BeyondMold

CLINICAL PRIMER APPENDIX

SIX TRIGGER MAPS · ONE TEMPLATE

Trigger Maps

Six exposures, one five-sensor network

Mapping common triggers onto the five danger pathways — CGRP, PACAP/VIP, P2X3, TRP, and PGE2 — each entering through a different front door and stressing the resolution arm in its own way.

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SIX TRIGGER MAPS · ONE TEMPLATE

Mapping common triggers onto the five danger pathways

The five-sensor convergence of Primer Figure 2 is the rule, not the exception. Other common exposures recruit the same network — CGRP, PACAP/VIP, P2X3, TRP, and PGE2 — but each enters through a different *front door* and stresses the resolution arm in its own way. The six maps below place them on one template, with every connector anchored to a numbered citation (references, final page). We begin with the original.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Water-Damaged Buildings

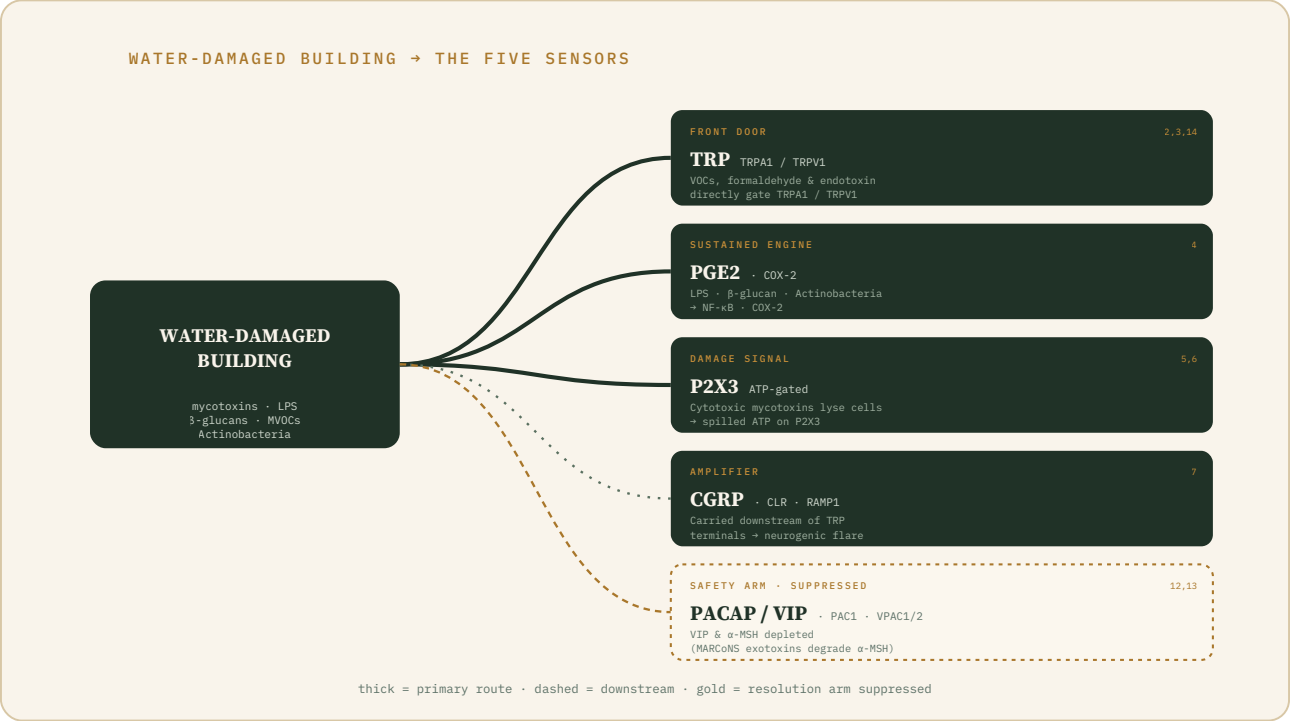

FIGURE 1. The original water-damaged-building map. One exposome recruits four danger sensors — directly (TRP, PGE2, P2X3) or downstream (CGRP) — while suppressing the resolution arm of the fifth (VIP / α-MSH).

