

WORKING PAPER

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# What has actually been studied around localized back heat

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## Abstract

This evidence map asks what has actually been studied around recurrent localized back heat. Prespecified source roles covered modern biomedical literature, Korean and East Asian databases, classical terminology, and safety sources; twelve priority objects received passage-level verification. The available literature clusters around itch-defined dorsal sensory syndromes, evoked sensory testing, post-exercise skin temperature, pain descriptors, and selected safety guidelines. No participant-level study was found that linked a spontaneous target episode with concurrent skin temperature and sensory testing. Negative yields define a bounded search gap, not proof of absence.

**Keywords:** evidence map · back heat · negative search yield · research gap · passage verification

## What this map counts—and what it does not

This is a bounded evidence map of a construct that does not travel under one stable label. Its source universe was fixed prospectively across seven lanes, with exact conceptual search blocks, shared eligibility rules, counterevidence targets, and passage priorities. The accounting keeps discovery, eligibility screening, lawful acquisition, passage verification, interpretation, hypothesis, and clinical implication as different states. A database record can therefore belong to the search history without becoming an evidentiary source, and an acquired or verified source can still be indirect for recurrent localized back heat.

The governing broad modern PubMed inventory is 816 exact unique PMIDs across 854 top-level occurrences, frozen through relevance position 240 of the first focal neuropathic and dermatological block. These are search-accounting denominators, not participant counts, study-quality grades, prevalence data, or 816 independent publication objects. A ten-position slice completed before the owner-approved correction took effect is preserved separately: it recorded seven additional unique PMIDs and three duplicate occurrences, but its resulting 823-PMID arithmetic is not substituted for the governing cutoff. The two records have different audit roles and neither may be silently rewritten.

Broad ranked pagination stopped because three consecutive 20-position waves at positions 181–240 added identifiers within categories already represented but no claim-changing evidence role, population, measurement construct, safety boundary, or serious counter-hypothesis. The stopping rule treats new identifiers in an existing category, remaining database results, and dynamic ranking as insufficient reasons to continue. It permits a rare additional search only for a named missing claim, population, or safety boundary with a query capable of resolving it. This is saturation for the purpose of this map, not an exhaustive census and not a claim that no further relevant record exists.

## Seven routes into one ambiguous complaint

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The search followed seven distinct routes. NICE guidance and PubMed were used first to identify associated findings and safety contexts. A second route gathered studies of focal neuropathic sensation, chronic itch, dermatological conditions, burning, and warmth. Musculoskeletal, positional, neurological, autonomic, and referred explanations were examined separately, while thermography and skin-temperature studies were kept distinct from tests of cold and warm perception under imposed stimuli. KCI, OASIS, and KMBase were used for contemporary Korean scholarship; the Korean Classics database and Chinese Text Project were used for historical terminology and medical cases whose editions and contexts could be checked. Finally, conflicting results, nonspecific findings, measurement limits, corrections, and retractions were collected on their own. The separation prevented the familiar vocabulary of any one field from deciding the search and its conclusion in advance.

The routes did not reach equal depth, and the report should not imply otherwise. By the 14 August 2026 cutoff, the safety search had screened two sets of NICE guidance and all 59 records in a prespecified PubMed block. For focal neuropathic and dermatological sensation, reviewers read the first 240 records from the broadest PubMed search and the first ten from each of two supporting searches. For trunk thermoception and objective temperature, one prespecified quantitative-sensory-testing paper served as a reference point, and 275, 84, and 161 ranked records were screened across three searches. Musculoskeletal and referred explanations, by contrast, were represented mainly by studies reclassified from those other searches rather than by a completed independent census. Counterevidence and publication-integrity checks were applied across all routes and therefore do not constitute another additive literature count.

The contemporary Korean lane used three native KCI searches, each screened only through the first 20 relevance-ranked titles; the portal reported 101, 188, and 469 results for those blocks. OASIS required narrower phrase adaptations because the frozen Boolean expression was treated literally, so its phrase-

level results remain separate from KCI counts. The historical lane searched seven exact strings through bounded ITKC and Chinese Text Project discovery routes, but native corpus access was unavailable or returned HTTP 403 in this environment. Those lane outcomes belong to later sections of the map; here they establish only that route, syntax, ceiling, script, and access state are part of the method.

