



Neuropathic pain

EPIDEMIOLOGY, RISKS, AND PREVENTION

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Disclosures

I have no actual or potential conflicts of interest related to the material being presented.

Nor do I discuss off-label indications for any medications.



Learning objectives

By the end of this presentation, delegates will be able to:

- Describe the burden of chronic pain in the general population;
- Report the proportion of chronic pain that is neuropathic in origin;
- Describe the prevalence of neuropathic pain in special populations;
- Appreciate the imprecision of the prevalence data;
- Appraise the socio-economic consequences of having neuropathic pain.



Key message

Neuropathic pain:

- Is common, especially in special populations (e.g., diabetes, HIV, spinal cord injury);
- The worsening global *diabetes mellitus* epidemic may have a significant impact on the burden of neuropathic pain;
- Has a significant, negative impact on the affected individual, and society.



What is epidemiology?

“The study of the distribution and determinants of health-related states or events in specified populations, and the application of this study to control health problems.”



Epidemiology and neuropathic pain

- **Definition:** Pain caused by a lesion or disease of the somatosensory nervous system

TO INFORM UNDERSTANDING, AT A POPULATION LEVEL, OF:

Distribution and determinants

Definition and classification

Etiology (factors that favor development and chronicity)

Prognosis

Prevention

Impact on quality of life

Design, targeting, and evaluation of treatment strategies

Allocation of health service resources

Allocation of educational resources



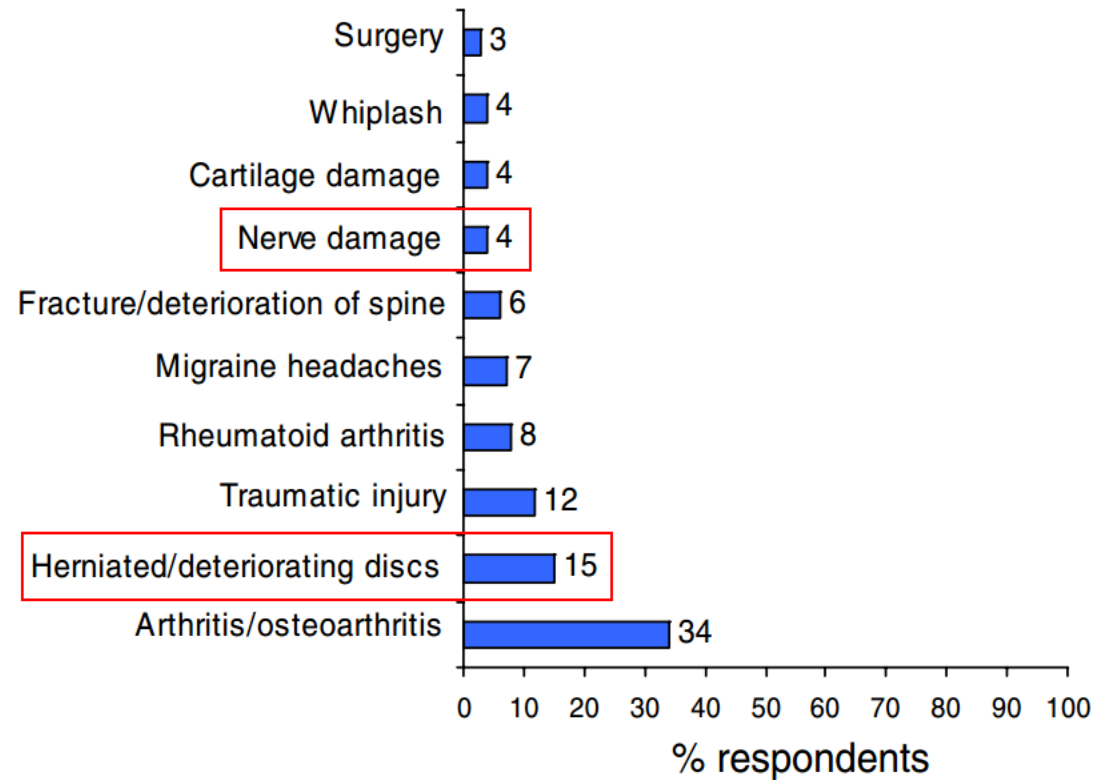
Prevalence of chronic pain

- **Chronic pain in the USA:** (*n* = 8,781; [Nahin, 2015](#))
 - 11% (*pain every day for \geq 3 months*)
 - 17% (*pain most days for \geq 3 months*)
- **Chronic pain in Europe:** (*n* = 46,394; [Breivik et al., 2004](#))
 - 19% (range: 12-30%) (*pain on most days for \geq 6 months*)
- **Risk factors for chronic pain:** ([van Hecke et al., 2014](#))
 - Female sex
 - Older age
 - Lower socio-economic status
 - Employment status and occupational factors
 - History of abuse/interpersonal violence
 - Genetic vulnerability
 - Acute pain burden
 - Psychological factors

