kw,kf. (57372)
- 285 exp spondylosis/ (20218)
- 286 (spondylos#s or spondylolys#s or spondylolisthes#s or spondylolisthes#s or spondylo-listhes#s or olisthes#s).tw,kw,kf. (28389)
- 287 or/167-286 [SPINAL CONDITIONS OF INTEREST] (2047647)
- 288 diagnostic imaging/ (302152)
- 289 (diagnos* adj3 (image? or imaging)).tw,kw,kf. (148257)
- 290 (x-ray* or xray*).tw,kw,kf. (1013646)
- 291 computer assisted tomography/ (929833)
- 292 computer assisted diagnosis/ (68654)
- 293 exp three-dimensional imaging/ (224450)
- 294 ((3D or 3-D or 3-dimension* or three dimension*) adj (image? or imaging)).tw,kw,kf. (52047)
- 295 exp echography/ (1532653)
- 296 (ultrasound* or ultrasonograph* or ultra-sonograph* or ultrasonic* or ultra-sonic*).tw,kw,kf. (1189680)
- 297 (echograph* or echo-graph* or echotomograph* or echo-tomograph* or echosonograph* or echo sonograph*).tw,kw,kf. (26765)
- 298 exp radiography/ (2736590)
- 299 (radiograph* or radiographic imag* or roentgenograph* or roentgeno-graph*).tw,kw,kf. (657740)
- 300 (fluoroscop* or fluoro-scop*).tw,kw,kf. (95356)
- 301 exp scintiscanning/ (219525)
- 302 ((radionuclide* adj2 imag*) or (radio-nuclide* adj2 imag*) or (radionuclide* adj2 scan*) or (radio-nuclide* adj2 scan*) or (radioisotope* adj2 imag*) or (radio-isotope* adj2 scan*) or scintigra* or scinti-gra* or scintiphotograph* or scinti-photograph* or scintiscan* or scinti-scan* or scanograph* or lymphoscintigra* or lympho-scintigra*).tw,kw,kf. (160590)
- 303 exp tomography/ (3578100)
- 304 (tomograph* or tomo-graph*).tw,kw,kf. (1262144)
- 305 (CAT scan* or CT scan* or PET scan* or PET imag* or PT scan* or PT imag*).tw,kw,kf. (428568)
- 306 (SPECTCT or SPECT CT or "SPECT/CT").tw,kw,kf. (19601)
- 307 (magnetic resonance imag* or MRI or MRIs or fMRI or fMRIs or NMR imag* or chemical shift imag* or magneti#ation transfer contrast imag* or spin echo imag* or zeugmatograph* or zeugmato-graph*).tw,kw,kf. (1369490)
- 308 (cineradiograph* or cine-radiograph* or cinefluorograph* or cine-fluorograph* or radiocinematograph* or radio-cinematograph*).tw,kw,kf. (4250)
- 309 nuclear medicine/ (46433)
- 310 ((nuclear or atomic) adj1 medicine?).tw,kw,kf. (50609)
- 311 (nuclear adj1 radiolog*).tw,kw,kf. (1424)
- 312 (sialogra* or salivogra* or sialoscintigra* or sialo-scintigra*).tw,kw,kf. (3406)
- 313 (enteroclys* or enterogra*).tw,kw,kf. (6696)
- 314 (esophagra* or oesophagra* or esophagogra* or oesophagogra*).tw,kw,kf. (7594)
- 315 ((CT or virtual) adj colonoscop*).tw,kw,kf. (1972)
- 316 (contrast adj (study or studies or medium)).tw,kw,kf. (48124)
- 317 (cholangiopancreatogra* or cholangio-pancreatogra* or ERCP or MRCP).tw,kw,kf. (60699)
- 318 cholecystogra*.tw,kw,kf. (5503)
- 319 (angiograph* or angio-graph* or angiogram* or angio-gram*).tw,kw,kf. (602023)
- 320 (perfusion adj3 (image? or imaging)).tw,kw,kf. (45039)
- 321 or/288-320 [IMAGING] (8712948)
- 322 287 and 321 [SPINAL CONDITIONS OF INTEREST AND IMAGING] (605359)
- 323 (exp animal/ or exp animal model/ or exp animal experiment/ or nonhuman/ or exp vertebrate/) not (exp human/ or exp human experiment/) (13363091)
- 324 322 not 323 [ANIMAL-ONLY REMOVED] (588598)
- 325 (conference abstract or editorial or letter).pt. (9083649)
- 326 case report/ or exp case study/ or directory/ (5553898)
- 327 324 not (325 or 326) [OPINION PIECES, IRRELEVANT PUBLICATION TYPES REMOVED] (298032)
- 328 exp practice guideline/ (767786)
- 329 (consensus or guideline* or guidance? or standards or recommendation*).ti,kw,kf. (575876)

