
EPIDEMIOLOGY

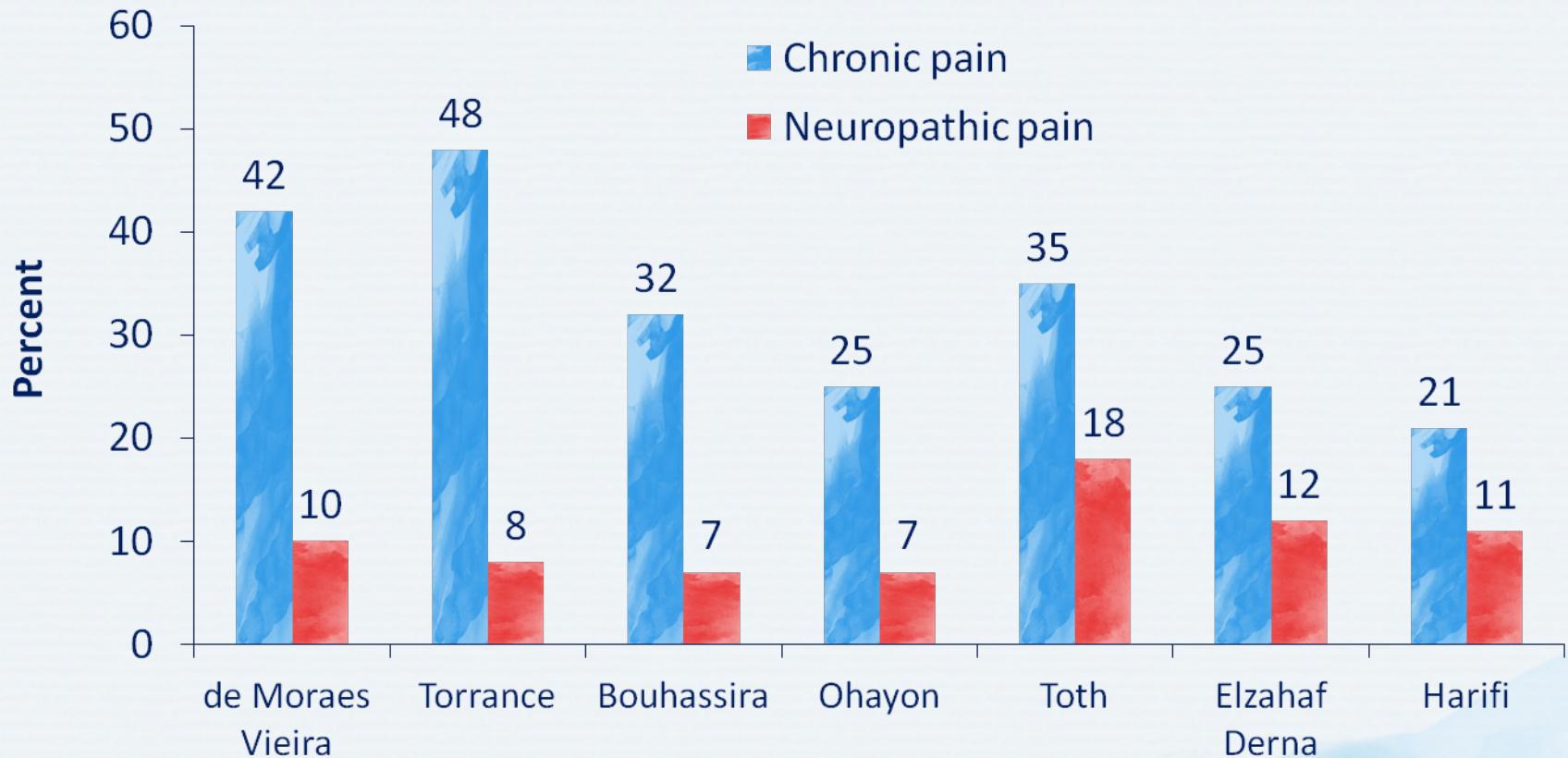
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General