> **In one line.** A water-damaged building enters through TRP, sustains itself through PGE2, signals damage through P2X3, amplifies through CGRP, and blocks its own resolution by depleting the VIP / α-MSH arm.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Chemical exposure

Volatile and electrophilic chemicals are the clearest TRP-front-door trigger: they covalently gate the channel directly, then recruit the inflammatory engine and damage signal behind it.

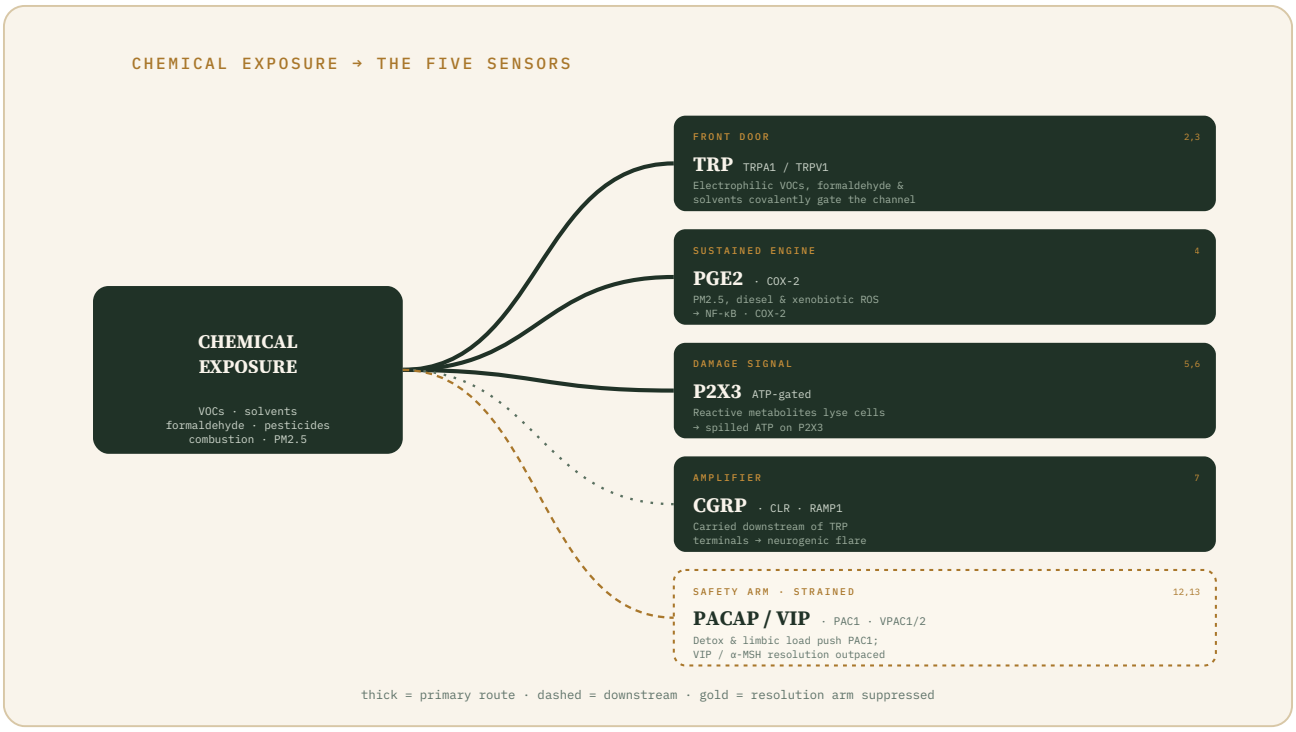

FIGURE 2. Chemical exposure enters directly through TRP, drives PGE2 through oxidative-inflammatory signaling, spills ATP onto P2X3, and amplifies through CGRP — while the VIP / α-MSH resolution arm is outpaced by detox and limbic load.

In one line. A chemical exposure enters through TRP, sustains itself through PGE2, signals damage through P2X3, and amplifies through CGRP — taxing the VIP / α-MSH resolution arm faster than it can refill.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Heavy-metal burden

Unlike a surface-channel irritant, heavy metals poison the organelle the whole framework turns on, so the damage signal (P2X3) and inflammatory engine (PGE2) lead.

