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Call to Action : Changing the Paradigm of Peripheral Neuropathy

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23rd April-2024



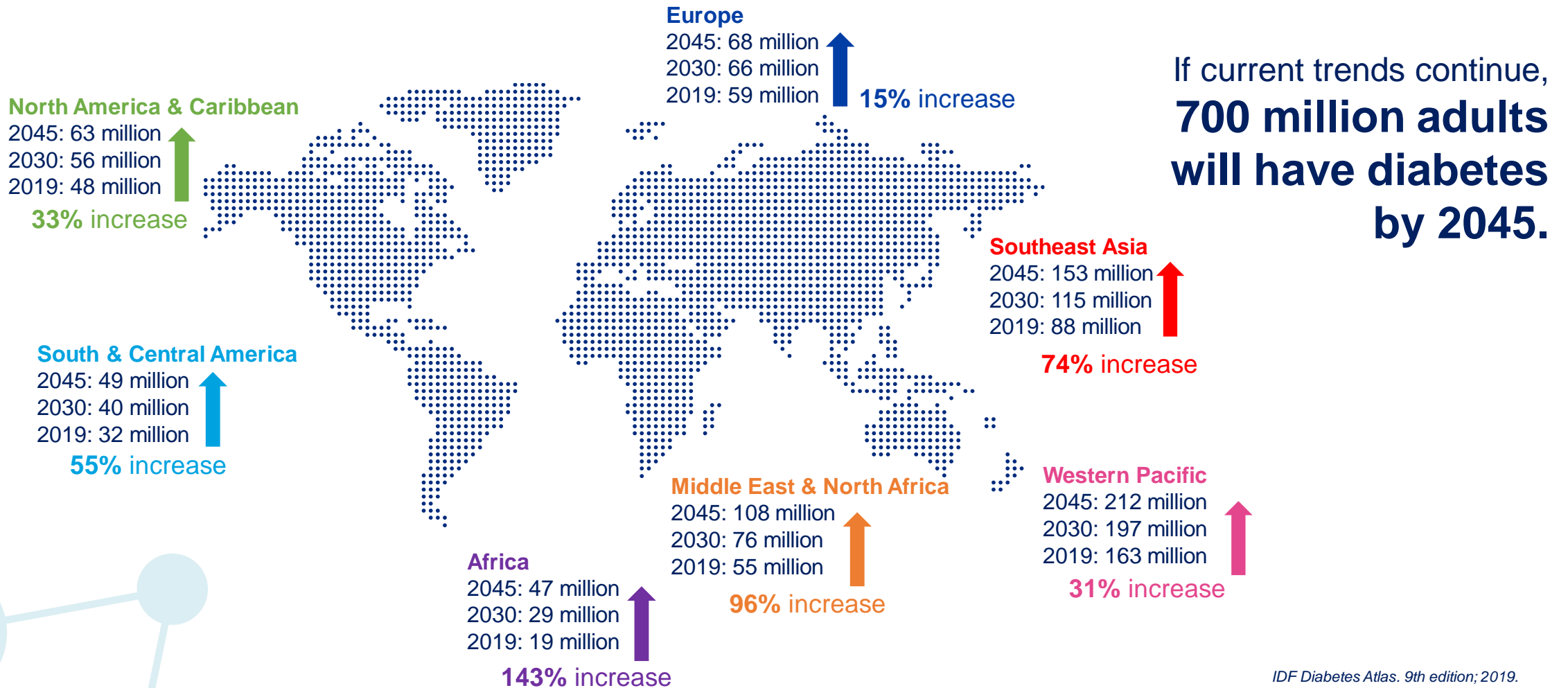
Disclosures

The views expressed in this presentation are my own and do not reflect the official position or policy of the Dubai Academic Health Corporation.



Diabetes is a global pandemic

Diabetes is a **widespread disease on the rise**. The number of diabetic patients has been rising steadily for decades and continues to rise in future.

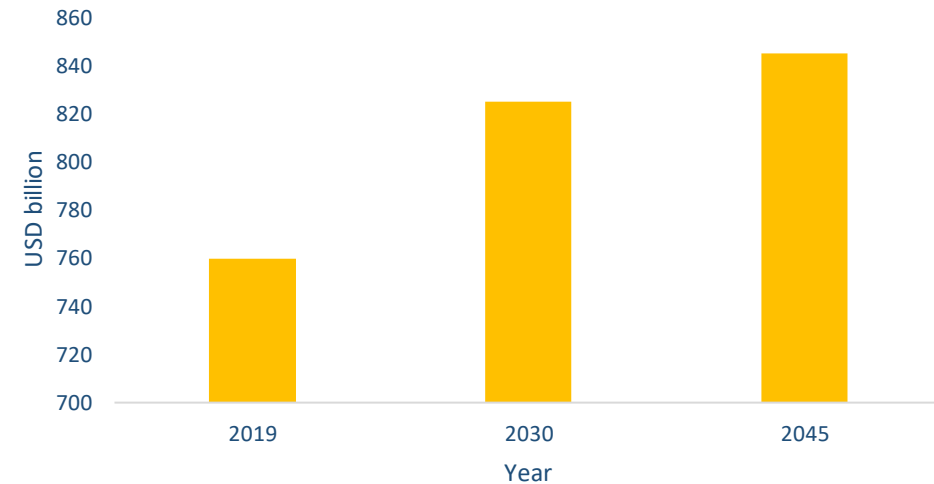


The economic burden of diabetes is immense

Did you know that diabetes has a substantial economic impact on countries and national health systems?



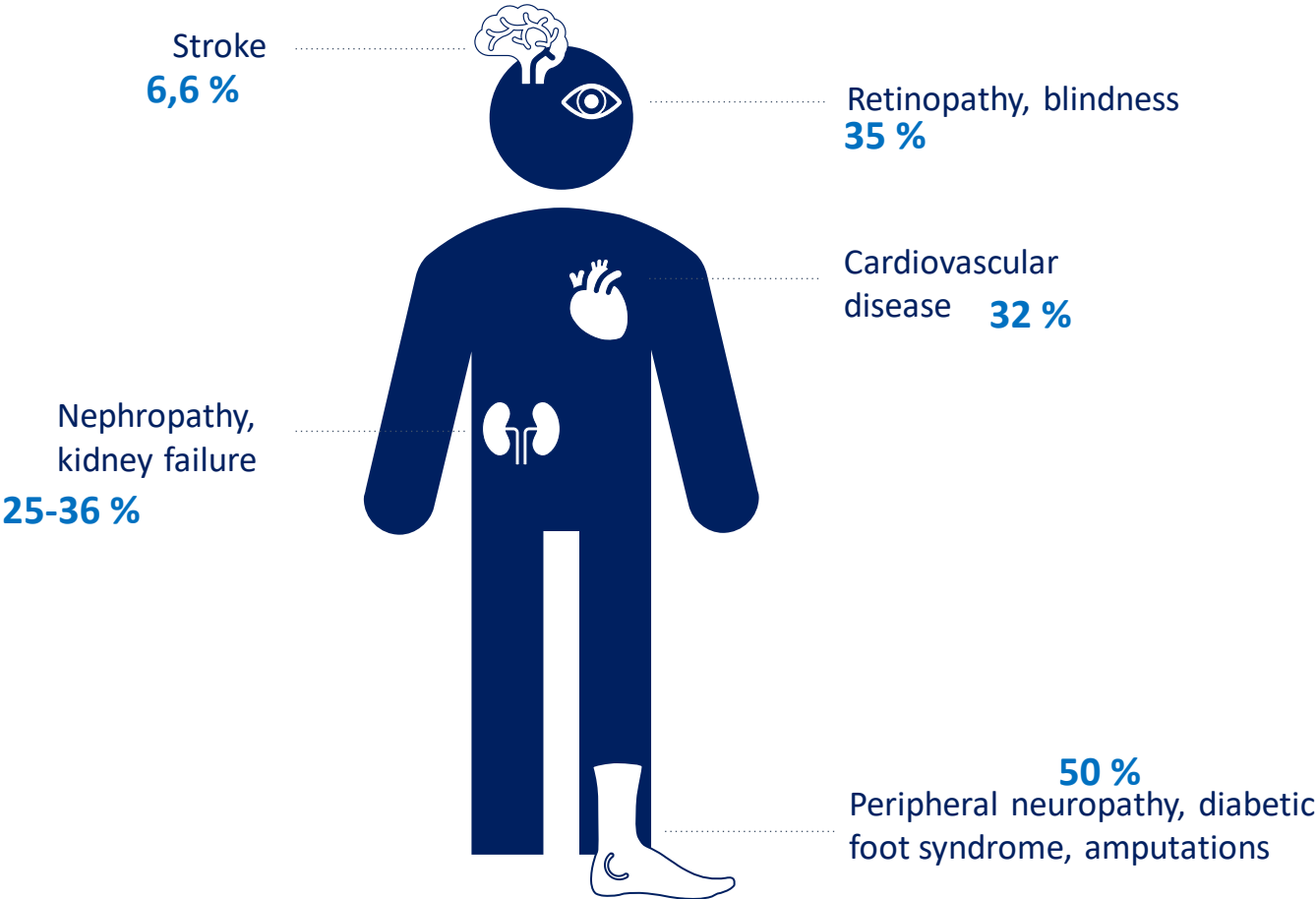
Total diabetes-related health expenditure for adults (20- 79 years) with diabetes in 2019, 2030 and 2045



10% of the global health expenditure is spend on diabetes (2019: USD 760 billion), and numbers are estimated to rise over the next years.

