

Appendix 3. Outcomes

Outcome categorisation and frequency of outcome reporting according to the COMET taxonomy.						
Core area	Outcome domains	Outcome headings	Subheadings	Number of verbatim outcomes	Citation	
Adverse events	Adverse events	Complications		138 (99)	(1–99)	
		Complications affecting the long-term outcome		3 (3)	(9,33,96)	
		Complications requiring unplanned additional surgery		36 (30)	(1,9,11,19,21,25,33,35,37–41,44,50,60,62,64,67,75,79,81,85,89,93,95–97,100,101)	
		Hardware or implant-related complications		4 (4)	(21,23,62,93)	
		Intraoperative complications		13 (11)	(9,20,23,33,60,93,96,97,101–103)	
Total (Adverse events)				194		
Life impact	Cognitive functioning	Cognitive functioning		2 (1)	(104)	
		Delivery of care	Parent satisfaction	Health services	1 (1)	(63)
				Treatment outcome	1 (1)	(63)
		Patient satisfaction	Health services	11 (10)	(9,22,62,73,101,104–108)	
			Transportation services	1 (1)	(104)	
			Treatment outcome	13 (13)	(19,22,24,29,43,45,50,73,89,106,109–111)	
			Tolerance to hardware	2 (2)	(19,37)	
			Total number of surgeries	7 (5)	(7,53,54,70,112)	
			Total treatment duration	2 (2)	(51,85)	
	Emotional functioning	Appearance		9 (9)	(24,62,73,101,104,106–108,113)	
		Mental health		6 (6)	(11,24,62,65,101,107)	
		Mood		3 (2)	(104,107)	
		Self-esteem		3 (3)	(22,104,105)	
		Negative feelings (harm)		15 (7)	(22,75,83,104,105,114,115)	
	Global quality of life	Quality of Life		19 (12)	(13,22,65,70,75,76,79,104,105,107,115,116)	
Personal circumstances	Financial resources		1 (1)	(104)		
	Home environment		1 (1)	(104)		
	Physical environment		1 (1)	(104)		
Physical functioning	Carrying, moving and handling objects	Lifting and carrying objects	4 (4)	(36,61,107,114)		
		Moving objects with lower extremities	2 (1)	(61)		
	Changing basic body position	Getting in and out of the car	1 (1)	(36)		
		Rolling over in bed	1 (1)	(36)		
		Squatting	4 (4)	(36,108,116,117)		
Energy and fatigue		5 (5)	(65,104,107,114,115)			

	Full weight bearing		40 (31)	(1,9,18,21,24,25,29–31,33–35,50,58,60,62,66,73,82,92,93,95,97,100,116,118–123)
	Gait pattern		27 (21)	(8,14,15,19,26,28,42,50,54,58,59,73,108,109,113,116,117,124–127)
	Going up and down stairs		11 (9)	(26,36,61,91,107,108,111,116,117)
	Lower limb function		28 (18)	(9,16,24,36,40,52,57,61,62,83,93,101,107,109,114,116,117,128)
	Maintaining body position	Sitting	2 (2)	(36,40)
		Standing	1 (1)	(36)
	Moving around	Jumping	5 (2)	(36,61)
		Moving around outside the home and other buildings	2 (2)	(36,111)
		Moving around within buildings other than home	4 (4)	(36,40,61,114)
		Moving around within the home	3 (2)	(36,87)
		Running	7 (4)	(36,61,63,114)
	Moving around using equipment		13 (12)	(2,29,34,58,93,108,109,116,117,120,129,130)
	Self-care		22 (19)	(8,14,19,22,36,42,50,54,63,73,75,87,104,106,108,113–115,127)
	Sexual functions		1 (1)	(104)
	Sleep functions		5 (4)	(11,104,114,115)
	Sport participation		15 (10)	(36,40,58,61,65,91,107,108,114,116)
	Using transportation	Using human-powered vehicles	2 (1)	(61)
		Using private motorized transportation	1 (1)	(36)
		Using public motorized transportation	1 (1)	(61)
	Walking		34 (27)	(9,14,22,28,34,43,56,58,61,63,75,86,91–93,104,107–111,115,117,119,120,124,130)
Role functioning	Carrying out daily routine		14 (12)	(36,42,65,75,107–109,114–116,125,126)
	Work and employment	Acquiring, keeping and terminating a job	12 (9)	(8,36,65,73,91,104,108,116,127)
		Doing housework	2 (2)	(36,115)
		Education life	3 (3)	(36,114,115)
Social functioning	Family relationships		1 (1)	(108)
	Informal social relationships		7 (4)	(104,107,108,114)
	Participation in recreation and leisure		6 (6)	(36,65,104,107,108,115)

