

Supplementary file 1: Stage one and two search strategies developed in MEDLINE (Ovid)**Search one: Identify patient-reported and physical outcome measures**

- 1 lumbar vertebrae/
- 2 sciatica/
- 3 (lumbar vertebra* or lumbar spin* or lumbar dis#).tw,kf.
- 4 (lumbar adj3 (stenosis or stenotic)).tw,kf.
- 5 ((lumbar or lumbosacral or lumbo-sacral or low* back*) adj5 surg*).tw,kf.
- 6 (lumbago or sciatica).tw,kf.
- 7 (radiculopathy or radiculitis or radicular pain*).tw,kf.
- 8 (nerve root* adj3 (pain* or avulsion or compress* or disorder* or pinch* or inflam* or imping* or irritat* or entrap* or trap*)).tw,kf.
- 9 7 or 8
- 10 (back\$5 or lumbosacral or lumbo-sacral or lumbar).tw,kf.
- 11 9 and 10
- 12 or/1-6,11

- 13 spinal fusion/
- 14 arthroplasty/ or arthroplasty, replacement/ or total disc replacement/
- 15 discectomy/ or discectomy, percutaneous/
- 16 laminectomy/
- 17 laminoplasty/
- 18 foraminotomy/
- 19 decompression, surgical/
- 20 su.fs.
- 21 ((disc or disk) adj3 (replac* or arthroplast*)).tw,kf.
- 22 ((vertebra* or spine or spinal or lumbar) adj3 arthroplast*).tw,kf.
- 23 ((disc or discs or disk*) adj3 (remov* or excis* or surg* or resect* or replac*)).tw,kf.
- 24 ((lumb* or lamina) adj3 (remov* or excis* or surg* or resect* or replac* or arthroplast*)).tw,kf.
- 25 (spin* fusion or (lumbar adj2 fusion) or alif or plif or tlif or dlif or xlif or ollif or axlif or axialif or lif or arthrodesis or syndesis or spondylodesis or spondylosyndesis or artificial ankylosis or discectom* or discectom* or laminectom* or laminotom* or laminoplast* or facetectom* or foraminotom* or fenestrat* or microdiscectom* or microdiscectom* or accuterm or discrode or spinecath or transdiscal or apld or microdecompression or micro decompression or sequestrectom*).tw,kf.
- 26 ((surg* or lumb* or disc or disk or intradiscal) adj3 decompress*).tw,kf.
- 27 (micro* adj3 (surg* or endoscop* or laser)).tw,kf.
- 28 ((disc or disk or intradiscal or intra discal or intervertebral or inter vertebral or percutaneous) adj3 (arthroplast* or biacuplast* or annuloplast* or electrothermal or thermomodulation)).tw,kf.
- 29 (thermal adj3 procedure*).tw,kf.
- 30 or/13-29

- 31 physical functional performance/
- 32 cardiorespiratory fitness/
- 33 physical endurance/

34 "task performance and analysis"/
35 recovery of function/
36 disability evaluation/
37 work capacity evaluation/
38 lifting/
39 locomotion/
40 walking/
41 gait/
42 dependent ambulation/
43 walking speed/
44 stair climbing/
45 postural balance/
46 activities of daily living/
47 self care/
48 movement/
49 motor activity/
50 motor skills/
51 psychomotor performance/
52 range of motion, articular/
53 muscle strength/
54 health status/
55 functional status/
56 exercise test/
57 walk test/
58 accelerometry/
59 ((daily or domestic or house or home) adj5 (activit* or task* or skill* or chore*)).tw,kf. 76607
60 (physical function* or functional activit* or independence or functional limitation* or activity
limitation* or impairment* or performance* or endurance or acceleromet* or muscle strength
or motor strength or mobility or postural balance or walk*).tw,kf.
61 (outcome* adj3 (clinical or physical or function*)).tw,kf.
62 or/31-61

63 12 and 30 and 62

64 63 not (exp animals/ not humans/)

Search two: Assess measurement properties of physical outcome measures of physical functioning

- 1 lumbar vertebrae/
- 2 sciatica/
- 3 (lumbar vertebra* or lumbar spin* or lumbar dis#).tw,kf.
- 4 (lumbar adj3 (stenosis or stenotic)).tw,kf.
- 5 ((lumbar or lumbosacral or lumbo-sacral or low* back*) adj5 surg*).tw,kf.
- 6 (lumbago or sciatica).tw,kf.
- 7 (radiculopathy or radiculitis or radicular pain*).tw,kf.
- 8 (nerve root* adj3 (pain* or avulsion or compress* or disorder* or pinch* or inflam* or imping* or irritat* or entrap* or trap*)).tw,kf.
- 9 7 or 8
- 10 (back\$5 or lumbosacral or lumbo-sacral or lumbar).tw,kf.
- 11 9 and 10
- 12 or/1-6,11