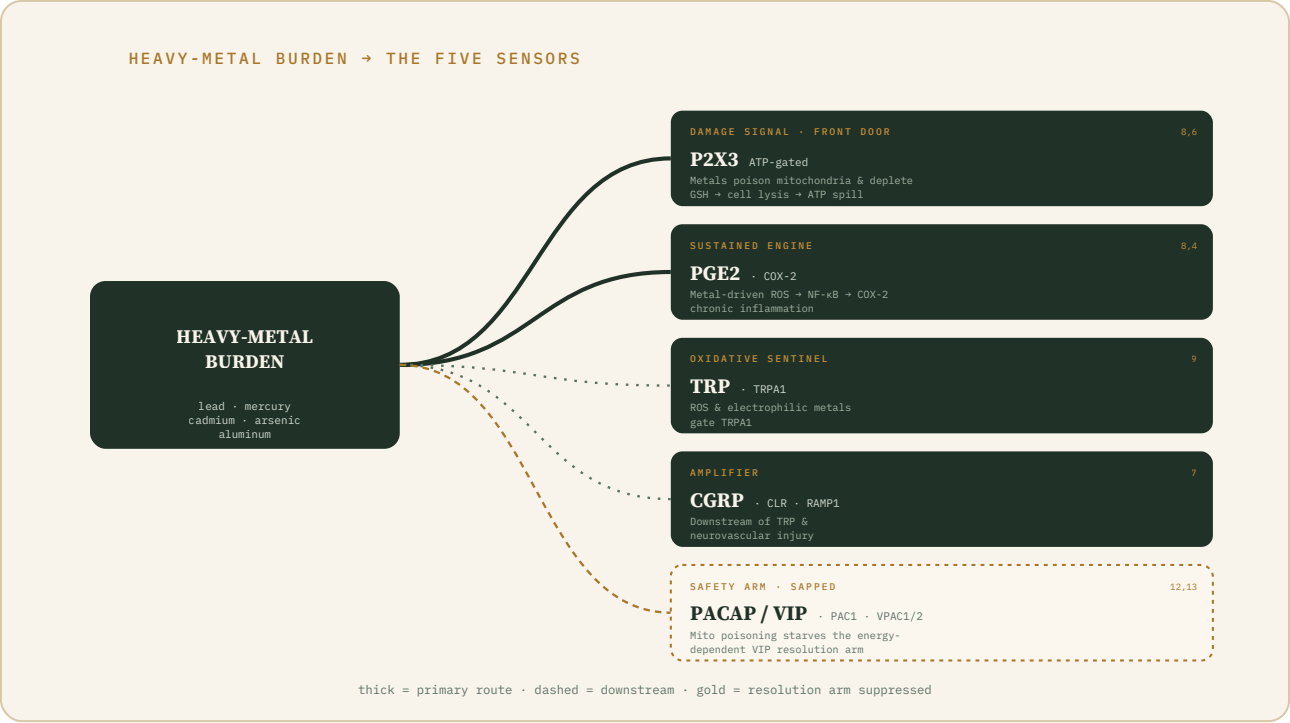

FIGURE 3. Metals strike the mitochondrion directly — the damage signal (P2X3) and inflammatory engine (PGE2) lead, TRP and CGRP follow through ROS, and the energy-dependent VIP resolution arm is starved by the same mitochondrial poisoning.

In one line. Heavy metals hit the mitochondrion itself — spilling ATP onto P2X3, firing PGE2 through ROS, opening TRP and amplifying via CGRP — while starving the energy-dependent VIP resolution arm.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Chronic stress — the top-down trigger

Stress inverts the water-damaged-building pattern: rather than an external toxin knocking out the resolution arm, it floods the *danger* receptor of the same axis (PAC1) from the top down.