Two declared native routes could not be executed through the ordinary public interfaces available to this unattended worker on 14 August 2026. The KMbase query interface returned HTTP 403 and its indexed legacy route did not expose native fields, filters, counts, or items. The Cochrane advanced-search route also returned HTTP 403; a bounded site-restricted index check produced only discovery locators, not a reproducible native result set. No access control was bypassed. These are environment-specific access determinations—not global unavailability, database-native zero yields, or evidence that the relevant literature is absent.

## The verified core is small and indirect

The Tier 1 core contains 12 publication objects selected because each had a distinct passage-verification job: phenotype, descriptor interpretation, objective surface temperature, evoked trunk or torso thermoception, construct validity, counterevidence, or a qualified safety boundary. All 12 now have auditable passage-verification decisions. Here, Tier 1 is a workflow priority, not a certainty grade: it does not mean that the source is direct for recurrent localized back heat, methodologically superior, fully accessible, or transferable to an individual clinical decision. The denominator is also publication objects—ten journal articles and two guideline families—not participants, files, passages, independent datasets, or effects.

The closest phenotype evidence still begins from other complaints. Three notalgia studies and one comparative pruritus study describe localized upper-back or scapular symptoms in itch-defined clinical samples; burning was prompted or grouped in some sources, and one two-cohort study recorded warmth for two participants without establishing whether that wording was spontaneous, recurrent, dominant, or measured consistently. A low-back-pain descriptor review found temperature-related terms such as hot, burning, cold, and thermal hyperalgesia across heterogeneous instruments and reference standards, but the evidence was equivocal and did not validate any single word as a mechanism, diagnosis, or temperature measurement. These sources help separate descriptors and expose elicitation and missingness problems; they do not estimate warmth prevalence or directly represent an isolated recurrent back-heat phenotype. <sup>[1,2,3,4,5]</sup>

The measurement objects answer different questions. A back-thermography pilot measured skin-surface regions before and after unilateral trunk fatigue and found time- and comparison-dependent temperature changes; it did not enroll people during spontaneous heat episodes or establish subjective-objective concordance. Two abstract-verified reference studies map evoked warmth and cold detection across trunk or torso sites in healthy or defined pain samples, with site, age, sex, modality, and variability qualifications; these thresholds are neither measured skin temperature nor spontaneous warmth. A 15-person notalgia QST pilot adds within-person symptomatic-versus-mirrored-site comparisons and null or bilateral findings, while a spinal-pain QST review reports

generally weak group-level relationships with self-reported pain or disability. Together they establish that surface temperature, evoked detection, paradoxical heat, pain, itch, burning, and felt warmth must remain separate constructs. [\[6, 7, 8, 9, 10\]](#)

Access and reporting states limit the core unevenly. Six journal objects were verified from full articles or an author accepted manuscript, and the two safety objects from current official guideline PDFs; four journal objects remain abstract-only. The notalgia QST article is full-text verified, but its linked methods supplement was not lawfully acquired. One comparative article retains irreconcilable denominator and reporting conflicts. None of these limitations was repaired by inference. Across the screened and verified set, no publication directly compared a spontaneous localized back-heat episode with simultaneous objective back temperature, and no object directly enrolled recurrent isolated back heat. Those are bounded negative yields of this map, not proof that concordance, discordance, a mechanism, or a relevant source cannot exist. [\[1, 11, 12\]](#)

## Safety evidence changes context, not the meaning of heat

A separate safety countersearch was deliberately narrow: on 14 August 2026, a prespecified PubMed query for systematic reviews of red flags and diagnostic accuracy in back, thoracolumbar, or thoracic pain returned nine records, and all nine were screened. Seven reviews were retained for counterevidence, one older fracture review was kept only as a source-tracing lead, and one review addressing reciprocal specialty referral in inflammatory bowel disease and spondyloarthritis was excluded as the wrong question and population. None of the nine selected participants for recurrent localized back heat or tested that sensation as an index feature. The zero is therefore a result of this complete bounded query, not proof that the symptom is harmless, rare, absent from practice, or absent from every literature.

