

Chronic Pain is Complex: Centralized Pain Explained and Treatment Approach

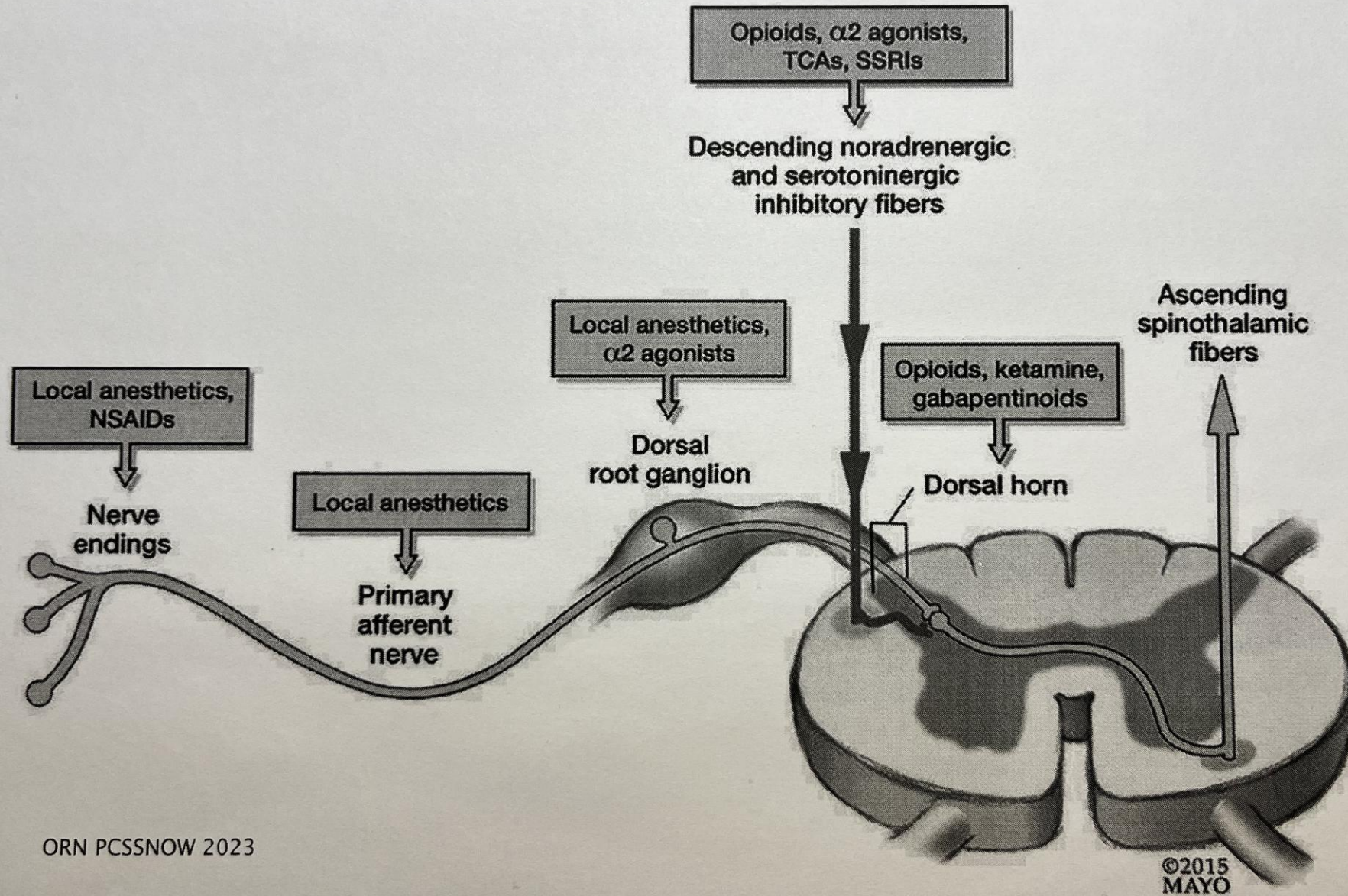
▶ May 15, 2025

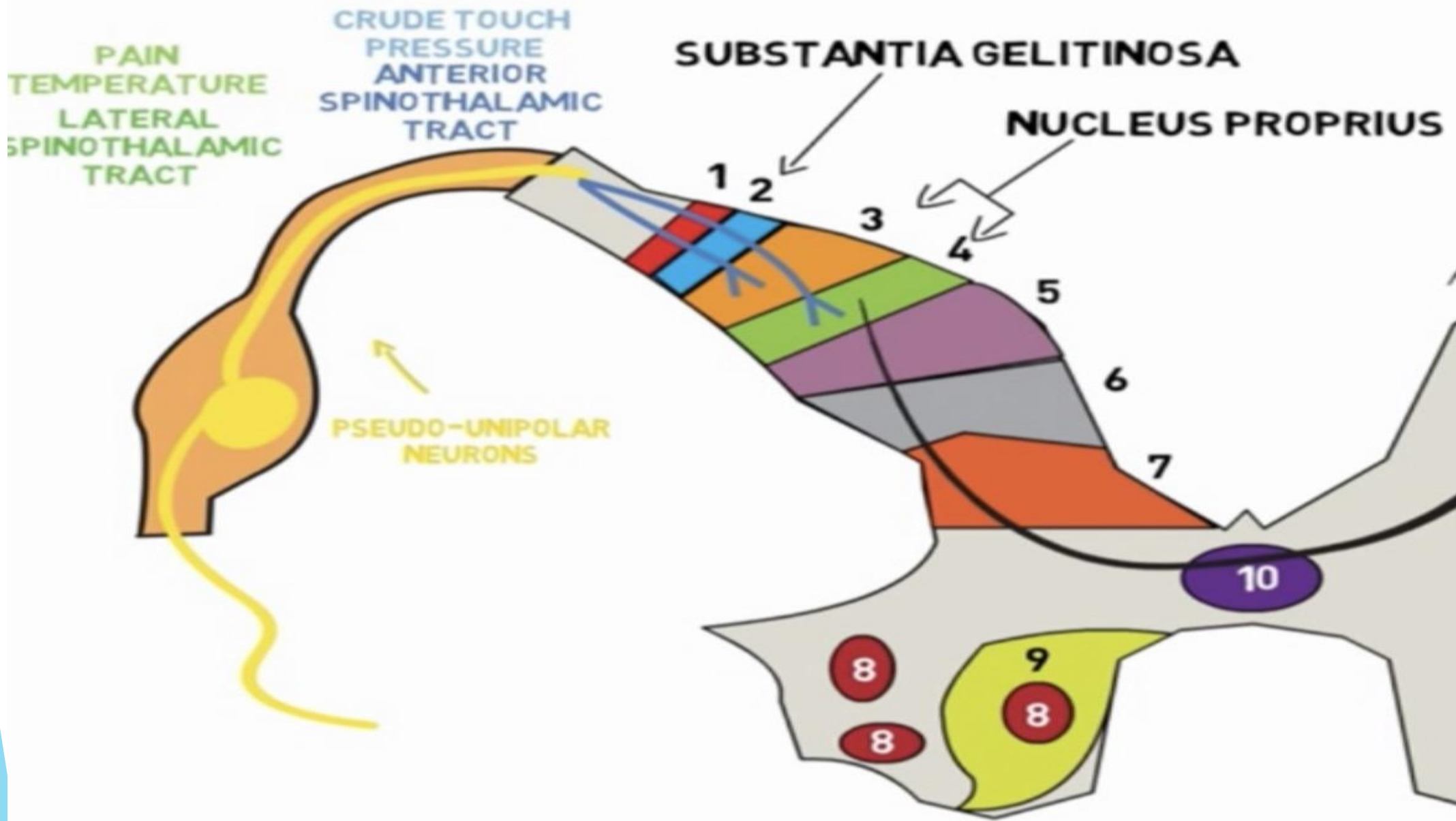
▶ Joseph M. Masternick, DO, ASAM, ABAM

OBJECTIVES

- ▶ 1.) What are Central Sensitivity Syndromes?
- ▶ 2.) CNS “Windup” physical and emotional trauma.
- ▶ 3.) Treatment approach and Opioid management.

