**APPENDIX – Search Strings**

**MEDLINE**

("Chronic Pain"[Mesh] OR chronic pain[tiab] OR central pain\*[tiab] OR musculoskeletal pain\*[tiab] OR cwp[tiab] OR widespread pain\*[tiab] OR "Nociceptive Pain"[Mesh] OR nociceptive pain\*[tiab] OR somatic pain\*[tiab] OR "Neck Pain"[Mesh] OR "Back Pain"[Mesh] OR (low back[tiab] OR lower back[tiab]) AND pain[tiab]) OR lumbar pain[tiab] OR neck pain\*[tiab] OR "Neck Injuries"[Mesh] OR "Back Injuries"[Mesh] OR "Arthroplasty, Replacement"[Mesh] OR "Somatosensory Disorders"[Mesh] OR "Autoimmune Diseases"[Mesh] OR autoimmune diseas\*[tiab] OR "Fractures, Bone"[Mesh] OR "Cumulative Trauma Disorders"[Mesh] OR neck injur\*[tiab] OR back injur\*[tiab] OR arthroplast\*[tiab] OR replacement\*[tiab] OR somatosensory disorder\*[tiab] OR bone fractur\*[tiab] OR trauma disorder\*[tiab])

AND

("Central Nervous System Sensitization"[Mesh] OR central sensitization\*[tiab] OR central sensitisation\*[tiab] OR central sensitivity syndrom\*[tiab] OR central pain modulat\*[tiab] OR central hypersensitiv\*[tiab] OR pain hypersensitiv\*[tiab] OR hyperalg\*[tiab] OR "Hyperalgesia"[Mesh] OR hyperalges\*[tiab] OR pressure hyperalges\*[tiab] OR pressure pain threshold\*[tiab] OR tactile allodyn\*[tiab] OR allodyn\*[tiab] OR noxious stimul\*[tiab] OR non-noxious stimuli\*[tiab] OR centralized pain\*[tiab] OR centralised pain\*[tiab] OR non-nociceptive stimul\*[tiab] OR nociceptive stimul\*[tiab] OR central hyperexcitabil\*[tiab] OR widespread hyperalges\*[tiab])

 AND

("Biomarkers"[Mesh] OR biomarker\*[tiab] OR "Vital Signs"[Mesh] OR vital sign\*[tiab] OR "Skin Temperature"[Mesh] OR skin\*[tiab] OR body temperatur\*[tiab] OR "Skin Pigmentation"[Mesh] OR skin pigmentation\*[tiab] OR heart rat\*[tiab] OR hrv[tiab] OR blood pressur\*[tiab] OR muscle activit\*[tiab] OR muscle contraction\*[tiab] OR quantitative morphometr\*[tiab] OR quantitative sensory test\*[tiab] OR qst[tiab] OR white matter connectiv\*[tiab] OR gray matter ultrastructur\*[tiab] OR "Cerebrovascular Circulation"[Mesh] OR cerebrovascular circulation\*[tiab] OR cerebral blood flow\*[tiab] OR "Electrophysiology"[Mesh] OR electrophysiolog\*[tiab] OR functional connectivit\*[tiab] OR sensory test\*[tiab] OR "Brain Mapping"[Mesh] OR brain mapp\*[tiab] OR brain imag\*[tiab] OR "Hyperhidrosis"[Mesh] OR hyperhidros\*[tiab] OR hyperreflex\*[tiab] OR hypertherm\*[tiab] OR pinprick-evoked brain respons\*[tiab] OR "Electromyography"[Mesh] OR electromyograph\*[tiab] OR emg[tiab] OR "Electroencephalography"[Mesh] OR electroencephalograph\*[tiab] OR eeg[tiab] OR "Magnetic Resonance Imaging"[Mesh] OR magnetic resonance imag\*[tiab ] OR mri[tiab] OR fmri\*[tiab] OR "Photoplethysmography"[Mesh] OR photoplethysmograph\*[tiab] OR ppg[tiab] OR skin nociceptor\*[tiab] OR tomograph\*[tiab] OR "Mydriasis"[Mesh] OR mydrias\*[tiab] OR pupil dilation\*[tiab] OR "Laser-Evoked Potentials"[Mesh] OR laser-evoked potential\*[tiab] OR non-invasiv\*[tiab] OR "Neurophysiology"[Mesh] OR neurophysiolog\*[tiab])

NOT

(("Child"[Mesh] OR "Adolescent"[Mesh] OR "Infant"[Mesh]) NOT "Adult"[Mesh])