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

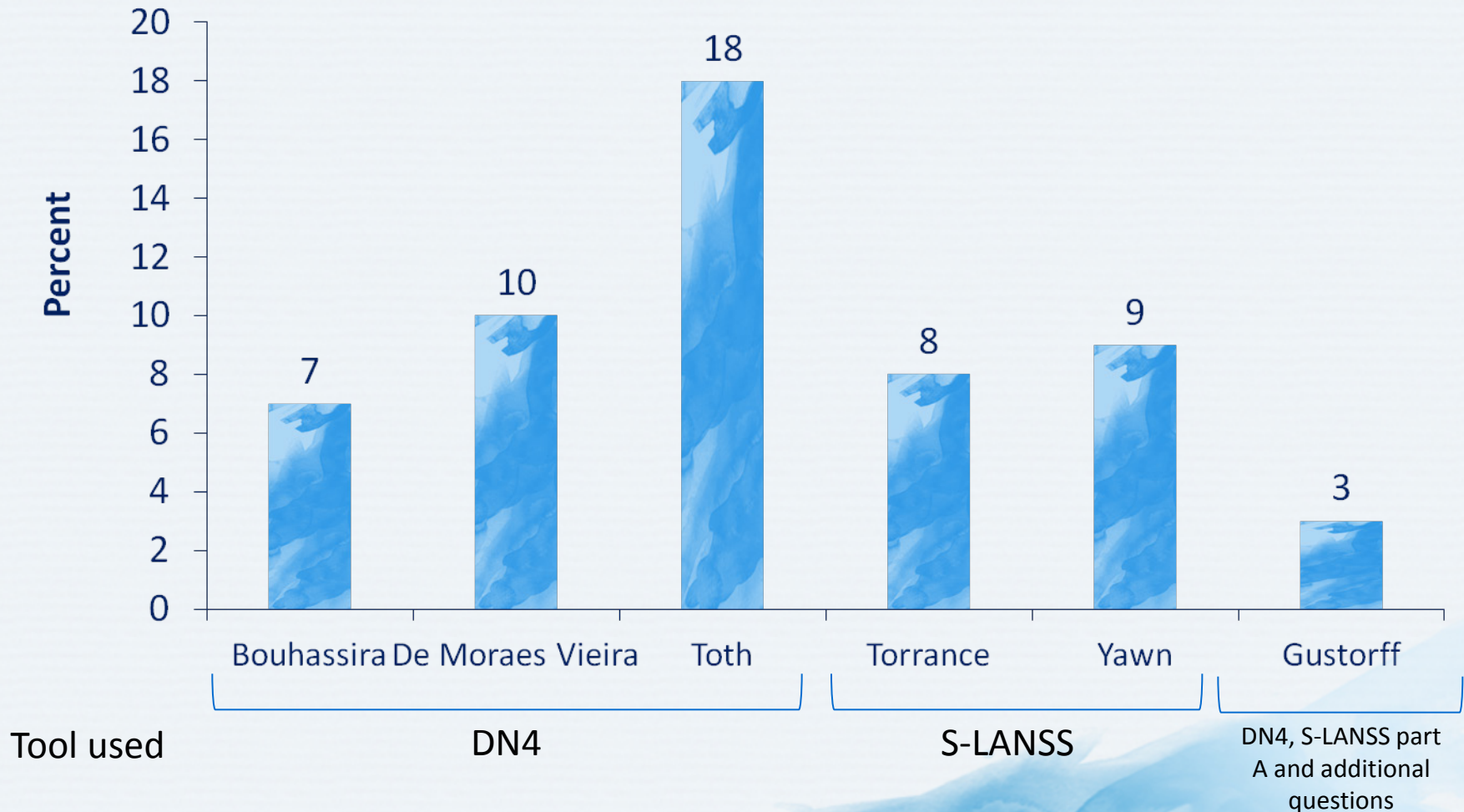
Summary of Selected Prevalence Studies



Adapted from: Bouhassira D *et al. Pain* 2008; 136(3):380-7; de Moraes Vieira EB *et al. J Pain Symptom Manage* 2012; 44(2):239-51; Elzahaf RA *et al. Pain Pract* 2013; 13(3):198-205; Harifi G *et al. Pain Med* 2013; 14(2):287-92; Ohayon MM, Stingl C. *Psychiatr Res* 2012; 46(4):444-50; Torrance N *et al. J Pain* 2006;7(4):281-9; Toth C *et al. Pain Med* 2009; 10(5):918-29;

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

Summary of Prevalence Studies Using Case Ascertainment Tool



Neuropathic Pain is Prevalent Across a Range of Different Conditions

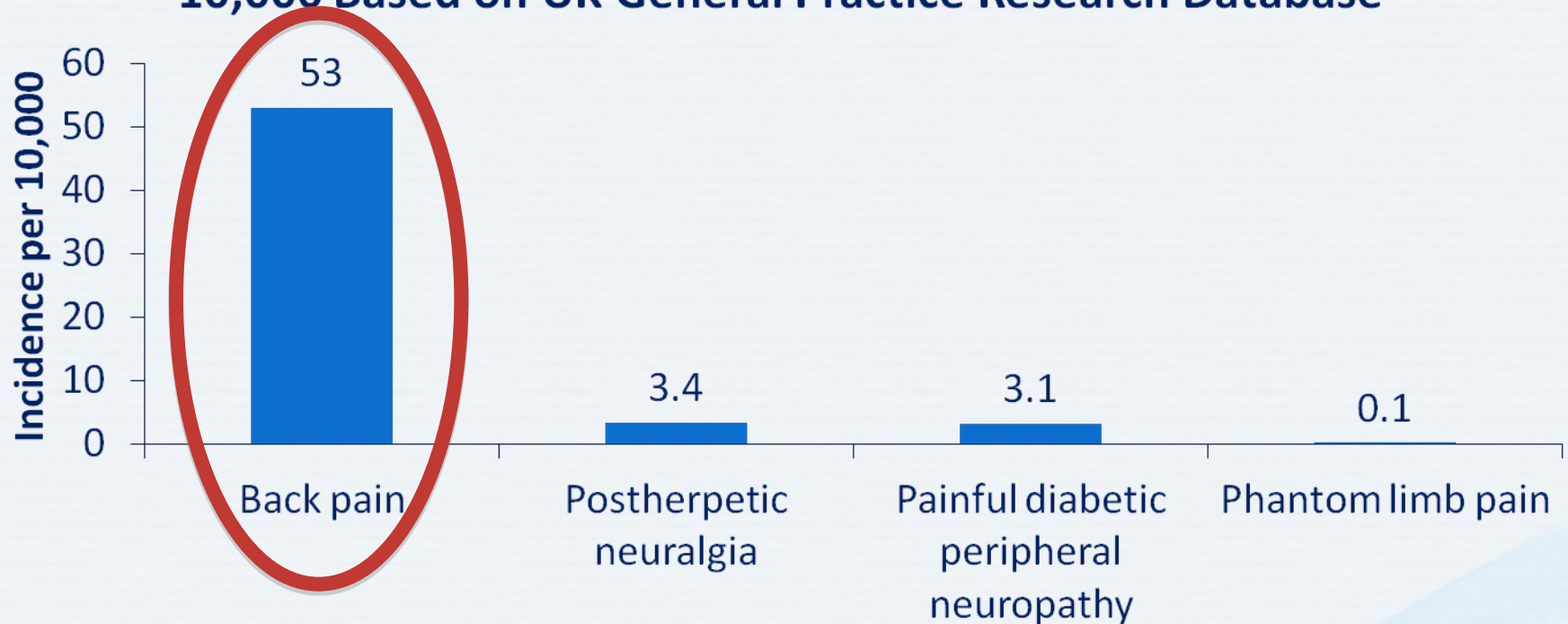
% affected by peripheral neuropathic pain	Condition		% affected by central neuropathic pain
11–26% ¹	Diabetes	Stroke	8% ⁹
~33% ²	Cancer	Spinal cord injury	75% ¹⁰
35–53% ^{3–5}	HIV	Multiple sclerosis	~55% ¹¹
20–43% of mastectomy patients ^{6,7}	Post-surgical		
Up to 37% ⁸	Chronic low back pain		
7–27% of patients with herpes zoster ¹	Postherpetic neuralgia		