Appendix 1. Search Strategies

330 (expert consensus or consensus statement* or
consensus conference* or clinical guideline? or practice
guideline? or treatment guideline? or practice parameter*
or position statement* or policy statement* or CPG or
CPGs).tw,kw,kf. (328280)
331 or/328-330 [GUIDELINE FILTER] (1375120)
332 327 and 331 [SPINAL CONDITIONS OF INTEREST AND
IMAGING - GUIDELINES] (7560)
333 limit 332 to yr="2019-current" [DATE LIMIT
APPLIED] (2792)
334 333 use emcxd [EMBASE RECORDS] (2307)
335 166 or 334 [BOTH DATABASES] (3127)
336 remove duplicates from 335 (2660) [TOTAL UNIQUE
RECORDS]
337 336 use medall [MEDLINE UNIQUE RECORDS] (815)
338 336 use emcxd [EMBASE UNIQUE RECORDS] (1845)

Appendix 2. Potentially relevant non-English guidelines

1. Reith W, Hausmann A, Kettner M. [New MRI guidelines for multiple sclerosis]. *Neue MRT-Leitlinien bei multipler Sklerose* 2022; 62: 322-326.
2. Shi Y, Guo W, Yu L. [Non-specific low back pain: interpretation of North American Spine Society (NASS) guidelines for evidence-based medicine]. *Zhongguo xiu fu chong jian wai ke za zhi = Chinese journal of reparative and reconstructive surgery* 2021; 35: 1336-1340.
3. Parfenov VA, Yakhno NN, Kukushkin ML, Davydov OS, Churyukanov MV, Golovacheva VA, Evzikov GY, Isaikin AI, Bakhtadze MA, Medvedeva LA, Kalinsky PP, Shirokov VA. Non-specific neck pain (cervicalgia). Guidelines of the Russian Society for the Study of Pain (RSSP). *Nevrologiya, Neiropsikhiatriya, Psikhosomatika* 2023; 15: 4-12.
4. Caparo-Zamalloa, C, Cabrejo-Bravo, J. A., Castaneda-Barba, C., Cortez-Escalante, J., Cruz-Cruz, A., Duenas-Pacheco, I, Escalante-Narrea, D, Escalante-Rojas R, Gonzalez-Mujica J, Guevara-Vidal A, Huamani C, Nisiamma-Vera JC, Perez-Alviz C.A, Rodriguez-Kadota LE, Vega-Wong PA. Peruvian consensus for the use of Magnetic Resonance Imaging in the diagnosis and follow-up of patients with Multiple Sclerosis. *Revista de Neuro-Psiquiatria* 2022; 85: 95-106.
5. Expert consensus on the use of MRI in multiple sclerosis. *Chinese Journal of Radiology (China)* 2023; 57: 592-599.
6. Magyar M, Nyilas NL, Bereczki D, Bozsik G, Rudas G, Ertsey C, Maurovich-Horvat P, Barsi P. Evaluation and diagnosis of spontaneous intracranial hypotension with magnetic resonance imaging. *Orvosi Hetilap* 2021; 162: 246-251.
7. Parfenov VA, Yakhno NN, Davydov OS, Kukushkin ML, Churyukanov MV, Golovacheva VA, Yu EG, Isaikin AI, Ivanova MA, Karateev AE, Amelin AV, Achkasov EE, Akhmadeeva LR, Bakhtadze MA, Barantsevich ER, Barulin AE, Belova AN, Belskaya GN, Bychenko VG, Doronina OB, Dreval ON, Zagorulko OI, Isagulyan ED, Iskra DA, Kalinsky PP, Karakulova Yu V, Kurushina OV, Medvedeva LA, Merkulova DM, Rachin AP, Sergienko DA, Stokov IA, Khabirov FA, Shirokov VA, Yakupov EZ. Discogenic lumbosacral radiculopathy. Recommendations of the Russian Association for the Study of Pain (RSSP). *Nevrologiya, Neiropsikhiatriya, Psikhosomatika* 2020; 12: 15-24.
8. Schleicher, P., Scholz, M., Castein, J., Kandziora, F.. Guideline-conform diagnostics for injuries of the subaxial cervical spine. *Der Unfallchirurg* 2020; 123: 641-652.

