



Assessment and management of neuropathic pain in primary care

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Atlantic Provinces Inter-Professional Pain Conference

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Conflicts of Interest

- I am Chief Investigator on a study of neuropathic pain epidemiology, funded by an unrestricted educational grant from Pfizer UK Ltd
- I am co-investigator on a study of neuropathic pain epidemiology in Canada, funded by an unrestricted educational grant from Pfizer Ltd
- No other current conflicts of interest



Objectives of this workshop

This workshop will discuss:

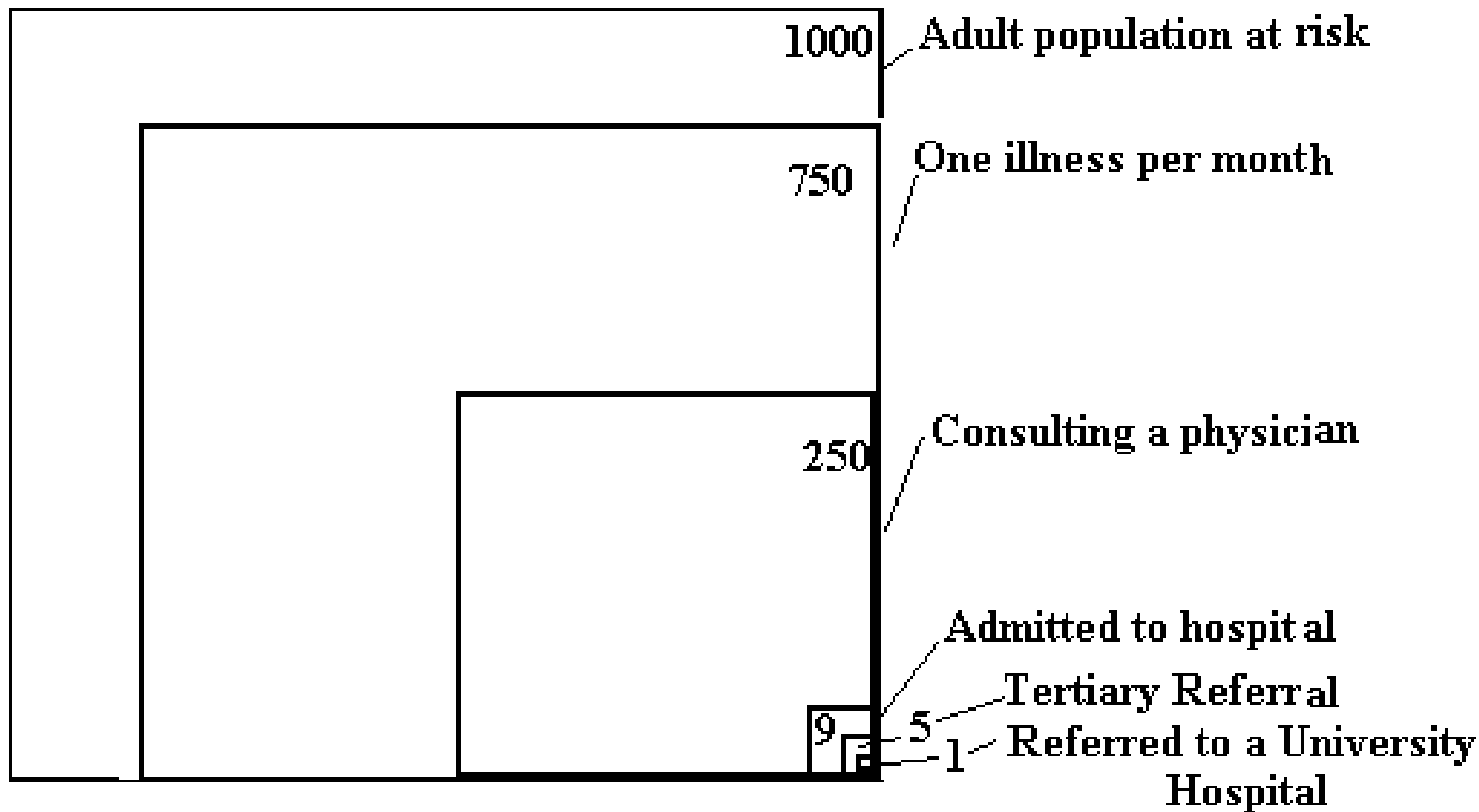
1. The nature and function of primary care
2. The workload and impact of neuropathic pain in primary care
3. Approaches to assessing neuropathic pain in primary care
4. Approaches to managing neuropathic pain in primary care



Some statistics

- 90% of NHS contacts are with primary care DH, 2011
- On average, each individual consults general practice 5.5 times per year Hippisley-Cox 2009
- In UK, 4.6million GP appointments/year for chronic pain, costing £69M (\equiv 793 full-time GPs) Belsey 2002
- Chronic pain prevalence 20% to 46% Breivik et al 2006; Elliott et al 1999
- Between 0.5% and 2% of them attend specialist pain clinic each year Breivik et al 2006
- In Canada, 0.15% of the population attends a multidisciplinary Pain Treatment Centre Peng et al 2007
- No statistics on appropriateness of referral