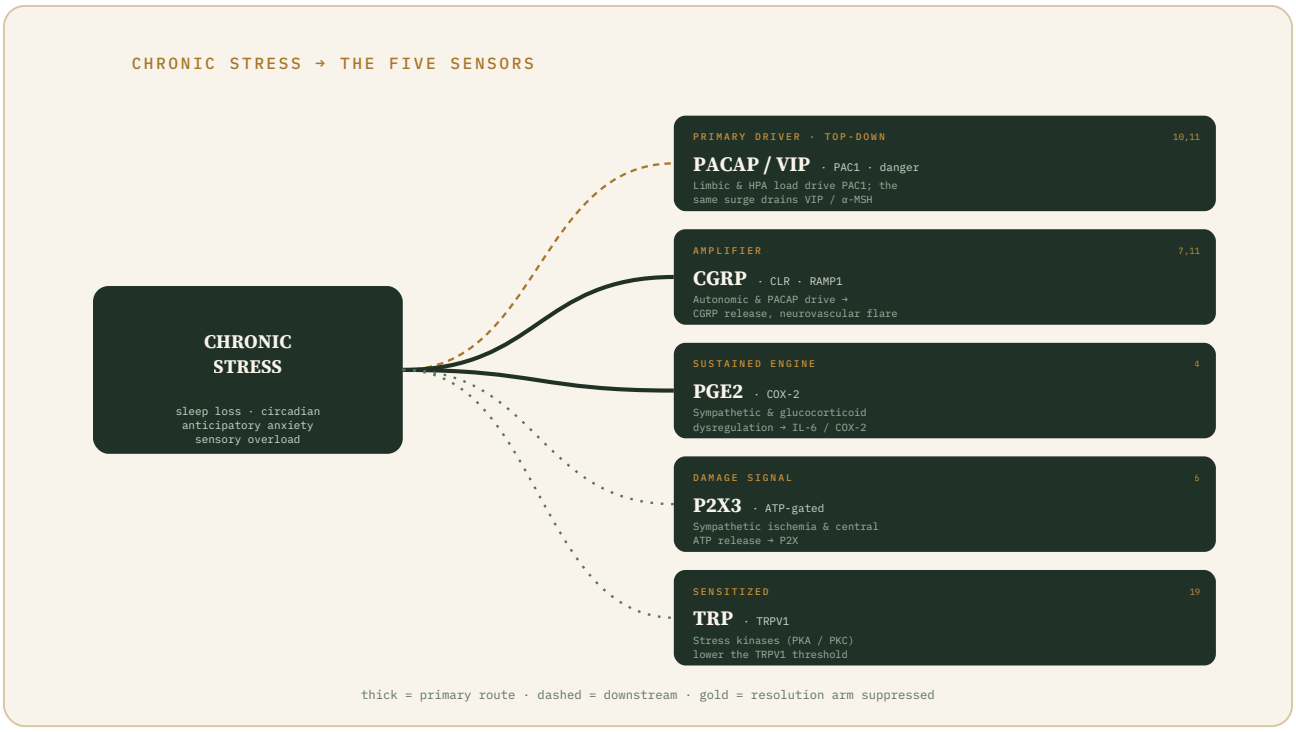

FIGURE 4. Stress floods the PAC1 danger receptor directly and amplifies through CGRP and PGE2, sensitizing P2X3 and TRP — while draining the VIP / α-MSH safety arm from within. Where a water-damaged building knocks the resolution arm out from outside, stress overruns it from inside.

> **In one line.** Stress is the top-down trigger: it floods the PAC1 danger receptor and drains the very VIP / α-MSH safety arm that would switch the alarm off — the mirror image of how a water-damaged building knocks that arm out from outside.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Radiation / EMF

The best-evidenced EMF footprint is oxidative-inflammatory — field-driven reactive oxygen species — so the PGE2 engine leads, with a proposed voltage-gated-calcium entry feeding the Ca^{2+} arm.

