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# NEURO EXAM REFRESHER

By

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For

AAPA We Are Family Medicine

Conference 2022



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# Numbness

- A perception change or exam finding confirming a dysfunction in a nerve – most commonly in peripheral nerves



Janet

Numbness of  
hands and feet

- Janet is a 44 yo female
- Reports a 5-month history of recurrent numbness to BL hands and feet. No noted weakness, color changes, swelling or injuries. Occasionally made worse with long travel or after doing “ a lot of crafts with the girls”
- PMHX – HTN, G2P2 (ages 19, 16), lap choly age 36, wisdom teeth extraction
- Up to date with preventative care including normal glucose testing 4 months ago at annual physical.



Janet

Numbness of  
hands and feet

- Meds:
    - Losartan 50mg QD
    - OCP
  - Vitals all WNL
  - Examination of skin, circulation, and MSK is normal.
- 
- **What is the appropriate neurologic examination?**



Janet

Numbness of  
hands and feet  
(exam)

## Neuro exam should include:

- Sensation
  - Light touch – cotton tip or filament
  - Sharp dull
  - Warm / cold
- Reflexes
  - Bicep, triceps, brachioradialis
- Strength
  - Bicep
  - Triceps
  - Wrist – extension and flexion
  - Fingers – grip, and individual strength
- Vibration sense
- Position sense

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# Dizziness and Near Syncope

Dizziness:

An altered sense of balance and perception of the place of the body

Near Syncope – A sensation of possible loss of consciousness



# Nadine

Dizziness and  
near syncope

- 26 yo female with complaints of dizziness for the last month and two separate episodes of feeling like she “might pass out.”
- She describes a general feeling of dizziness, but no spinning sensations. It is persistent and rises and falls in intensity.
  - (-) No N/V, no noted vision changes, no sinus issues or ear pain.
  - (+) Mild HA off and on – Tylenol manages
- Two separate events when the dizziness was significant and she felt as though she may pass out, one at work (secretary) one on a weekend after taking her dog for a walk. No hx of syncope and no aura. Sitting down and resting for 15 minutes resolved the symptoms.






# Nadine

Dizziness and  
near syncope


- PMHX is benign
- Family HX
  - Mother - HTN
  - father - Hyperchol and HTN
- Vitals all WNL
- In clinic A1C was 5.2
- Examination of skin, ENT, circulation, is normal.

- **What is the appropriate neurologic examination?**
- 



# Nadine

Dizziness and  
near syncope

- Cranial Nerves
    - EOMs
    - Nystagmus
    - Pupillary response
    - Facial movements
  - Balance
    - Tandem walking
    - Romberg
    - Head swing
  - Strength
  - Sensation
  - Vision
  - Reflexes
- 



Nadine

Dizziness and  
near syncope  
(exam)

- **Neuro exam should include:**
- Cranial Nerves
  - Nystagmus
  - Pupillary and fundoscopic exam
  - Head swing
- Strength
  - Bicep
  - Triceps
  - Quads
  - Wrists and ankles–
    - extension and flexion
- Cerebellar tests
  - Romberg
  - Pronator drift
  - Heel toe walking
- Reflexes
  - Bicep, triceps, brachioradialis
- Coordination
  - Position sense

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**HEADACHE**





Deon

Headache

- 35 yo transgender male (pronouns they/them) currently on a stable dose of testosterone hormone supplementation for the last 3 years who reports a worsening of headaches. They describe a long-standing history of migraine headaches since teen years that was stable until 5 months ago. Previously had one migraine every 3-4 months managed well with triptan abortive agent. In the last 5 months, they report headaches presenting every 2-3 weeks lasting 3-4 days, and not resolving with abortive meds completely. More global headaches than one-sided, which is different than their migraine pattern.
- No recent changes in medications or dosing.



Deon

Headache

- Increased life stress due to work strain(desk job) has impacted their ability to maintain regular exercise and diet has become a “little worse” in the last 6 months.
- Ibuprofen does help some but not completely and they are losing sleep some nights due to trouble getting comfortable.
- PMHX gender transition to male completed 3 years ago with top surgery 2 years ago.
- Family HX
  - Mother – DM, Basal cell CA, Hypothyroidism
  - Father – CAD with stenting at age 67, HTN
  - Brother with HTN at age 42



Deon

Headache

- Vitals all WNL
- Examination of cardiovascular, Pulm, skin, ENT, is normal.
- What is the appropriate neurologic examination?
- What other system would you also need to examine?



Deon

Headache  
(exam)

- **Neuro exam should include:**
- Cranial Nerves
  - Nystagmus
  - Pupillary and fundoscopic exam
- Strength
  - Bicep, Triceps, Quads
  - Wrists and ankles–
    - extension and flexion
  - Grip
- Cerebellar tests
  - Romberg
  - Pronator drift
- Special testing
  - Coordination
- =====
- MSK exam
  - close attention to muscle tension, myofascial bands, and trigger points
    - Especially in the occipital area, cranium, and temporal areas





# Cognitive Changes

- Can be reported by the patient or loved one / caregiver
- Can include:
  - Forgetfulness
  - Word finding changes
  - Perceived loss of skills
    - Ex:
      - Math skills
      - Reasoning
      - Work functions



Leo

Cognition Change

- 76 yo male who presents with his daughter, whom he lives with. Andy reports that his daughter is “nagging him” often about things he is forgetting. He thinks it’s a result of the information “not being interesting”. He is widowed and has limited social activities, so family are the only people to share concerns or note any changes.
- The concerns from his daughter are related to him not recalling conversations from the day before, not being able to keep track of his bills as well over the last few months, and general forgetfulness such as names, lost items and tasks.
- No noted physical changes, no falls, no complaints of pain



Leo

Cognition Change

- Compliant with medications with pill organizer – which his daughter refills weekly.
- ROS: negative per pt
- Problem list
  - HTN
  - Type 2 DM
  - Hypercholesterolemia
- Meds:
  - Atenolol 100mg BID
  - Lisinopril 20 mg QD
  - Metformin ER 500 mg BID
  - Rosuvastatin 20 mg QD



Leo

Cognitive Changes

- PE:
  - Vitals WNL, weight is stable
  - ENT, Cardiovascular, Pulm, Abd normal
- Labs
  - Done 2 months ago at DM check up
    - A1C was 6.8
    - BMP normal
- What is the appropriate neurologic examination?



Leo

Cognition Changes  
(exam)

### Neuro Exam should include:

- Cognitive screening
  - Yes that's part of a neuro exam 😊
  - MMS
- Gait and Balance
  - Looking for signs of Parkinson's or cerebellar changes
- Coordination
  - Rapid alternating movements
  - Look for slowing or asymmetry
- Reflexes for changes
  - A past exam is important for comparison

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# Tips to remember

- Neuro exams are not that complicated to perform and can be done efficiently if you are comfortable with the skills
- Neuro exams add volumes of reassurance and information to a clinical evaluation
- Remember the Neuro exam done well can help avoid costly imaging
- Imaging should be used to reinforce or better define a PE finding, and should not take the place of a good exam