Diabetes can have severe complications

If left untreated, diabetes can cause damage to many of the body's organs and have a strong impact on the health and quality of life of the patient.



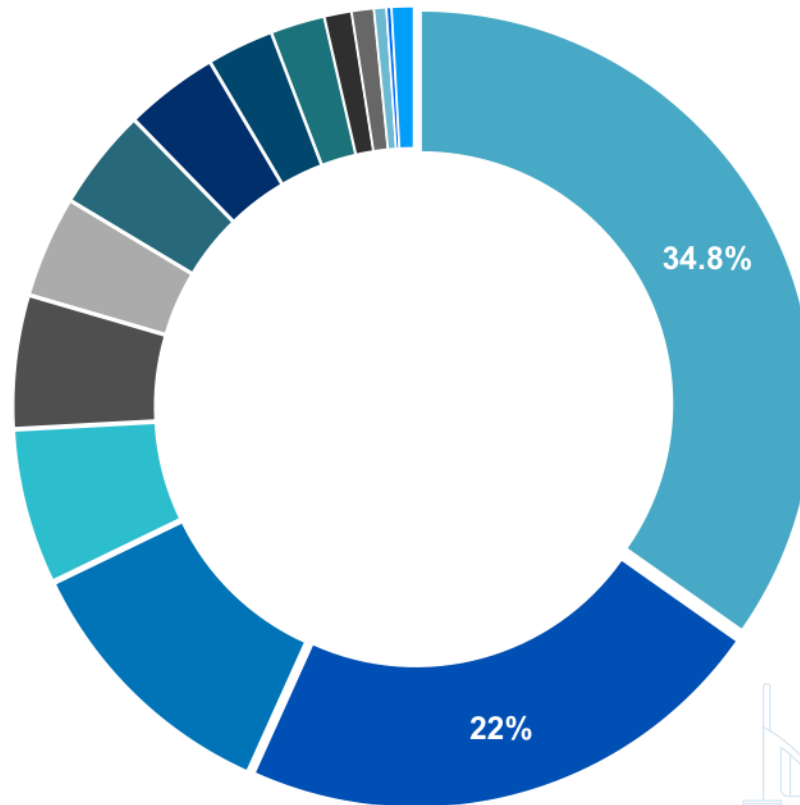
Risk factors for diabetes-related complications include smoking, overweight and obesity, physical inactivity, high blood pressure and high cholesterol.

Early diagnosis, lifestyle changes, consistent treatment and patient compliance are key to avoid disabling and life-threatening complications.

*Approx. prevalence numbers for complications

Diabetes: #1 cause of peripheral nerve damage

Etiology of peripheral neuropathy/ polyneuropathy*



- diabetes mellitus (34.8%)
- unclear etiology (22.0%)
- alcohol (11.1%)
- Guillan-Barré-Syndrome (6.3%)
- infections (5.4%)
- vasculitis (4.1%)
- chronic inflammatory demyelinating polyneuropathy (4.1%)
- malabsorption (3.8%)
- paraneoplastic (2.7%)
- hereditary polyneuropathies (2.2%)
- paraproteinemia (1.1%)
- toxins (excl. alcohol) (0.9%)
- amyloidosis (0.5%)

Landmann G. Ars Medici. 2013;1: 18–21.

*Polyneuropathy = peripheral neuropathy affecting multiple nerves, this is the most common form. Mononeuropathy also exists, affecting only one nerve.



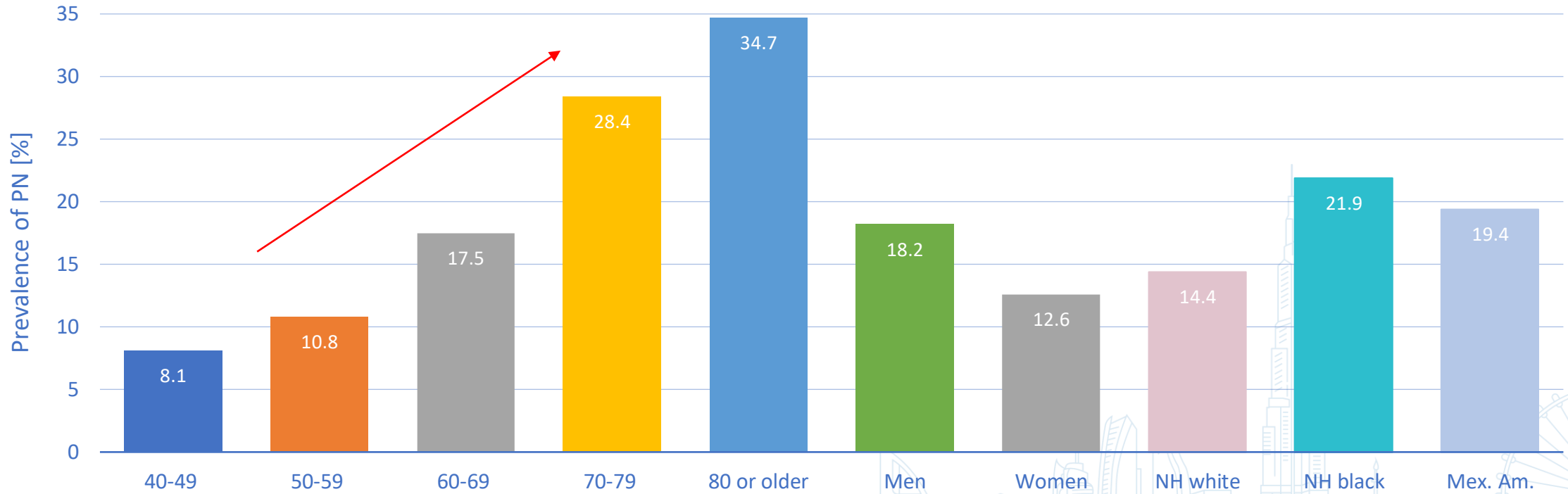
Prevalence of Lower-Extremity Disease in the U.S. Adult Population ≥40 Years of Age With and Without Diabetes

1999–2000 National Health and Nutrition Examination Survey

N=2873, 419 with DM

14.8% with PN

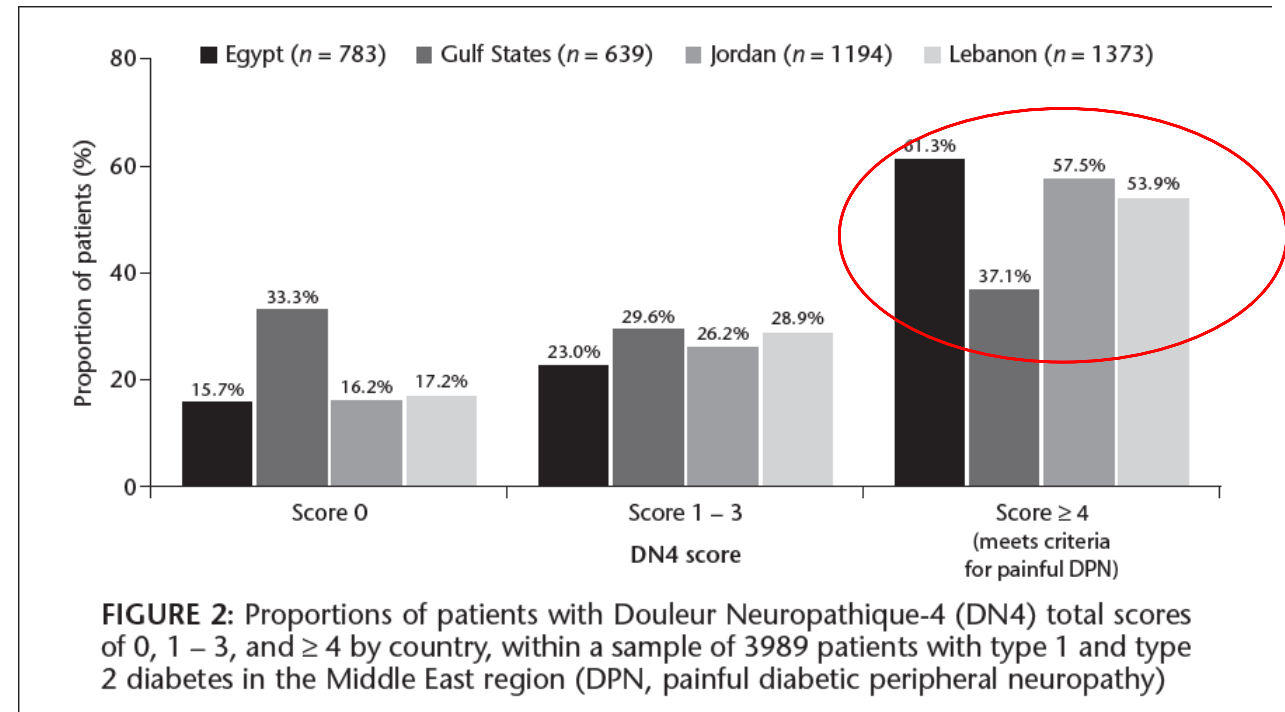
Prevalence increases with age



Age is given in years. NH = non Hispanic. Mex. Am. = Mexican American.