Total (Life impact)			384		
Physiological or clinical	Blood and lymphatic system outcomes	Blood loss (harm)	11 (9)	(3,33,36,62,66,93,97,127,131)	
		Infection and infestation outcomes			
		Bone infection (harm)	1 (1)	(87)	
		Deep infection (harm)	29 (27)	(4,7,11,14,21–23,37,39,41,42,44,46,54,65,67,81,84,90,91,93,95,101,103,105,127,132)	
		Infection (harm)	29 (23)	(8,11,14,19,24,36,42,47,49–51,54,73,76,78,93,96,108,113,126–128,133)	
		Intramedullary infection (harm)	3 (3)	(22,48,49)	
		Osteomyelitis (harm)	17 (14)	(10,11,15,19,23,32,33,59,60,97,125,132,134,135)	
		Pin site infection (harm)	47 (43)	(3,4,8,10,13,16,18,19,22,24,28,33,37–39,41,42,44,48,52,53,57,59,68–70,77–79,82–85,87,88,91,104,114,125,127,131,134,136)	
		Septic events (harm)	5 (5)	(9,60,61,67,75)	
		Soft tissue infection (harm)	2 (2)	(23,87)	
		Superficial or wound infection (harm)	19 (16)	(11,18,19,42,48,51,54,56,65,70,81,86,103,130–132)	
		Surgical site infections (harm)	6 (4)	(9,46,89,132)	
	Musculoskeletal and connective tissue outcomes		Abnormal bone reaction (harm)	73 (14)	(1,7,19,21,25,47,60,72,106,135,137–140)
			Amputation (harm)	3 (3)	(19,39,67)
		Bone healing	236 (105)	(1,2,5,8–15,18–22,24,29–33,36–39,41–43,45,48–55,57–63,65,67–70,73–79,81–98,100–103,105,106,108,109,111–113,116,120,122–128,133–136,139,141–145)	
		Cartilage condition	5 (1)	(116)	
		Compartment syndrome (harm)	7 (7)	(10,22,42,60,84,85,102)	
		Deformity	76 (52)	(4,6,8,13,14,18,19,21–24,27,28,32,35,37,38,41,42,44,50,51,53,54,56,57,59,61,68,70,73,79,83,85,87,88,90–)	

		93,95,96,101,103,108,10,113,123,125,126,138,145)
Fractures (harm)	74 (54)	(2-4,7,8,11-14,16,18,22,23,27,28,33,37-42,44,48,51,53,54,56,57,62,65,68-70,73-75,78,81,82,84,85,87,88,92,94,95,97,103,114,123,133,136,145)
Hardware or implant failure (harm)	133 (62)	(1,5,7,9,14-16,18-21,25,28,30,31,35,37,38,41,44-48,50,51,53-55,57,60-62,64,65,67,71-73,75-77,89,90,93-97,99-103,105,121,123,127,128,133-135)
Joint instability (harm)	66 (40)	(5,7,14,16,17,22-24,33,34,37-39,42,44,51,52,54,57,60,65-67,69,73,78,82,85,87,95,97,99,103,108,110,116,117,128,131,133)
Lengthening	456 (132)	(1-19,21-28,30-46,48-50,52-62,64-71,73-82,84-98,100-106,108,109,112-116,119-129,131,133-136,138,139,141-147)
Lower limb alignment	196 (72)	(5-15,17,18,22-28,32-35,37,38,40-42,45,52,53,56,58,60-62,66,69,70,73-78,82-88,90,93,94,96,97,100,101,103,104,107,108,110,113,119,125,127,128,142,147)
Muscle strength	7 (6)	(11,17,91,96,109,116)
Muscle tightness/ stiffness	3 (2)	(51,103)
Nail removal/retention ratio	9 (9)	(1,6,35,50,67,71,73,103,128)
Nonunion or nonhealing (harm)	151 (77)	(1,3-5,7-12,14-18,21-25,27,28,31,33,37-48,51-55,57,60,62,63,65,67-69,74-76,78,81-85,87-89,91,93-97,100-