NOT

 ("animals"[MeSH] NOT "humans"[MeSH])

**EMBASE**

('chronic pain'/exp OR 'chronic pain':ab,ti OR 'chronic pain syndrome'/exp OR 'central pain'/exp OR ‘central pain\*’:ab,ti OR 'central pain syndrome'/exp OR 'chronic widespread pain'/exp OR cwp:ab,ti OR 'widespread pain'/exp OR 'widespread pain\*':ab,ti OR 'nociceptive pain'/exp OR 'nociceptive pain\*':ab,ti OR 'somatic pain'/exp OR 'somatic pain\*':ab,ti OR (low\* NEXT/5 ‘back pain\*'):ab,ti OR 'neck pain'/exp OR 'neck pain\*':ab,ti OR 'cervical pain'/exp OR 'cervical pain\*':ab,ti OR 'patellofemoral pain'/exp OR 'patellofemoral pain\*':ab,ti OR 'rheumatoid arthritis'/exp OR 'rheumatoid arthritis':ab,ti OR 'chronic arthritis'/exp OR 'chronic arthritis':ab,ti OR 'joint injury'/exp OR 'joint injur\*':ab,ti OR 'whiplash injury'/exp OR whiplash:ab,ti OR 'fibromyalgia'/exp OR fibromyalg\*:ab,ti OR 'fibromyalgia syndrome'/exp OR fms:ab,ti OR 'patellofemoral pain syndrome'/exp OR 'patellofemoral pain syndrom\*':ab,ti OR pfps:ab,ti OR 'intervertebral disk degeneration'/exp OR 'intervertebral disk degeneration':ab,ti OR 'disc degeneration'/exp OR 'disc degeneration\*':ab,ti OR 'degenerative disc disease'/exp OR 'degenerative disc disease\*':ab,ti OR 'osteoarthritis'/exp OR ' osteoarthritis':ab,ti OR 'total knee arthroplasty'/exp OR 'total knee arthroplast\*':ab,ti OR 'total hip replacement'/exp OR 'total hip replacement\*':ab,ti OR 'temporomandibular joint disorder'/exp OR 'temporomandibular joint disorder\*':ab,ti OR 'autoimmune pancreatitis'/exp OR 'autoimmune pancreatitis':ab,ti OR 'multiple sclerosis'/exp OR 'multiple sclerosis':ab,ti)

AND

('central nervous system sensitization'/exp OR 'central nervous system sensitization\*':ab,ti OR 'central sensitization'/exp OR 'central sensitization':ab,ti OR 'central sensitivity syndrome'/exp OR 'central sensitivity':ab,ti OR ‘central pain modulat\*’:ab,ti OR 'hypersensitivity'/exp OR 'hypersensitivit\*':ab,ti OR 'hyperalgesia'/exp OR 'hyperalgesia':ab,ti OR 'pressure pain threshold'/exp OR 'pressure pain threshold\*':ab,ti OR 'tactile allodynia'/exp OR 'allodynia'/exp OR 'allodynia':ab,ti OR ‘noxious stimul\*’:ab,ti OR 'nociceptive stimulation'/exp OR 'nociceptive stimul\*':ab,ti OR ‘non-noxious stimuli’:ab,ti OR ‘centralized pain\*’:ab,ti OR ‘centralised pain\*’:ab,ti OR ‘non-nociceptive stimul\*’:ab,ti OR 'hyperexcitability'/exp OR 'hyperexcitability':ab,ti )

