

The T4 Syndrome Diagnosis

Does it exist and what can we do about it?

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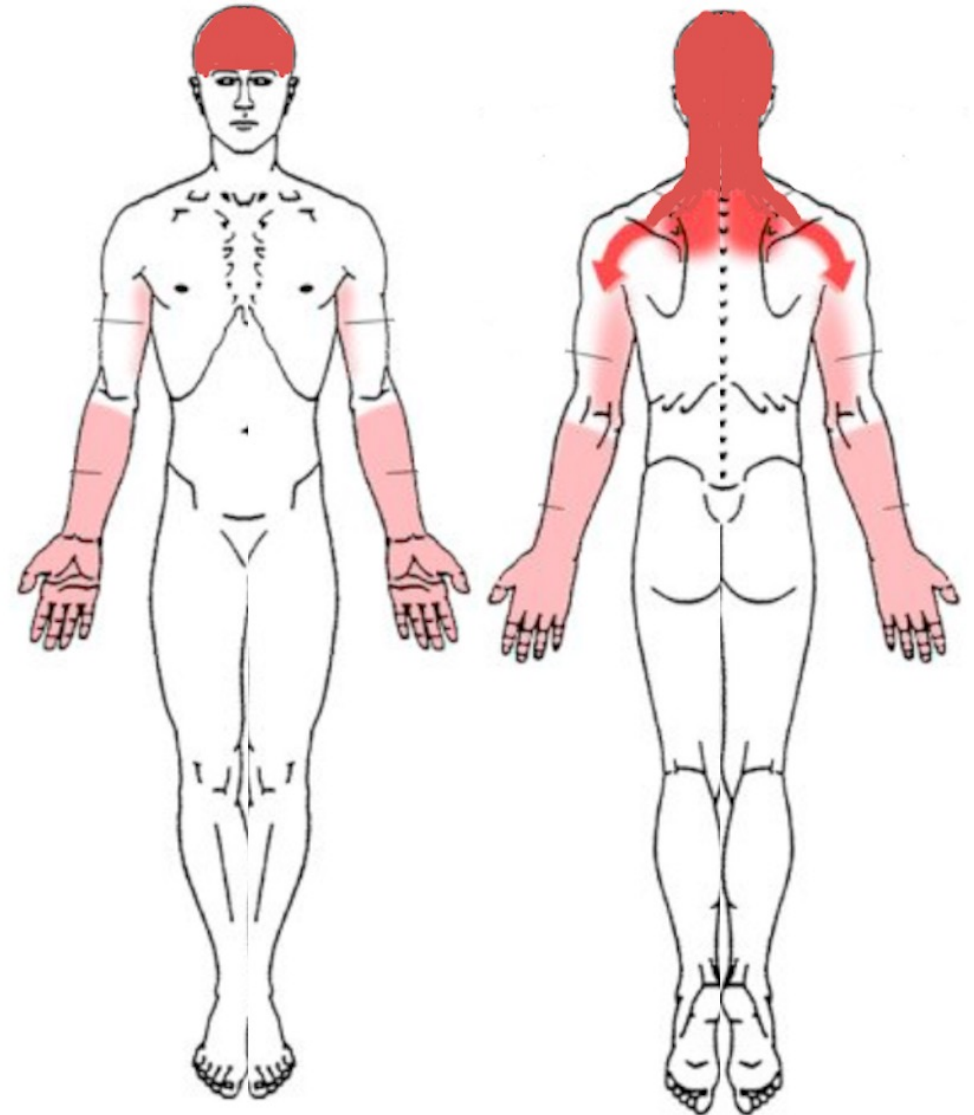
What is T4 Syndrome?

