EPIDEMIOLOGY
General
5–20% of the General Population May Suffer from Neuropathic Pain

Summary of Selected Prevalence Studies

Up to 20% of the General Population May Suffer from Neuropathic Pain

Summary of Prevalence Studies Using Case Ascertainment Tool


- Bouhassira De Moraes Vieira: 7%
- Toth: 18%
- Torrance: 8%
- Yawn: 9%
- Gustorff: 3%

DN4, S-LANSS part A and additional questions
Neuropathic Pain is Prevalent Across a Range of Different Conditions

<table>
<thead>
<tr>
<th>Condition</th>
<th>% affected by peripheral neuropathic pain</th>
<th>% affected by central neuropathic pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>11–26%&lt;sup&gt;1&lt;/sup&gt;</td>
<td>8%&lt;sup&gt;9&lt;/sup&gt;</td>
</tr>
<tr>
<td>Cancer</td>
<td>~33%&lt;sup&gt;2&lt;/sup&gt;</td>
<td>75%&lt;sup&gt;10&lt;/sup&gt;</td>
</tr>
<tr>
<td>HIV</td>
<td>35–53%&lt;sup&gt;3–5&lt;/sup&gt;</td>
<td>~55%&lt;sup&gt;11&lt;/sup&gt;</td>
</tr>
<tr>
<td>Post-surgical</td>
<td>20–43% of mastectomy patients&lt;sup&gt;6,7&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Chronic low back pain</td>
<td>Up to 37%&lt;sup&gt;8&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Postherpetic neuralgia</td>
<td>7–27% of patients with herpes zoster&lt;sup&gt;1&lt;/sup&gt;</td>
<td></td>
</tr>
</tbody>
</table>

HIV = human immunodeficiency virus

Patients Suffering from Neuropathic Pain in Primary Care Represent Wide Variety of Etiologies

Annual Incidence of Neuropathic Pain Conditions per 10,000 Based on UK General Practice Research Database

- Back pain: 53
- Postherpetic neuralgia: 3.4
- Painful diabetic peripheral neuropathy: 3.1
- Phantom limb pain: 0.1

Incidence of neuropathic back pain may be overestimated due to study definitions.
UK = United Kingdom
26% had painful diabetic peripheral neuropathy

Associated with decreased quality of life

80% of patients report moderate to severe pain

Prevalence of Peripheral Neuropathy among Adults Aged 40 and Older Increases by Positive Diabetic Status and Age

Symptomatic persons reported numbness/loss of feeling or painful sensations/tingling in feet during the preceding 3 months; age-sex adjusted to the 2000 United States standard population.
Up to 26% of People with Diabetes Develop Painful Diabetic Peripheral Neuropathy

Estimated Prevalence of Diabetes

<table>
<thead>
<tr>
<th>Region</th>
<th>2000</th>
<th>2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Americas</td>
<td>33,016,000</td>
<td>66,812,000</td>
</tr>
<tr>
<td>Africa</td>
<td>7,020,000</td>
<td>18,324,000</td>
</tr>
<tr>
<td>Eastern Mediterranean</td>
<td>15,188,000</td>
<td>42,600,000</td>
</tr>
<tr>
<td>Europe</td>
<td>33,332,000</td>
<td>47,973,000</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>46,903,000</td>
<td>119,541,000</td>
</tr>
<tr>
<td>Western Pacific</td>
<td>35,771,000</td>
<td>71,050,000</td>
</tr>
<tr>
<td>Worldwide</td>
<td>171,000,000</td>
<td>366,000,000</td>
</tr>
</tbody>
</table>

Patients with Severe Neuropathy Are More Likely to Experience Pain Related to Diabetic Peripheral Neuropathy

Percentage Prevalence of Neuropathic Symptoms in 15,659 Diabetic Patients Characterized by Their Level of Clinical Neuropathy

NDS = neuropathy disability score
Risk Factors for Painful Diabetic Neuropathy Include Gender, Ethnicity and Type 2 Diabetes

OR = odds ratio; CI = confidence interval
Vascular Risk Factors and Diabetic Neuropathy

A1C = glycosylated hemoglobin; BMI = body mass index; CI = confidence interval; OR = odds ratio

Model 1: without cardiovascular disease and retinopathy

OR (95% CI)

- Hypertension: 1.57
- Smoking: 1.38
- A1C: 1.48
- Change in A1C: 1.36
- Diabetes duration: 1.40
- BMI: 1.27
- Triglycerides: 1.21
- Total cholesterol: 1.15

n = 1101 with type 1 diabetes
Follow-up: 7.3 ± 0.6 years

Incidence of Herpes Zoster and Postherpetic Neuralgia May Be Increasing

Annual incidence of herpes zoster, annual incidence of postherpetic neuralgia, and percentage of patients with herpes zoster who developed postherpetic neuralgia in Harvard Vanguard Medical Associates, 1996-2008. Figure is adjusted for age and sex relative United States Census 2000.

Incidence of Herpes Zoster Increases with Age\(^1\)

7–27% of patients with herpes zoster (shingles) develop postherpetic neuralgia\(^2\)

**Graph:**
- **Canada (Manitoba) – Law\(^*\)**
- **UK (RCGP) – Brisson**
- **US (Olmsted – Yawn\(^**\))**
- **US (Medstat) – Insinga\(^*\)**
- **UK – Hope - Simpson**
- **Netherlands – de Melker**

**Legend:**
- Annual incidence (per 1000 person-years)

**Notes:**
- **RCGP** = Royal College of General Practitioners; **UK** = United Kingdom; **US** = United States
Age Is the Major Risk Factor for Developing Postherpetic Neuralgia

Risk Factors for Postherpetic Neuralgia Include Diabetes, Lymphoma, Lupus and HIV

<table>
<thead>
<tr>
<th>Potential risk indicator</th>
<th>RR (95% CI)*</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥60 years</td>
<td>2.344 (2.171–2.532)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Systemic lupus erythematous</td>
<td>2.268 (1.749–2.942)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Lymphoma/leukaemia</td>
<td>1.735 (1.319–2.282)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>1.351 (1.246–1.467)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Female gender</td>
<td>0.953 (0.886–1.025)</td>
<td>0.2</td>
</tr>
<tr>
<td>Liver cancer</td>
<td>0.864 (0.651–1.148)</td>
<td>0.32</td>
</tr>
<tr>
<td>Breast cancer</td>
<td>0.748 (0.526–1.063)</td>
<td>0.11</td>
</tr>
<tr>
<td>HIV/AIDS</td>
<td>0.475 (0.264–0.856)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

*Model adjusted for age and sex
AIDS = acquired immunodeficiency syndrome; CI = confidence interval;
HIV = human immunodeficiency virus; RR = relative risk
Summary
Epidemiology: Summary

Up to 20% of the population may suffer from neuropathic pain.

- 11–26% of people with diabetes develop painful diabetic peripheral neuropathy
- Risk factors include:
  - Female gender
  - South-East Asian ethnicity
  - Type 2 (vs. type 1) diabetes
- 7–27% of people with herpes zoster develop postherpetic neuralgia
- Increasing age is the major risk factor for postherpetic neuralgia