AND

(biomarker\*:ab,ti OR 'vital sign'/exp OR 'vital sign\*':ab,ti OR 'skin temperature'/exp OR 'skin'/exp OR 'skin':ab,ti OR 'body temperature'/exp OR 'body temperature\*':ab,ti OR 'skin pigmentation'/exp OR 'skin pigment\*':ab,ti OR 'heart rate'/exp OR 'heart rat\*':ab,ti OR 'heart rate variability'/exp OR hrv:ab,ti OR ‘blood pressure\*’:ab,ti OR 'muscle contraction'/exp OR 'muscle contraction\*':ab,ti OR ‘muscle activit\*’:ab,ti OR ‘quantitative morphometr\*’:ab,ti OR 'quantitative sensory testing'/exp OR 'quantitative sensory test\*':ab,ti OR qst:ab,ti OR 'gray matter'/exp OR 'gray matter':ab,ti OR 'white matter'/exp OR 'white matter':ab,ti OR ‘cerebrovascular circulation\*’:ab,ti OR ‘cerebral blood flow\*’:ab,ti OR 'brain circulation'/exp OR 'brain circulation':ab,ti OR 'cerebral blood flow velocity'/exp OR 'cerebral blood flow velocity':ab,ti OR 'brain blood flow'/exp OR 'brain blood flow':ab,ti OR 'electrophysiology'/exp OR 'electrophysiol\*':ab,ti OR 'functional connectivity'/exp OR 'functional connectivit\*':ab,ti OR ‘behavioral biomarker\*’:ab,ti OR ‘sensory test\*’:ab,ti OR 'brain mapping'/exp OR 'brain mapp\*':ab,ti OR 'brain imaging'/exp OR 'brain imag\*':ab,ti OR 'hyperhidrosis'/exp OR 'hyperhidros\*':ab,ti OR 'hyperreflexia'/exp OR 'hyperreflex\*':ab,ti OR 'hyperthermia'/exp OR 'hypertherm\*':ab,ti OR ‘pinprick-evoked brain respons\*’:ab,ti OR 'pinprick test'/exp OR 'pinprick test\*':ab,ti OR 'electroencephalography'/exp OR 'electroencephalography':ab,ti OR eeg:ab,ti OR 'electromyography'/exp OR 'electromyograph\*':ab,ti OR emg:ab,ti OR ‘magnetic resonance imag\*’:ab,ti OR mri:ab,ti OR 'functional magnetic resonance imaging'/exp OR fmri:ab,ti OR 'photoplethysmogram'/exp OR 'photoplethysmogram\*':ab,ti OR ppg:ab,ti OR 'tomography'/exp OR 'tomograph\*':ab,ti OR ‘skin nociceptor\*’:ab,ti OR ‘noninvasive biomarker\*’:ab,ti OR 'mydriasis'/exp OR 'mydrias\*':ab,ti OR 'pupil dilation'/exp OR 'pupil dilation':ab,ti OR 'laser evoked potential'/exp OR 'laser evoked potential':ab,ti OR 'neurophysiology apparatus and instruments'/exp)

*Publication years, Humans & Age were adjusted through EMBASE filters*

**PsycINFO**

((DE "Chronic Pain" OR TI "chronic pain" OR AB "chronic pain") OR (DE "Nociceptors" OR TI "nociceptor\*\*" OR AB "nociceptor\*") OR (TI "central pain\*" OR AB "central pain\*") OR (TI "musculoskeletal pain\*" OR AB "musculoskeletal pain\*") OR (TI "widespread pain\*" OR AB "widespread pain\*") OR (TI "somatic pain\*" OR AB "somatic pain\*") OR (DE "Fibromyalgia" OR TI "fibromyalgia" OR AB "fibromyalgia") OR (DE "Whiplash" OR TI "Whiplash" OR AB "Whiplash") OR (TI "neck pain\*" OR AB "neck pain\*") OR (TI "neck injur\*" OR AB "neck injur\*") OR (TI "back injur\*" OR AB "back injur\*") OR (DE "Back Pain" OR TI "back pain\*" OR AB "back pain\*") OR (TI "low\* NEXT/5 ‘back pain\*'" OR AB "low\* NEXT/5 ‘back pain\*'") OR (TI "lumbar pain" OR AB "lumbar pain") OR (TI "arthroplast\*" OR AB "arthroplast\*") OR (TI "replacement\*" OR AB "replacement\*") OR (DE "Somatosensory Disorders" OR TI "somatosensory disorder\*" OR AB "somatosensory disorder\*") OR (DE "Multiple Sclerosis" OR TI "multiple sclerosis" OR AB "multiple sclerosis") OR (TI "fractures, bone" OR AB "fractures, bone") OR (TI "trauma disorder\*" OR AB "trauma disorder\*"))