Nociceptive Pathway





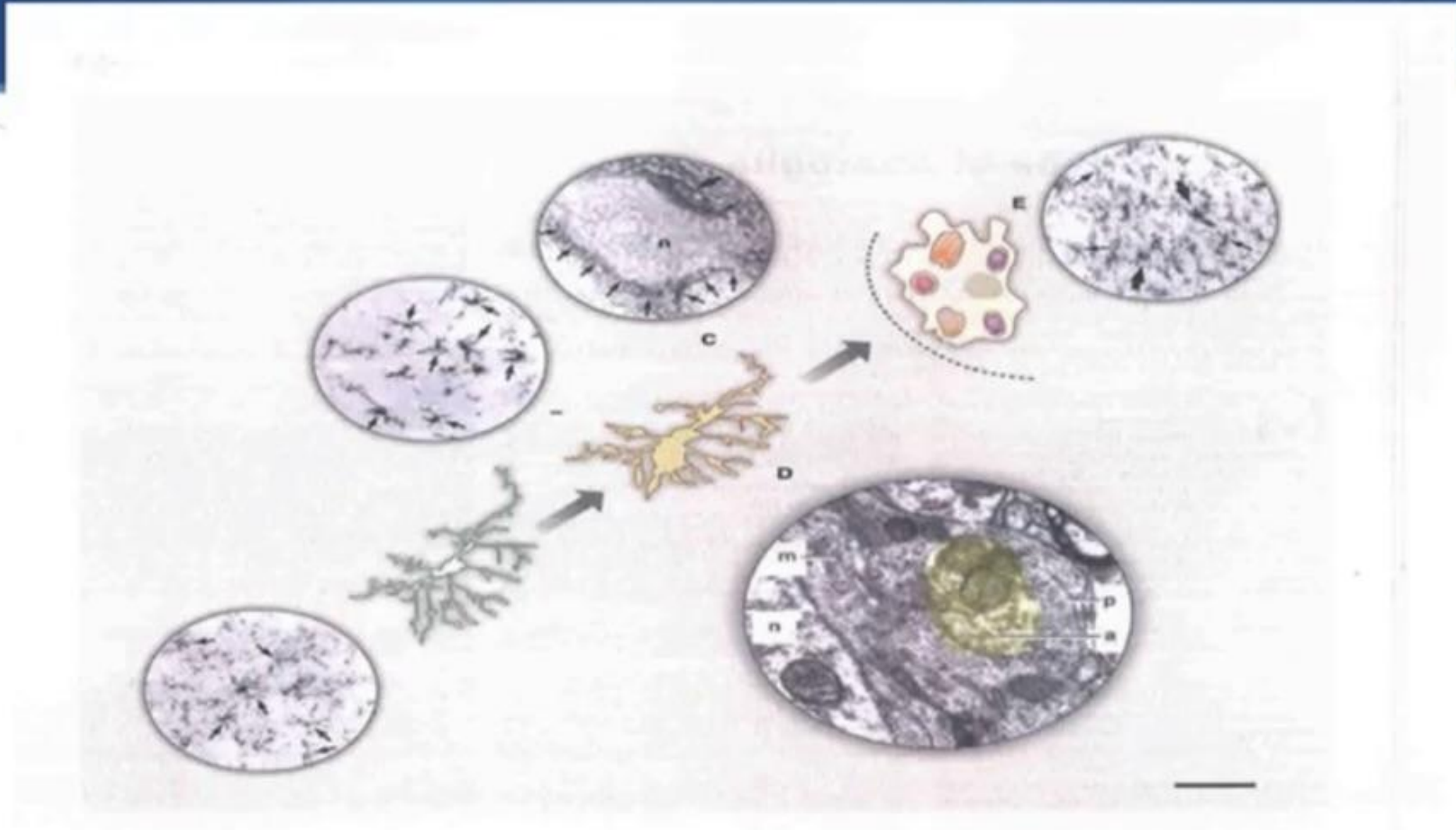
C-Fibers and the Dorsal Horn

- <https://youtu.be/BXSVH-DAqfU?feature=shared>

Microglia “Electricians”

- Exist apart from and are not connected to the neuronal circuits
- “Resting” (Ramified) microglia are sessile not inactive
- Maintain the integrity of the CNS circuitry
- “microglia can potentially influence information processing in the CNS, either indirectly via their interactions with astrocytes, or directly by interacting with synapses”

Schematic drawing showing the microglial activation cascade and associated phenotypic plasticity



Microglia Innate Immune Function

- Functional plasticity / Chameleon-like phenotype
- Low threshold of activation
- Rapid responders to CNS pathology
- Graded response to changes in their environment