Symptoms

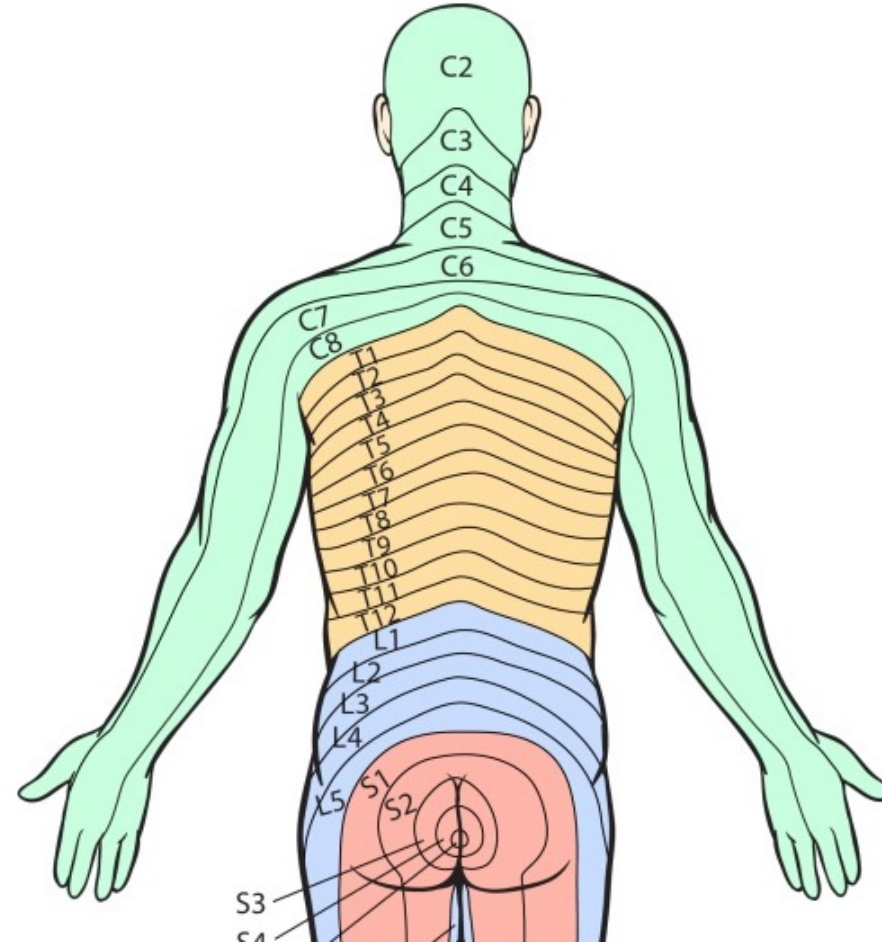
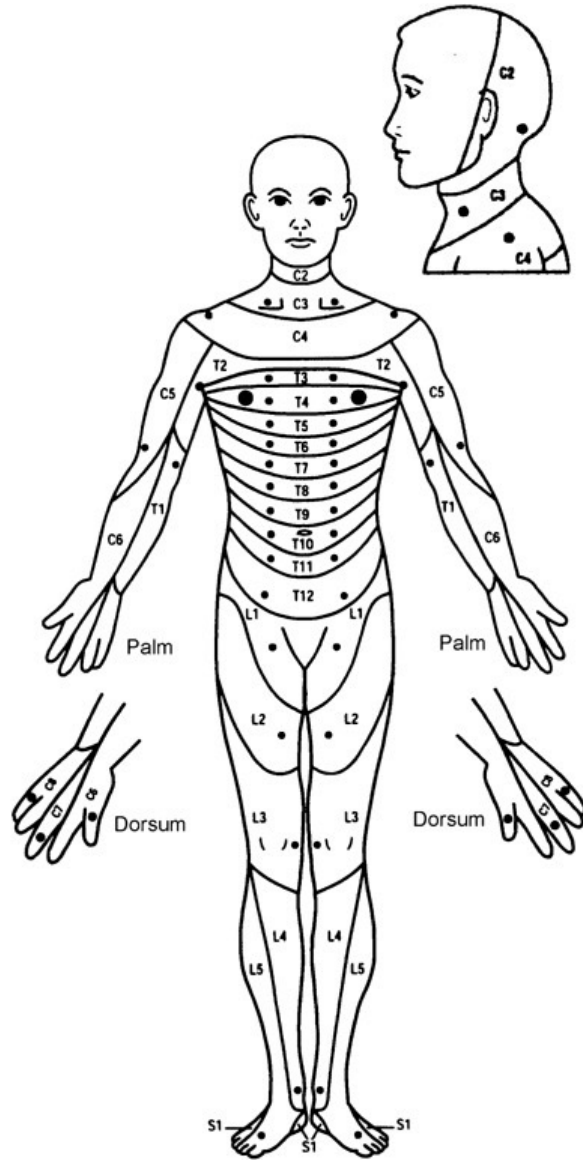
- Local upper thoracic pain and dysfunction
- Neck, interscapular and chest wall pain
- Headaches
- Unilateral or bilateral arm and hand sensory symptoms
- Sudomotor and vasomotor dysfunction