Appendix 3. AGREE-II assessments

Guideline	Domain 1				Domain 2				Domain 3									Domain 4				Domain 5					Domain 6			Overall quality
	1	2	3	Score (%)	4	5	6	Score (%)	7	8	9	10	11	12	13	14	Score (%)	15	16	17	Score (%)	18	19	20	21	Score (%)	22	23	Score (%)	
ACR 2021 [21] (Agarwal et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	2	3	2	1	8 (67)	3	3	6 (100)	High
EAN/PNS 2023 [22] (van Doorn et al)	3	2	3	8 (89)	3	3	3	9 (100)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	3	1	1	6 (50)	3	3	6 (100)	High
EAN/PNS 2021 [23] (van den Bergh et al)	3	2	3	8 (89)	3	3	3	9 (100)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	3	3	3	3	12 (100)	3	3	6 (100)	High
NICE (NG220) 2023 [24]	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	1	3	7 (78)	1	3	1	1	6 (50)	3	3	6 (100)	High
ACR 2019 [25] (McDonald et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	2	3	3	1	9 (75)	3	3	6 (100)	High
ACR 2021 [26] (Ortiz et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	2	3	2	1	8 (67)	3	3	6 (100)	High
Australian Gdl 2023 [27] (Birrell et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	1	3	1	3	3	1	18 (75)	2	3	1	6 (67)	1	3	1	1	6 (50)	3	3	6 (100)	Moderate
EANM/ESNR 2019 [28] (Lazzeri et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	1	3	3	1	8 (67)	3	3	6 (100)	High
ACR 2021 [30] (Hutchins et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	2	3	8 (89)	2	3	2	1	8 (67)	3	3	6 (100)	High
ASIPP 2020 [31] (Manchikanti et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	1	1	1	4 (33)	3	3	6 (100)	High
CJWG 2022 [32] (Hurley et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	1	2	6 (67)	1	1	3	1	6 (50)	3	3	6 (100)	High
JOA 2021 [33] (Haro et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	2	8 (89)	1	1	1	1	4 (33)	3	3	6 (100)	Moderate
JOA 2022 [34] (Kawakami et al)	3	3	3	9 (100)	3	3	3	9 (100)	3	3	3	3	3	3	3	1	22 (92)	3	3	2	8 (89)	3	3	3	1	10 (83)	3	3	6 (100)	High
JOA 2022 [35] (Shirado et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	2	8 (89)	3	3	3	1	10 (83)	3	3	6 (100)	High
LFIGC 2020 [36] (Cohen et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	2	8 (89)	1	1	3	1	6 (50)	3	3	6 (100)	High
NICE (NG59) 2020 [37]	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	1	3	7 (78)	1	3	3	1	8 (67)	3	3	6 (100)	High
NASS 2020 [38] (Kreiner et al)	3	3	3	9 (100)	3	1	3	7 (78)	3	3	3	3	1	3	3	1	20 (83)	3	3	3	9 (100)	1	1	1	1	4 (33)	3	3	6 (100)	Moderate
VA/DoD 2019 [39] (Pangarkar et al)	3	1	3	7 (78)	3	3	3	9 (100)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	2	3	1	1	7 (58)	3	3	6 (100)	Moderate
ACR 2020 [40] (Bestic et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	3	3	2	1	9 (75)	3	3	6 (100)	High