The seven retained reviews concern serious-pathology questions in low-back-pain, thoracolumbar-pain, emergency-department, malignancy, fracture, spinal-infection, or cauda-equina contexts. Their role in this map is adversarial: they prevent a vivid sensory word from being promoted into a self-contained red flag and preserve the limited, variable, or untested performance of individual warning features. They do not supply diagnostic accuracy for heat, burning, or warmth in people selected for this cluster phenotype, and they do not authorize transfer of a finding from one condition, care setting, or symptom constellation to another.

The current official NICE neurological guidance, NG127, changes decisions through specified combinations rather than through thermal wording: population, tempo, symmetry, anatomical distribution, weakness or imbalance, reflex findings, functional impact, and newly disturbed bladder, bowel, sexual, or perineal function. Its adult cauda-equina pathway, for example, joins severe low-back pain radiating into a leg with new bladder, bowel, sexual, or perineal findings; its stable radiculopathy and narrowly defined non-referral contexts retain their own duration, distribution, examination, diagnosis, trigger, severity, and functional qualifiers. The guideline's sensory rationales state that the committee relied on knowledge and experience because the reviewed evidence did not support recommendations. Full-document checking found no criterion named back heat, localized warmth,

burning, skin temperature, or temperature. NG127 therefore bounds UK neurological contexts and urgency language; it neither classifies isolated recurrent back heat as a redirect nor supplies general reassurance. <sup>[11]</sup>

NG234 is narrower still: its spinal-metastasis and metastatic-spinal-cord-compression pathways combine past or current cancer, or independently suspected cancer, with specified pain characteristics and neurological symptoms or signs. The immediate oncological-emergency route requires cancer context plus a named cord-compression feature; the separate 24-hour route requires cancer context plus qualifying pain, and later imaging timing follows those clinically qualified pathways. The evidence base mixes comparative symptom evidence, imaging evidence, and committee experience and does not provide diagnostic accuracy for a thermal descriptor. Full-document checking again found none of the target thermal terms. NG234 can therefore preserve cancer-specific UK pathway boundaries and change-over-time safety-netting, but it cannot turn back heat into evidence of malignancy, an imaging indication, or a reason to transfer NICE timing or referral rules into Korean practice. <sup>[12]</sup>

## Sparse language lanes and false equivalences

The contemporary Korean lane was sparse only within declared routes and ceilings. On 14 August 2026, three native KCI blocks reported 101, 188, and 469 records respectively; the first 20 relevance-ranked titles in each block were screened, for 60 title records in all. None of those screened titles described recurrent heat or burning localized to the back. A bounded KCI site-restricted discovery check retained one healthy-participant upper-body measurement paper as indirect background because it included regional skin temperature and subjective sensation, while one back-localized thoracic dorsal-ramus neuroma case remained only a source-tracing lead because heat was not established at title screen. Neither record supplies a direct phenotype study, a participant-level subjective-objective comparison for this complaint, diagnostic accuracy, or prevalence. The first-20 ceilings, dynamic ranking, and locator-only web checks make this a route-bounded negative yield, not a claim that Korean literature or the phenomenon is absent.

Repository behavior itself exposed terminology hazards. OASIS treated the frozen Boolean expression as a literal string, so its initial zero was classified as a syntax failure. Six narrower phrase or script checks then yielded no eligible direct record: one apparent hit for a Korean back-and-heat phrase joined unrelated category strings; three adapted phrases returned valid portal zeros on that date; seven records for 배열 used sequence, array, arrangement, or ordering senses; and a search for 背熱 surfaced the same visible 배열 records. That last result indicates normalization or token conflation, not six historical occurrences and not equivalence between the Korean spelling 배열 and the Literary Sinitic string 背熱. Kibase native execution remained unavailable through checked ordinary public routes, so no Kibase zero is reported. The same access discipline applies to the separately frozen Cochrane route: unavailable in this environment is an access state, not a database-native result.