HIV = human immunodeficiency virus

1. Sadosky A et al. *Pain Pract* 2008; 8(1):45-56; 2. Davis MP, Walsh D. *Am J Hosp Palliat Care* 2004; 21(2):137-42; 3. So YT et al. *Arch Neurol* 1988; 45(9):945-8; 4. Schifitto G et al. *Neurology* 2002; 58(12):1764-8; 5. Morgello S et al. *Arch Neurol* 2004; 61(4):546-51; 6. Stevens PE et al. *Pain* 1995; 61(1):61-8; 7. Smith WC et al. *Pain* 1999; 83(1):91-5; 8. Freynhagen R et al. *Curr Med Res Opin* 2006; 22(10):1911-20; 9. Andersen G et al. *Pain* 1995; 61(2):187-93; 10. Siddall PJ et al. *Pain*. 2003; 103(3):249-57; 11. Rae-Grant AD et al. *Mult Scler* 1999; 5(3):179-83.

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



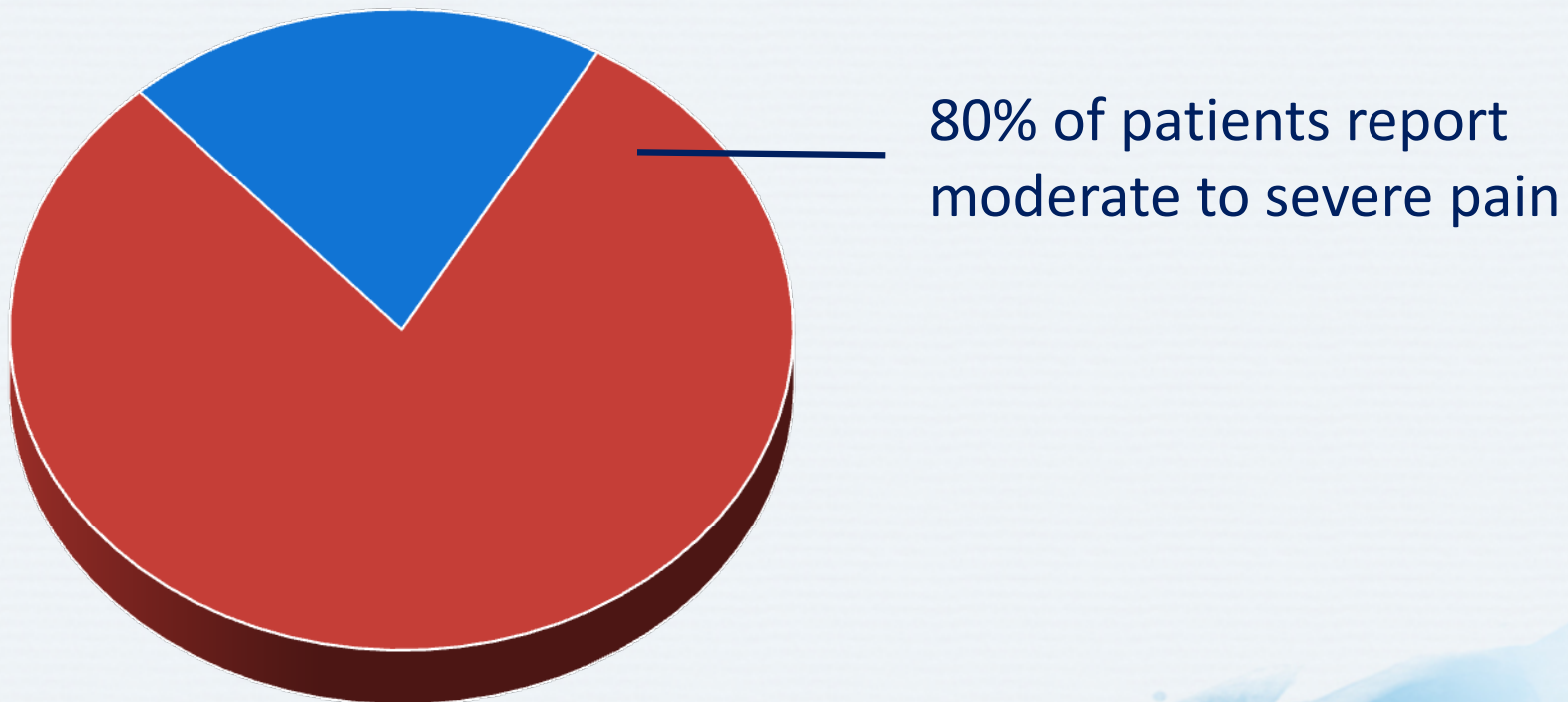
Incidence of neuropathic back pain may be overestimated due to study definitions.