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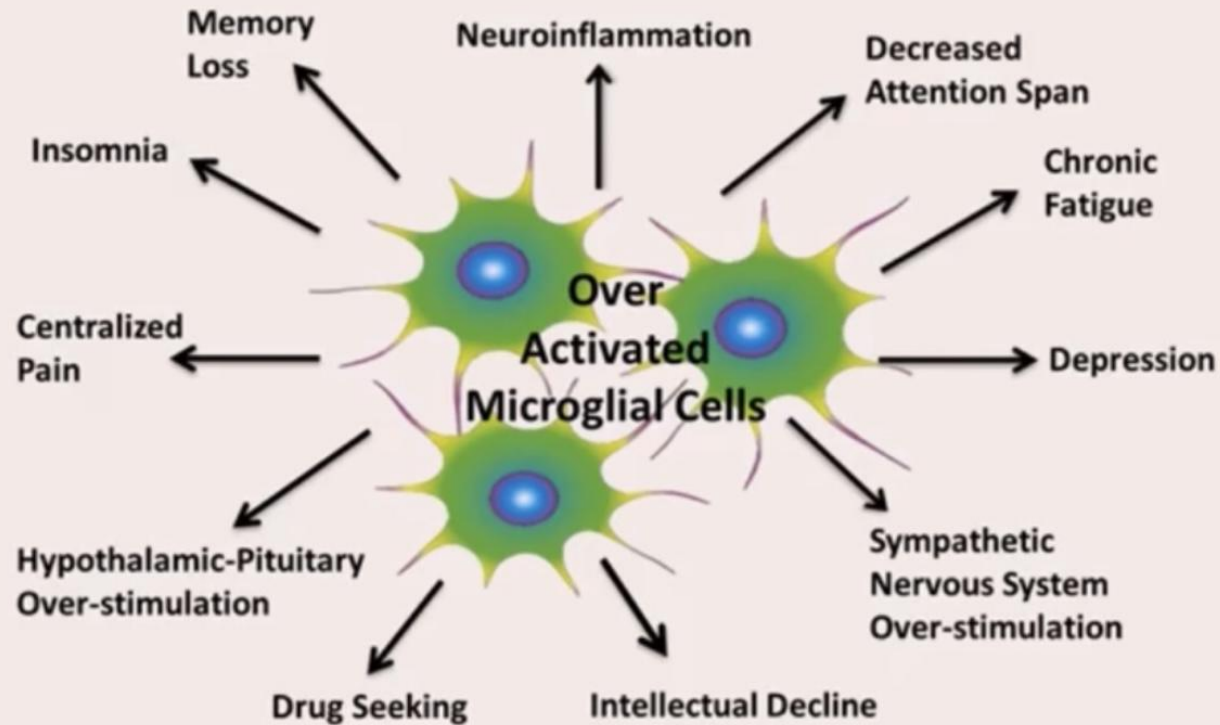
Secretory Products of Microglia

Cytokines (IL-1 α , IL-1 β , IL-6, IL-10, IL-12, IL-16, IL-23, TNF- α , TGF- β)

Chemokines

CC: CCL2/MCP-1, CCL3/MIP-1 α , CCL4/MIP-1 β ,
CCL5/RANTES, CXC: CXCL8/IL-8, CXCL9/MIG, CXCL10/IP-10,
CXCL12/SDF-1 α , CX3C: CX3CL1/fractaline

Some Pathologic Results of Microglial Cell Over-Activation



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LOWERED CORTISOL

- This means that the regulating anti-inflammatory effect of cortisol is absent. Without sufficient Cortisol, there is nothing to prevent severe, chronic inflammation. In effect, the immune system is running out of control.
- **Low Cortisol leads to an increased production of pro-inflammatory cytokines, which lead to an over-activation of the immune system and inflammation.**
- The result is increased susceptibility to developing inflammatory diseases, including autoimmune diseases, mood disorders, malignancy, chronic fatigue syndrome, chronic pains syndrome, obesity, glucose dys-regulation and fibromyalgia.
(widespread pain and tenderness)

CORTISOL AND IMMUNE SYSTEM :

Cortisol levels can become imbalanced during the different stages of **Adrenal Fatigue**