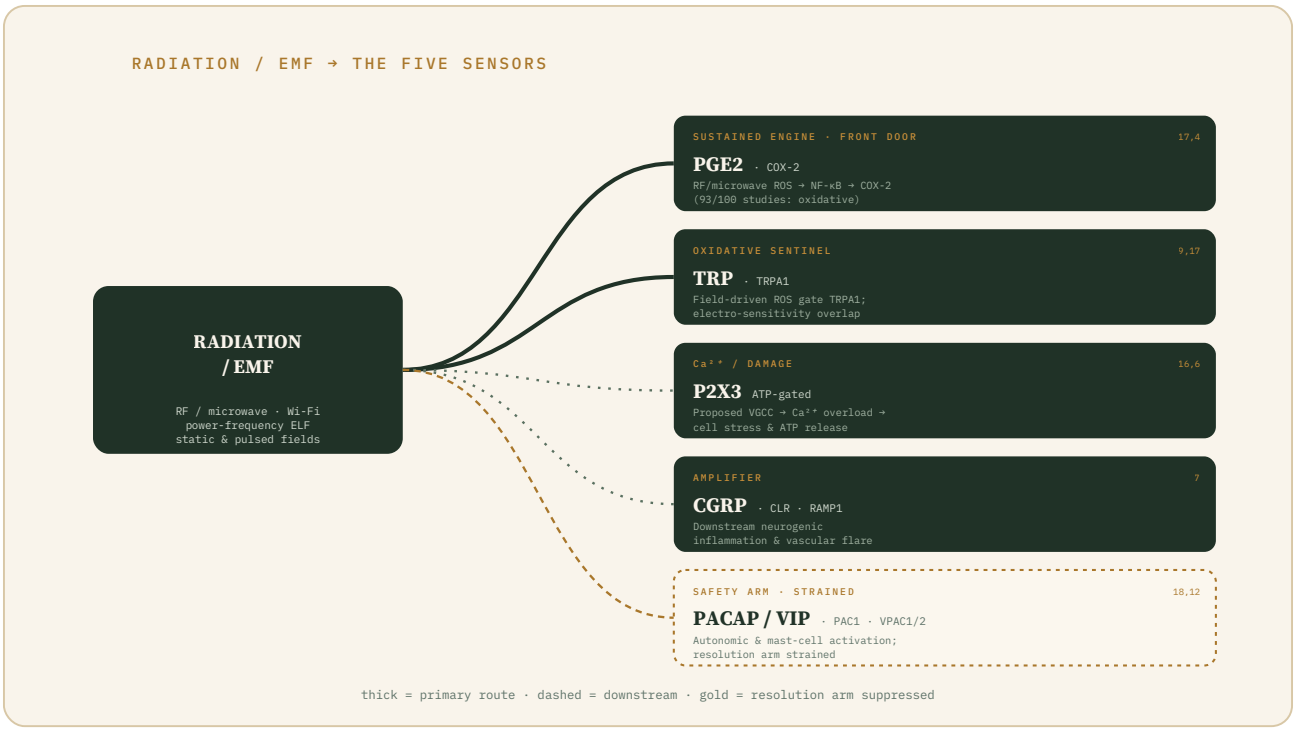

FIGURE 5. EMF's best-supported footprint is oxidative-inflammatory: field-driven ROS fire PGE2 and gate TRP, with a proposed VGCC→Ca^{2+} entry feeding P2X3 and CGRP downstream — while the autonomic VIP arm is strained. Mechanisms here are hypothesized, not settled (see caveat).

In one line. EMF's best-supported footprint is oxidative-inflammatory: field-driven ROS fire PGE2 and gate TRP, with a proposed VGCC→Ca^{2+} entry feeding P2X3 — while the autonomic VIP arm is strained.

Caveat. Non-thermal EMF mechanisms are scientifically contested. Some reviews conclude that fields at standard guideline limits are far too weak to gate voltage-gated calcium channels, and the RFR–oxidative-stress link, while reported in most studies, is not settled. These connectors are presented as a mechanistic hypothesis, not established causation.

COMPANION TO FIGURE 2 · THE FIVE-SENSOR CONVERGENCE

Chronic infection

Infection is the one trigger that sensory neurons sense *directly*: bacterial products and LPS gate TRP on nociceptors without waiting for the immune system, making TRP the front door.