Illness and attendance







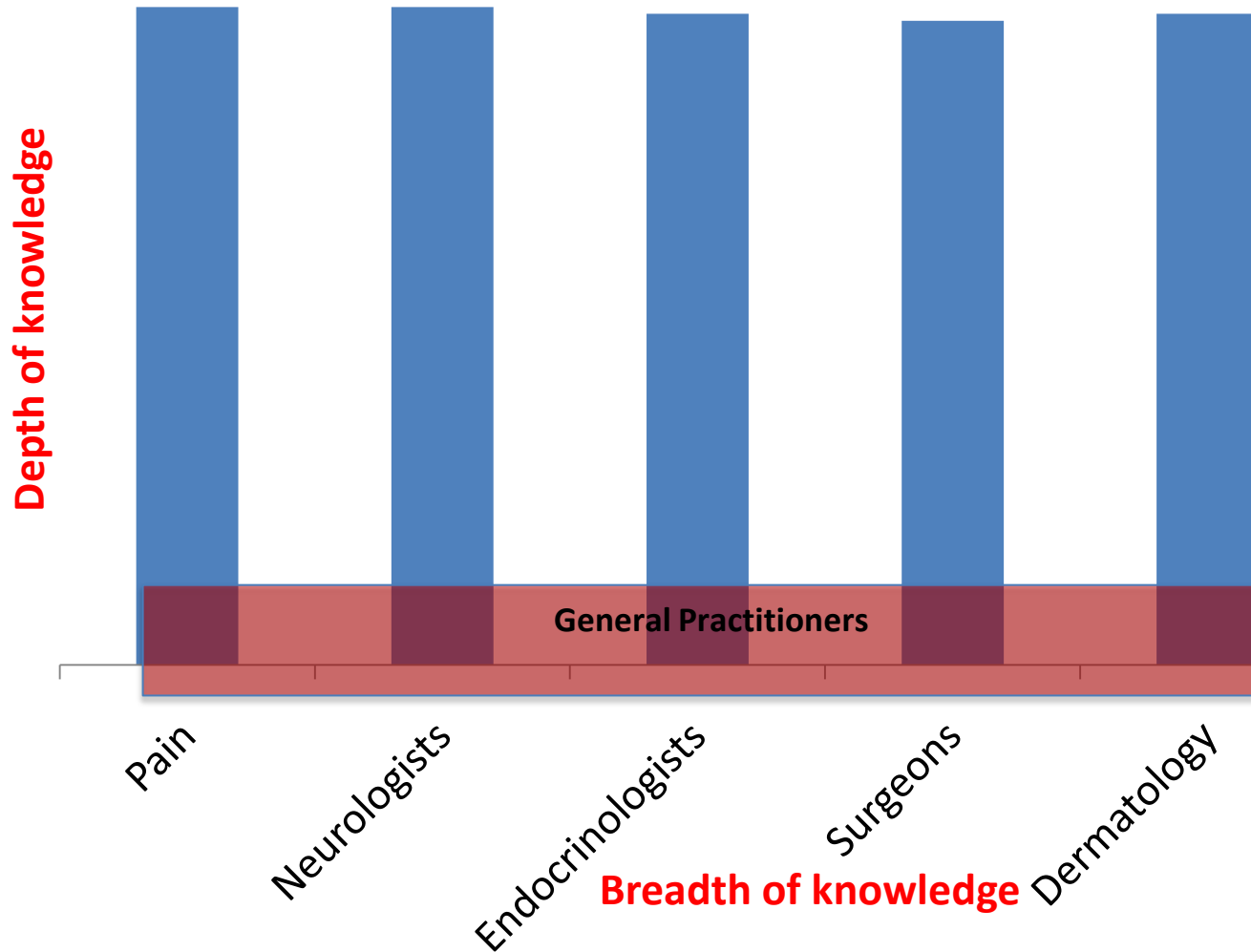
WHO: Primary health care

The ultimate goal of primary health care is better health for all, with five key elements:

- reducing exclusion and social disparities in health (universal coverage reforms);
- organizing health services around people's needs and expectations (service delivery reforms);
- integrating health into all sectors (public policy reforms);
- pursuing collaborative models of policy dialogue (leadership reforms); and
- increasing stakeholder participation.



GPs and Specialists



Chronic Pain: A Primary Care Condition

rheumatic disease: **In Practice**



No. 9, September 2002

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- Presentation
- Assessment
- Management
- Rehabilitation
- Follow-up
- Managing associated co-morbidity



Structure and function of primary care

- Varies between country

Consultations:

- Presenting problem
 1. **Assessment** – including differential diagnosis
 2. **Management** – drug and non-drug
 3. **Referral** – primary, secondary, tertiary care
- Other problems, prevention & health promotion
- 5-10 minute consultation



10-minute consultation

Pendleton, 1984

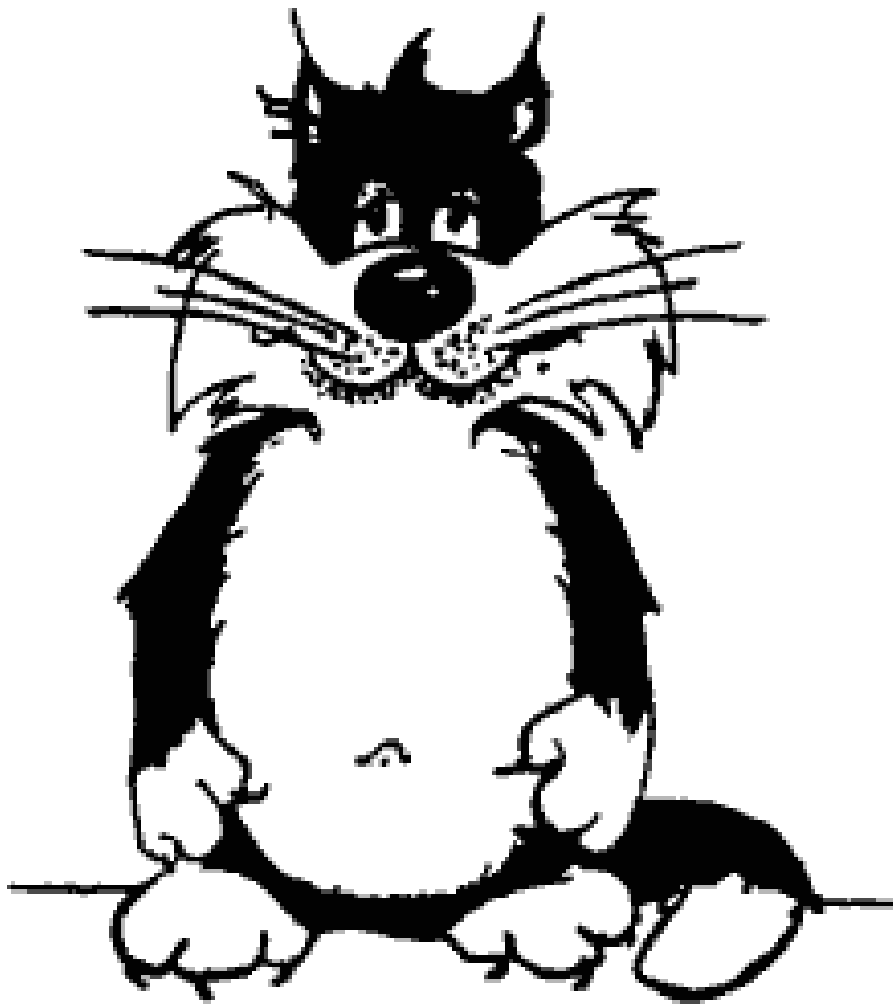
- 1 - To define the reasons for the patient's attendance including:
 - the nature and history of the problem
 - their cause
 - the patient's ideas, concerns and expectations
 - the effects of the problem
- 2 - To consider other problems:
 - continuing problems
 - at-risk factors
- 3 - To choose with the patient an appropriate action for each problem.
- 4 - To achieve a shared understanding of the problems with the patient.
- 5 - To involve the patient in the management plan and encourage him/her to accept appropriate responsibility.
- 6 - To use time and resources appropriately
- 7 - To establish or maintain a relationship with the patient which helps to achieve the other tasks.