Prevalence of Painful Diabetic Peripheral Neuropathy among Patients with Diabetes Mellitus in the Middle East Region

S JAMBART¹, Z AMMACHE², F HADDAD³, A YOUNES⁴, A HASSOUN⁵, K ABDALLA⁶,
C ABOU SELWAN⁷, N SUNNA⁷, D WAJSBROT⁷ AND E YOUSEIF⁷





- **53,7 %** diabetic patients met criteria for painful DPN (DN4 score >4)
- Highest incidence: **Egypt (61,3%)** followed by **Jordan (57,5%), Lebanon 53,9%)** and **Gulf States (37,1%)**
- Notably higher than that observed in studies conducted in **Europe and the USA**, which reported prevalence rates of **15 – 25%**.



**BMJ Open
Diabetes
Research
& Care**

Prevalence of peripheral neuropathy in pre-diabetes: a systematic review

Varo Kirthi ^{1,2}, Anugraha Perumbalath,³ Emily Brown,³ Sarah Nevitt,⁴ Ioannis N Petropoulos,⁵ Jamie Burgess,³ Rebecca Roylance,⁶ Daniel J Cuthbertson,³ Timothy L Jackson,^{1,2} Rayaz A Malik ^{5,7}, Uazman Alam^{3,8,9}

- Prevalence 2-77%
- Majority of study reported > 10%
- Higher prevalence among study evaluating small nerve fibre
- Pre-diabetes is a risk factor for chronic axonal polyneuropathy

BMJ Open Diab Res Care 2021;**9**:e002040.





The burden of peripheral neuropathy is high

PN is a chronic disease that affects patients in different dimensions

PN often **starts** with **barely noticeable symptoms** (e.g. mild numbness or tingling in fingers and toes), but symptoms can **change, get worse, or become more painful** in the course of the disease. In **advanced stages**, patients will experience **neuropathic pain** which will affect their lives significantly.

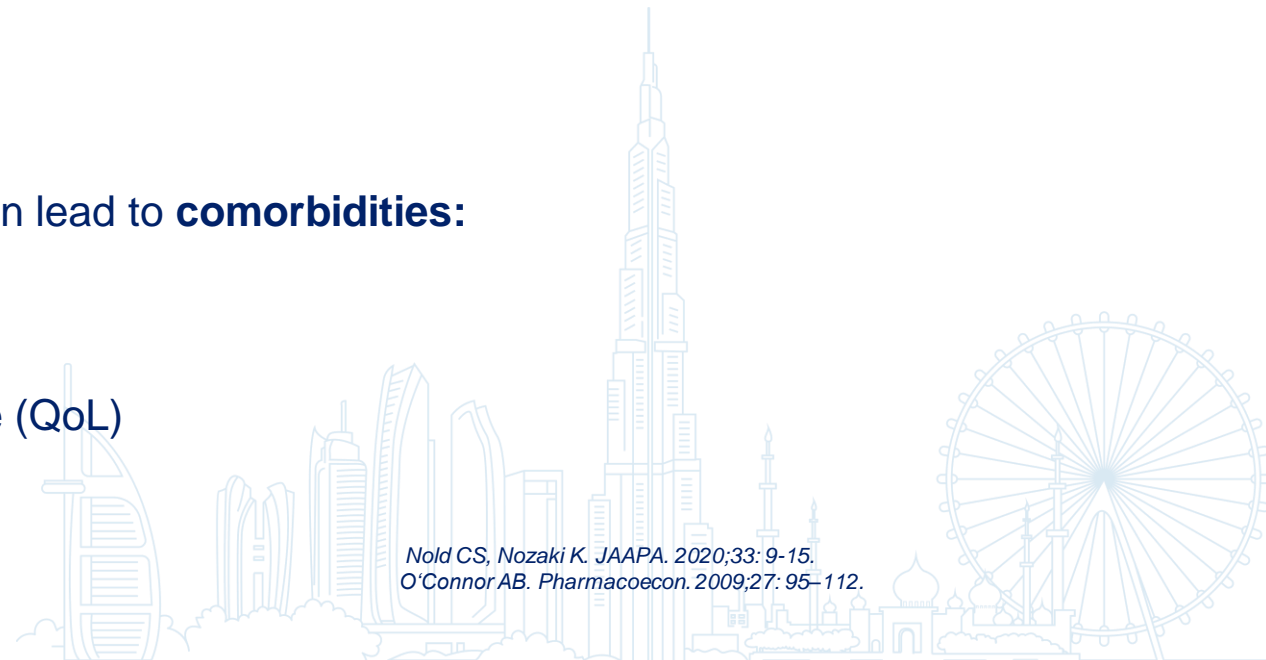


Peripheral neuropathy can have a **significant impact** on :

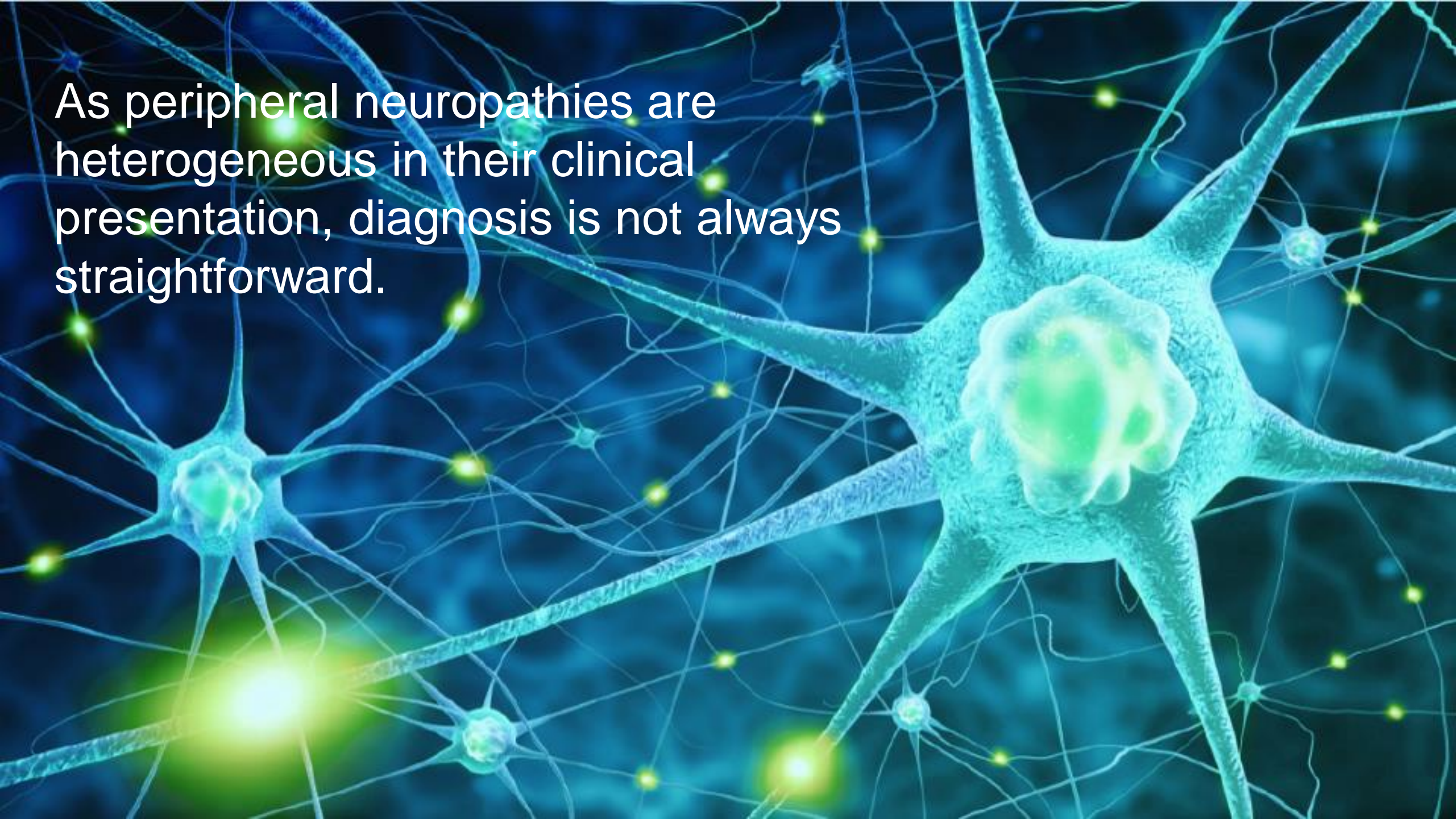
- patient's social life
- working life
- happiness
- overall well-being
- economic situation

Peripheral neuropathy can lead to **comorbidities**:

- depression
- sleep disorders
- anxiety
- influence quality of life (QoL)



As peripheral neuropathies are heterogeneous in their clinical presentation, diagnosis is not always straightforward.