The historical lane searched seven prespecified Literary Sinitic strings separately. ITKC could be approached only through site-restricted public indexing in this environment, where no visible result appeared; that is not a native corpus zero. Chinese Text Project indexing exposed limited object,

transcription, and edition metadata, but its native search, object pages, and facsimile were not lawfully accessible here. One 背熱 occurrence was retained as an edition-identified retrieval candidate in the received Ling-shu textual tradition: the indexed context treats regional warmth as a palpated diagnostic proxy linking an arm region to shoulder-and-back heat, rather than as a person's recurrent focal sensation. The named base edition, exact image, textual variants, transcription, and translation remain unverified. This object therefore represents a historical measurement/proxy role for later passage checking; it does not establish a quotation, a stable historical diagnosis, a modern symptom equivalent, or a diagnosis of any historical person.

The map consequently keeps its thermal words in separate columns. 배열 is not 背熱; English back heat is not automatically either term; a spontaneous report of burning is not interchangeable with warmth, touch-perceived temperature, instrumented skin temperature, or an evoked thermal threshold or paradoxical-heat response. Korean descriptors such as 열감, 작열감, 화끈거림, 뜨거움, 이상감각, and 신경병 증성 소양증 also remain analytically distinct unless a source defines or measures their relationship. Sparse retrieval may identify where a construct was not represented under a bounded search, but it cannot create translation equivalence, subjective-objective concordance, cross-era continuity, or clinical transfer.

## What remains genuinely unstudied here

The clearest gap is not a missing additional identifier but a missing direct study design. Within the frozen searches and verified set, no study prospectively enrolled people because of recurrent localized back heat; no participant-level study characterized focal warmth as the presenting phenotype; no study paired a spontaneous episode with concurrent mapped skin findings, objective back-surface temperature, and evoked thermoception; and no diagnostic-accuracy study evaluated the complaint. The closest sources instead enrolled itch- or pain-defined notalgia and neuropathic samples, measured provoked surface temperature, or tested evoked thermal responses. These are source- and method-bounded negative yields. They neither establish concordance or discordance nor show that the complaint, a mechanism, or a relevant literature does not exist.

Several explanatory framings are underrepresented rather than rejected. Dermatological or local inflammatory heat lacks a direct target-phenotype study and requires visible or palpable skin findings plus episode-matched measurement. Musculoskeletal, positional, and referred framings were represented mainly by routed context records, not an independently complete direct-study lane. Systemic and whole-body thermoregulatory context remains relevant only when it changes a back-specific distinction. Autonomic, vascular, trauma, and cardiopulmonary framings were not causally adjudicated by the frozen Tier 1 set. The same is true of neurological alternatives beyond the selected focal-sensory and conditional-safety roles. None of these gaps supplies a default cause, a comparative frequency, a red flag, a reassurance feature, or evidence against an explanation.

Some uncertainty is an access or reporting gap rather than an evidence-role gap. At the Tier 1 retrieval freeze, five source files were lawfully acquired and seven journal objects retained explicit access limitations or fallback locators. The supplement for PMID 38835743 remains unavailable; PMIDs 32086681, 24525274, 33077130, and 23711482 remain abstract-level for claim purposes; and PMID

28902951 retains prompt omissions and denominator conflicts that cannot be silently repaired. KMBase and Cochrane native interfaces were unavailable through checked ordinary public routes, while historical object and facsimile access was also limited. These constraints prohibit unsupported full-text detail and native zero claims. They do not authorize bypassing access controls and do not, by themselves, reopen broad ranked PubMed pagination.

Future work should therefore be claim-specific. A prospective observational study could recruit on the complaint itself and record a participant-defined body map, exact quality wording, perceived depth, onset, duration, recurrence, posture, movement, clothing, ambient heat, exertion, sleep, touch, itch, pain, relief, visible and palpable skin findings, and relevant associated symptoms. During an episode, prespecified acclimation and timing could support anatomically matched surface-temperature measurements, with baseline, contralateral, and reference comparisons reported separately; spontaneous sensation, objective temperature, evoked QST, and whole-body thermoregulation should remain distinct variables. Repeated within-person observations could then ask whether any pattern is reproducible before testing a diagnostic or causal claim. Separate claim-specific searches would be justified only when such a question requires a rare evidence role not represented in the frozen map or when a lawful access state materially changes—not because more records remain in a dynamic ranking.