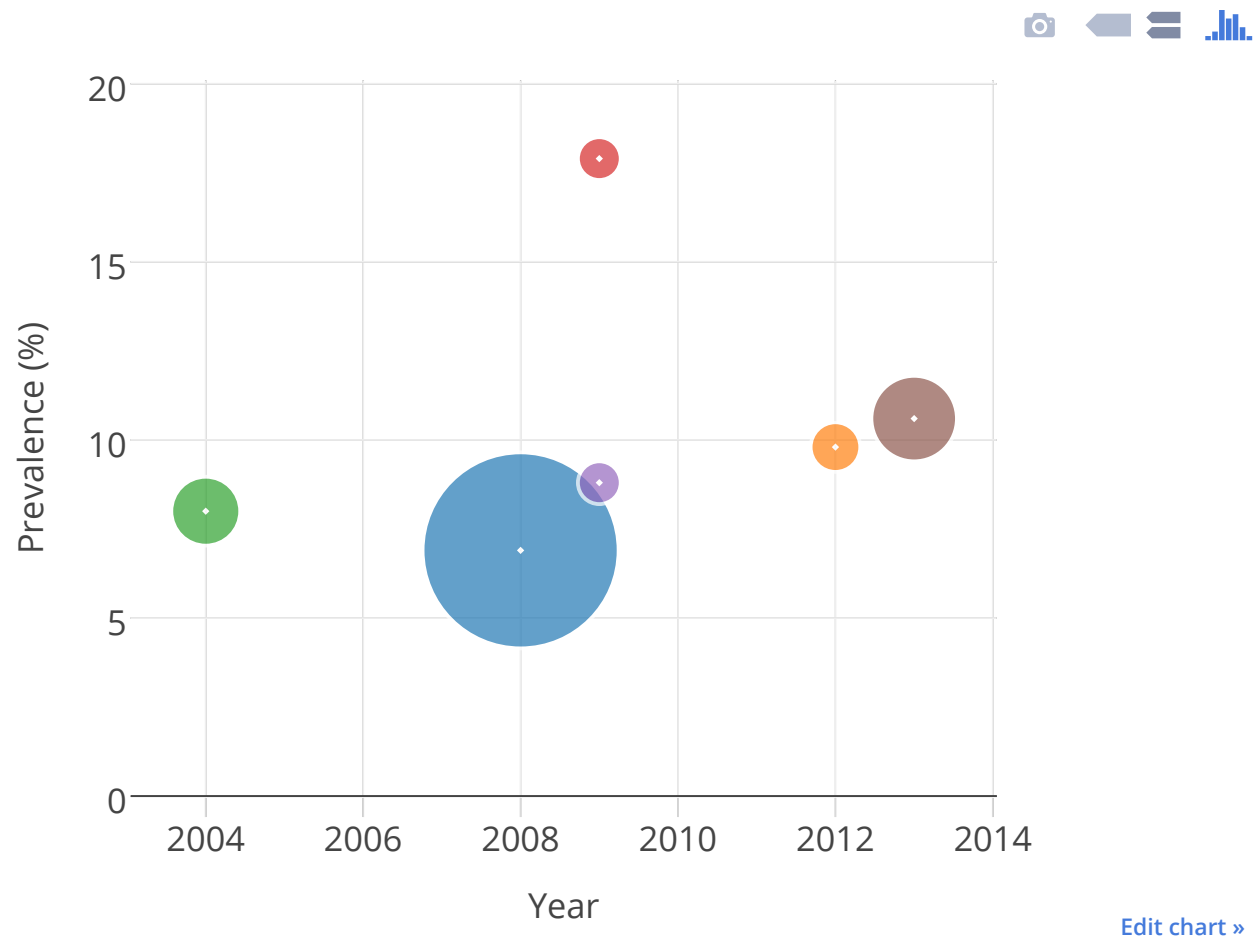


How much of chronic pain is neuropathic?

Source of chronic pain in a subset of 4,389/46,394 people with chronic pain in Europe (Breivik et al., 2004)



Neuropathic pain in the general population



[Edit chart »](#)

*Torrance et al., 2007; Bouhassira et al., 2008; Toth et al., 2009;
Yawn et al., 2009; de Moraes Vieira et al., 2012; Harifi et al., 2013*
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Prevalence of pain in specific conditions

CAUSE	PREVALENCE OF PAINFUL NEUROPATHY (%)
HIV polyneuropathy	40-93
Spinal cord injury	67
Diabetic polyneuropathy	40-50
Radiculopathy	37
Multiple sclerosis	28
Post-herpetic neuralgia	7-28
Post-stroke	8

Veves et al., 2007; Sadosky et al., 2008; Haanpaa et al., 2009; van Hecke et al., 2014

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Are the data any good?