The diagnosis of peripheral neuropathy is a challenge. Many patients remain undiagnosed and untreated.

People with peripheral neuropathy (PN) often remain undiagnosed for different reasons. Thus, the disease is considered a “silent disease”.

Without timely diagnosis and appropriate treatment, patients can develop neuropathic pain, which is very difficult to treat and significantly affects their quality of life.



Who is at risk of developing PN?

Patients can develop PN due to many different diseases and risk factors!

Many patients have multiple underlying causes leading to nerve damage



Diabetes



Obesity



Alcoholism



External injury, trauma (e.g. by surgery), ischemia, inflammation



Medication (e.g. chemotherapy)



Nutritional deficiencies (e.g. B vitamin deficiency)

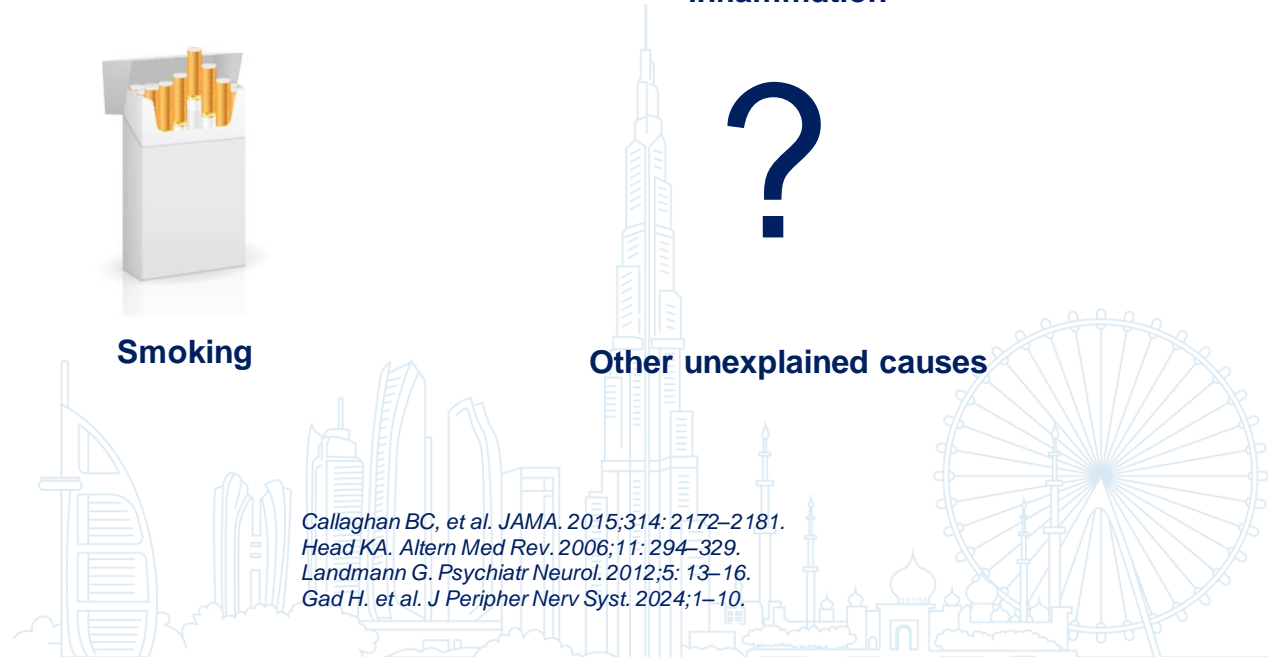


Smoking



Other unexplained causes

Callaghan BC, et al. *JAMA*. 2015;314: 2172–2181.
Head KA. *Altern Med Rev*. 2006;11: 294–329.
Landmann G. *Psychiatr Neurol*. 2012;5: 13–16.
Gad H, et al. *J Peripher Nerv Syst*. 2024;1–10.





Up to 80% of patients remain undiagnosed

All over the world, a large proportion of diabetics suffer from PN but remain undiagnosed

Recent studies from different countries confirm **need to increase awareness** and educate on diagnosis:¹⁻⁵

- Proportion of **undiagnosed patients** is similar across different countries
- Similar results in different regions and countries with higher or lower economic status

Sample size	% undiagnosed DPN	Country of study conduct	Reference
N=425	99,8%	Malaysia	Lee 2022
n = 242	98,82%	Saudi Arabia	Algeffari 2018
N=1095	80%	Qatar	Ponirakis 2019
N=1850	61.5% Painful and 81.1% painless DSPN	Germany	Ziegler 2018
N=1100	91%	Germany	Bongaerts 2013
N=816	79% PNS patients undiagnosed DPN	USA	Wang 2011

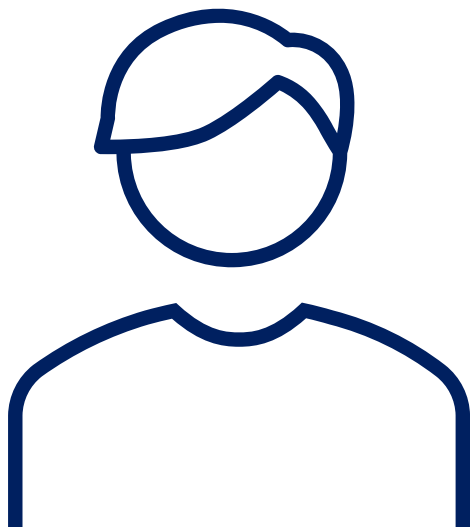
PN = peripheral neuropathy

Algeffari MA. *J Family Community Med.* 2018;25: 43-47; Ponirakis G, et al. *J Diabetes Investig.* 2019;10: 1558-1564.
 Ziegler D, et al. *Diabetes Res Clin Pract.* 2018;139: 147-154; Lee PY, et al. *Malays Fam Physician.* 2022;17: 36-43.
 Wang W, et al. *Diabetes Educ.* 2011;37: 536-548; Bongaerts B et al; *Diabetes Care* Vol 36, 1141-1146; 2013



Both patients and physicians face barriers

Diagnosis of peripheral neuropathy is a challenge for both patients and physicians



Due to different challenges experienced by both – patients and physicians - **up to 80% remain undiagnosed**

Patients suffer from symptoms for around 5 years before being diagnosed

Even patients with painful peripheral neuropathy often remain undiagnosed and untreated





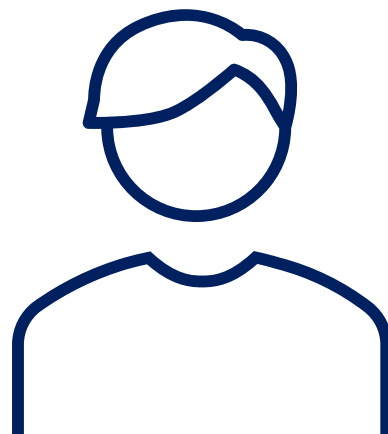
Patient barriers on the way to diagnosis

Overcoming these barriers is important for the patient to **get diagnosed as early as possible** and **receive treatment**. But here the struggle starts...

Lack of awareness on disease and risk factors

Don't notice or ignore mild symptoms

Accept symptoms or get used to them



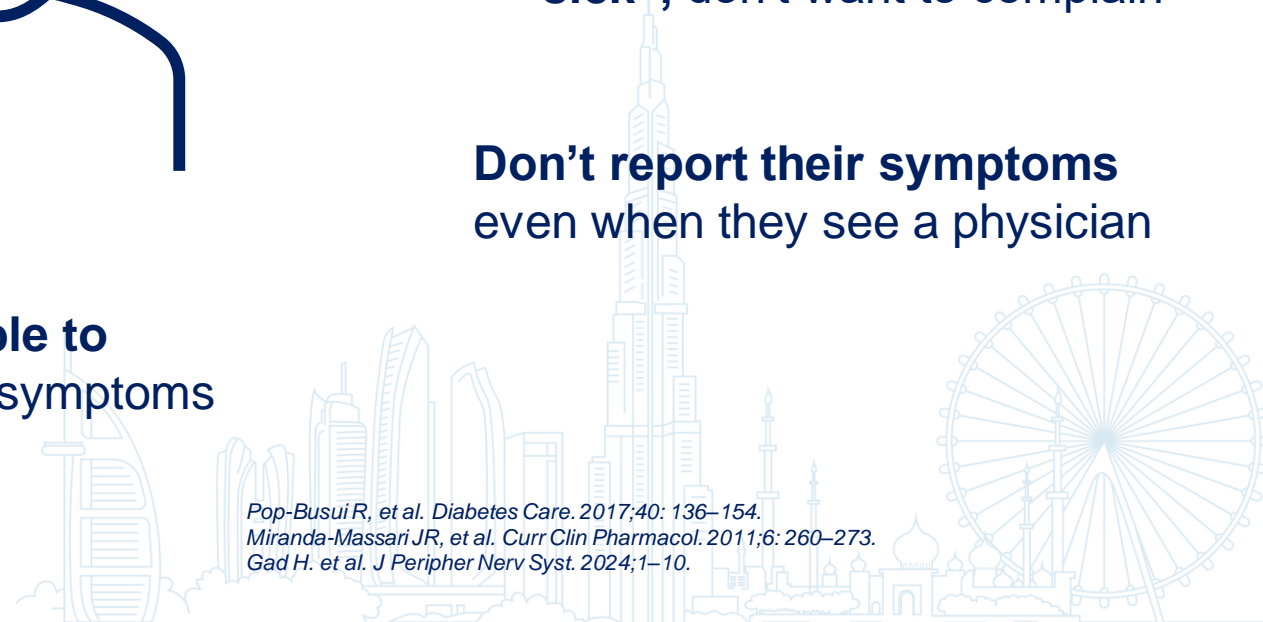
Think **symptoms are not serious**, just part of aging process