Appendix 3. AGREE-II assessments

Guideline	Domain 1				Domain 2				Domain 3								Domain 4				Domain 5					Domain 6			Overall quality	
	1	2	3	Score (%)	4	5	6	Score (%)	7	8	9	10	11	12	13	14	Score (%)	15	16	17	Score (%)	18	19	20	21	Score (%)	22	23		Score (%)
ESMO et al 2021 [41] (Strauss et al)	3	2	3	8 (89)	3	3	3	9 (100)	3	3	3	3	3	3	3	3	24 (100)	3	3	2	8 (89)	1	3	1	1	6 (50)	3	3	6 (100)	High
Polish Soc. 2023 [42] (Maciejczak et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	3	3	3	9 (100)	3	3	1	1	8 (67)	3	3	6 (100)	High
ACR 2023 [43] (Khan et al)	3	2	3	8 (89)	3	1	3	7 (78)	3	3	3	3	3	3	3	1	22 (92)	2	3	3	8 (89)	2	3	1	1	7 (58)	3	3	6 (100)	High

Abbreviations: ACR: American College of Radiology; ASIPP: American Society of Interventional Pain Physicians; CJWG: Cervical Joint Working Group; EAN/PNS: European Academy of Neurology/Peripheral Nerve Society; EANM/ESNR: European Association of Nuclear Medicine/European Society of Neuroradiology; ESMO et al: European Society for Medical Oncology-European Reference Network for Rare Adult Solid Cancers-European Reference Network for Genetic Tumour Risk Syndromes; JOA: Japanese Orthopedic Association; LFIGC: Lumbar Facet Intervention Guidelines Committee; NASS: North American Spine Society; NICE: National Institute for Health and Care Excellence; VA/DoD: Veterans Affairs/Department of Defense

Appendix 4. Evidence Tables

Table SP01. Myelopathy

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
CT: computed tomography; IV: intravenous; MRI: magnetic resonance imaging; US: ultrasound	
CAR 2012 [20]	C01. MYELOPATHY - MRI: Indicated [B]: MRI is the best imaging modality for evaluating suspected spinal cord lesions and possible cord compression. - CT: Specialized investigation [B]: CT is usually indicated only if better bony detail is required. - CT myelography: Specialized investigation [C]: CT myelography may be required if MRI is contraindicated or a diagnostic dilemma remains after CT or MRI.
ACR 2020 [21] (Agarwal et al)	MYELOPATHY ▪ Variant 1. Acute onset myelopathy. Initial imaging. ▪ Variant 2. Chronic or progressive myelopathy. Initial imaging.
European Academy of Neurology/Peripheral Nerve Society Guideline 2023 [22] (van Doorn et al)	GUILLAIN-BARRÉ SYNDROME - Nerve MRI or US - MRI nerve root enhancement - US or MRI - Whole spine MRI with contrast
European Academy of Neurology/Peripheral Nerve Society Guideline 2021 [23] (van der Bergh et al)	CHRONIC INFLAMMATORY DEMYELINATING POLYRADICULONEUROPATHY - US - MRI
NICE 2020 (NG220) [24]	MULTIPLE SCLEROSIS - MRI - 2017 revised McDonald criteria

Abbreviations: ACR: American College of Radiologists; CAR: Canadian Association of Radiologists; NICE: National Institute for Health and Care Excellence