UK = United Kingdom

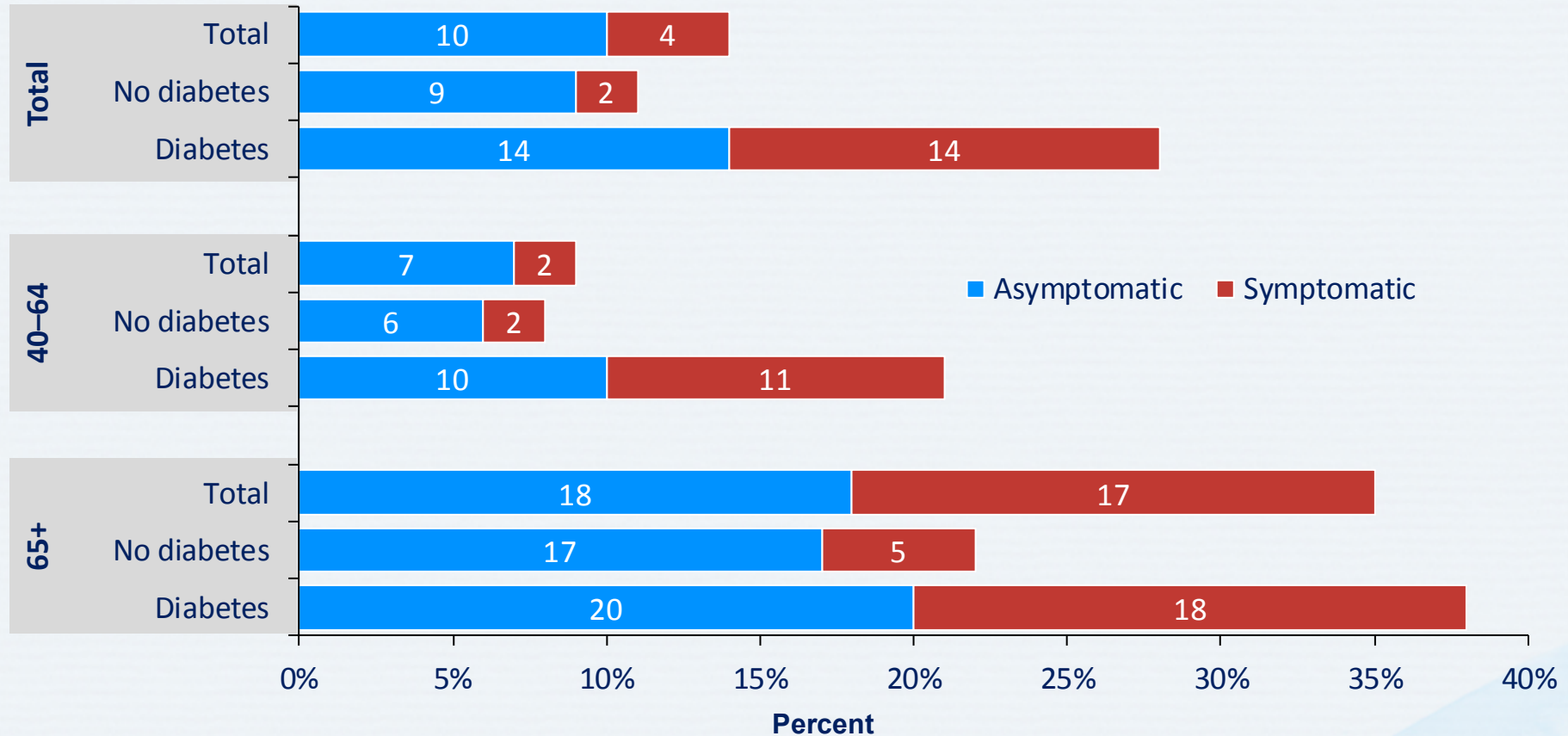
Adapted from: Hall GC *et al.* *BMC Fam Pract* 2013; 14:28.

Prevalence of Painful Diabetic Peripheral Neuropathy in Type 2 Diabetes

- 26% had painful diabetic peripheral neuropathy
- Associated with decreased quality of life



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



Source: National Health and Nutrition Examination Survey (NHANES). 1999–2004.

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.

Pfizer Medical Division. *The Burden of Pain Among Adults in the United States*. Pfizer Inc.; New York, NY: 2008.

Up to 26% of People with Diabetes Develop Painful Diabetic Peripheral Neuropathy¹