10-minute consultation

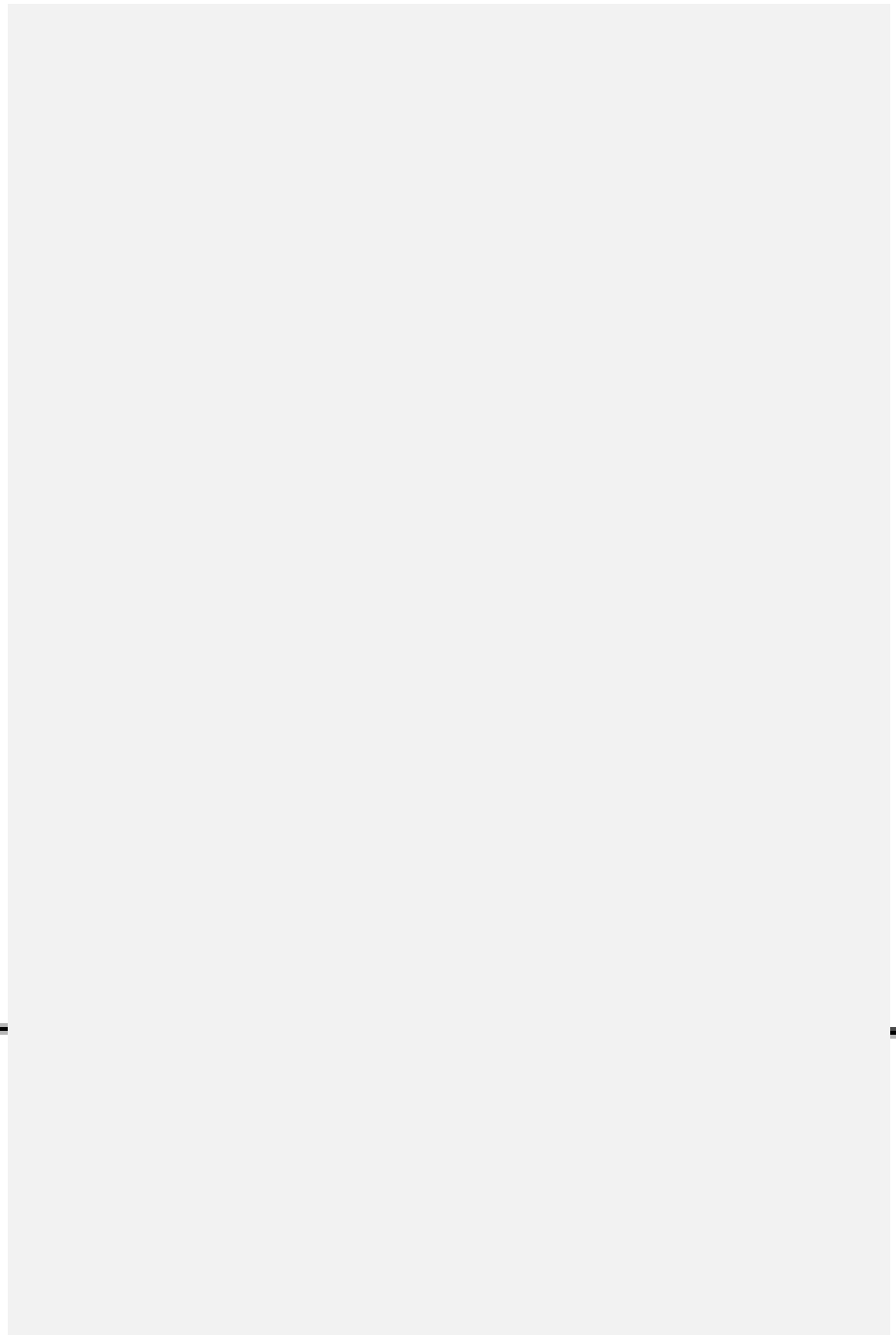
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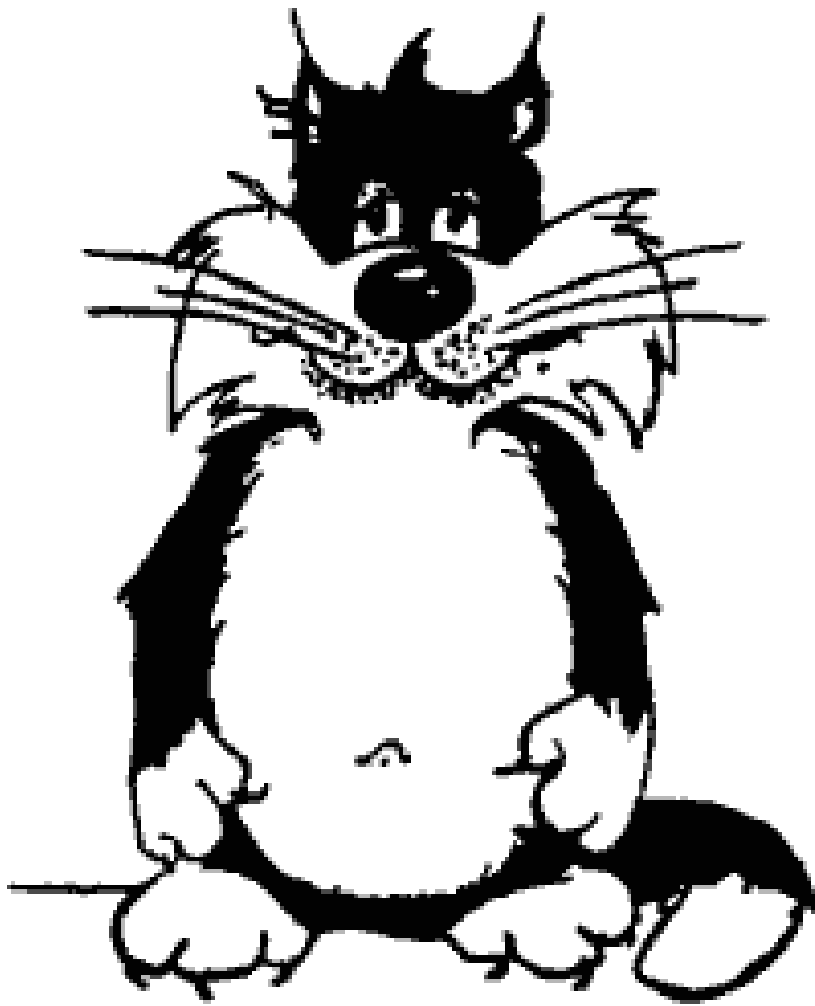
- Wait for the patient to come in from the waiting room
- Opportunistic health promotion
- Score QOF points
- Enter (increasingly complex) data to computerised medical records
- Fix the printer, which jammed when printing prescription
- Discuss last night's football/hockey
 - (don't mention rugby)
- Etc....