Proposed Mechanisms

- Upper thoracic joint 'dysfunction'
- Irritation, ischaemia or entrapment of sympathetic neurons
- Subsequent decrease in sympathetic neural activation

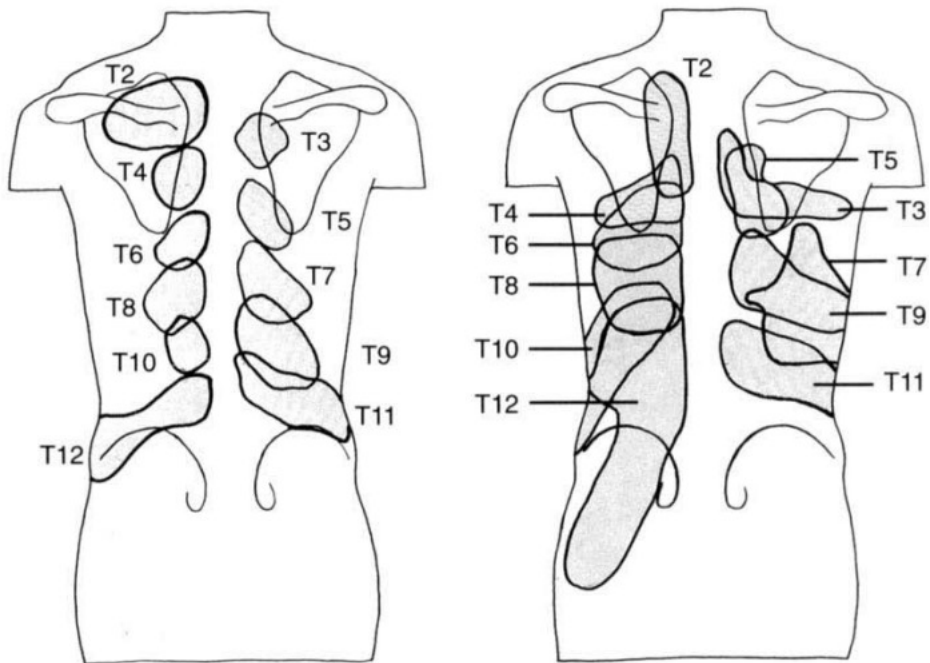


Radicular Pain/Radiculopathy

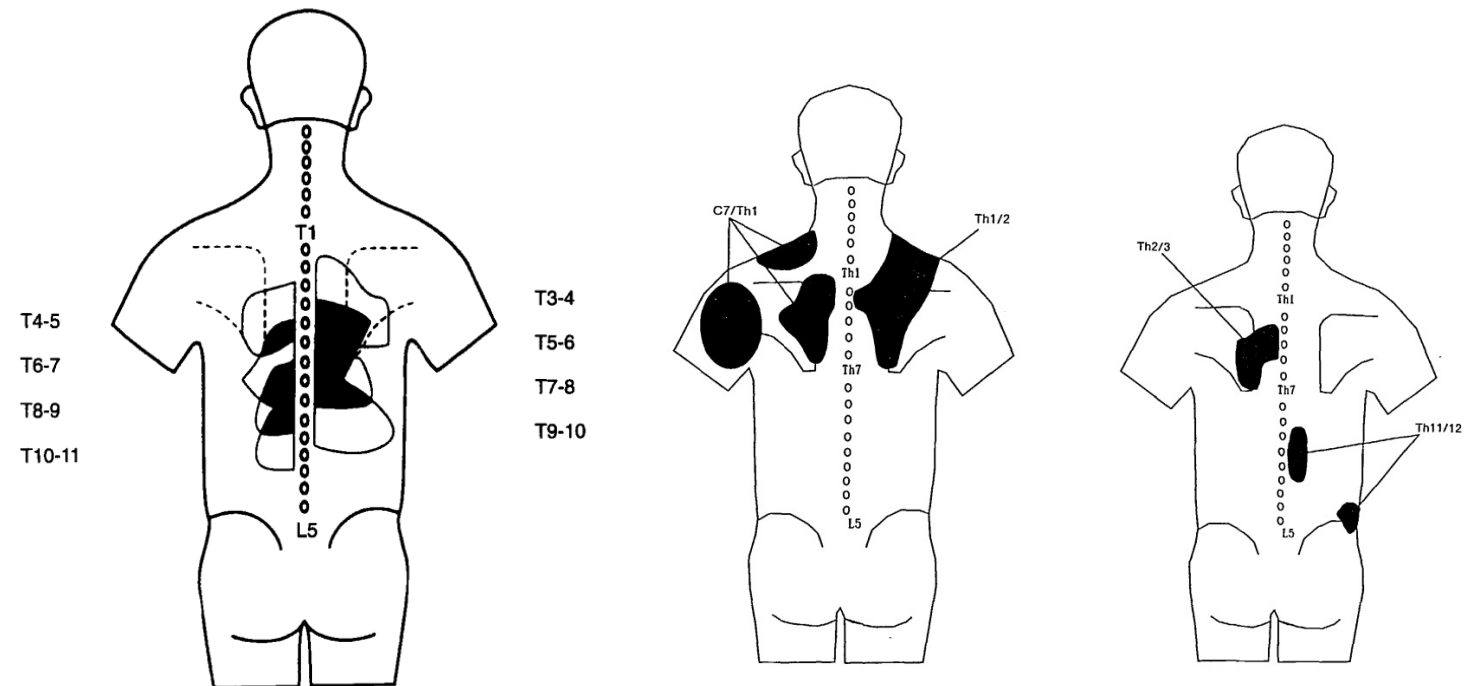