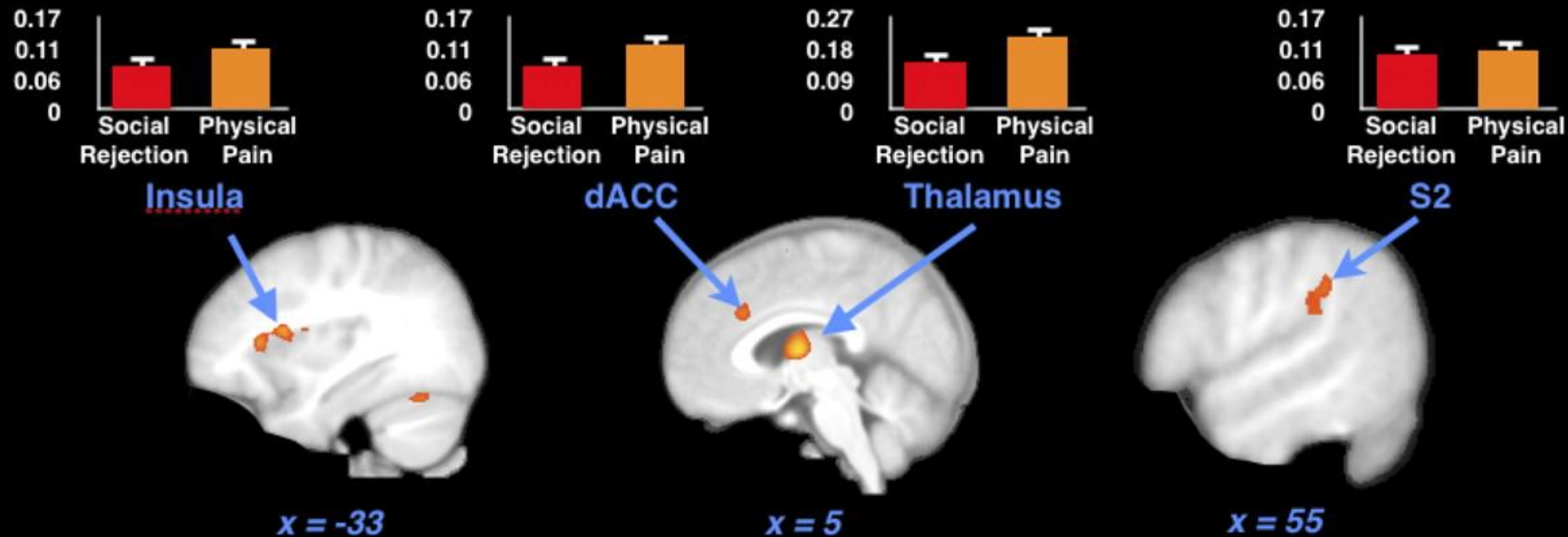
Cortisol levels largely depend on which stage of condition a person has reached.

In the early stages of Adrenal Fatigue, cortisol levels are likely to be elevated, along with epinephrine and norepinephrine.

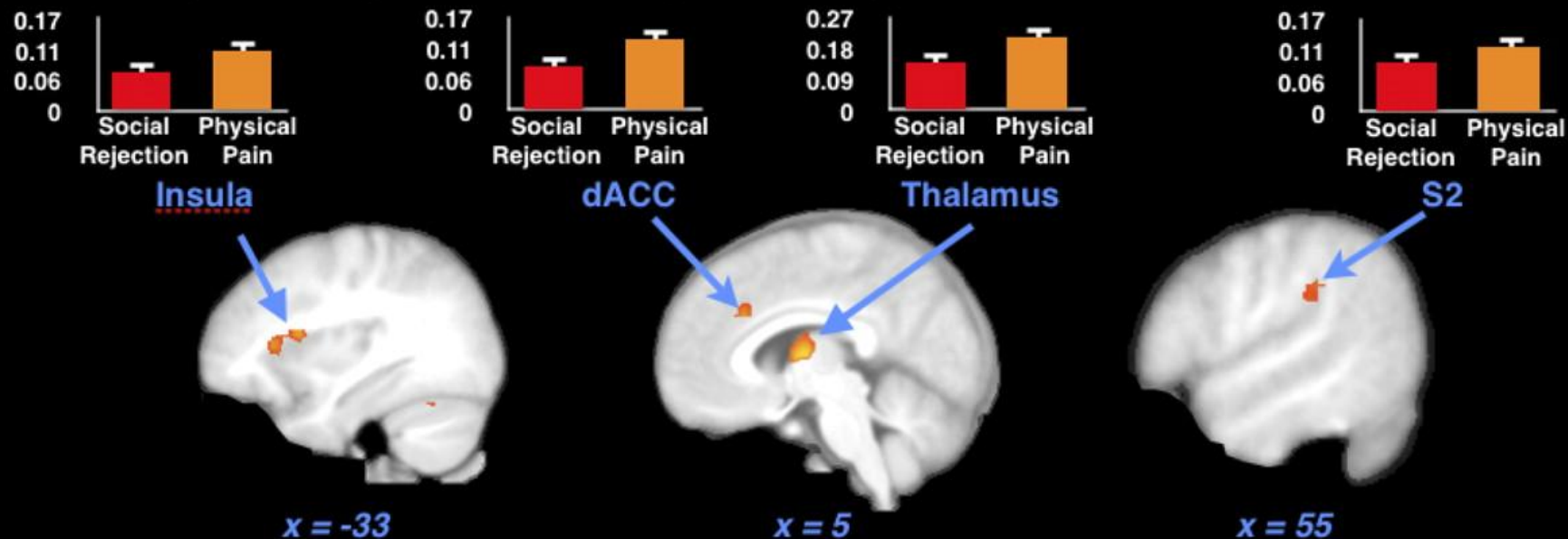
In the later stages of Adrenal Fatigue, cortisol levels will be much, much lower