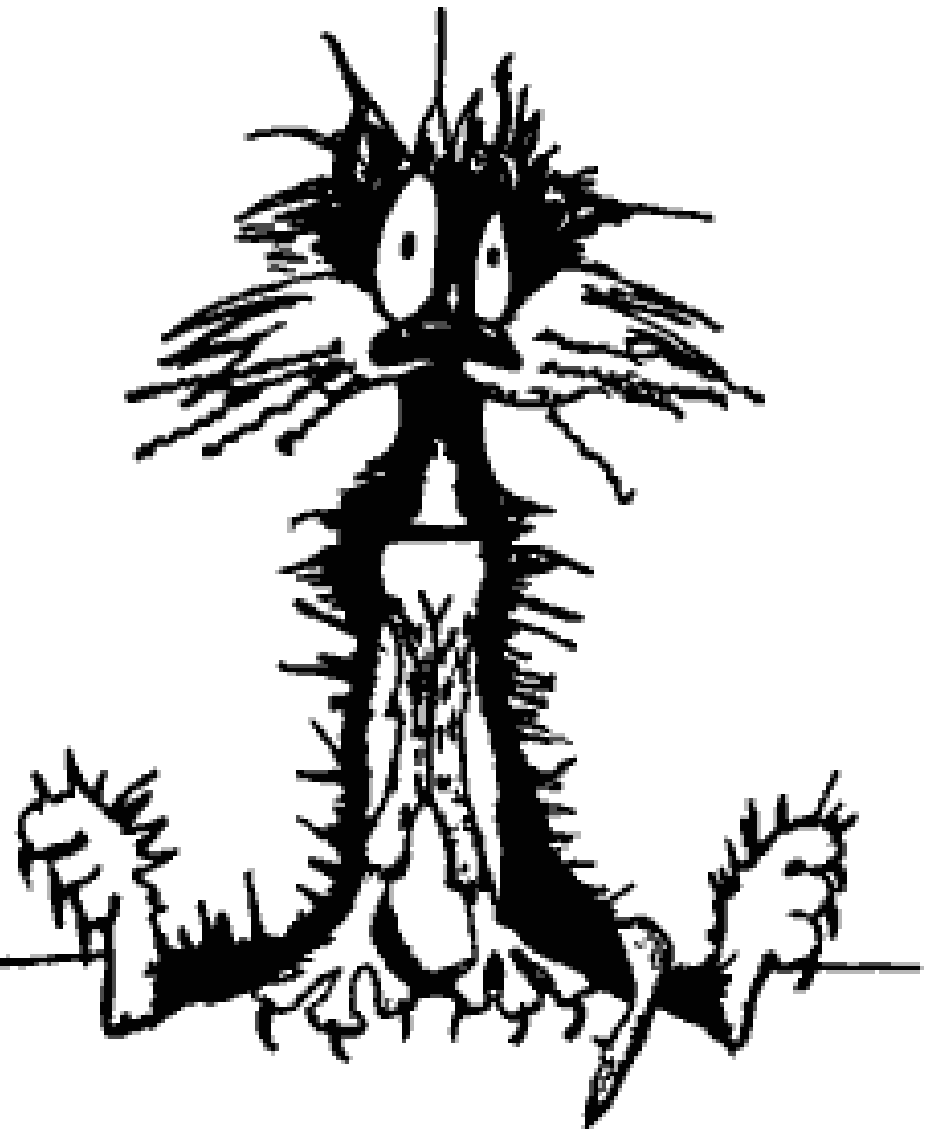


Before Work





Before Work



After Work



Neuropathic pain

- Nociceptive pain typically results from damage to tissues
- Neuropathic pain arises as a direct consequence of a lesion or disease affecting the somatosensory system
www.iasp-pain.org, Treede *et al* 2008, Jensen *et al* 2011
 - “Possible”
 - “Probable”
 - “Definite”
- Mixed pain: “pain can be more or less neuropathic”
Bennett *et al* 2006

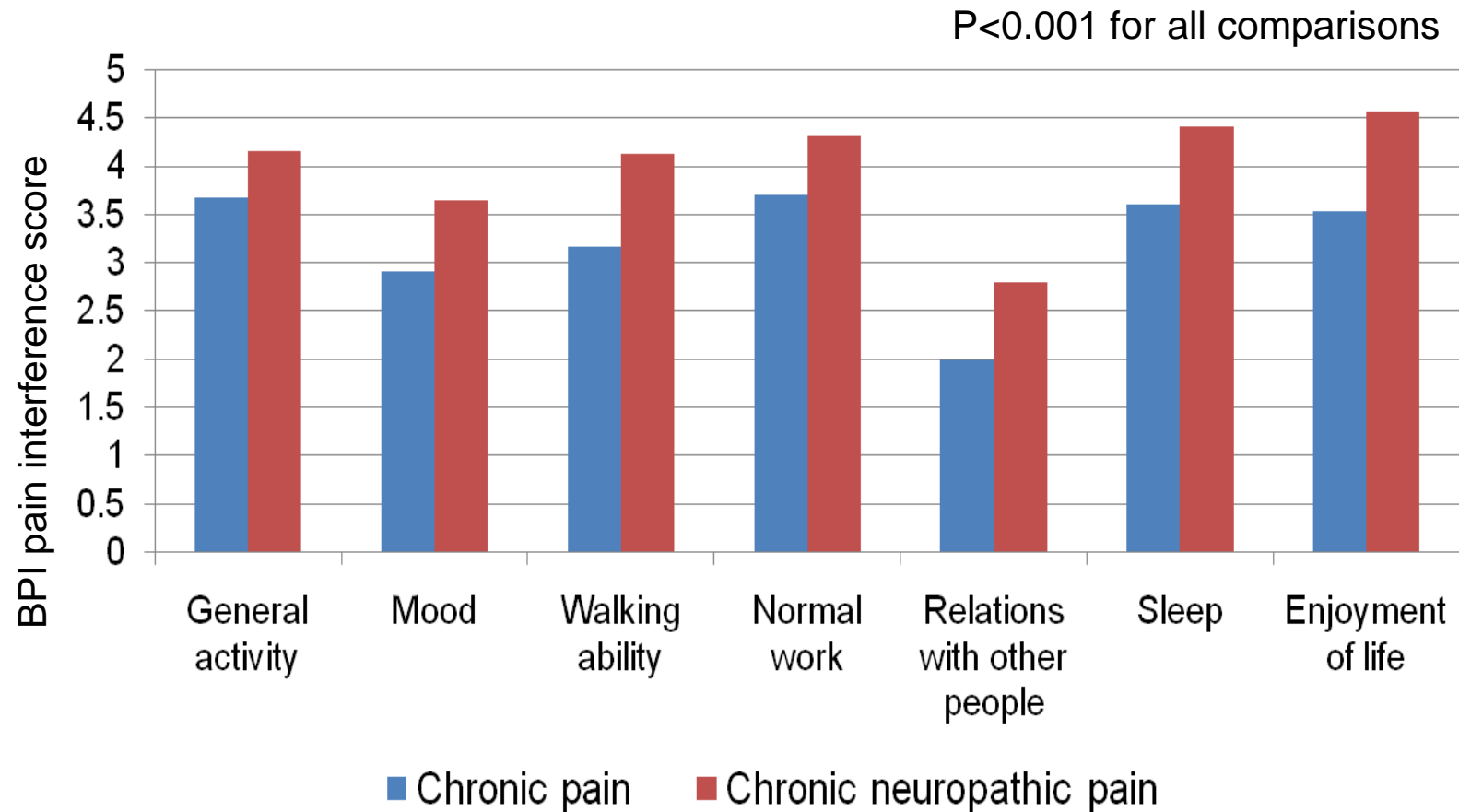
What is the prevalence /
workload of neuropathic pain in
primary care?



Prevalence and workload

- **Neuropathic pain**
 - 1-2% of people have a neuropathic pain condition (USA, UK) Bowsher 1991; Bennett 1997
 - 7-8% of people have pain with neuropathic features Torrance *et al* 2006; Bouhassira *et al* 2008
- **Lumbar radiculopathy**
 - 40% of adults experience back pain each year; 40% of them attend their GP DH 1998
 - 37% of those presenting low back pain to primary care have neuropathic features Freynhagen 2006
- **Postherpetic neuralgia**
 - Lifetime prevalence of shingles ~25% NFID 2007
 - 8% of HZV develop PHN Choo 1997
- **Diabetic peripheral neuropathic pain**
 - Worldwide prevalence of DM 2.8% (2000), rising to 4.4% (2030) Wild *et al* 2004
 - 11-26% of those with DM have PDN Sadosky *et al* 2008
- **HIV neuropathy**
 - >33 million people worldwide with HIV WHO 2007
 - Around 35% will develop painful peripheral neuropathy Sadosky 2008

Neuropathic pain is associated with severe reductions in health and quality of life





General Practitioners need:

1. An appreciation of the importance of presence and causes of neuropathic pain and co-morbidities, its impact on function and quality of life, and its multi-dimensional assessment and management.
2. Access to an evidence-based range of effective management strategies in primary care.
3. Practical, evidence-based consensus on referral guidelines from primary care to specialist clinics, and on follow-up after clinic attendance.

These don't exist





These don't exist

- Minimal education on chronic pain in undergraduate or postgraduate GP training
- Most existing evidence is based in secondary care
 - Different patient groups
 - Different resources available
 - Some evidence does exist
- No widely-agreed evidence-based referral guidelines
 - Though some good consensus-based and local examples
 - Newer condition-specific guidelines
 - Others in process - SIGN

Neuropathic pain as a single entity?

