

Table 1. Individual items included on the 38-item clinical criteria checklist.

Criterion	Description	
1.	Pain of recent onset.	
2.	Pain associated with and in proportion to trauma, a pathological process or movement/postural dysfunction.	
3.	History of <u>nerve</u> injury, pathology or mechanical compromise.	
4.	Pain disproportionate to the nature and extent of injury or pathology.	
5.	Usually intermittent and sharp with movement/mechanical provocation; may be a	more constant dull ache or throb at rest.
6.	More constant/unremitting pain.	
7.	Pain variously described as burning, shooting, sharp or electric-shock-like.	
8.	Pain localised to the area of injury/dysfunction (with/without some somatic	referral).
9.	Pain referred in a dermatomal or cutaneous distribution.	
10.	Widespread, non-anatomical distribution of pain.	
11.	Clear, proportionate mechanical/anatomical nature to aggravating and easing	factors.
12.	Mechanical pattern to aggravating and easing factors involving activities/ <u>neural tissue</u> .	postures associated with movement, loading or compression of
13.	Disproportionate, non-mechanical, unpredictable pattern of pain provocation in	response to multiple/non-specific aggravating/easing factors.
14.	Reports of spontaneous (i.e. stimulus-independent) pain and/or paroxysmal	pain (i.e. sudden recurrences and intensification of pain).
15.	Pain in association with other dysesthesias (e.g. crawling, electrical, heaviness).	
16.	Pain of high severity and irritability (i.e. easily provoked, taking longer to	settle).
17.	Pain in association with other symptoms of inflammation (i.e. swelling,	redness, heat)
18.	Pain in association with other neurological symptoms (e.g. pins and needles,	numbness, weakness).
19.	Night pain/disturbed sleep.	
20.	Responsive to simple analgesia/*NSAIDS.	
21.	Less responsive to simple analgesia/NSAIDS and/or more responsive to anti- medication.	epileptic (e.g. Lyrica)/anti-depression (e.g. Amitriptyline)
22.	Usually rapidly resolving or resolving in accordance with expected tissue	healing/pathology recovery times.
23.	Pain persisting beyond expected tissue healing/pathology recovery times.	
24.	History of failed interventions (medical/surgical/therapeutic).	
25.	Strong association with maladaptive psychosocial factors (e.g. negative behaviours, altered family/work/social life, medical conflict).	emotions, poor self-efficacy, maladaptive beliefs and pain
26.	Pain in association with high levels of functional disability.	
27.	Antalgic (i.e. pain relieving) postures/movement patterns.	
28.	Clear, consistent and proportionate mechanical/anatomical pattern of pain	reproduction on movement/mechanical testing of target tissues.
29.	Pain/symptom provocation with mechanical/movement tests (e.g. move/load/compress <u>neural</u> <u>tissue</u>).	Active/Passive, Neurodynamic, i.e. #SLR) that
30.	Disproportionate, inconsistent, non-mechanical/non-anatomical pattern of pain	provocation in response to movement/mechanical testing.
31.	Positive neurological findings (altered reflexes, sensation and muscle power in	a dermatomal/myotomal or cutaneous nerve distribution).

- 32. Localised pain on palpation.
- 33. Diffuse/non-anatomic areas of pain/tenderness on palpation.
- 34. Positive findings of allodynia within the distribution of pain.
- 35. Positive findings of hyperalgesia (primary and/or secondary) within the distribution of pain.
- 36. Positive findings of hyperpathia within the distribution of pain.
- 37. Pain/symptom provocation on palpation of relevant neural tissues.
- 38. Positive identification of various psychosocial factors (e.g. catastrophisation, fear-avoidance behaviour, distress).

*Non-steroidal anti-inflammatory drugs, #Straight leg raise.

Table 2. Patient demographics by pain classification (n=464).

Nociceptive	Peripheral Neuropathic	Central Sensitisation
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Variable	(n=256)	(n=102)	(n=106)
Gender (Female)	150 (59%)	53 (52%)	57 (54%)
Age y, Mean (SD, Range)	44 (14.5, 19-85)	44 (13.1, 20-76)	43 (12.3, 20-80)
Source of referral			
GP	144 (56%)	68 (67%)	44 (42)
Orthopaedics	41 (16%)	12 (12%)	11 (10)
ED	25 (10%)	14 (14%)	5 (5%)
Pain clinic	6 (2%)	3 (3%)	38 (36%)
Occ Health	25 (10%)	2 (2%)	2 (2%)
Rheumatologist	4 (2%)	0	1 (1%)
Other	11 (4%)	3 (3%)	5 (5%)
Assessment setting			
BPSC	128 (50%)	68 (67%)	24 (23%)
Physio. Dept	119 (47%)	33 (32%)	39 (37%)
Pain Clinic	2 (1%)	1 (1%)	43 (41%)
Private Practice	7 (3%)	0	0
Predominant pain location			
Back	209 (82%)	9 (9%)	65 (61%)
Back/Thigh	37 (15%)	19 (19%)	17 (16%)
Uni Leg BK	3 (1%)	60 (59%)	4 (4%)
Back/Uni leg BK	7 (3%)	11 (11%)	10 (9%)
Bilat Leg BK	0	1 (1%)	1 (1%)
Back/Bilat leg BK	0	2 (2%)	9 (9%)
Duration current episode			
0-3 weeks	17 (7%)	2 (2%)	2 (2%)
4-6 weeks	33 (13%)	14 (14%)	2 (2%)
7-12 weeks	33 (13%)	18 (18%)	2 (2%)
4-6 months	36 (14%)	23 (22%)	2 (2%)
7-12 months	27 (11%)	21 (21%)	10 (9%)