Neither result is beneficial for the immune system

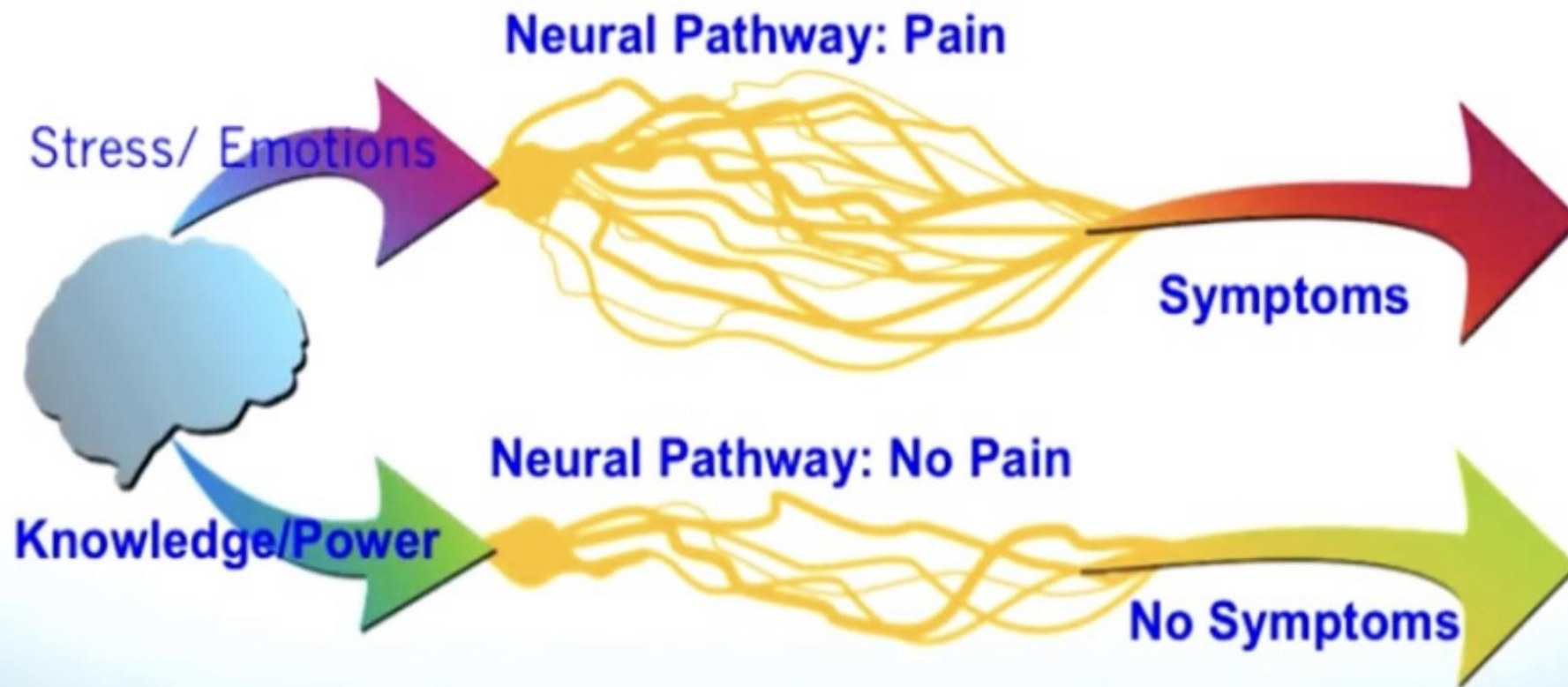
A Social Rejection Physical Pain Overlap, Whole Brain Analysis