Estimated Prevalence of Diabetes²

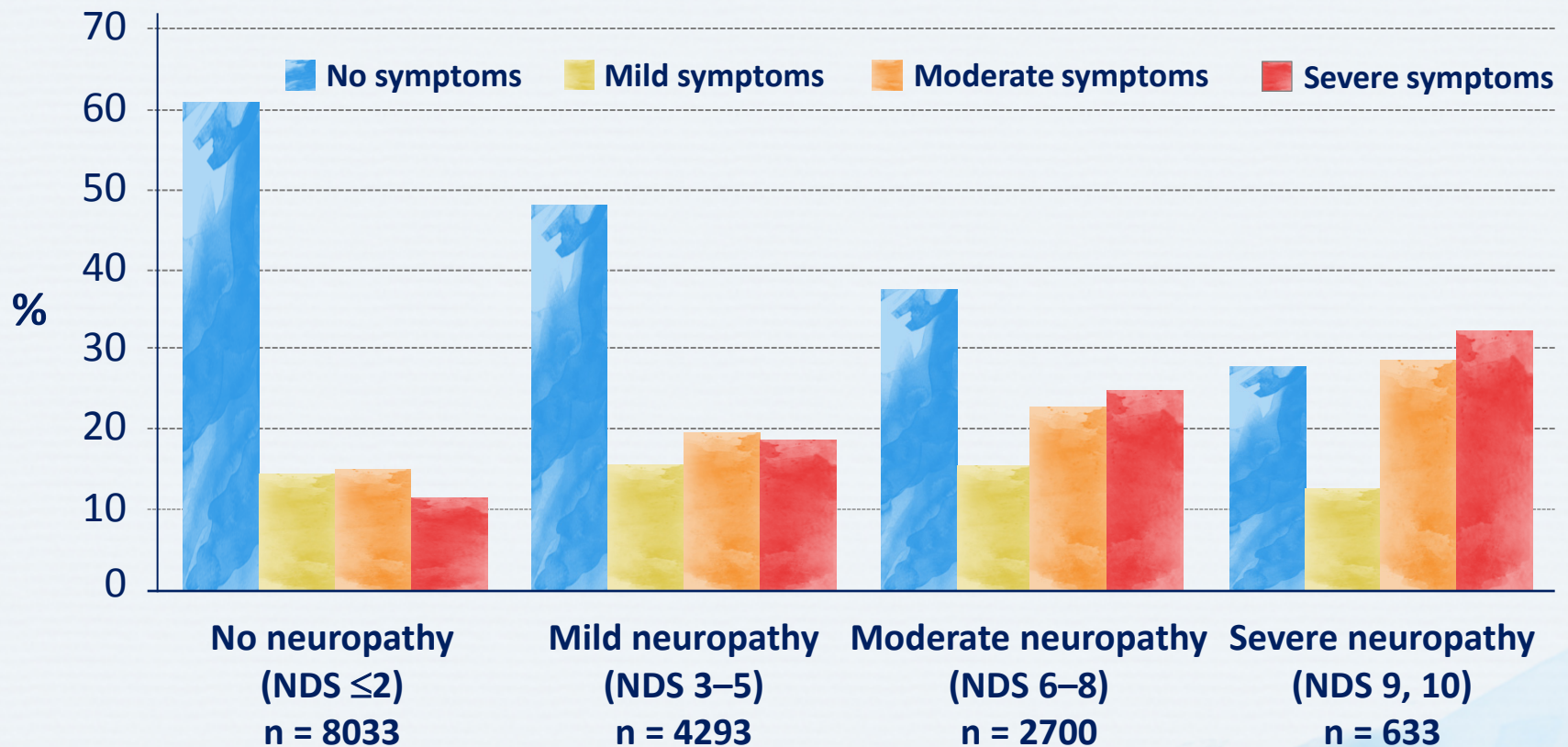
	2000	2030
Americas	33,016,000	66,812,000
Africa	7,020,000	18,324,000
Eastern Mediterranean	15,188,000	42,600,000
Europe	33,332,000	47,973,000
South-East Asia	46,903,000	119,541,000
Western Pacific	35,771,000	71,050,000
Worldwide	171,000,000	366,000,000

1. Sadosky A *et al.* *Pain Pract* 2008; 8(1):45-56;

2. World Health Organization. *Country and Regional Data on Diabetes*. Available at: http://www.who.int/diabetes/facts/world_figures/en/. Accessed: August 23, 2013.

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

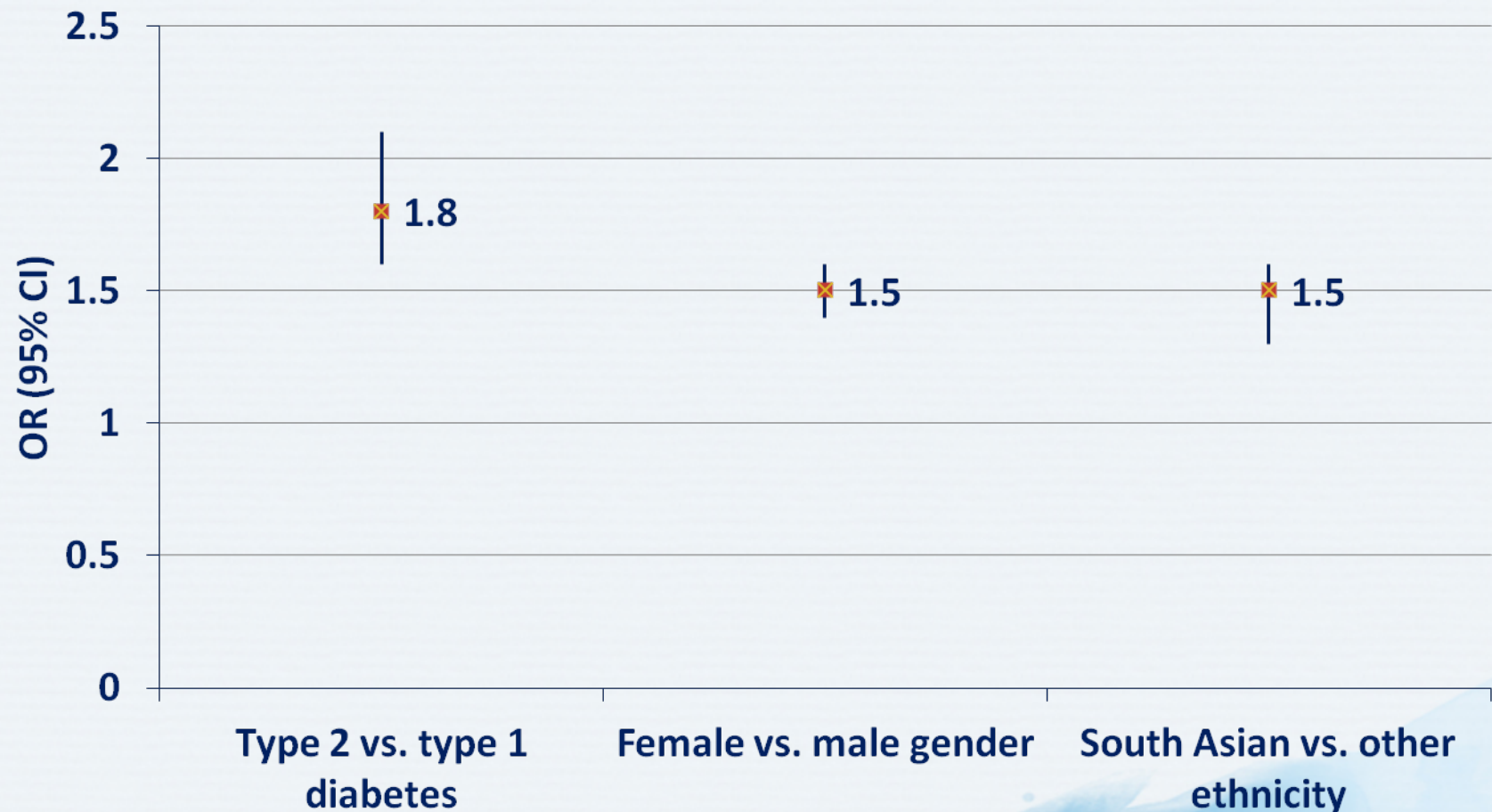
Percentage Prevalence of Neuropathic Symptoms in 15,659 Diabetic Patients Characterized by Their Level of Clinical Neuropathy