- **Common features among all causes**
 - Mechanisms, symptoms, signs
 - HRQoL impact more dependent on intensity than cause (Doth *et al* 2010)
- **Common response to treatments**
 - Sindrup and Jensen, 1999; Hansson and Dickenson, 2005
- **Not always possible to distinguish diagnosis**
 - Especially in primary care, also in epidemiology
- **Specific treatments available for NeuP**
 - Therefore important to identify and target unclassified and mixed cases, as well as classical syndromes
 - Daniel *et al* (2008) – different treatment needs from PMP for NeuP than for CLBP



Structure and function of primary care

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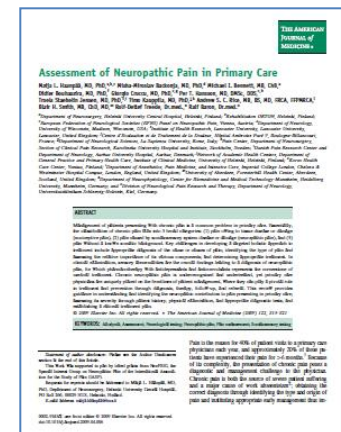
Is this neuropathic pain? - assessment



Assessment of Neuropathic Pain in Primary Care

Maija L. Haanpää, MD, PhD,^{a,b,c} Misha-Miroslav Backonja, MD, PhD,^d Michael I. Bennett, MB, ChB,^e Didier Bouhassira, MD, PhD,^f Giorgio Cruccu, MD, PhD,^{c,g} Per T. Hansson, MD, DMSc, DDS,^{c,h} Troels Staehelin Jensen, MD, PhD,^{c,i} Timo Kauppila, MD, PhD,^{j,k} Andrew S. C. Rice, MB, BS, MD, FRCA, FFPMRCA,^l Blair H. Smith, MB, ChD, MD,^m Rolf-Detlef Treede, Dr.med.,ⁿ Ralf Baron, Dr.med.^o

- *The American Journal of Medicine (2009) 122, S13–S21*





Diagnosing neuropathic pain Treede et al, 2008

“Pain arising as a direct consequence of diseases affecting the somatosensory system”

1. Pain with a distinct neuroanatomically plausible distribution
2. A history of a relevant lesion or disease affecting the peripheral or central somatosensory system
3. Demonstration of the distinct neuroanatomically plausible distribution by at least one confirmatory test
4. Demonstration of the relevant lesion or disease by at least one confirmatory test

- **Definite** neuropathic pain: all (1 to 4)
- **Probable** neuropathic pain: 1 and 2 plus either 3 or 4
- **Possible** neuropathic pain: 1 and 2 without confirmatory evidence from 3 or 4

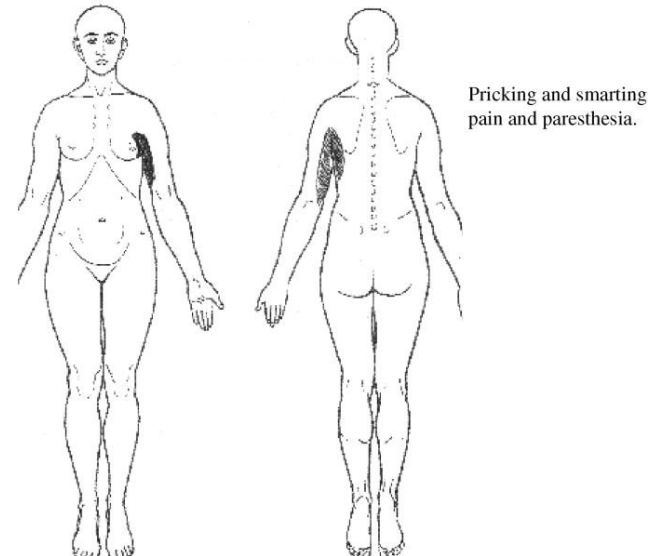
How detailed should assessment be in primary care?

- **History**

- Pain drawings
- Questionnaires

- **Examination**

- General
- QST



- **How do these affect the management decisions?**

Key points Haanpää *et al* 2009

- **History**
 - Characteristic symptoms, location, intensity, relevant co-morbidities
- **Screening tools**
 - Eg S-LANSS, DN4, Pain-DETECT
 - Useful, but not a substitute for clinical judgement
- **Clinical examination**
 - Sensory abnormality
 - Neuro-anatomically logical
- **Referral**
 - If assessment inconclusive, or cause not evident

Thermorollers

- Should GPs store their thermoroller at 20⁰C or 24⁰ C?
- What is a thermoroller?
- “A metal object cooled with tap water”



Clinical tools to help identify neuropathic pain

- Leeds Assessment of Neuropathic Symptoms and Signs (LANSS)
- Neuropathic Pain Questionnaire (NPQ)
- Douleur Neuropathique en 4 questions (DN4)
- painDETECT
- ID-Pain
- *Clinical examination remains the basis of neuropathic pain diagnosis* Haanpää et al 2009
- ? “Possible” neuropathic pain Treede et al 2008

Date: Patient: Last name: First name:

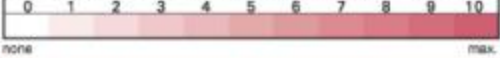
How would you assess your pain **now**, at this moment?



How strong was the **strongest** pain during the past 4 weeks?



How strong was the pain during the past 4 weeks **on average**?



Mark the picture that best describes the course of your pain:

- Persistent pain with slight fluctuations
- Persistent pain with pain attacks
- Pain attacks without pain between them
- Pain attacks with pain between them

Please mark your **main area of pain**

Does your pain radiate to other regions of your body? yes no

If yes, please draw the direction in which the pain radiates.

Do you suffer from a burning sensation (e.g., stinging nettles) in the marked areas?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Do you have a tingling or prickling sensation in the area of your pain (like crawling ants or electrical tingling)?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Is light touching (clothing, a blanket) in this area painful?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Do you have sudden pain attacks in the area of your pain, like electric shocks?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Is cold or heat (bath water) in this area occasionally painful?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Do you suffer from a sensation of numbness in the areas that you marked?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>
Does slight pressure in this area, e.g., with a finger, trigger pain?	never <input type="checkbox"/>	hardly noticed <input type="checkbox"/>	slightly <input type="checkbox"/>	moderately <input type="checkbox"/>	strongly <input type="checkbox"/>	very strongly <input type="checkbox"/>

(To be filled out by the physician)

never	hardly noticed	slightly	moderately	strongly	very strongly
<input type="checkbox"/> x 0 = 0	<input type="checkbox"/> x 1 = <input type="text"/>	<input type="checkbox"/> x 2 = <input type="text"/>	<input type="checkbox"/> x 3 = <input type="text"/>	<input type="checkbox"/> x 4 = <input type="text"/>	<input type="checkbox"/> x 5 = <input type="text"/>
Total score <input type="text"/> out of 35					

Date: Patient: Last name: First name:

Please transfer the total score from the pain questionnaire:

Total score

Please add up the following numbers, depending on the marked pain behavior pattern and the pain radiation. Then total up the final score:

- Persistent pain with slight fluctuations **0**
- Persistent pain with pain attacks **-1** if marked, or
- Pain attacks without pain between them **+1** if marked, or
- Pain attacks with pain between them **+1** if marked
- Radiating pain? **+2** if yes

Final score

Screening Result

Final score

negative	unclear	positive
----------	---------	----------

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38

A neuropathic pain component is unlikely (< 15%)	Result is ambiguous, however a neuropathic pain component can be present	A neuropathic pain component is likely (> 90%)
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This sheet does not replace medical diagnostics.
It is used for screening the presence of a neuropathic pain component.