Table SP02. Suspected spinal infection

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; FDG-PET: fluorodeoxyglucose-positron emission tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; PET: positron emission tomography
CAR 2012 [20]	C02. SUSPECTED DISCITIS OR VERTEBRAL OSTEOMYELITIS - MRI: Indicated [B]: MRI is the best imaging modality for evaluating suspected discitis or osteomyelitis. - CT: Specialized investigation [B]: CT is usually indicated only if better bony detail is required. - NM: Indicated in specific circumstances: If MRI is contraindicated or the findings equivocal, a combined bone and gallium scintigraphy is helpful. The combination of bone and gallium scanning is more specific than MRI especially in the postoperative or post instrumentation setting. It can also be used to assess the presence of residual infection after therapy.
ACR 2019 [25] (McDonald et al)	CERVICAL NECK PAIN OR CERVICAL RADICULOPATHY ▪ Variant 4. Suspicion for infection with new or increasing nontraumatic cervical or neck pain or radiculopathy. Initial imaging.
ACR 2021 [26] (Ortiz et al.)	SUSPECTED SPINE INFECTION ▪ Variant 1. Suspected spine infection (such as epidural abscess or discitis osteomyelitis), with new or worsening back or neck pain, with or without fever, who may have one or more of the following red flags (diabetes mellitus, IV drug use, cancer, HIV, or dialysis) or abnormal lab values. Initial imaging. ▪ Variant 3. Suspected spine infection (such as epidural abscess or discitis osteomyelitis), with new neurologic deficit or cauda equina syndrome. Initial imaging. ▪ Variant 4. Suspected spine infection (such as epidural abscess or discitis osteomyelitis), with decubitus ulcer or wound overlying spine. Initial imaging.
Australian Guideline 2023 [27] (Birrell et al)	NEUROSYPHYLIS - CT - MRI
EANM/ESNR and ESCMID 2019 [28] (Lazzeri et al)	SPINE INFECTION (SPONDYLODISCITIS) - Plain film X-ray - MRI - CT - [¹⁸F] FDG-PET/CT - Hybrid PET/MRI

Abbreviations: ACR: American College of Radiologists; CAR: Canadian Association of Radiologists; EANM: European Association of Nuclear Medicine; ESNR: European Society of Neuroradiology; ESCMID: European Society of Clinical Microbiology and Infectious Diseases

Table SP03. Possible atlanto-axial instability (non-traumatic)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	MRI: magnetic resonance imaging; XR: radiograph
CAR 2012 [20]	C03. POSSIBLE ATLANTO-AXIAL INSTABILITY - XR: Indicated [B]: Lateral cervical spine XRs in flexion and extension are the appropriate imaging to assess possible cervical spine instability in patients with rheumatoid arthritis, Down's syndrome, etc. - MRI: Specialized investigation [B]: MRI is valuable to show cord damage secondary to chronic atlanto-axial instability