Don't want to be perceived as **“sick”**, don't want to complain

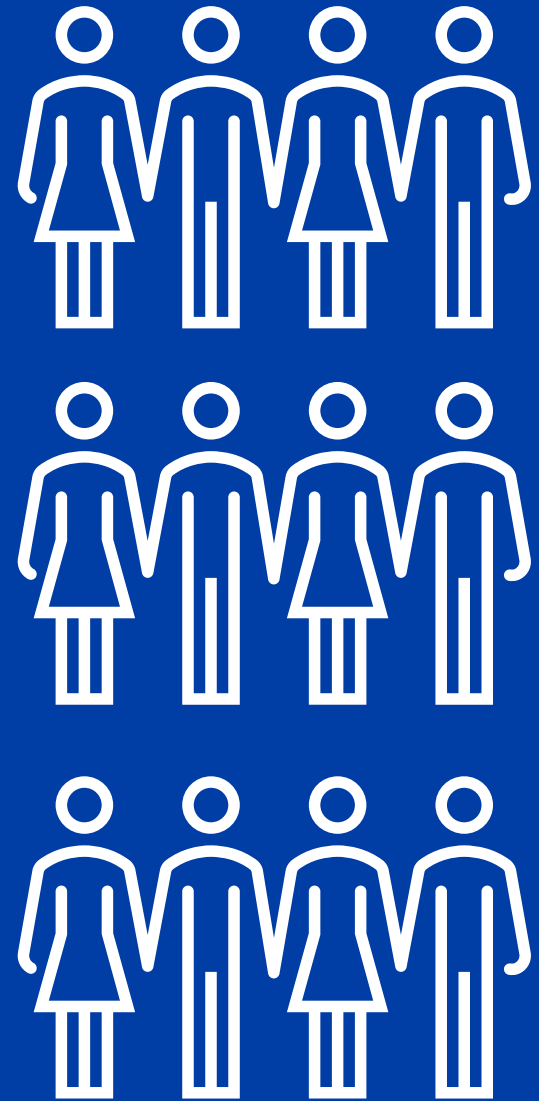
Don't report their symptoms even when they see a physician

Are **not able to verbalize** symptoms

*Pop-Busui R, et al. Diabetes Care. 2017;40: 136–154.
Miranda-Massari JR, et al. Curr Clin Pharmacol. 2011;6: 260–273.
Gad H. et al. J Peripher Nerv Syst. 2024;1–10.*



Raising awareness among
the community is a critical
step to get unaware
patients diagnosed



Physician barriers to diagnose PN

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Many physicians, especially in primary care settings struggle to diagnose PN for several reasons ...

Limited time for each patient

Crowded clinics, too many patients, lack of medical staff

Patients do not report symptoms proactively and **physicians have no time to ask**



Diagnosis of PN is not routine clinical practice in primary care

Diagnosis of PN is **perceived complex**, requiring devices physicians don't have

Lack of consistent and simple guidance

Not aware that diagnosing PN is **possible with simple tools**

Focus on other complications perceived more severe such as CVD, retinopathy etc.

CVD = cardio vascular diseases

Gad H. et al. *J Peripher Nerv Syst.* 2024;1–10.

Simple guidance and tools
for primary care settings to
diagnose PN is few
minutes will change the
paradigm and improve
patient care





Changing the paradigm of PN diagnosis

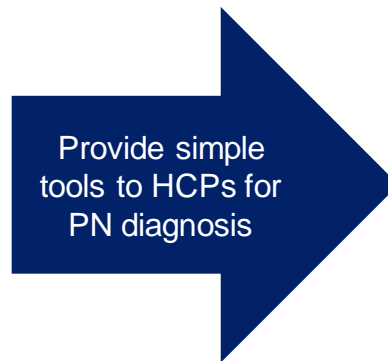
Earlier PN diagnosis will improve patients' lives!

Even today, **up to 80%** of PN patients are **undiagnosed**. Shifting the focus **from the physician** as the only one carrying the burden of diagnosis **to the patient/community** will facilitate **earlier, faster and easier diagnosis**.

Person suffers from symptoms but is unaware



Person becomes aware that symptoms could be a disease and consults HCP

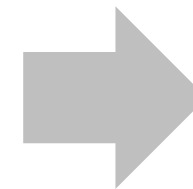


HCP diagnoses PN

~80% of PN patients consult a primary care physician



Treatment of every patient with a suitable product



Today, time to diagnosis is around 5 years



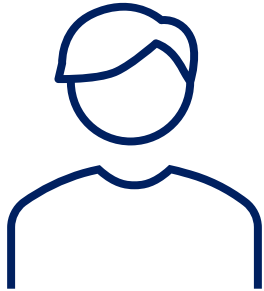


New screening and diagnosis tool empowers the patient and helps the physician to diagnose in few minutes

Increase disease awareness among the community and provide a tool to screen for PN risk to **drive early diagnosis**

Patient can screen and **assess the risk** for peripheral neuropathy with 5 simple questions and share the outcomes with the physician

Unaware person = patient



Questionnaire for patients to complete

- Do you experience any of the following sensations in hands and/or feet? Only tick boxes, if yes.
 - Burning
 - Tingling
 - Electric shock like pain
 - Numbness
 - Itch & other weird/ unusual sensation
- How bothersome are these sensations? Check intensity on scale from 1-10.

Not at all
1
2
3
4
5
6
7
8
9
10
 Most bothersome
- Where do you experience these sensations? Circle where felt: Right, Left.
- Does it get worse at night? Yes, No.
- Please tick boxes of anything below that applies to you!
 - Diabetic or pre-diabetic
 - Taking medication for more than 3 months
 - Obesity
 - Restricted diet
 - Smoking
 - Drinking alcohol

Add sum of blue boxes above. Max. 15 points. Your total score is

Please talk to your doctor and share the results of this questionnaire. A total score > 4 (max. score is 13) indicates peripheral neuropathy.

Provide a **simple tool to physicians** to diagnose PN based on the pre-assessment of the patient

Physician can **finalize the diagnosis with 2 simple tests within minutes**, after reviewing the first part completed by the patient

Physician



Questionnaire for doctors to complete

Sensory Tests

This should take no longer than a few minutes and guide the diagnosis. If professional tools are not on hand, use simple everyday objects, for example a painter's brush, a feather, a toothpick, or a cotton swab.

Should any of the below scales trend towards little to no sensation, this could indicate the presence of peripheral neuropathy - assess in conjunction with patient results of the questionnaire.

- Perform a pin-prick test and compare to non-affected area. Mark with X where patient falls on the scale:
 - 3 Full sensation
 - 2 Reduced sensation
 - 1 No sensation
- Perform a cotton wool/brush and compare to non-affected area. Mark with X where patient falls on the scale:
 - 3 Full sensation
 - 2 Reduced sensation
 - 1 No sensation

Add sum of blue boxes above. Max. 6 points. Total score is

If either of both tests scores < 2, consider referral or define suitable treatment and monitor the patient.



New questionnaire developed by experts

A multinational expert panel with expert from 11 countries developed a new questionnaire

Step 1:

- Designed to increase community awareness and empower the patient
- Facilitates earlier diagnosis as the patient will be alerted to screen the risk before seeing a physician
- Patient screens the risk and obtains a score reflecting the risk for PN

Questionnaire for patients to complete

1 Do you experience any of the following sensations in hands and/or feet? Only tick boxes, if yes

Burning Tingling Electric shock like pain Numbness Pins & needles Other weird/unusual sensation

1 point per ticked box. If nothing applies, Max. 6 points

2 How bothersome are these sensations? Check intensity on scale from 1-10

Not at all 1 2 3 4 5 6 7 8 9 10 Most bothersome

Discuss your symptoms with your doctor for a precise diagnosis

3 Where do you experience these sensations? Circle where felt

Right Left

4 Does it get worse at night? Yes No

For question 4, 1 point for Yes and 0 points for No. Max. 1 point

5 Please tick boxes of anything below that applies to you?

Diabetes or pre-diabetes Taking medication for more than 3 months Obesity Restricted diet smoking drinking alcohol

1 point per ticked box. Max. 6 points

Please talk to your doctor and share the results of this questionnaire. A total score > 4 (max. score is 13) indicates peripheral neuropathy.