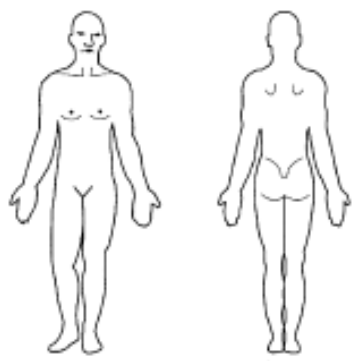


THE S-LANSS PAIN SCORE

Leeds Assessment of Neuropathic Symptoms and Signs (self-complete)

NAME _____ DATE _____

- This questionnaire can tell us about the type of pain that you may be experiencing. This can help in deciding how best to treat it.
- Please draw on the diagram below where you feel your pain. If you have pain in more than one area, **only shade in the one main area where your worst pain is.**



- On the scale below, please indicate how bad your pain (that you have shown on the above diagram) has been in the last week where:
'0' means no pain and '10' means pain as severe as it could be.

NONE 0 1 2 3 4 5 6 7 8 9 10 SEVERE PAIN

-
- On the other side of the page are 7 questions about your pain (the one in the diagram).
 - Think about how your pain that you showed in the diagram has felt **over the last week**. Please circle the descriptions that best match your pain. These descriptions may, or may not, match your pain no matter how severe it feels.
 - Only circle the responses that describe your pain. **Please turn over.**

Appendix 3

DN4 Neuropathic Pain Diagnostic Questionnaire

Please complete this questionnaire by ticking one answer for each item in the four questions below:

A "YES" score of ≥ 4 is diagnostic of Neuropathic Pain.

Patient Name:	_____
Gender:	_____
DOB:	_____
Date:	_____
Time:	_____

Interview of the patient

Question 1	Does the pain have one or more of the following characteristics? 1. Burning <input type="checkbox"/> Yes <input type="checkbox"/> No 2. Painful cold <input type="checkbox"/> Yes <input type="checkbox"/> No 3. Electric shocks <input type="checkbox"/> Yes <input type="checkbox"/> No
Question 2	Is the pain associated with one or more of the following symptoms in the same area? 4. Tingling <input type="checkbox"/> Yes <input type="checkbox"/> No 5. Pins and needles <input type="checkbox"/> Yes <input type="checkbox"/> No 6. Numbness <input type="checkbox"/> Yes <input type="checkbox"/> No 7. Itching <input type="checkbox"/> Yes <input type="checkbox"/> No

Examination of the patient

Question 3	Is the pain located in an area where the physical examination may reveal one or more of the following characteristics? 8. Hypoesthesia to touch <input type="checkbox"/> Yes <input type="checkbox"/> No 9. Hypoesthesia to prick <input type="checkbox"/> Yes <input type="checkbox"/> No
Question 4	In the painful area, can the pain be caused or increased by: 10. Brushing <input type="checkbox"/> Yes <input type="checkbox"/> No

Patient Score: /10

Source: Gaulisotto D et al. Comparison of pain syndromes associated with nervous or somatic lesions and development of a new neuropathic pain diagnostic questionnaire (DN4). *Pain* 2005;114: 29-36



The available neuropathic screening pain tools use similar language¹

	LANSS	DN4	NPQ	painDETECT	ID Pain
Symptoms					
Prickling, tingling, pins and needles	•	•	•	•	•
Electric shocks or shooting	•	•	•	•	•
Hot or burning	•	•	•	•	•
Numbness		•	•	•	•
Pain evoked by light touching	•		•	•	•
Painful cold or freezing pain		•	•		
Pain evoked by mild pressure				•	
Pain evoked by heat or cold				•	
Pain evoked by changes in weather			•		
Pain limited to joints					o
Itching		•			
Temporal patterns				•	
Radiation of pain				•	
Autonomic changes	•				
Clinical examination					
Brush allodynia	•	•			
Raised soft touch threshold		•			
Raised pin prick threshold	•	•			

Management and referral options for chronic pain in primary care

- Drugs
- Investigation and diagnosis
- Education
- Supporting self-management
- Physiotherapy
- Occupational therapy
- Counselling
- Treating co-morbidity (eg depression, diabetes)
- Social support
- Consultant referral

Rehabilitation



Outcomes of management

- Reduced pain intensity
- Improved quality of life
- Return to work
- Rehabilitation
- Acceptance
- Patient-determined

“The goals of treatment thus change from the identification and repair of the cause of the pain to improving function and decreasing suffering.” Sullivan, 1991

Multi-disciplinary team

Includes some or all of, but is not necessarily restricted to:

- General practitioner
- Practice nurse, District nurse, Health visitor
- Pain specialist
- Nurse specialist
- Psychologist
- Practice staff
- Physiotherapist
- Occupational therapist
- Pharmacist
- Counsellor
- Social worker
- Complementary therapists





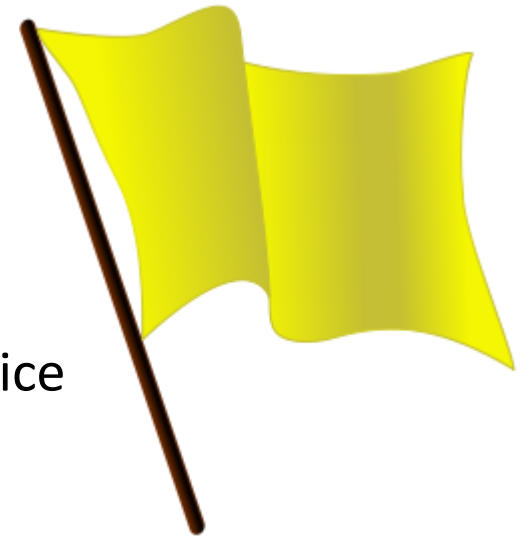
"I'M THE ONE WITH THE MEDICAL DEGREE, I'LL DETERMINE IF YOUR BACK IS BOTHERING YOU, OR NOT..."

Patient-centred approaches

“Yellow flags” – barriers to improvement

Kendall et al 1997 (back pain)

- Belief that pain and activity are harmful
- ‘Sickness behaviours’ (like extended rest)
- Low or negative mood, social withdrawal
- Treatment expectations that do not fit best practice
- Problems with claim and compensation
- History of back pain, time-off, other claims
- Problems at work, poor job satisfaction
- Heavy work, unsociable hours (shift work)
- Overprotective family or lack of support



Detectable (and modifiable) in primary care

Opportunities for prevention?

Known risk markers for **chronic pain** include:

- **Demographic**

- Female gender, older, lower social class, less education, employment status, occupational factors, ?smoking

- **Psychosocial**

- Anxiety, depression, somatization, consulting behaviour, coping style

- **Clinical**

- Pain (acute or chronic), history of other functional somatic symptoms (personal or family), poor general health, high BMI

- **Mechanical**

- Manual handling technique

But trials in primary care generally disappointing



Opportunities for prevention?

Factors associated with all **neuropathic pain** include:

- Female gender
- Older age
- Occupational factors
 - manual workers
 - being unable to work
- Indicators of deprivation
 - Social class (housing tenure)
 - Educational attainment
- Poor general health

Cross-sectional studies, so cause/effect not known.