Abbreviations: CAR: Canadian Association of Radiologists

Table SP04. Axial pain (non-traumatic)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography; XR: radiography
CAR 2012 [20] If there is clinical concern about an epidural abscess or hematoma which may present with acute pain but no neurological symptoms, urgent imaging is required. Red flag indications: - Suspected cancer - Suspected infection - Cauda equina syndrome - Severe/progressive neurological deficit - Suspected compression fracture	C04. NECK PAIN, BRACHIALGIA, DEGENERATIVE CHANGE - MRI: Indicated [B]: Imaging is only indicated when there are neurological signs or symptoms, or if pain persists after conservative management for more than four weeks. - CT: Indicated only in specific circumstances [B]: CT is indicated only when MRI is contraindicated or not available. - XR: Not indicated [B]: Degenerative changes begin to appear on XR in early middle age and are usually unrelated to the patient's symptoms. C05. PAIN WITHOUT TRAUMA - XR: Indicated only in specific circumstances [B]: XR may be used if a compression fracture or a metastasis is suspected. However, it does not distinguish between an acute and an old fracture and it is not as sensitive as MRI for metastases. - Nuclear medicine bone scan with SPECT (+/- CT): Indicated only in specific circumstances [B]: When malignancy is suspected or known, in osteoporotic patients especially to determine age of compression fractures, to aid in selection of vertebral levels for vertebroplasty, to evaluate patients in whom other investigations of the T-Spine are negative (assessment of chest wall, ribs etc). - MRI: Indicated only in specific circumstances [B]: If there is clinical concern about an epidural abscess or hematoma which may be present with acute pain but no neurological symptoms, urgent MRI imaging is required. Imaging is otherwise only indicated when there are neurological signs or symptoms, or if pain persists after conservative management for more than four weeks. - CT: Indicated only in specific circumstances [B]: CT is only indicated if MRI is contraindicated or unavailable, or if more bony detail is necessary. C06. LOWER BACK PAIN - MRI: Indicated only in special circumstances [B]: If imaging is indicated, MRI is the best modality. Imaging is only indicated if there are "red flag" indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4- 6 week trial of conservative management. - CT: Indicated in special circumstances [B]: Imaging is only indicated if there are "red flag" indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4- 6 week trial of conservative management. CT is only indicated if MRI is contraindicated or unavailable. CT can provide excellent imaging. In very large patients, image noise can be a problem. The radiation dose is also a consideration. - XR: Indicated only in specific circumstances [B]: XR may be used if a compression fracture or a metastasis is suspected. However, it does not distinguish between an acute and an old fracture and it is not as sensitive as MRI for metastases.

Appendix 4. Evidence Tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
CT: computed tomography; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography; XR: radiography	
	- NM: Indicated in specific circumstances [B]: When malignancy is suspected or known, in osteoporotic patients especially to determine age of compression fractures, to aid in selection of vertebral levels for vertebroplasty, or to evaluate patients in whom other investigations of the L-Spine are negative. NM can be useful to localize fractures not visible on conventional XR.
ACR 2019 [25] (McDonald et al)	CERVICAL NECK PAIN OR CERVICAL RADICULOPATHY ▪ Variant 1. New or increasing nontraumatic cervical or neck pain. No “red flags.” Initial imaging. ▪ Variant 6. Cervicogenic headache and new or increasing nontraumatic cervical or neck pain. No neurologic deficit. Initial imaging. ▪ Variant 7. Chronic cervical or neck pain. Initial imaging.
ACR 2021 [30] (Hutchins et al)	LOW BACK PAIN ▪ Variant 1. Acute low back pain with or without radiculopathy. No red flags. No prior management. Initial imaging. ▪ Variant 2. Subacute or chronic low back pain with or without radiculopathy. No red flags. No prior management. Initial imaging. ▪ Variant 6. Low back pain with or without radiculopathy. One or more of the following: low-velocity trauma, osteoporosis, elderly individual, or chronic steroid use. Initial imaging. ▪ Variant 7. Low back pain with or without radiculopathy. One or more of the following: suspicion of cancer, infection, or immunosuppression. Initial imaging.
Cervical Joint Working Group 2021 [32] (Hurley et al)	CERVICAL SPINE (FACET) JOINT PAIN - Radiological imaging modalities
American Society of Interventional Pain Physicians 2020 [31] (Manchikanti et al)	CHRONIC SPINAL PAIN - SPECT - MRI - CT
Japanese Orthopaedic Association 2021 [33] (Haro et al)	LUMBAR DISC HERNIATION - MRI - Myelography - CT
Japanese Orthopaedic Association 2021 [34] (Kawakami et al)	LUMBAR SPINAL STENOSIS - MRI
Japanese Orthopaedic Association 2019 [35] (Shirado et al)	LOW BACK PAIN - XR - MRI
Lumbar Facet Intervention Guidelines	LUMBAR FACET JOINT PAIN - SPECT