Somatic Referral

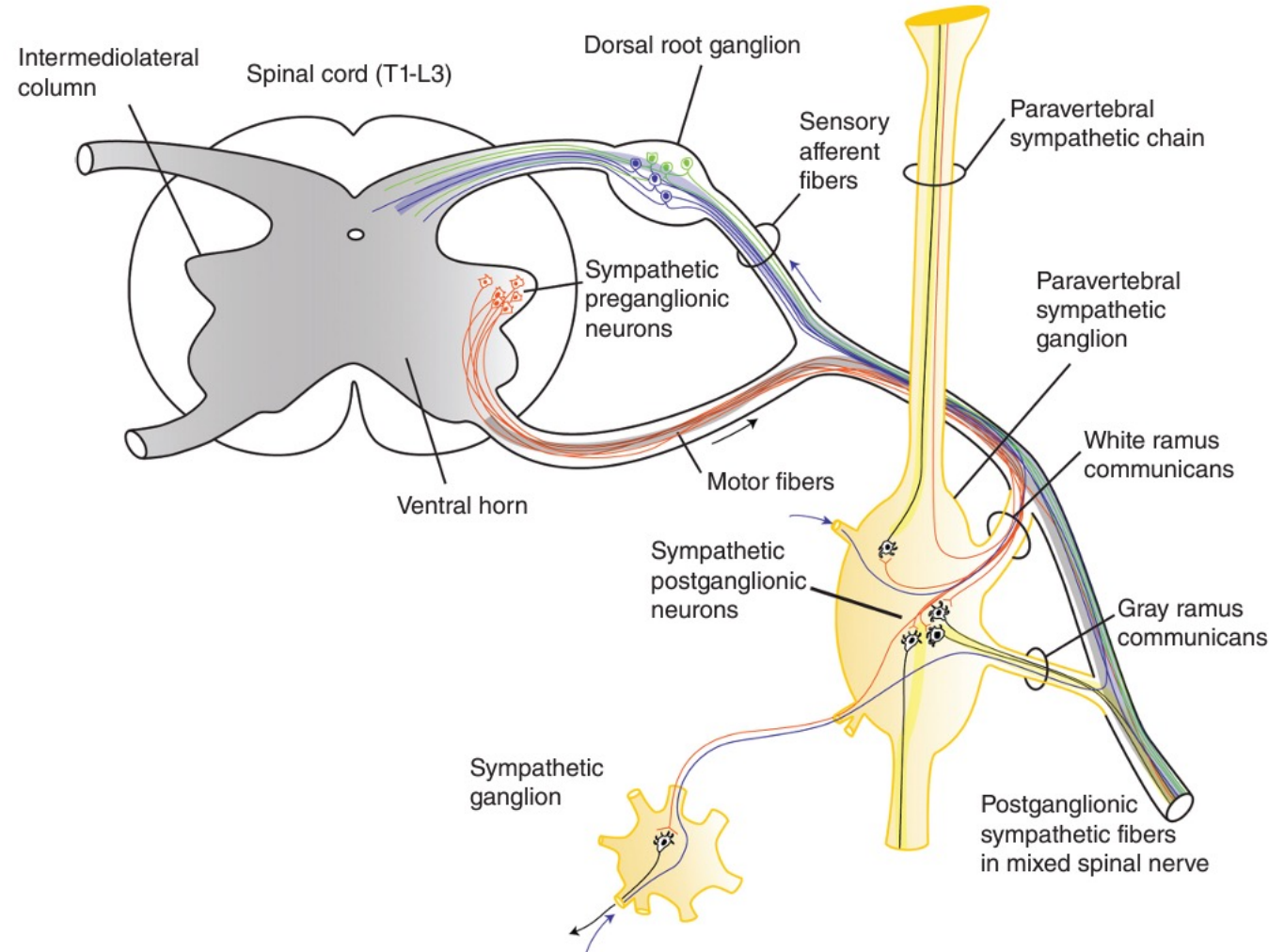
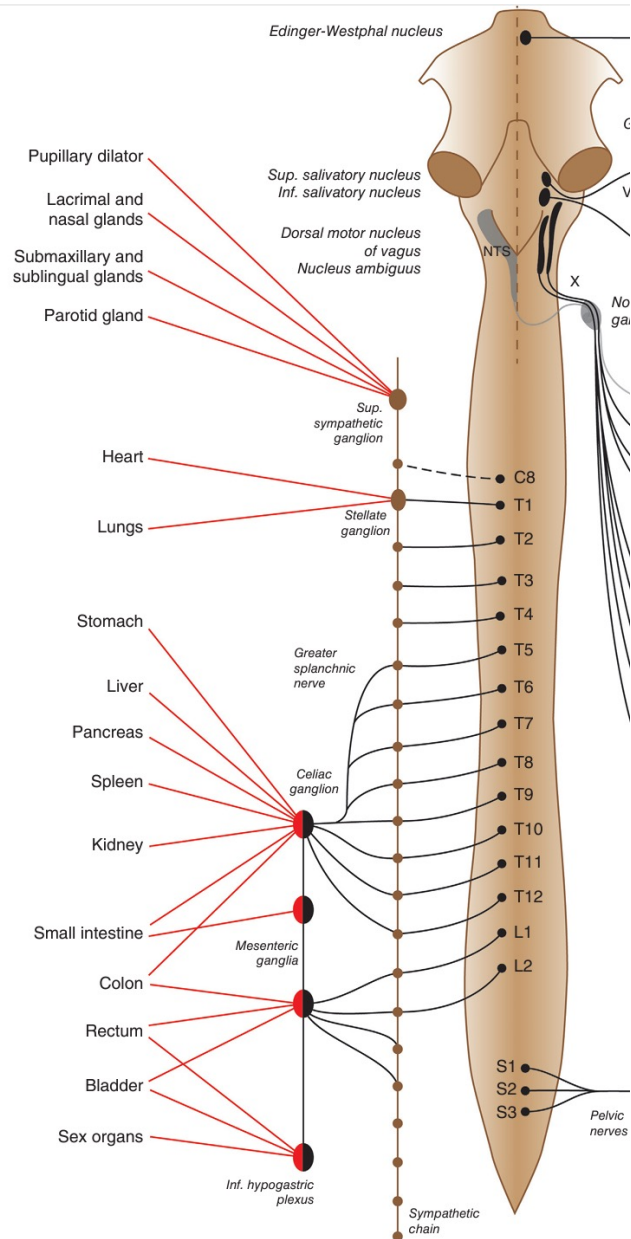
Interspinous Structure Referral