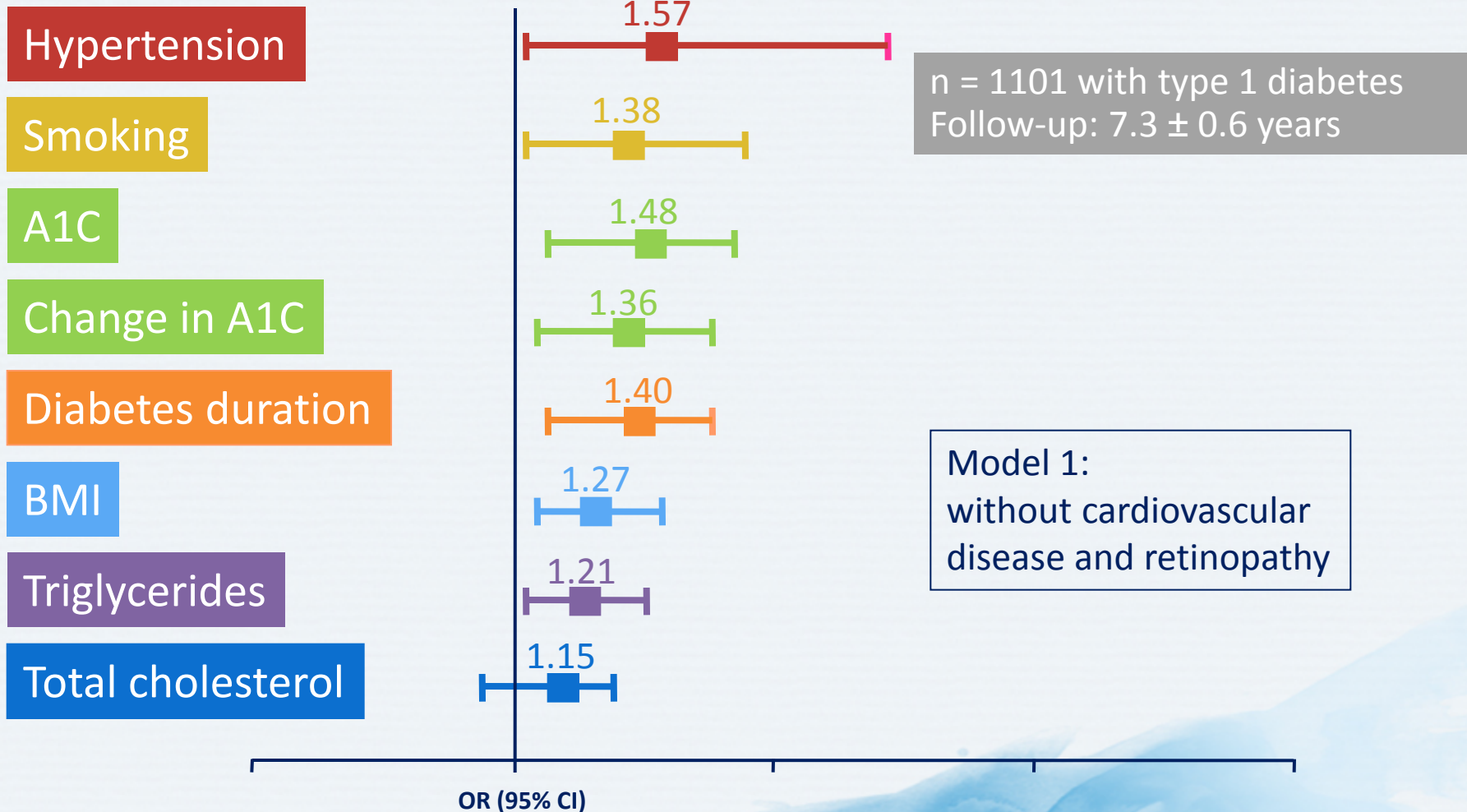
NDS = neuropathy disability score

Abbott CA et al. *Diabetes Care* 2011; 34(10):2220-4.

Risk Factors for Painful Diabetic Neuropathy Include Gender, Ethnicity and Type 2 Diabetes