Appendix 4. Evidence Tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
CT: computed tomography; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography; XR: radiography	
Committee 2020 [36] (Cohen et al)	- Scintigraphy - MRI - CT
NICE 2020 (NG59) [37]	LOW BACK PAIN AND SCIATICA - Imaging
North American Spine Society 2020 [38] (Kreiner et al)	LOW BACK PAIN - Imaging
Veterans Affairs and U.S. Department of Defense 2019 [39] (Pangarkar et al)	LOW BACK PAIN - Imaging

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists; NICE: National Institute for Health and Care Excellence

Table SP05. Radicular pain (non-traumatic)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography; XR: radiography
CAR 2012 [20] If there is clinical concern about an epidural abscess or hematoma which may present with acute pain but no neurological symptoms, urgent imaging is required. Red flag indications: - Suspected cancer - Suspected infection - Cauda equina syndrome - Severe/progressive neurological deficit - Suspected compression fracture	C04. NECK PAIN, BRACHIALGIA, DEGENERATIVE CHANGE - MRI: Indicated [B]: Imaging is only indicated when there are neurological signs or symptoms, or if pain persists after conservative management for more than four weeks. - CT: Indicated only in specific circumstances [B]: CT is indicated only when MRI is contraindicated or not available. - XR: Not indicated [B]: Degenerative changes begin to appear on XR in early middle age and are usually unrelated to the patient's symptoms. C05. PAIN WITHOUT TRAUMA - XR: Indicated only in specific circumstances [B]: XR may be used if a compression fracture or a metastasis is suspected. However, it does not distinguish between an acute and an old fracture and it is not as sensitive as MRI for metastases. - Nuclear medicine bone scan with SPECT (+/- CT): Indicated only in specific circumstances [B]: When malignancy is suspected or known, in osteoporotic patients especially to determine age of compression fractures, to aid in selection of vertebral levels for vertebroplasty, to evaluate patients in whom other investigations of the T-Spine are negative (assessment of chest wall, ribs etc). - MRI: Indicated only in specific circumstances [B]: If there is clinical concern about an epidural abscess or hematoma which may be present with acute pain but no neurological symptoms, urgent MRI imaging is required. Imaging is otherwise only indicated when there are neurological signs or symptoms, or if pain persists after conservative management for more than four weeks. - CT: Indicated only in specific circumstances [B]: CT is only indicated if MRI is contraindicated or unavailable, or if more bony detail is necessary. C06. LOWER BACK PAIN - MRI: Indicated only in special circumstances [B]: If imaging is indicated, MRI is the best modality. Imaging is only indicated if there are "red flag" indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4- 6 week trial of conservative management. - CT: Indicated in special circumstances [B]: Imaging is only indicated if there are "red flag" indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4- 6 week trial of conservative management. CT is only indicated if MRI is contraindicated or unavailable. CT can provide excellent imaging. In very large patients, image noise can be a problem. The radiation dose is also a consideration. - XR: Indicated only in specific circumstances [B]: XR may be used if a compression fracture or a metastasis is suspected. However, it does not distinguish between an acute and an old fracture and it is not as sensitive as MRI for metastases.

Appendix 4. Evidence Tables

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; MRI: magnetic resonance imaging; SPECT: single-photon emission computed tomography; XR: radiography
	- NM: Indicated in specific circumstances [B]: When malignancy is suspected or known, in osteoporotic patients especially to determine age of compression fractures, to aid in selection of vertebral levels for vertebroplasty, or to evaluate patients in whom other investigations of the L-Spine are negative. NM can be useful to localize fractures not visible on conventional XR.
ACR 2019 [25] (McDonald et al)	CERVICAL NECK PAIN OR CERVICAL RADICULOPATHY ▪ Variant 2. New or increasing nontraumatic cervical radiculopathy. No “red flags.” Initial imaging. ▪ Variant 9. Chronic cervical or neck pain without or with radiculopathy. Radiographs show ossification in the posterior longitudinal ligament (OPLL). Next imaging study.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table SP06. Cauda equina syndrome