Imperfect screening tools

- **DN4-interview:** sensitivity = 82%, specificity = 86%
- **S-LANSS:** sensitivity = 75%, specificity = 80%



Are the data any good?...*contd*

Imperfect screening tools

- **Modelling based on:** n = 3000; DN4-interview (sensitivity = 82%, specificity = 86%)



The burden of neuropathic pain

“ 17% of people with neuropathic pain rated their quality of life as being, *worse than death.* ”



The burden of neuropathic pain

Compared to other causes of chronic pain, neuropathic pain is associated with:

- Reduced mobility
- Reduced quality of life
- Reduced sleep / sleep quality
- Increased unemployment
- Increased work impairment
- Increased depression / anxiety
- Increased use of healthcare

Doth et al., 2010; Attal et al., 2011; Torrance et al., 2013; Schaefer et al., 2014a

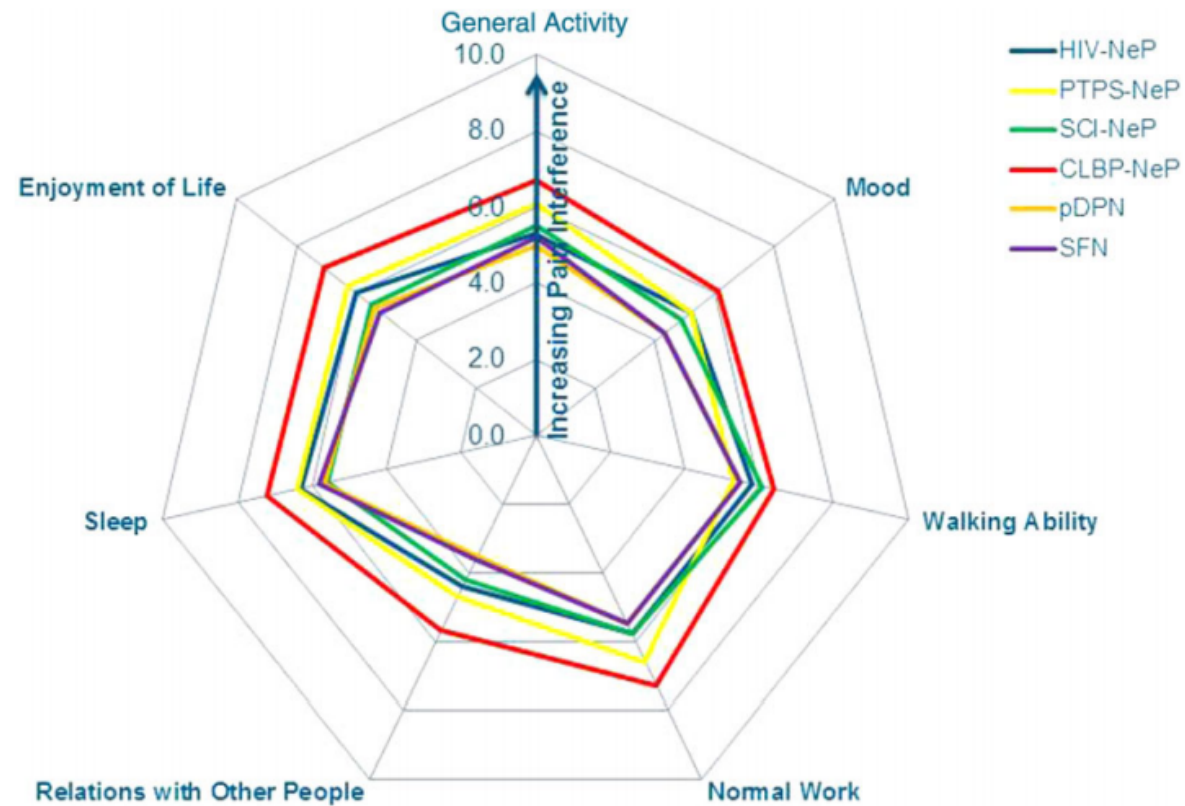
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The burden of neuropathic pain

- The dysfunction is consistent across aetiologies



The burden of neuropathic pain

- Presence of pain increases gait variance, number of falls, and fear of falls

ATTRIBUTE	DIABETES (%; N=20)	DIABETES + NEUROPATHY (%; N=20)	DIABETES + NEUROPATHIC PAIN (%; N=20)
Fall in the last year	15	20	45
Fear of falling	5	20	64



The future

Painful diabetic polyneuropathy

- 10-20% of people with diabetes have a painful polyneuropathy



Europe: Prevalence, impact on daily life, and treatment". In: *European*
2005.06.009. .

the general population: A systematic review of epidemiological studies".

and Its Impact on Quality of Life". In: *Curr Pain Headache Rep* 16.3 (Feb.