Add sums of blue boxes above. Max. 13 points. Your total score is:

Step 2:

- Patient shares the outcomes of step 1 with the physician
- The score and the responses to the questions allow to assess the risk quickly
- Two simple sensory tests
- Physicians invest significantly less time to make the diagnosis

Questionnaire for doctors to complete

Sensory Tests

This should take no longer than a few minutes and guide the diagnosis. If professional tools are not on hand, use simple everyday objects, for example a painter's brush, a feather, a toothpick, or a cotton swab.

Should any of the below scales trend towards little to no sensation, this could indicate the presence of peripheral neuropathy - assess in conjunction with patient results of the questionnaire.

1 Perform a pin-prick test and compare to non-affected area. Mark with X where patient falls on the scale.

3 Full sensation
2 Reduced sensation
1 No sensation

Points per box. Max. 3 points

2 Perform a cotton wool/brush and compare to non-affected area. Mark with X where patient falls on the scale.

3 Full sensation
2 Reduced sensation
1 No sensation

Points per box. Max. 3 points

If either of both tests scores ≤ 2, consider referral or define a suitable treatment and monitor the patient.

Add sums of blue boxes above. Max. 6 points. Total score is:



Involving patients in screening reduces the time physicians invest in diagnosis and empowers patients

Advantages of the new questionnaire:

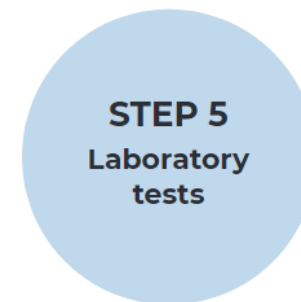
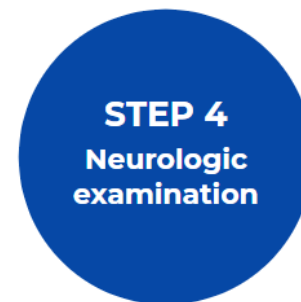
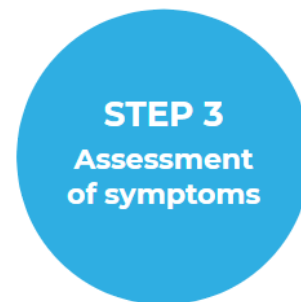
- Involving the patient in the screening process will not only **reduce the time** a physician requires to reach a diagnosis but would also **empower the patient**.
- Both physicians and patients agree that **simple numeric scales** are most useful
- Physicians in primary care prefer a **short, simple, and accurate tool** to screen for PN in their daily practice
- Other HCPs such as nurses, pharmacists, podiatrists etc can be involved to screen early

Questionnaire for patients to complete		Questionnaire for doctors to complete	
<p>1 Do you experience any of the following sensations in hands and/or feet? Only tick boxes, if yes</p> <p>Burning Tingling Electric shock like pain Numbness Pins & needles Other weird/unusual sensation</p> <p>1 point per ticked box. 0 points if nothing applies. Max. 6 points</p>	<p>2 How bothersome are these sensations? Check intensity on scale from 1-10</p> <p>Not as all 1 2 3 4 5 6 7 8 9 10 Most bothersome</p> <p>Discuss your symptoms with your doctor for a precise diagnosis</p>	<p>Sensory Tests</p> <p>This should take no longer than a few minutes and guide the diagnosis. If professional tools are not on hand, use simple everyday objects, for example a painter's brush, a feather, a toothpick, or a cotton swab.</p>	<p>Should any of the below scales trend towards little to no sensation, this could indicate the presence of peripheral neuropathy - assess in conjunction with patient results of the questionnaire.</p>
<p>3 Where do you experience these sensations? Circle where felt</p> <p>right Left</p>	<p>4 Does it get worse at night?</p> <p>Yes No</p> <p>For question 4: 1 point for Yes and 0 points for No. Max. 1 point</p>	<p>1 Perform a pin-prick test and compare to non-affected area</p> <p>Mark with X where patient falls on the scale:</p> <p>3 Full sensation 2 Reduced sensation 1 No sensation</p> <p>Points per box: Max. 3 points</p>	<p>2 Perform a cotton wool/brush and compare to non-affected area</p> <p>Mark with X where patient falls on the scale:</p> <p>3 Full sensation 2 Reduced sensation 1 No sensation</p> <p>Points per box: Max. 3 points</p>
<p>5 Please tick boxes of anything below that applies to you?</p> <p>Diabetes or pre-diabetes Taking medication for more than 3 months obesity</p> <p>Restricted diet Smoking Drinking alcohol</p> <p>1 point per ticked box. Max. 6 points</p>	<p>Please talk to your doctor and share the results of this questionnaire. A total score > 4 (max. score is 13) indicates peripheral neuropathy.</p>	<p>If either of both tests scores ≤ 2, consider referral or define suitable treatment and monitor the patient.</p>	<p>Add sums of both boxes above. Max. 12 points. Your total score is</p>



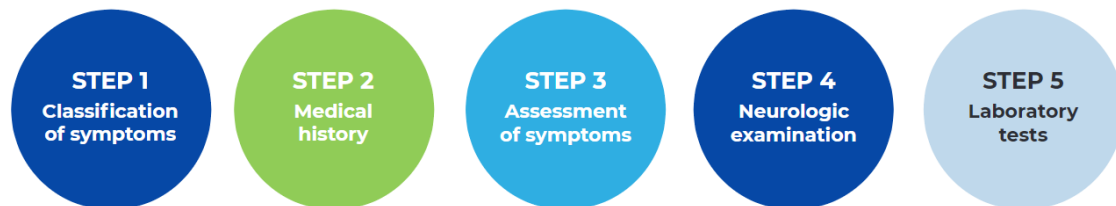
Tests at primary care physicians

This simple **5- step guide**, based on an expert panel recommendation by Malik et al. 2020¹, helps physicians diagnose PN within minutes despite limitations in primary care. In case the diagnosis is still unclear after this, referral to a specialist can be considered.





Tests at primary care physicians



Step 1: Classify symptoms into acute, subacute or chronic

A simple classification of the onset of symptoms provides an initial differential diagnosis.

Classify symptoms based on the onset into

- acute (days),
- subacute (weeks to months) or
- chronic (> 6 months).

While an acute onset could be due to an infectious disease or toxin exposure, a subacute onset may be caused by inflammatory, immune-mediated or metabolic (diabetes, nutritional deficiencies) causes, medication or chemotherapy. When the symptoms are chronic, consider a diabetic or hereditary neuropathy.



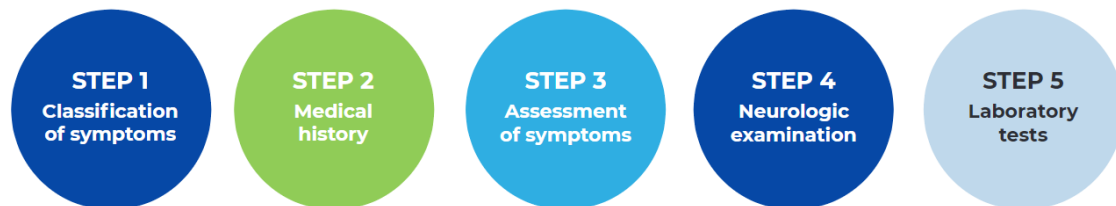
Step 1: Classify symptoms into acute, subacute or chronic

Acute	Subacute	Chronic	Relapsing/ remitting
Guillain-Barré syndrome	Nutritional deficiency	Hereditary neuropathy	Guillain-Barré syndrome
Acute intermittent porphyria	Prolonged toxin exposure	Diabetic neuropathy	Porphyria
Diphtheria	Metabolic (diabetic neuropathy, uremic neuropathy)	CIDP	CIDP
Toxicity due to thallium, mercury, arsenic, lead	Immune-mediated (e.g. CIDP, vasculitis, sarcoidosis)	Hereditary e.g. Charcot-Marie-Tooth, familial amyloidosis, HIV neuropathy	HIV/ AIDS
Critical illness neuropathy	Neoplastic (e.g. hematological/ lympho-proliferative malignancies)	CIPN	
	Paraneoplastic (e.g. anti-Hu)		

CIDP, chronic inflammatory demyelinating polyneuropathy; CIPN, chemotherapy-induced peripheral neuropathy; HIV, human immunodeficiency virus