Zygapophyseal Joint Referral



Sympathetic Outflow



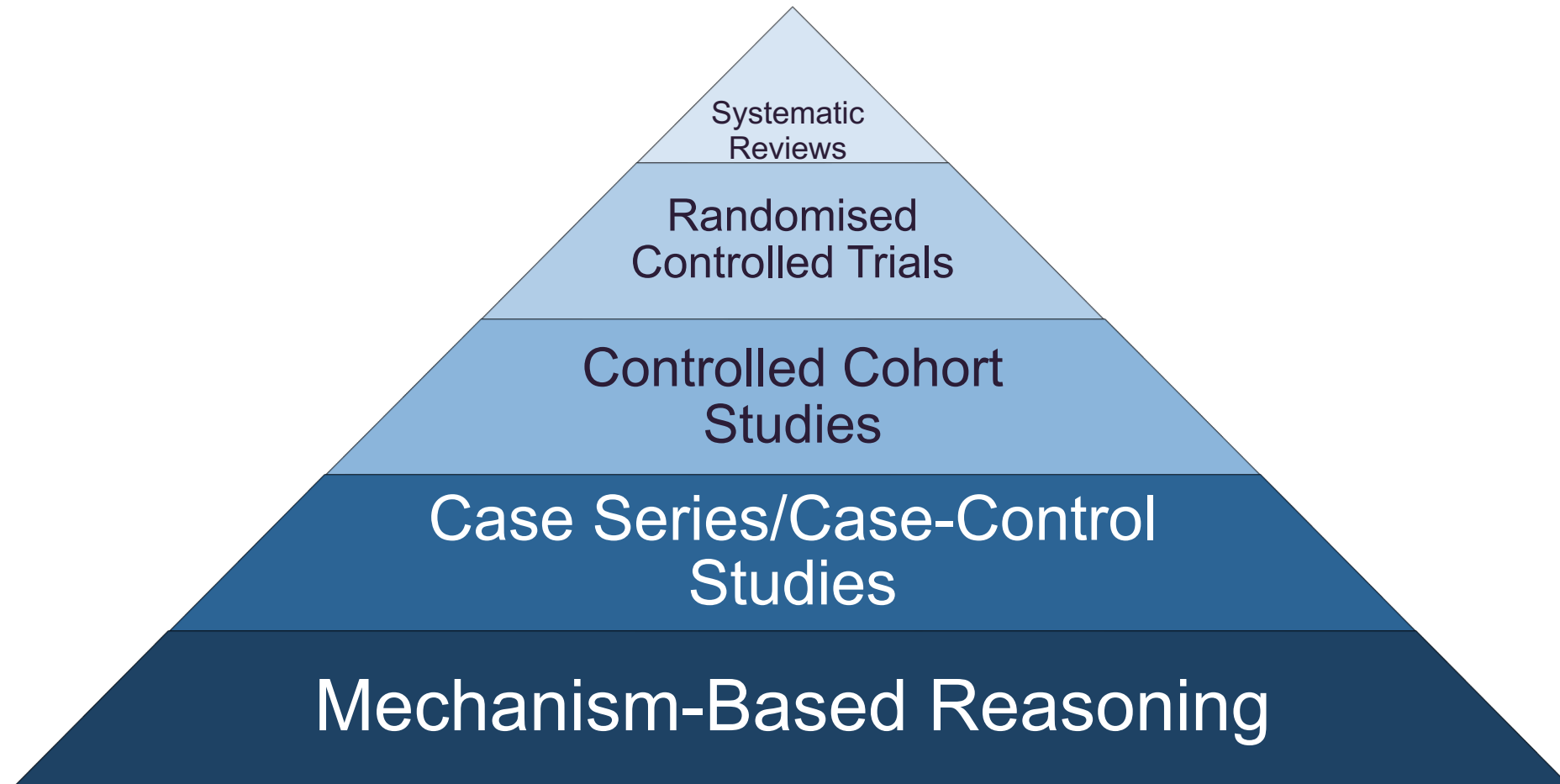
T4 Syndrome: A Scoping Review of the Literature

Steve Karas, DSc, PT,^a and Albert Pannone, PT^b

Study Characteristics

- RCT x1 (Level 2)
- Case series x2 (Level 4)
- Other x8 (Level 5)
 - Singular case reports
 - Expert opinion pieces
 - Case series without proper reporting

OCEBM Levels of Evidence for Treatment Efficacy Studies



The T4 syndrome

DeFranca G.G.;

Levine L.J.