Specific risk factors

- **PDN**

- Risk factors for DM
- Smoking; high HbA_{1C}; duration of DM; other metabolic syndrome components; female gender Tesfaye 2005; Jensen 2006

- **PHN**

- Older age; female gender; immunocompromise; painful prodrome; greater acute pain; more severe rash Jung 2004

- **Post-surgical pain**

- Surgery!
- Surgical technique/nerve damage; peri-operative pain; female gender; psychosocial factors Kehlet 2006

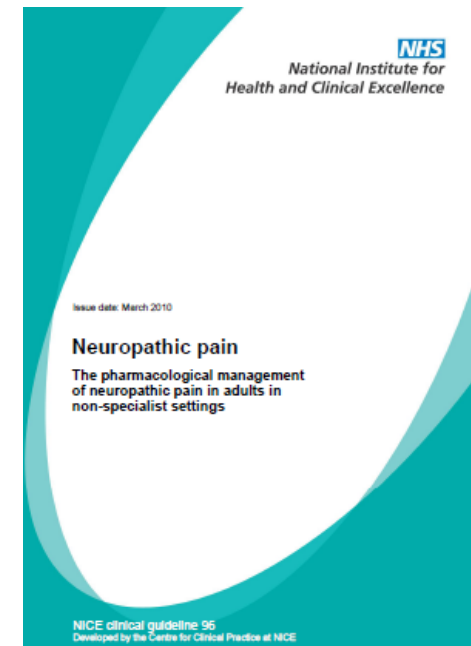
Consider these in planning prevention

Drugs in the **management** of neuropathic pain

- **NICE Guidelines**

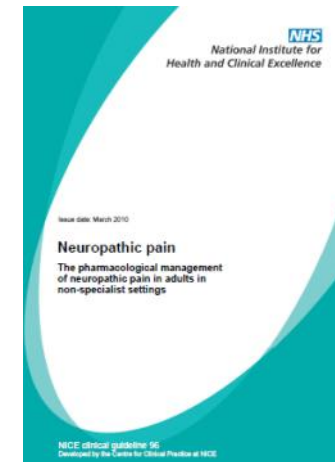
“The pharmacological management of neuropathic pain in adults in non-specialised settings”

- March 2010
- Revision underway
- UK (England & Wales)
- Aimed at primary care



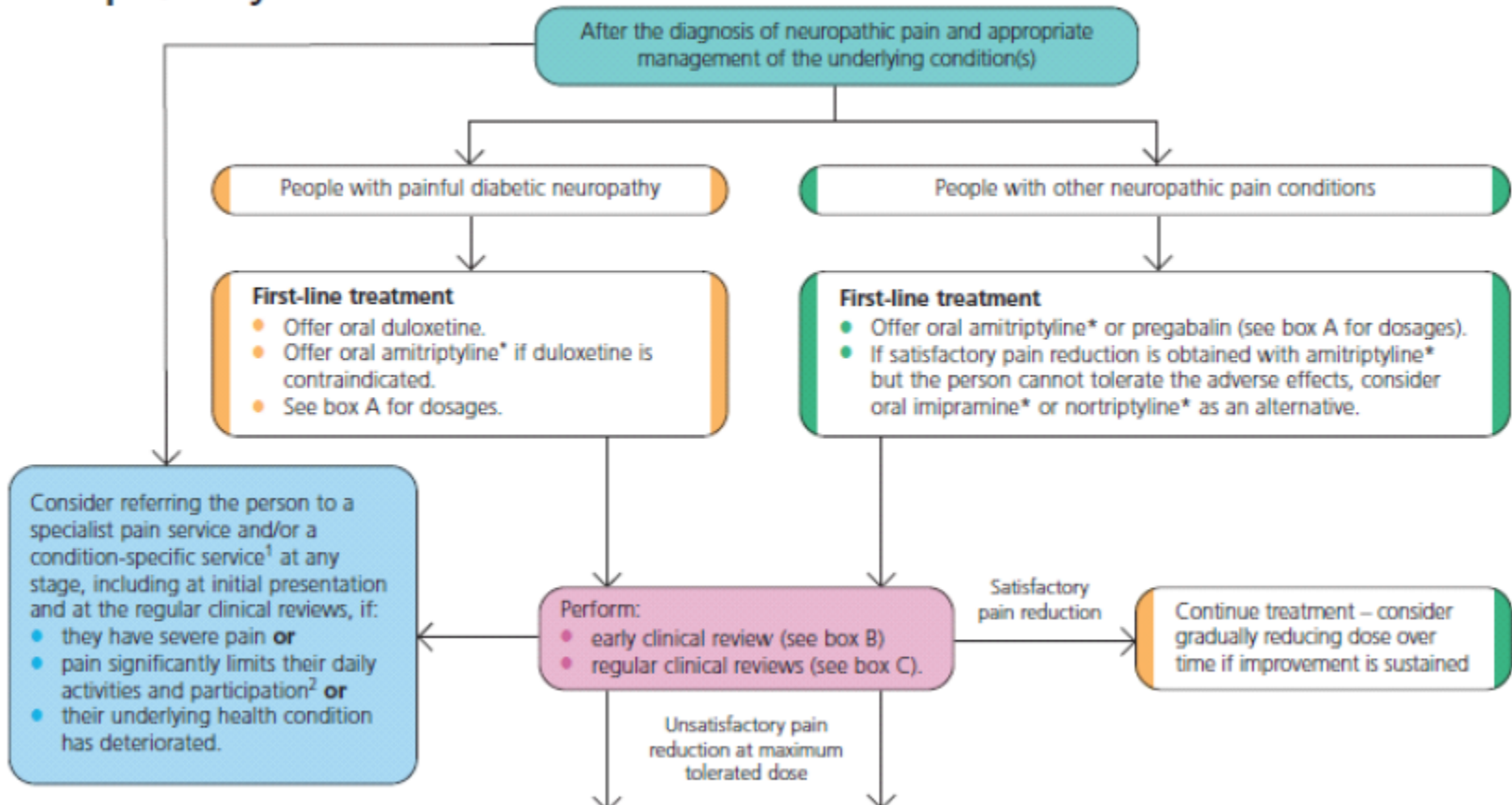
Key points NICE, 2010

- **1st line**
 - Duloxetine (if DM); otherwise **TCA** or **pregabalin**
- **2nd line**
 - Add or switch to another of these
- **3rd line**
 - Tramadol and/or lidocaine, and refer
- Early referral if severe
- Early and regular review
- Other drugs (inc opioids) only in collaboration with specialist
- **2011 revision out for consultation**