AND

((TI "central nervous system sensitization" OR AB "central nervous system sensitization") OR (TI "central sensitization\*" OR AB "central sensitization\*") OR (TI "central sensitisation\*" OR AB "central sensitisation\*") OR (TI "central sensitivity syndrom\*" OR AB"central sensitivity syndrom\*") OR (TI "central pain modulat\*" OR AB "central pain modulat\*") OR (TI "central hypersensitiv\*" OR AB "central hypersensitiv\*") OR (TI "hyperalg\*" OR AB "hyperalg\*") OR (TI "hyperalgesi\*" OR AB "hyperalgesi\*") OR (TI "pressure pain threshold\*" OR AB "pressure pain threshold\*") OR (TI "tactile allodyn\*" OR AB "tactile allodyn\*") OR (TI "noxious stimul\*" OR AB "noxious stimul\*") OR (TI "non-noxious stimuli\*" OR AB "non-noxious stimuli\*") OR (TI "centralized pain\*" OR AB "centralized pain\*") OR (TI "centralised pain\*" OR AB "centralised pain\*") OR (TI "non-nociceptive stimul\*" OR AB "non-nociceptive stimul\*") OR (TI "nociceptive stimul\*" OR AB "nociceptive stimul\*") OR (TI "central hyperexcitabil\*" OR AB "central hyperexcitabil\*") OR (TI "widespread hyperalges\*" OR AB "widespread hyperalges\*"))

AND

((DE "Skin Temperature" OR TI "skin temperature" OR AB "skin temperature") OR (DE "Body Temperature" OR TI "body temperatur\*" OR AB "body temperatur\*") OR (DE "Cerebral Blood Flow" OR TI "cerebral blood flow" OR AB "cerebral blood flow") OR (DE "Electrophysiology" OR TI "electrophysiolog\*" OR AB "electrophysiolog\*") OR (DE "Electromyography" OR TI "electromyograph\*" OR AB "electromyograph\*") OR (DE "Electroencephalography" OR TI "electroencephalograph\*" OR AB "electroencephalograph\*") OR (DE "Hyperthermia" OR TI "hyperthermia" OR AB "hyperthermia") OR (DE "Magnetic Resonance Imaging" OR TI "magnetic resonance imag\*" OR AB "magnetic resonance imag\*") OR (DE "Somatosensory Evoked Potentials" OR TI "somatosensory evoked potentials" OR AB "somatosensory evoked potentials") OR (TI "biomarker\*" OR AB "biomarker\*") OR (TI "vital sign\*" OR AB "vital sign\*") OR (TI "skin\*" OR AB "skin\*") OR (TI "skin pigmentation\*" OR AB "skin pigmentation\*") OR (TI "heart rat\*" OR AB "heart rat\*") OR (TI "heart rate variabilit\*" OR AB "heart rate variabilit\*") OR (TI "hrv" OR AB "hrv") OR (TI "blood pressur\*" OR AB "blood pressur\*") OR (TI "muscle activit\*" OR AB "muscle activit\*") OR (TI "muscle contraction\*" OR AB "muscle contraction\*") OR (TI "quantitative morphometr\*" OR AB "quantitative morphometr\*") OR (TI "quantitative sensory test\*" AB "quantitative sensory test\*") OR (TI "qst" OR AB "qst") OR (TI "white matter connectiv\*" OR AB "white matter connectiv\*") OR (TI "gray matter ultrastructur\*" OR AB "gray matter ultrastructur\*") OR (TI "cerebrovascular circulation\*" OR AB "cerebrovascular circulation\*") OR (TI "functional connectivit\*" OR AB "functional connectivit\*") OR (TI "sensory test\*" OR AB "sensory test\*") OR (TI "brain mapp\*" OR AB "brain mapp\*") OR (TI "brain imag\*" OR AB "brain imag\*") OR (TI "hyperhidros\*" OR AB "hyperhidros\*") OR (TI "hyperreflex\*" OR AB "hyperreflex\*") OR (TI "pinprick-evoked brain respons\*" OR AB "pinprick-evoked brain respons\*") OR (TI "photoplethysmograph\*" OR AB "photoplethysmograph\*") OR (TI "skin nociceptor\*" OR AB "skin nociceptor\*") OR (TI "tomograph\*" OR AB "tomograph\*") OR (TI "mydrias\*" OR AB "mydrias\*") OR (TI "pupil dilation\*" OR AB "pupil dilation\*") OR (TI "laser-evoked potential\*" OR AB "laser-evoked potential\*") OR (TI "non-invasiv\*" OR AB "non-invasiv\*") OR (TI "neurophysiolog\* OR AB "neurophysiolog\*))

NOT

((DE 'child' OR TI ‘child’ OR AB ‘child’) OR (DE 'adolescent' OR TI 'adolescent' OR AB 'adolescent') OR (DE 'infant' OR TI 'infant' OR AB 'infant') NOT (DE 'adult' OR TI 'adult' OR AB 'adult'))

NOT

((DE 'animal' OR TI 'animal' OR AB 'animal') NOT (DE 'human' OR TI 'human' OR AB 'human'))