- 13 spinal fusion/
- 14 arthroplasty/ or arthroplasty, replacement/ or total disc replacement/
- 15 discectomy/ or discectomy, percutaneous/
- 16 laminectomy/
- 17 laminoplasty/
- 18 foraminotomy/
- 19 decompression, surgical/
- 20 su.fs.
- 21 ((disc or disk) adj3 (replac* or arthroplast*)).tw,kf.
- 22 ((vertebra* or spine or spinal or lumbar) adj3 arthroplast*).tw,kf.
- 23 ((disc or discs or disk*) adj3 (remov* or excis* or surg* or resect* or replac*)).tw,kf.
- 24 ((lumb* or lamina) adj3 (remov* or excis* or surg* or resect* or replac* or arthroplast*)).tw,kf.
- 25 (spin* fusion or (lumbar adj2 fusion) or alif or plif or tlif or dlif or xlif or ollif or axlif or axialif or lif or arthrodesis or syndesis or spondyldesis or spondylosyndesis or artificial ankylosis or discectom* or discectom* or laminectom* or laminotom* or laminoplast* or facetectom* or foraminotom* or fenestrat* or microdiscectom* or microdiscectom* or accuterm or discrode or spinecath or transdiscal or apld or microdecompression or micro decompression or sequestrectom*).tw,kf.
- 26 ((surg* or lumb* or disc or disk or intradiscal) adj3 decompress*).tw,kf.
- 27 (micro* adj3 (surg* or endoscop* or laser)).tw,kf.
- 28 ((disc or disk or intradiscal or intra discal or intervertebral or inter vertebral or percutaneous) adj3 (arthroplast* or biacuplast* or annuloplast* or electrothermal or thermomodulation)).tw,kf.
- 29 (thermal adj3 procedure*).tw,kf.
- 30 or/13-29

- 31 Names of identified physical outcome measures

- 32 instrumentation.fs.
- 33 methods.fs.
- 34 validation study.pt.
- 35 comparative study.pt.

36 psychometrics/
37 psychometr*.ti,ab,kf.
38 (clanimetr* or clinometr*).mp.
39 exp outcome assessment, health care/
40 outcome assessment.ti,ab,kf.
41 outcome measure*.mp.
42 observer variation/
43 observer variation.ti,ab,kf.
44 exp health status indicators/
45 exp "reproducibility of results"/
46 reproducib*.ti,ab,kf.
47 discriminant analysis/
48 (reliab* or unreliab* or valid* or coefficient or homogeneity or homogeneous or internal
consistency).ti,ab,kf.
49 (cronbach* and (alpha or alphas)).ti,ab,kf.
50 (item and (correlation* or selection* or reduction*)).ti,ab,kf.
51 (agreement or precision or imprecision or precise values).mp.
52 (test and retest).ti,ab,kf.
53 (stability or interrater or inter-rater or intrarater or intra-rater or intertester or inter-tester or
intratester or intra-tester or interobserver or inter-observer or intraobserver or intra-observer
or intertechnician or inter-technician or intratechnician or intra-technician or interexaminer or
inter-examiner or intraexaminer or intra-examiner or interassay or inter-assay or intraassay or
intra-assay or interindividual or inter-individual or intraindividual or intra-individual or
interparticipant or inter-participant or intraparticipant or intra-participant or kappa or kappa's
or kappas).ti,ab,kf.
54 repeatab*.mp.
55 ((replicab* or repeated) and (measure or measures or findings or result or results or test or
tests)).mp.
56 (generaliza* or generalisa* or concordance).ti,ab,kf.
57 (intraclass and correlation).ti,ab,kf.
58 (discriminative or known group or factor analysis or factor analyses or factor structure or factor
structures or dimension* or subscale*).ti,ab,kf.
59 (multitrait and scaling and (analysis or analyses)).ti,ab,kf.
60 (item discriminant or interscale correlation* or error or errors or individual variability or interval
variability or rate variability).ti,ab,kf.
61 (variability and (analysis or values)).ti,ab,kf.
62 (uncertainty and (measurement or measuring)).ti,ab,kf.
63 (sensitiv* or responsive*).ti,ab,kf.
64 (limit and detection).ti,ab,kf.
65 (minimal detectable concentration or interpretab*).ti,ab,kf.
66 ((minimal or minimally or clinical or clinically) and (important or significant or detectable) and
(change or difference)).ti,ab,kf.
67 (small* and (real or detectable) and (change or difference)).ti,ab,kf.
68 (meaningful change or ceiling effect or floor effect or item response model or IRT or Rasch or
differential item functioning or DIF or computer adaptive testing or item bank or cross-cultural
equivalence).ti,ab,kf.
69 or/32-68

- 70 12 and 30 and 31 and 69
- 71 (address or biography or case reports or comment or directory or editorial or festschrift or interview or lecture or legal case or legislation or letter or news or newspaper article or patient education handout or popular work or congress or consensus development conference or "consensus development conference, nih" or practice guideline).pt.
- 72 70 not 71
- 73 72 not (exp animals/ not humans/)