BMA: PP	100	100	100	55.5	22.8	21.3	11.1	3.8	2.8	0	0								
EV	2.72	3.42	3.15	1.17	0.31	0.40	0.22	0.08	0.06	0.00	0.00								
SD	0.66	0.68	0.79	1.15	0.65	0.83	0.65	0.43	0.40	0.00	0.00								
Model 2																			
BMA: PP	100	100	100	60.6	16.9	29.2	39.5	17.2	25.6										
EV	2.60	3.13	3.07	1.19	0.22	0.49	0.64	0.28	0.52										
SD	0.69	0.75	0.85	1.10	0.56	0.85	0.90	0.72	1.04										
Model 3																			
BMA: PP	100	100	100	62.9		28.8	42.5	17.3	29.0										
EV	2.62	3.08	3.11	1.24		0.47	0.69	0.28	0.59										
SD	0.69	0.74	0.85	1.10		0.84	0.92	0.72	1.09										
Model 4																			
BMA: PP	100	100	100	62.9		28.8	42.5		29.0										
EV	2.62	3.08	3.11	1.24		0.47	0.69		0.59										
SD	0.69	0.74	0.85	1.10		0.84	0.92		1.09										
Model 5																			
BMA: PP	100	100	100	83.0			41.8		34.7										
EV	2.57	3.19	3.23	1.70			0.68		0.71										
SD	0.67	0.73	0.83	0.98			0.92		1.17										
Model 6																			
BMA: PP	100	100	100	83.9			45.3												
EV	2.65	3.35	3.16	1.72			0.75												
SD	0.65	0.68	0.80	0.97			0.96												
Model 7																			
BMA: PP	100	100	100	94.5															
EV	2.72	3.42	3.32	2.04															
SD	0.63	0.66	0.76	0.79															

Abbreviations: BMA-Bayesian model averaging, PP-Posterior probability (%), EV-Expected value (regression coefficient), SD-Standard deviation of the EV. Variables within models listed in descending order of Posterior probability.

Table 4. Indices of classification accuracy from successive regression models.

	CA	Sensitivity	Specificity	PPV	NPV	LR+	LR-	DOR
Model 1	96.9	90.8	98.6	94.7	97.5	64.30	0.09	690.24

BMA								
Model 2 BMA	96.7	90.8	98.3	93.7	97.5	53.58	0.09	573.56
Model 3 BMA	96.7	90.8	98.3	93.7	97.5	53.58	0.09	573.56
Model 4 BMA	96.7	90.8	98.3	93.7	97.5	53.58	0.09	573.56
Model 5 BMA	96.7	90.8	98.3	93.7	97.5	53.58	0.09	573.56
Model 6 BMA	96.7	90.8	98.3	93.7	97.5	53.58	0.09	573.56
Model 7 BMA	96.5	91.8	97.7	91.8	97.7	40.64	0.08	486.56

Values are presented as ‘%’ (except LR +, LR –, DOR).

Abbreviations: CA- Classification Accuracy, PPV-Positive Predictive Value, NPV-Negative Predictive Value, LR +-Positive Likelihood Ratio, LR -- Negative Likelihood Ratio, DOR-Diagnostic Odds Ratio.

Table 5. Model parameters for criteria in the final ‘central sensitisation pain’ model.

Criteria	Regression Coefficient	SD	95% CI Lower	95% CI Upper	OR	OR 95% CI Lower	OR 95% CI Upper
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4 Pain disproportionate to injury	2.72	0.63	1.48	3.96	15.19	4.39	52.48
13 Disproportionate Aggs/Eases	3.42	0.66	2.13	4.72	30.69	8.41	112.03
25 Psychosocial symptoms	2.03	0.79	0.49	3.58	7.65	1.64	35.79
33 Diffuse palpation	3.32	0.75	1.84	4.80	27.57	6.28	121.09

Table 6. Classification accuracy of the ‘final’ ‘central sensitisation pain’ model.

	Reference standard positive	Reference standard negative
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Cluster positive	90 patients	8
Cluster negative	8	346

Table 7. Indices of classification accuracy for the ‘final’ ‘central sensitisation pain’ model.

	Value	95% CI Lower	95% CI Upper
CA	96.5	94.3	98.0
Sensitivity	91.8	84.5	96.4
Specificity	97.7	95.6	99.0
PPV	91.8	84.5	96.4
NPV	97.7	95.6	99.0
LR+	40.64	20.43	80.83
LR-	0.08	0.04	0.16
DOR	486.56	177.74	1331.97

Abbreviations: CA- Classification Accuracy, PPV-Positive Predictive Value, NPV-Negative Predictive Value, LR +-Positive Likelihood Ratio, LR -- Negative Likelihood Ratio, DOR-Diagnostic Odds Ratio.