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; MRI: magnetic resonance imaging; NM: nuclear medicine; XR: radiography
CAR 2012 [20]	This is addressed as a red flag under C06. LOWER BACK PAIN If there is clinical concern about an epidural abscess or hematoma which may present with acute pain but no neurological symptoms, urgent imaging is required. Red flag indications: Suspected cancer; Suspected infection; <u>Cauda equina syndrome</u>; Severe/progressive neurological deficit; Suspected compression fracture C06. LOWER BACK PAIN - MRI: Indicated only in special circumstances [B]: If imaging is indicated, MRI is the best modality. Imaging is only indicated if there are “red flag” indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4-6 week trial of conservative management. - CT: Indicated in special circumstances [B]: Imaging is only indicated if there are “red flag” indications. In patients with suspected uncomplicated herniated disc or spinal stenosis imaging is only indicated after an unsuccessful 4-6 week trial of conservative management. CT is only indicated if MRI is contraindicated or unavailable. CT can provide excellent imaging. In very large patients, image noise can be a problem. The radiation dose is also a consideration. - XR: Indicated only in specific circumstances [B]: XR may be used if a compression fracture or a metastasis is suspected. However, it does not distinguish between an acute and an old fracture and it is not as sensitive as MRI for metastases. - NM: Indicated in specific circumstances [B]: When malignancy is suspected or known, in osteoporotic patients especially to determine age of compression fractures, to aid in selection of vertebral levels for vertebroplasty, or to evaluate patients in whom other investigations of the L-Spine are negative. NM can be useful to localize fractures not visible on conventional XR.
ACR 2021 [30] (Hutchins et al)	LOW BACK PAIN ▪ Variant 4. Low back pain with suspected cauda equina syndrome. Initial imaging.
ACR 2021 [26] (Ortiz et al.)	SUSPECTED SPINE INFECTION ▪ Variant 3. Suspected spine infection (such as epidural abscess or discitis osteomyelitis), with new neurologic deficit or cauda equina syndrome. Initial imaging.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists

Table SP07. Suspected spinal tumour

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
	CT: computed tomography; MRI: magnetic resonance imaging; PET: positron emission tomography; XR: radiograph
CAR 2012 [20]	Not covered in 2012 guideline.
ACR 2020 [40] (Bestic et al)	PRIMARY BONE TUMORS - Variant 1. Suspect primary bone tumor. Initial imaging. - Variant 2. Suspect primary bone tumor. Radiographs negative or do not explain symptoms. Next imaging study. - Variant 6. “Incidental” osseous lesion on MRI or CT scan for unrelated indication. Suspect primary bone tumor. Not clearly benign. Next imaging study.
ESMO-EURACAN-GENTURIS-ERN PaedCan 2021 [41] (Strauss et al)	BONE SARCOMAS - XR - MRI - CT
Polish Societies 2023 [42] (Maciejczak et al)	SPINAL TUMOURS - MRI - CT - Scintigraphy - PET

Abbreviations: CAR: Canadian Association of Radiologists; ESMO-EURACAN-GENTURIS-ERN PaedCan: European Society for Medical Oncology-European Reference Network for Rare Adult Solid Cancers-European Reference Network for Genetic Tumour Risk Syndromes European Reference Network for Paediatric Oncology

Table SP08. Suspected compression fracture (non-traumatic)

Guideline Group	Imaging modality addressed in guideline recommendations and/or clinical scenarios covered
CAR 2012 [20]	Not covered in the 2012 guideline.
ACR 2022 [43] (Khan et al)	VERTEBRAL COMPRESSION FRACTURES ▪ Variant 1. New symptomatic vertebral compression fracture (VCF) identified on radiographs. No known malignancy. Next imaging study. ▪ Variant 2. New symptomatic VCF identified on radiographs. History of malignancy. Next imaging study. ▪ Variant 3. New back pain. Previously treated VCF or multiple VCFs. Initial Imaging. ▪ Variant 4. Asymptomatic VCF identified on radiographs. History of malignancy. Next imaging study.

Abbreviations: ACR: American College of Radiology; CAR: Canadian Association of Radiologists