B Social Rejection Physical Pain Overlap, ROI Analysis



Neural Pathways of Pain



TBD

- ▶ TBD
- ▶ TBD
- ▶ TBD
- ▶ TBD

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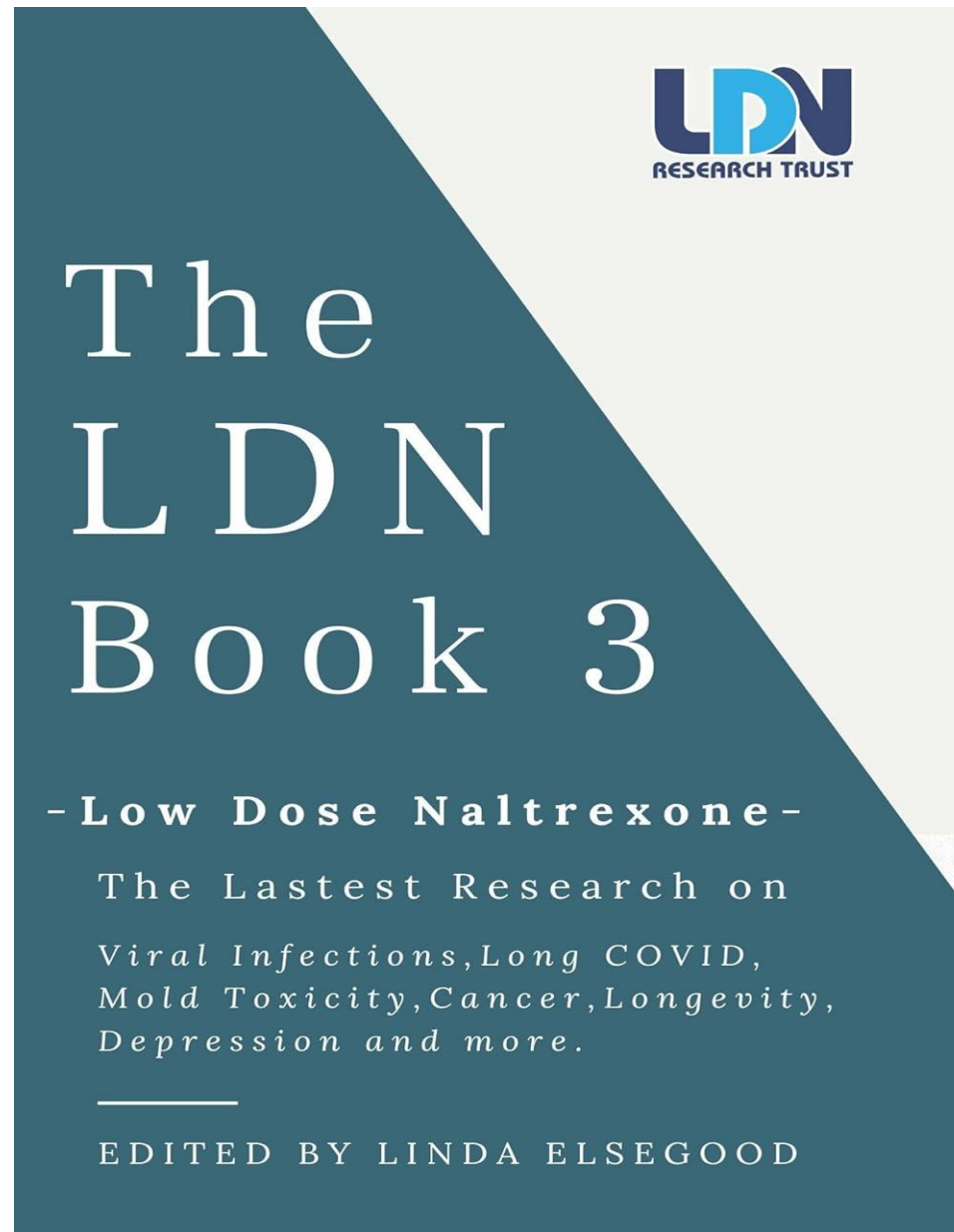
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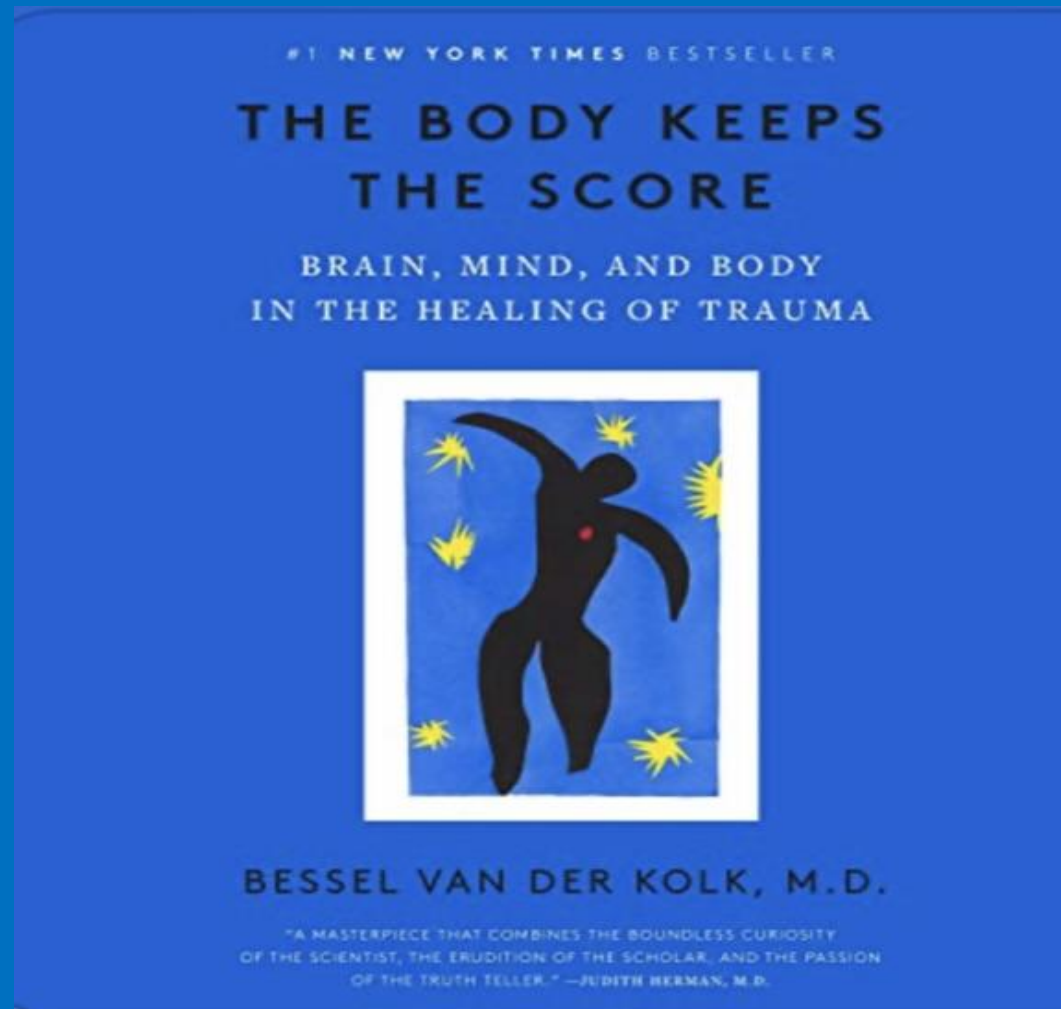
**The LDN: Low Dose Naltrexone;
The Latest Research on; Viral
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Depression and More (Ldn, 3)**
by [Linda Elsegood](#) (Editor)



The Body Keeps the Score

Brain, Mind, and Body in the Healing of Trauma

By Bessel van der Kolk M.D.





CHRONIC PAIN REHABILITATION

Active Pain Management that Helps
You Get Back to the Life You Love

DR. EVAN PARKS
FOREWORD BY JAMES HUDSON, MD

Thank you.

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- ▶ docjmac60@gmail.com

Chronic Pain Relief 1: What Causes Chronic Pain?

<https://youtu.be/SQ1JPY-q5vo?feature=shared>

Central Sensitivity Syndromes

<https://www.youtube.com/watch?v=BrMb656yJd4>