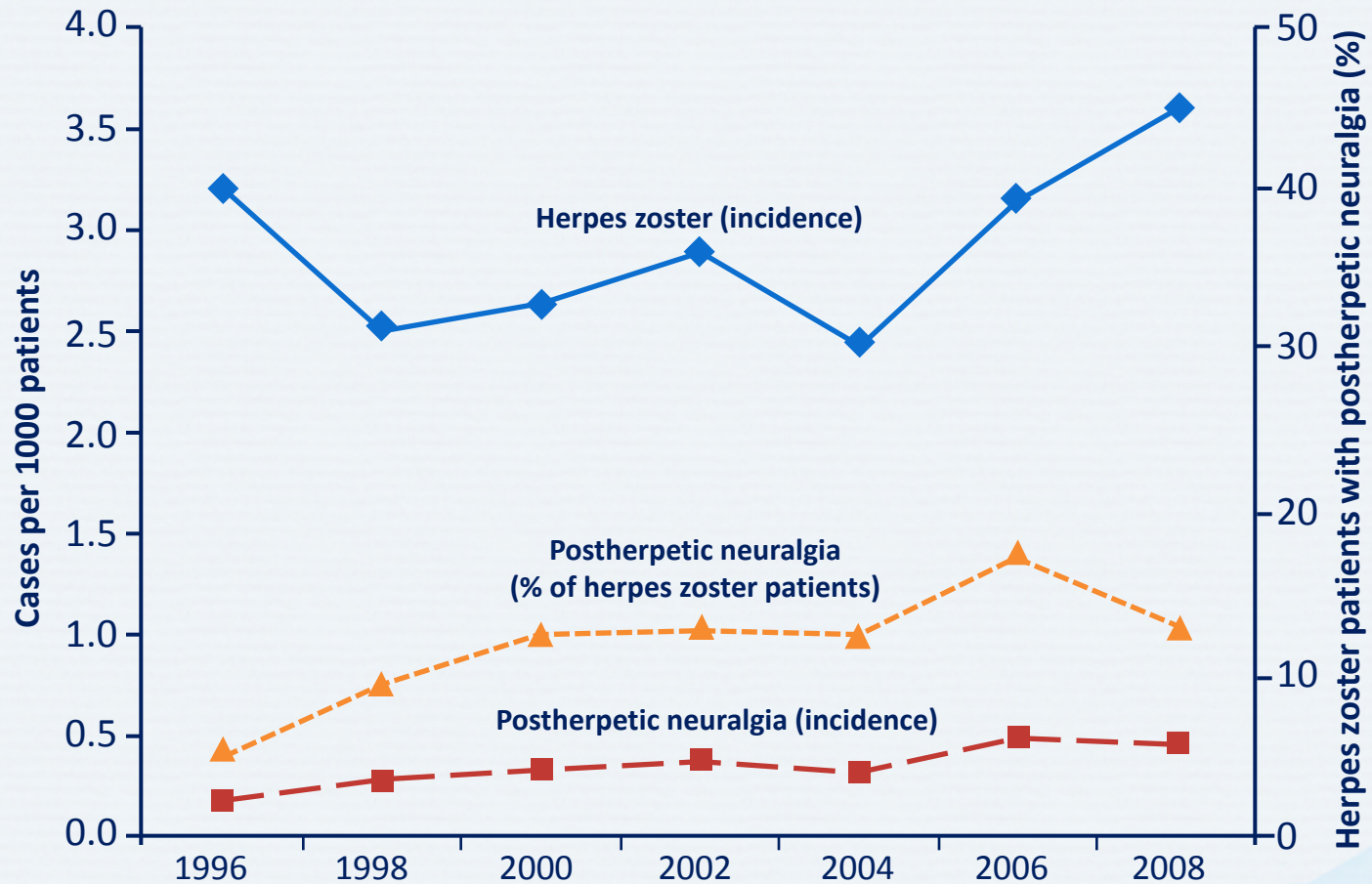
Vascular Risk Factors and Diabetic Neuropathy



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

Tesfaye S et al. *N Engl J Med* 2005; 352(4):341-50.