CLINICAL PRESENTATION, QUANTITATIVE SENSORY TESTING, AND THERAPY OF 2 PATIENTS WITH FOURTH THORACIC SYNDROME

Gary A. Mellick, DO,^a and Larry B. Mellick, MS, MD^b

Assessment Findings

- Imaging –ve
- Postural abnormalities
- Pain/stiffness limited Tx + Cx ROM
- Painful + hypomobile Tx segments
- Potential +ve neurodynamics
- **Neural integrity testing



ELSEVIER

Manual Therapy

Volume 10, Issue 4, November 2005, Pages 292-296



THE UNIVERSITY
OF QUEENSLAND
AUSTRALIA

Case Report

The T4 syndrome

Jenny Louise Conroy, Anthony G. Schneiders [👤](#) [✉](#)

Interventions

- Tx + rib mobilisation + manipulation
- Tx ROM exercises
- Tx extensor strengthening
- Pectoral stretching
- Postural re-education Cx + Tx
- Activity modification
- Address Cx impairments also
- **Anaesthetic injections + adjuvant analgesics

Original article

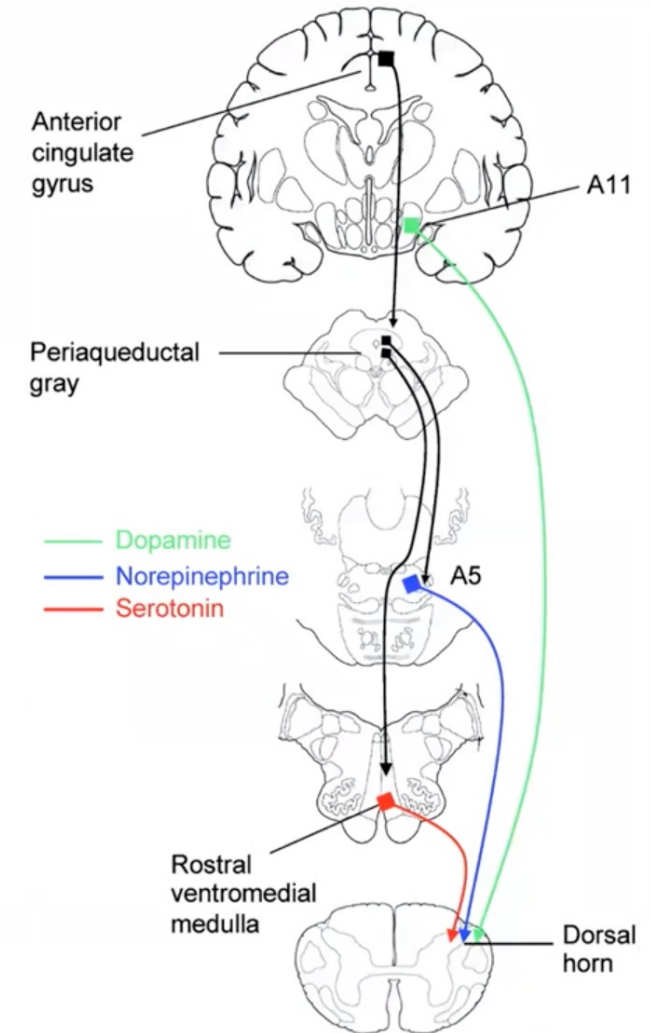
Sympathetic nervous system effects in the hands following a grade III postero-anterior rotatory mobilisation technique applied to T4: A randomised, placebo-controlled trial

Pete Jowsey^{a,*}, Jo Perry^b

Thoracic Mobilisation Increases Sympathetic Activity in the Hands

- Increase in skin conductance
- Decrease in skin temperature
- Sympathoexcitation via stimulation of the periaqueductal gray

Does this prove the proposed mechanism of T4 Syndrome?