Tests at primary care physicians

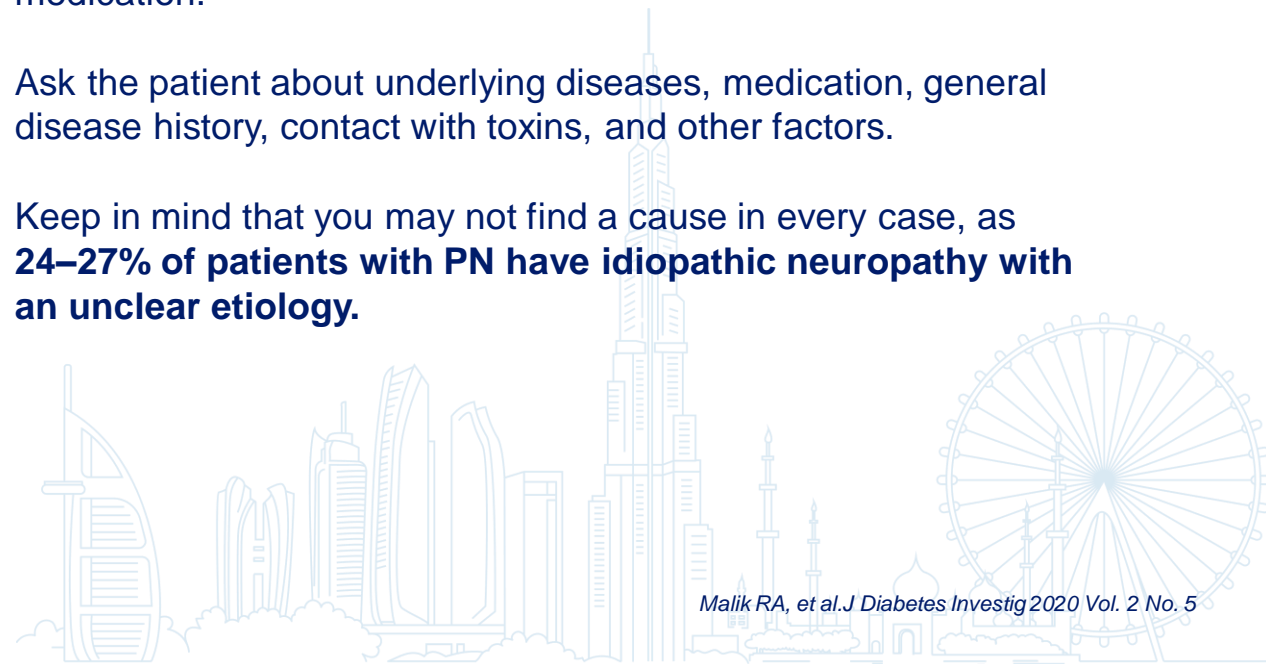


Step 2: Take a careful medical history

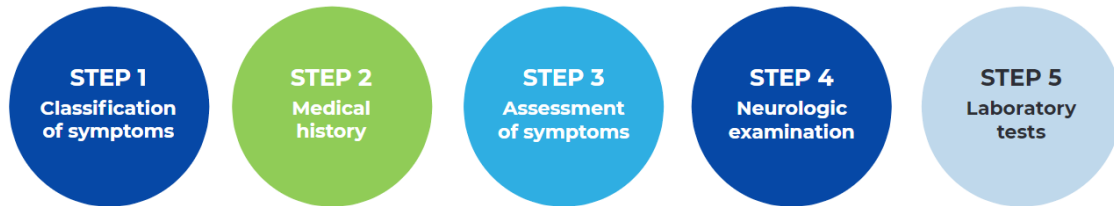
Taking a thorough medical history helps to find out the cause of the disease which can be very various: metabolic, systemic, infectious, inflammatory, nutritional, or mediated by toxins or medication.

Ask the patient about underlying diseases, medication, general disease history, contact with toxins, and other factors.

Keep in mind that you may not find a cause in every case, as **24–27% of patients with PN have idiopathic neuropathy with an unclear etiology.**



Tests at primary care physicians



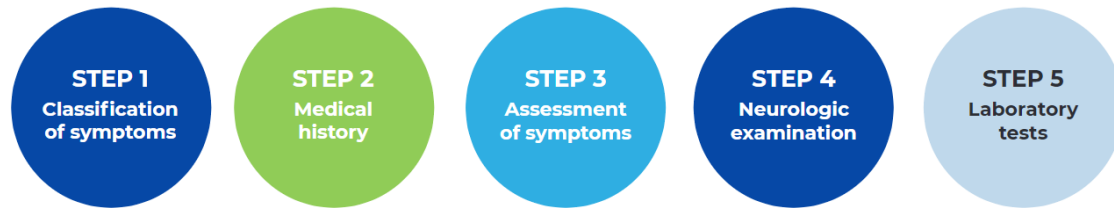
Step 2: Take a careful medical history

Metabolic disease	Hypothyroidism Chronic liver disease Chronic kidney disease Diabetes Prediabetes
Systemic disease	Systemic/ non-systemic vasculitis (ANCA, cryoglobulinemia) Paraproteinemia
Infectious	Amyloidosis HIV Leprosy Hepatitis B/C
Inflammatory	(CIDP)
Nutritional	Deficiency of B vitamins (B12, B1, B6) Malabsorption syndromes Bariatric surgery
Toxins	Organophosphorus agents, alcohol, arsenic, mercury, isoniazid
Medication	Colchicine, dapsone, amiodarone, nitrofurantoin, metronidazole, ethambutol, chemotherapy (vincristine, cisplatin, taxol, bortezomib)

ANCA, anti-neutrophil cytoplasmic antibodies; CIDP, chronic inflammatory demyelinating neuropathy; HIV, human immunodeficiency virus



Tests at primary care physicians



Step 3: Assess symptoms and signs of peripheral neuropathy

Some patients might have difficulties in describing their symptoms properly. Ask the patient proactively and focus on the main characteristics of PN: numbness, pins and needles and tingling sensation, lancinating, stabbing or electric shock like pain.

Use picturesque everyday examples such as 'feeling of ants' or 'electric shocks' to help the patient.

It may also be difficult for the patient to express their symptom localization in words. Let the patient circle the symptom localization in a simple sketch, which also helps to assess symmetry.





Tests at primary care physicians



STEP 1
Classification
of symptoms

STEP 2
Medical
history

STEP 3
Assessment
of symptoms

STEP 4
Neurologic
examination

STEP 5
Laboratory
tests

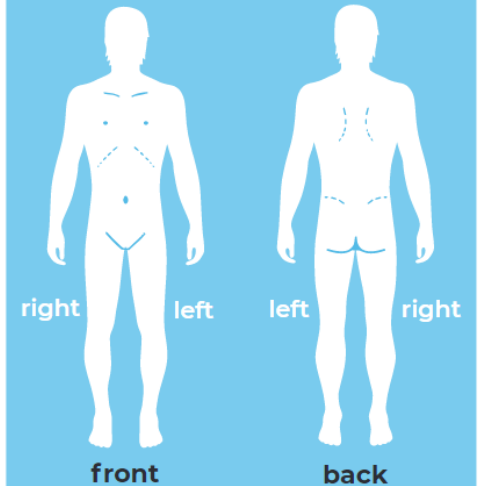
Step 3: Assess symptoms and signs of peripheral neuropathy

Simple questions to ask about symptoms*:

- Do you have a feeling as if **ants are crawling** along your feet?
- Does it **feel like electric shocks** out of nothing?
- Does the bedsheet on your feet feel painful sometimes?
- Where do you experience the pain/ sensation?
- Does it occur on **both sides** (symmetrical)?
Is it worse at night?