## How to update the map without moving its goalposts

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This map is a dated account of a frozen search and verification process, not a promise that a relevance ranking will remain stable. Before a publication-ready package is declared, each Tier 1 journal object should be rechecked for correction, retraction, expression-of-concern, and publication-version relationships, and each guideline family should be rechecked on its official page for current version, review date, replacement, or withdrawal. The recheck date, route, result, and consequence for each supported claim should be appended to the audit trail; the earlier integrity decision remains visible.

Access should be updated with the same discipline. A new check is warranted for a named source when a lawful public route or access state may have materially changed, especially for the unavailable PMID 38835743 supplement, the four abstract-level objects, and the reporting-limited PMID 28902951 record. Any newly acquired file should receive a source locator, retrieval date, identity check, media type, and hash before substantive use. A former limitation is closed only for the details actually verified; prior access failures and unresolved reporting conflicts are retained rather than overwritten. No update permits bypassing authentication, paywalls, robots, rate limits, or other access controls.

Broad ranked PubMed pagination remains closed. A rare retrieval exception requires a prospectively named missing claim, population, measurement construct, or safety boundary, together with the exact targeted query or lawful route capable of resolving it and a prespecified decision consequence. The search and its negative or positive yield are appended as a bounded update. More results, a changed dynamic ordering, or a new identifier in an already represented category is not material progress and does not qualify.

A source earns a genuinely new evidence role only if it changes the map's claim structure: for example, direct recruitment on recurrent localized subjective back heat; concurrent episode-level mapping of spontaneous sensation, visible or palpable findings, objective back-surface temperature, and evoked testing; diagnostic-accuracy, prevalence, or intervention evidence with a coherent population and estimand; a previously unrepresented serious counter-hypothesis or safety boundary; or a verified source that materially changes a historical or cross-language interpretation. Otherwise the source may strengthen, qualify, or duplicate an existing row but does not reopen the map.

Corrections and updates are append-only and versioned. Each amendment should identify the prior artifact and decision, the new evidence or access event, the reason for changing or retaining the decision, the affected claims, citations, displays, and publication objects, and any remaining disagreement. Screening reversals and denominator changes must be explicit; the governing 816-PMID cutoff and the preserved non-governing post-cutoff slice keep their distinct roles unless an owner-authorized protocol amendment states otherwise. A new dated run record and replacement draft version may supersede an earlier synthesis for use, but the earlier artifact is not silently edited away and no update is labeled peer reviewed or version-of-record merely because it is newer.

## Declarations

|                                      |                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Author contributions (CRediT)</b> | Yeonseung Choe: Conceptualization, Methodology, Clinical framing, Research-system design · Baekrokdam Research Commons (BRC): Investigation, Data curation, Writing – original draft, Evidence verification                                                                                      |
| <b>Data availability</b>             | Only public literature was used. The evidence ledger linking citations to passages, permitted claims, and prohibited inferences is downloadable with this article.                                                                                                                               |
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| <b>Competing interests</b>           | The authors and publisher share research infrastructure with Baekrokdam Korean Medicine Clinic. This relationship does not support treatment-effect claims or causes not examined in this work.                                                                                                  |
| <b>AI use disclosure</b>             | AI tools assisted retrieval, structuring, bilingual drafting, and format conversion. Citations were verified at passage level, and claim boundaries, counter-hypotheses, bibliographic links, and form fit were rechecked by internal publication gates. BRC retains publication accountability. |
| <b>Ethics</b>                        | This public-literature work contains no individual patient data. Any human-participant implementation of the protocol requires separate ethics review and consent.                                                                                                                               |

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12. National Institute for Health and Care Excellence. Spinal metastases and metastatic spinal cord compression (NG234). Updated 2026. [Source](#)