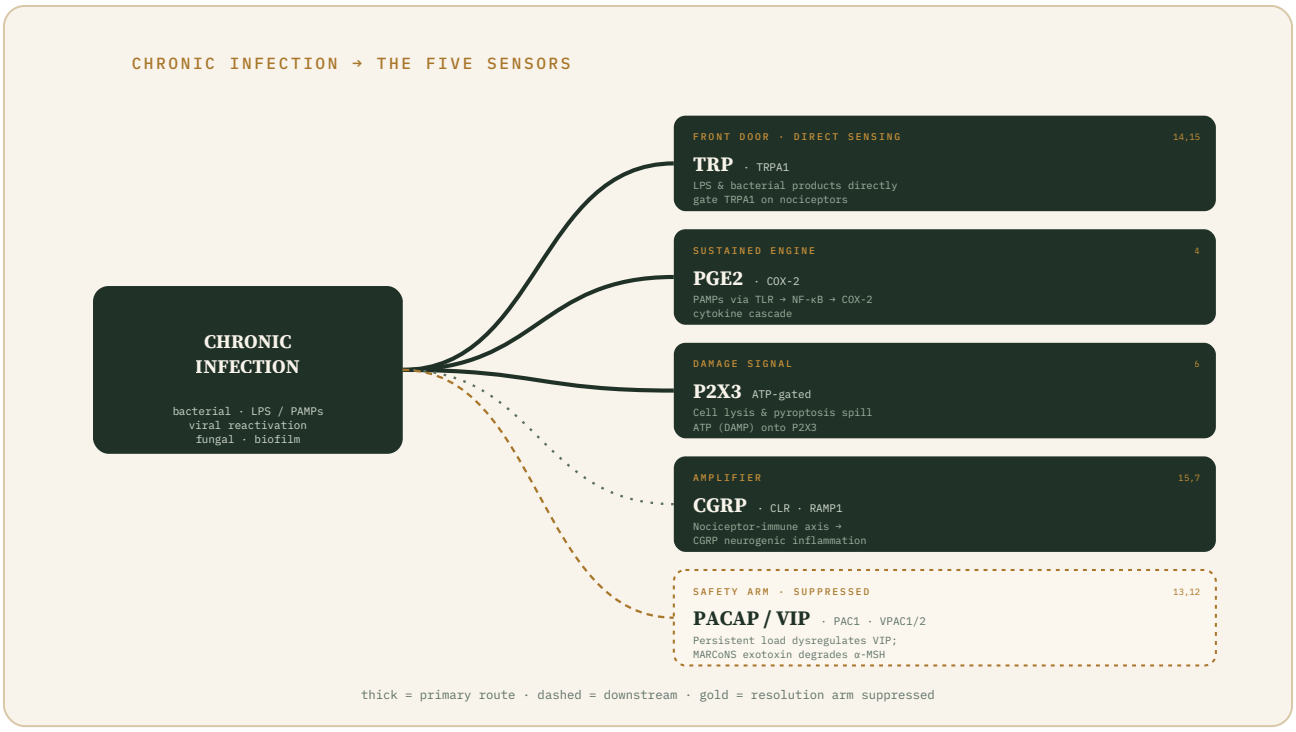

FIGURE 6. Infection is the trigger nociceptors sense directly: bacterial products and LPS gate TRP, PAMPs drive PGE2, lysis spills ATP onto P2X3, and the nociceptor–immune axis amplifies CGRP — while VIP / α-MSH resolution is suppressed.

> **In one line.** Infection is the trigger nociceptors sense directly: bacterial products gate TRP, PAMPs drive PGE2, lysis spills ATP onto P2X3, and the nociceptor–immune axis amplifies CGRP — while VIP / α-MSH resolution is suppressed.

SYNTHESIS · READING THE SIX MAPS TOGETHER

Different doors, one room

Across six exposomes the same five-sensor network is recruited — but the dominant entry point differs, and that is what makes the maps clinically useful. Naming the front door names the lever: the pathway to intercept first, and the reason single-target therapy underperforms when several doors are open at once.

DIFFERENT DOORS, ONE ROOM

Water-damaged building	immune engine (PGE2) & TRP front door; MARCoNS degrades the α-MSH safety arm
Chemical exposure	the chemical channel itself (TRP); resolution arm outpaced by detox load
Heavy-metal burden	the mitochondrion → ATP spill (P2X3); resolution arm starved of energy
Chronic stress	the danger receptor (PAC1) top-down; resolution arm drained from within
Radiation / EMF	oxidative-inflammatory engine (PGE2 / ROS); proposed VGCC→Ca^{2+} entry · contested
Chronic infection	direct neural sensing (TRP) + PAMP engine; resolution arm suppressed

Six doors, one room: every trigger converges on the mitochondrial Cell Danger Response, and every recovery must restore the VIP / α-MSH resolution arm to close the gate.

REFERENCES · CONNECTOR CITATIONS

References

Each connector in Figures 1–6 carries a superscript keyed to this list. The receptor and signaling biology reflects established literature; the trigger-to-pathway assignments are this framework's organizing structure.

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Figure 5 (EMF): refs 16–18 (non-thermal VGCC / oxidative / mast-cell effects) are contested and presented as hypothesis. Educational synthesis — not a substitute for clinical judgment.