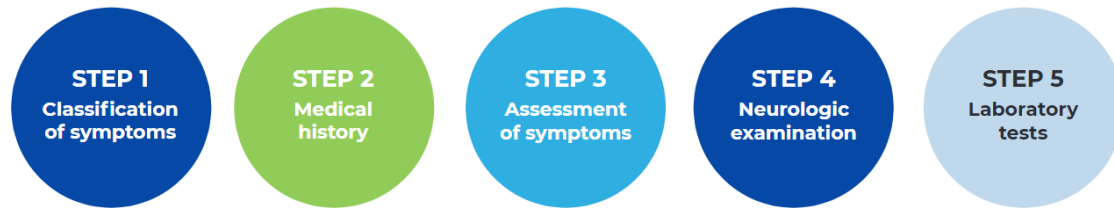
* listed questions not exhaustive

Simple sketch to circle symptom localization





Tests at primary care physicians

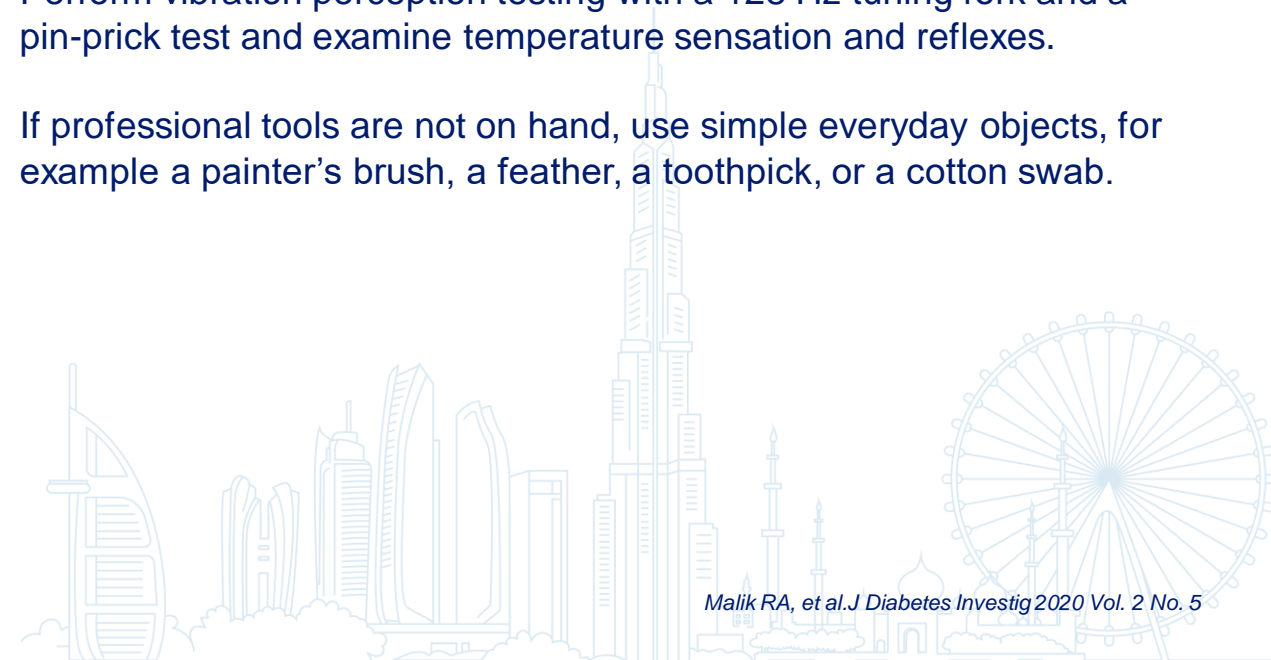


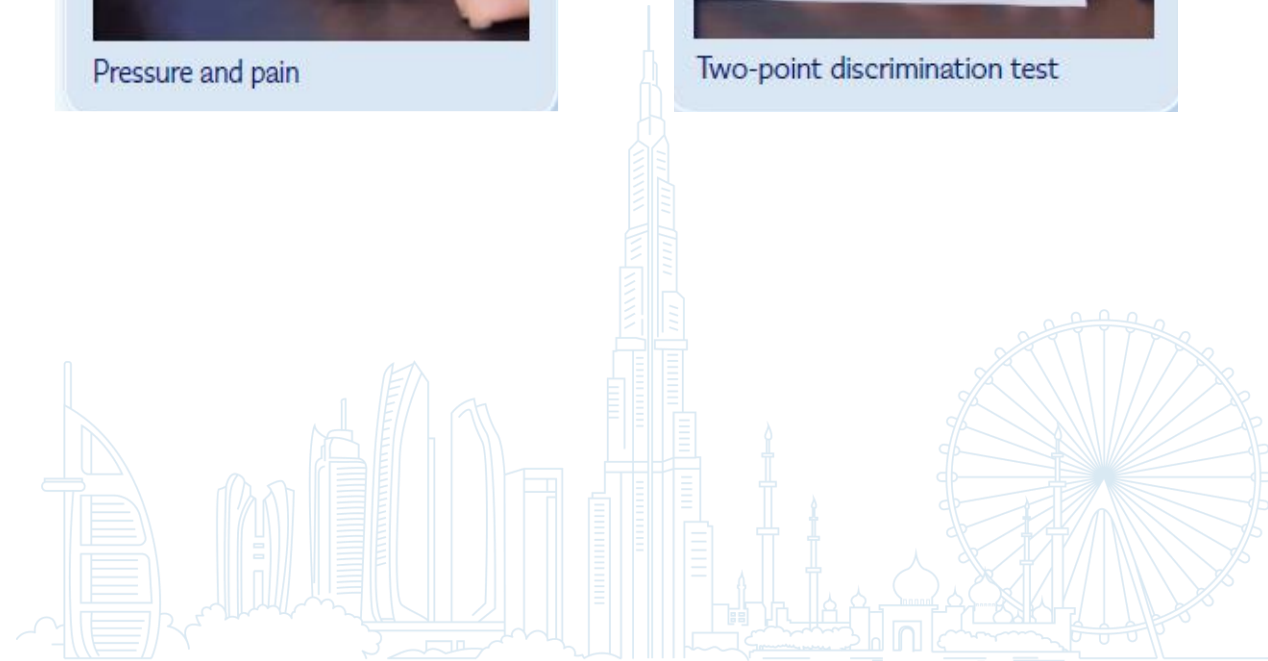
Step 4: Perform a neurological examination

Easy to perform sensory tests take no longer than a few minutes and guide the diagnosis.

Perform vibration perception testing with a 128 Hz tuning fork and a pin-prick test and examine temperature sensation and reflexes.

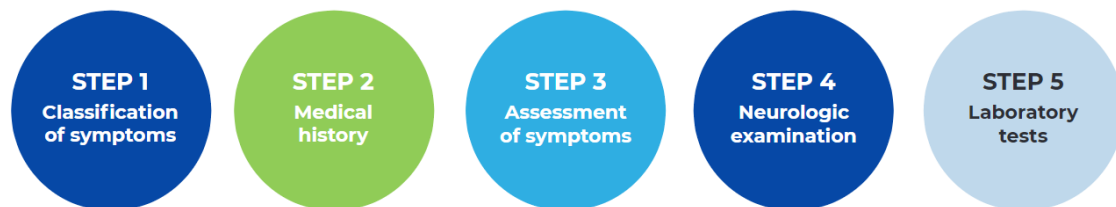
If professional tools are not on hand, use simple everyday objects, for example a painter's brush, a feather, a toothpick, or a cotton swab.







Tests at primary care physicians



Step 5: Order laboratory tests

Different laboratory tests can help to refine the diagnosis, although no definite blood marker is available to clearly diagnose PN.

None of the tests is mandatory but will help to investigate the possible underlying cause, such as diabetes.

Order appropriate laboratory tests to support or refute a diagnosis, if needed. Serum glucose, HbA1c and vitamin B12 levels can often be done in a primary care setting.

For more complex tests like anti-HIV antibodies, refer the patient to a specialist practice or send the blood sample to an external laboratory.

Tests at primary care physicians



Step 5: Order laboratory tests

Common/ simple	Serum glucose, HbA1c, oral glucose tolerance test, vitamin B12
	Erythrocyte sedimentation rate (ESR), serum and urine electrophoresis
	Liver and renal function test Thyroid function test
May require referral depending on available resources	Anti-HIV antibodies
	Tumor (paraneoplastic) markers
	Vasculitis profile (ANA, ANCA, Ro/La, cryoglobulin)





Tests at General Practice and by specialists

Some patients need to be referred to a neurologist.

Blood tests can be performed by both, but they will only deliver **supportive information**. There is currently **no known blood marker** for peripheral neuropathy, therefore it **can not be diagnosed by blood testing**.

Blood tests can detect vitamin deficiencies, diabetes, abnormal immune function, and other signs for conditions that can cause PN.



GP



SPECIALIST

Tests that the specialist will perform are different and require a **specific equipment and knowledge**.





Tests at speciality care

Some tests (if required) normally have to be done by a **specialist** – either because they depend on very **special equipment** or because interpretation of the results requires **highly specialized knowledge**.

Imaging tests:¹

Computer tomography or magnet resonance imaging scans can look for herniated disks, tumors or other abnormalities.

Nerve function tests:⁴

Electromyography records electrical activity in muscles to detect nerve damage. A probe sends electrical signals to a nerve, and an electrode placed along the nerve's pathway records the nerve's response to the signals (nerve conduction studies).

Other nerve function tests:⁴

These might include an autonomic reflex screen that records how the autonomic nerve fibers work, a sweat test, and sensory tests that record how the patient feels touch, vibration, cooling and heat.

Nerve biopsy:^{5,6}

This involves removing a small portion of a nerve, usually a sensory nerve, to look for abnormalities.

Skin biopsy:⁶

The doctor removes a small portion of skin to look for a reduction in nerve endings.



SPECIALIST



Summary and conclusion

- PN is a chronic disease that affects patients on different levels: physically, emotionally, socially, and economically.
- **The diagnosis of PN is a challenge.** Around 80% of affected persons all over the world are undiagnosed.
- Patients suffer from PN for around 5 years before being diagnosed.
- Without timely diagnosis and appropriate treatment, patients can develop neuropathic pain, which will significantly affect their quality of life.
- Shifting the focus from the physician to the patient who can also screen for PN and see a physician earlier facilitates a faster and easier diagnosis.
- **Using the new questionnaire developed by experts** can change the paradigm of PN diagnosis.
- The new questionnaire is published in a peer-reviewed journal JPNS: *Gad H. et al. J Peripher Nerv Syst. 2024;1–10.*

Raising awareness among the community and simplifying the diagnosis process for physicians is key for a timely diagnosis!





Thank You