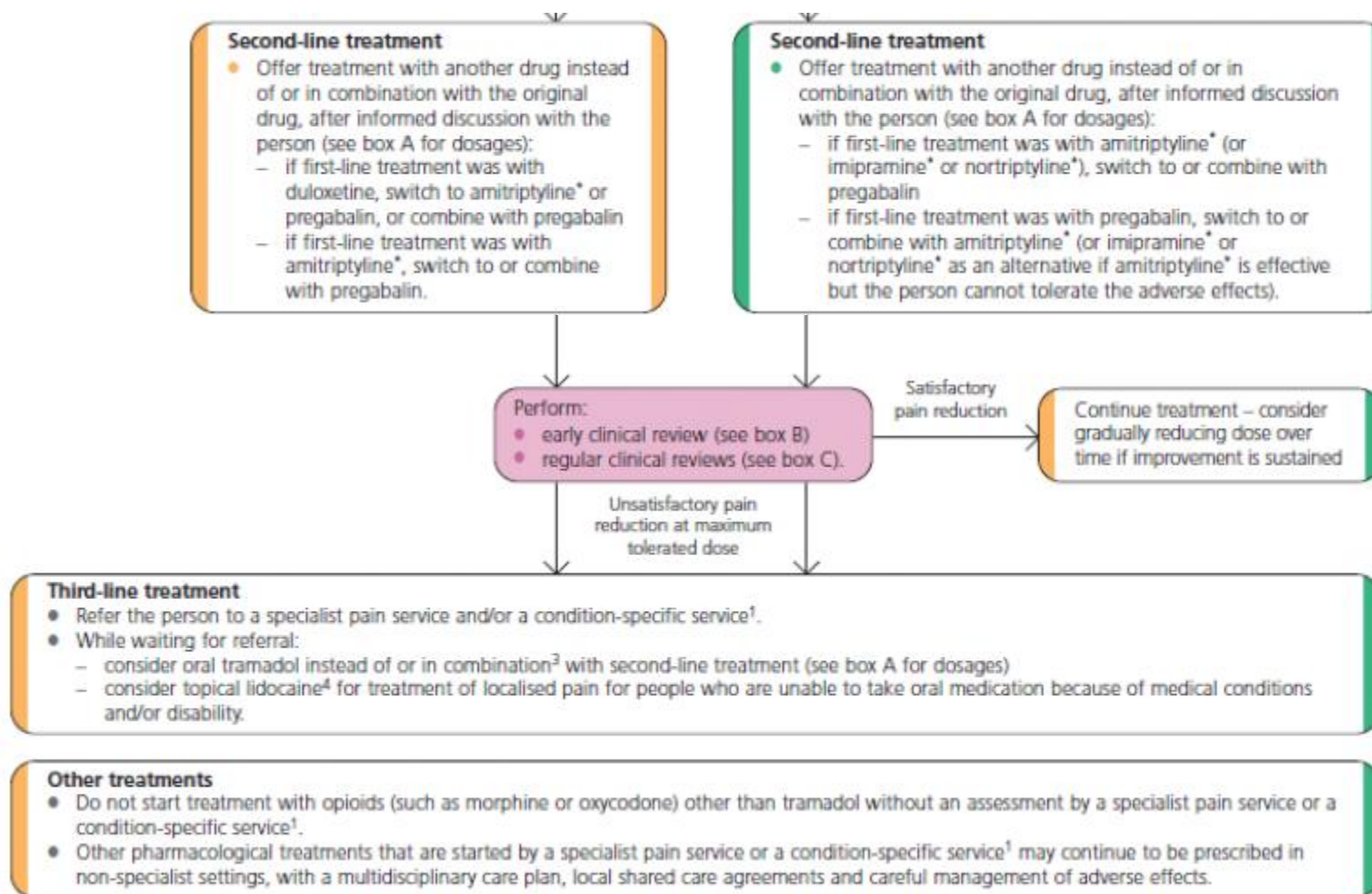


NICE-recommended care pathway

Care pathway



NICE-recommended care pathway

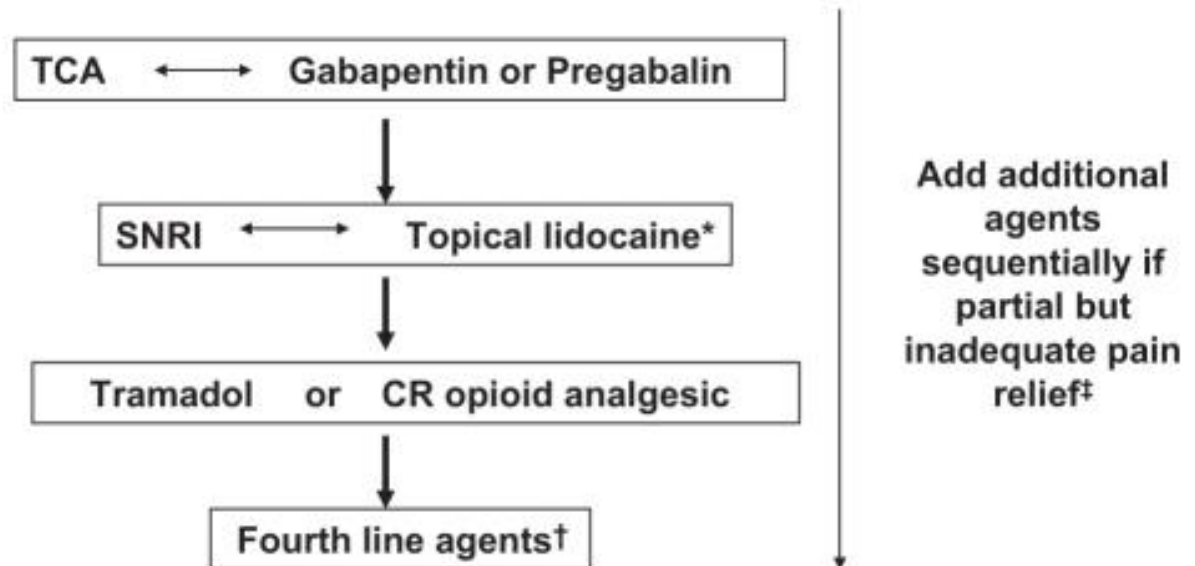


Canadian Guidelines

Pharmacological management of chronic neuropathic pain - consensus statement and guidelines from the Canadian Pain Society.

[Moulin DE](#), [Clark AJ](#), [Gilron I](#), [Ware MA](#), [Watson CP](#), [Sessle BJ](#), [Coderre T](#), [Morley-Forster PK](#), [Stinson J](#), [Boulanger A](#), [Peng P](#), [Finley GA](#), [Taenzer P](#), [Squire P](#), [Dion D](#), [Cholkan A](#), [Gilani A](#), [Gordon A](#), [Henry J](#), [Jovey R](#), [Lynch M](#), [Mailis-Gagnon A](#), [Panju A](#), [Rollman GB](#), [Velly A](#); [Canadian Pain Society](#).

[Pain Res Manag.](#) 2007 Spring;12(1):13-21.





Discussion

For neuropathic pain:

- Can we improve diagnosis and **assessment** in primary care?
- Can we improve **management** in primary care?
- When should we **refer** from primary to secondary care?
- What do we need from our specialist colleagues?
- What do they need from us?
- What do primary and secondary care need to know about each other?





Case studies 1

52 y/o man with lower extremity pain, “sharp and needle-like”, worse on standing and with any touch, including fabric. Pain present for ~6/12, not relieved by paracetamol or ibuprofen. Diagnosed with diabetes 6 years ago; at that time his HbA_{1c} was 12.3%; excellent glycaemic control since – latest HbA_{1c} 6.2%. Other history includes CHD, Stage II diabetic nephropathy, morbid obesity, atrial fibrillation.



Case studies 2

78 y/o woman with lower extremity pain keeping her awake, “deep and aching”, lasts 6/52. Had been on amitriptyline for depression until then, but this was stopped because of falls; now on SSRI. Diagnosed with diabetes ~18 years ago at time of CABG – good glycaemic control since then ($\text{HbA}_{1\text{C}} < 7\%$ for last 4 years). Other history includes vascular dementia, CHD, hypertension, dyslipidaemia.

Thank you for coming to this Workshop



"GO AWAY, GET A LIFE, THEN COME BACK "

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