Incidence of Herpes Zoster and Postherpetic Neuralgia May Be Increasing

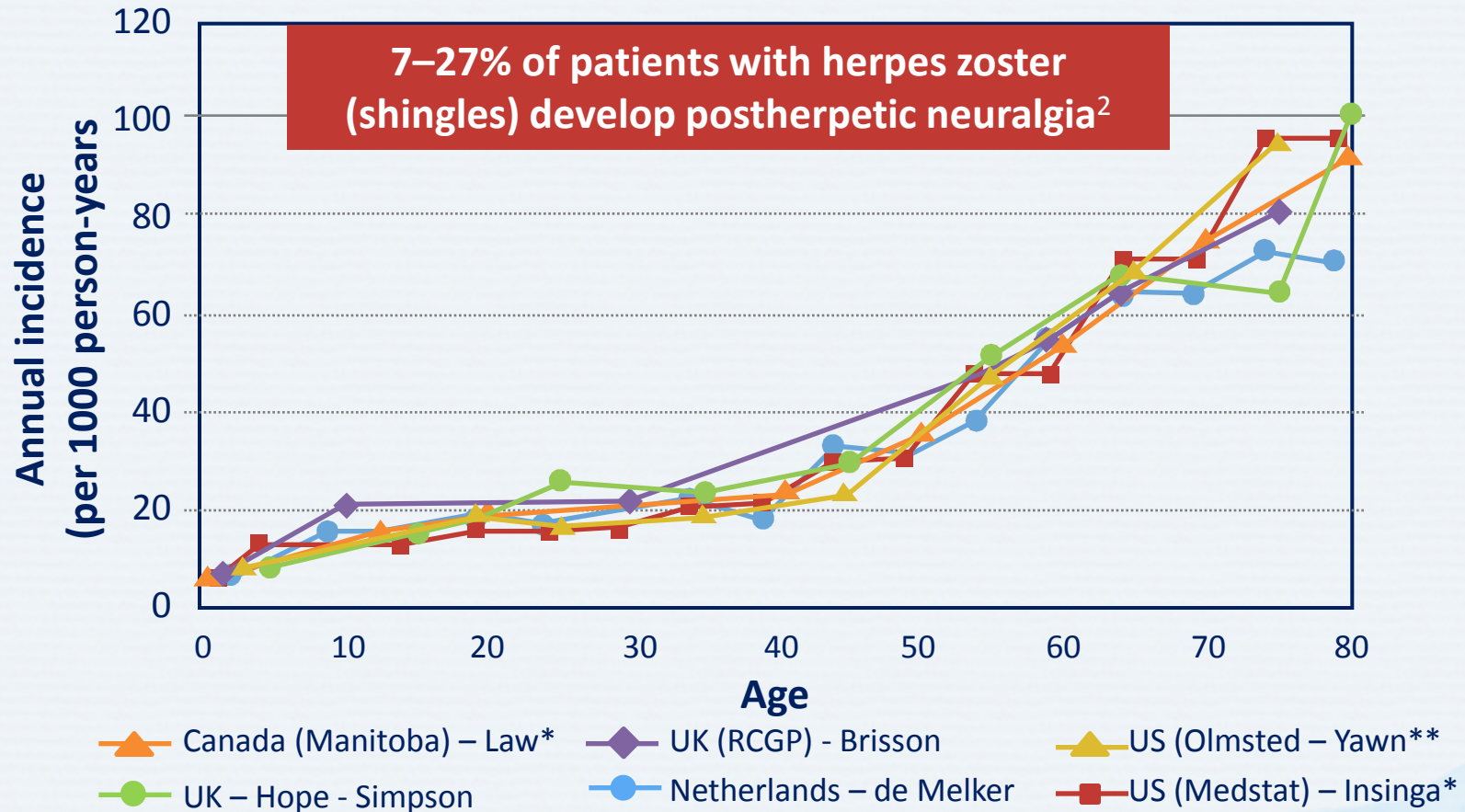


Annual incidence of herpes zoster, annual incidence of postherpetic neuralgia, and percentage of patients with herpes zoster who developed postherpetic neuralgia in Harvard Vanguard Medical Associates, 1996-2008.

Figure is adjusted for age and sex relative United States Census 2000.

Klompas M *et al.* *Mayo Clin Proc* 2011; 86(12):1146-53.

Incidence of Herpes Zoster Increases with Age¹

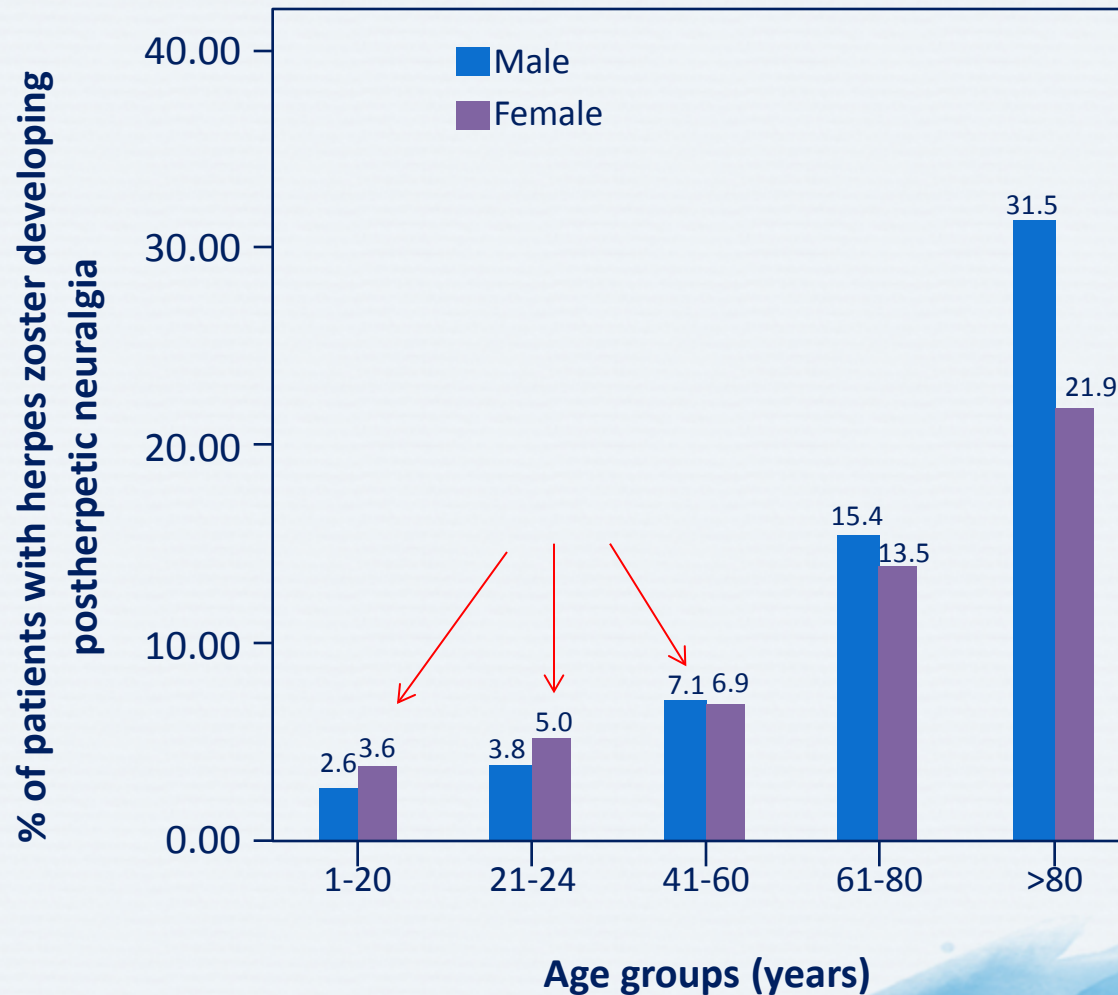


RCGP = Royal College of General Practitioners; UK = United Kingdom; US = United States

1. Johnson R et al. *Int J Infect Dis* 2007; 11(Suppl 2):S43-8;

2. Sadosky A et al. *Pain Pract* 2008; 8(1):45-56.

Age Is the Major Risk Factor for Developing Postherpetic Neuralgia



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

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

*Model adjusted for age and sex

AIDS = acquired immunodeficiency syndrome; CI = confidence interval;

HIV = human immunodeficiency virus; RR = relative risk

Jih JS et al. *Acta Derm Venereol* 2009; 89(6):612-6.

Summary

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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