Diagnostic Considerations

No Reference Standard

No Diagnostic Criteria

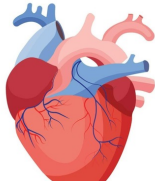
No Special Tests

Absence of Neurological Signs

Sympathetic Activity Difficult to Measure

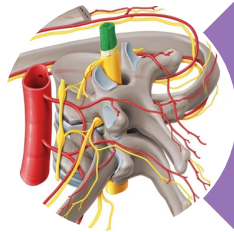
Challenging Differential Diagnoses

Differential Diagnoses



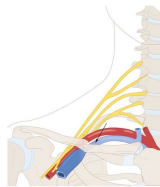
Angina Pectoris

Convergence of cardiac visceral afferents on common secondary somatic afferents



Entrapment Neuropathies

Cervical radiculopathy/radicular pain; cubital tunnel syndrome; carpal tunnel syndrome etc



Thoracic Outlet Syndrome

True neurological, symptomatic neurological and vascular subtypes



Headaches

Myriads of primary and secondary headache classifications

Conclusion and Clinical Implications

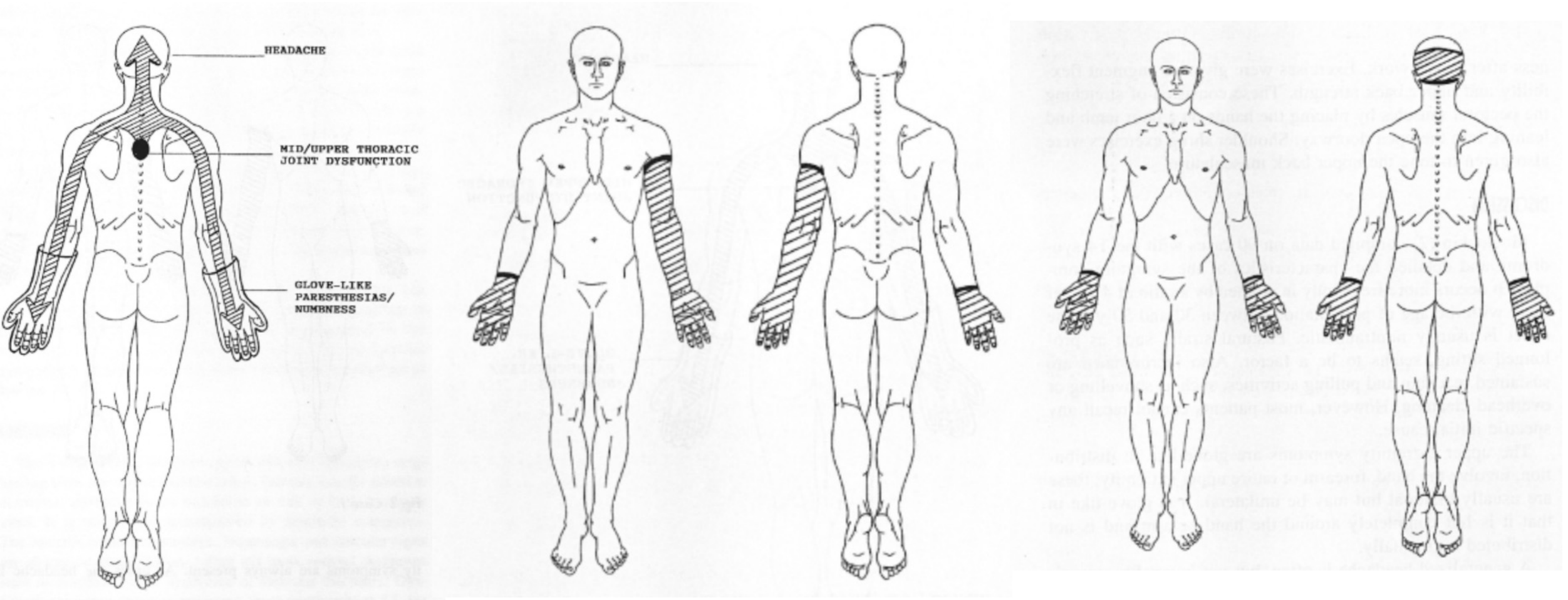
**Does T4
Syndrome exist?**

- Neuroanatomically plausible
- Evidence does not adequately legitimise it as a discrete condition

**What should I do
if I suspect T4
Syndrome?**

- Rule out the differentials
- Treat the impairments

Questions?



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