Altered pain processing in patients with type I and II diabetes

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**Introduction**

Diabetes and diabetic neuropathies (DSPN) affect small diameter nerve fibre function responsible for thermal, electrical, and pain perception. Quantitative sensory testing (QST) can assess small diameter nerve fibre function.

**AIM**

To summarise the evidence from QST on altered pain threshold and pain modulation in patients with diabetes with and without DSPN (both painful and non-painful).

**Methods**

Protocol registered on PROSPERO (CRD42018088173) and reported according to guidelines (PRISMA)

**Databases**

MEDLINE, CINAHL, EMBASE, Cochrane Library, SPORTDiscus, Web of Science and PEDro

<table>
<thead>
<tr>
<th>Flow diagram</th>
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<tbody>
<tr>
<td>n = 6,798</td>
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<td>(3,839 after duplicates removed)</td>
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Screening + eligibility (2 researchers)

<table>
<thead>
<tr>
<th>Systematic review</th>
<th>Meta-analysis</th>
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<tr>
<td>n=25</td>
<td>n=18</td>
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**Included:**

**Results**

**Pain threshold**

Progressive loss of function across groups to heat, cold and electrical stimuli

- greater loss of function than
- greater loss of function than
- greater loss of function than

| Painful DSPN | Non-painful DSPN | Diabetes without DSPN | Healthy |
|

**Pain modulation**

Only one paper retrieved on pain modulation and temporal summation

**Conclusions**

Patients with diabetes without DSPN already show loss of small-diameter nerve function

Loss of small-diameter nerve function is progressive across the diabetes groups

Pain modulation mechanisms in diabetes requires further investigation