			103,105,113,126,127,130,134)
	Osteoarthritis (harm)	8 (2)	(40,67)
	Osteonecrosis (harm)	5 (5)	(33,60,78,96,97)
	Pain or discomfort	110 (60)	(1,2,7-9,11,13-15,17,19-21,23-25,31-34,39,42,50,54,62,65,67,73,75,79,86,88,89,91,93,95,98,99,101,103,104,106-111,113-117,124-127,132,134,139,148)
	Pelvic position	5 (3)	(50,58,116)
	Range of Motion	215 (83)	(1,2,7-11,14,15,17,19,21-25,27,29,32-34,37-39,42,44,46,47,50-55,57-60,62,63,65-71,73,74,76,79,82-85,87,89-91,93-97,99,101,103,108,109,111,113,114,116,119,125-127,129,131,135,136,144,147)
	Soft tissue complications (harm)	30 (24)	(8,10,14,19,23,27,32,33,42,49,50,54,73,75,79,83,87,94,96,106,108,110,113,126)
	Spinal alignment	10 (3)	(15,46,87)
	Swelling (harm)	5 (5)	(2,51,108,117,132)
	Synovitis (harm)	1 (1)	(116)
	Time in/with hardware	96 (67)	(1,3,4,6-13,16,18-20,23,24,26,28,30,32,36,40-42,48,52,56,57,59,61,66,68,70,73,74,77-79,81-85,87,88,90,92,93,96-98,110,114,119-122,126,127,131,133,134,136-138,141)
	Wound healing	3 (3)	(22,42,89)
	Wound problems (harm)	9 (9)	(5,11,21,48,49,52,70,89,93)
Nervous system outcomes	Neurologic deficits (harm)	47 (35)	(3,5,8,11,16,17,19,21-23,33,38,42,45-47,51,53,68,71,78,81,83-85,87,90,95,100,103,111,114,130,135,136)

	Skin and subcutaneous tissue outcomes	Skin lesions (harm)	15 (13)	(10,20,22,38,56,81,84–86,91,95,98,127)
	Vascular outcomes	Vascular incidents (harm)	29 (24)	(8,9,21–23,33,38,42,46,51,68,71,73,76,78,85,94,96,100,102,105,111,127,135)
Total (Physiological or clinical)			2252	
Resource use	Economics	Cost of the treatment	19 (3)	(44,112,115)
	Hospital	Length of stay	20 (18)	(9,18–20,33,37,38,44,66,82,86,89,91,97,98,116,148,149)
		Number and duration of outpatient office visits	3 (3)	(44,112,135)
		Operation duration	19 (15)	(3,13,18,33–36,44,62,91,93,97,99,127,131)
		Radiation exposure during surgery	5 (4)	(13,33,93,97)
		Readmission	4 (2)	(82,149)
	Need for further intervention	Medications	18 (6)	(29,38,62,66,97,148)
		Analgesia requirements		
		Antibiotic use	2 (2)	(11,29)
		Dependence on any medication or medical aids	1 (1)	(104)
		Requirement for blood transfusion	5 (3)	(33,93,97)
		Reoperation	9 (9)	(27,33,50,53,62,67,93,113,125)
		Reprogramming	3 (3)	(4,12,13)
	Societal/carer burden	Reliance on others	1 (1)	(104)
Total (Resource use)			109	
Grand Total			2939	

The table displays both the number of verbatim outcomes listed under each outcome heading and subheading, as well as the number of articles (in parentheses) reporting these outcome headings and subheadings.

For visualization, an interactive map of the outcomes was created using the web application Flourish. (available at <https://public.flourish.studio/visualisation/18576652/>) (150)

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