

OMB # 0925-XXXX

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### NEUROLOGY KNOWLEDGE CHECK

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1. Which of the following is not a proposed mechanism for the fluctuations in seizure frequency observed in catamenial epilepsy?
  - a. Variations in genes targeted by gonadal hormones such as BDNF or Neuropeptide Y
  - b. Changes in dietary protein uptake**
  - c. Fluctuations in antiseizure drug levels
  - d. Changes in water and/or electrolyte balance

The correct answer is B—Changes in dietary protein uptake are NOT a proposed mechanism for fluctuations in seizure frequency observed in catamenial epilepsy.

2. Estrogen treatment has been shown to have what effect on stroke outcomes in rats?
  - a. Neuroprotective for stroke when given to aging female rats.
  - b. No effect or increases infarct volume in aging female rats.**
  - c. Toxic when given to young male rats.
  - d. Toxic when given young ovariectomized female rats.

The correct answer is B. Preclinical data shows estrogen treatment to either have no effect or increase infarct volume in aging female rats. Estrogen treatment is also shown to be neuroprotective for stroke in young male rats, and to reduce infarct volume in young ovariectomized female rats.

3. Parkinson's Disease is most prominent in individuals under the age of 60 and is more prevalent in female than males.
- a. True
  - b. False**

The correct answer is B. Parkinson's Disease is most prominent in people over 60 years of age and is more prevalent in males.

4. Which of the following is not associated with increased risk for Parkinson's Disease?
- a. Bilateral oophorectomy
  - b. Bilateral orchiectomy**
  - c. Greater than 70 years old
  - d. Male sex

The correct answer is B. Bilateral oophorectomy, age greater than 70 years, and male sex are all associated with increased risk for Parkinson's Disease. Bilateral orchiectomy is not associated with increased risk for Parkinson's Disease.

5. Which of the following are additional stroke risk factors for women?
- a. Pregnancy
  - b. Gestational diabetes
  - c. Oral contraceptive use
  - d. Hormonal therapy
  - e. All of the above**

The correct answer is E. Pregnancy, gestational diabetes, oral contraceptive use, and hormonal therapy are additional risk factors for women

6. Sex differences exist in the presentation of Parkinson's Disease. Men are more likely than women to present with \_\_\_\_\_, while women are more likely than men to present with \_\_\_\_\_.
- a. Tremor; Rigidity and rapid eye movement
  - b. Rigidity and rapid eye movement; Tremor**
  - c. Depression; Sexual dysfunction

- d. Dyskinesia; Camptocormia

The correct answer is B. Men are more likely than women to present with rigidity and rapid eye movement, camptocormia, and sexual dysfunction. Women are more likely than men to present with tremor, depression, and dyskinesia.

7. Examples of seizures' impact on sex steroid regulation include:

- a. Increases in sexual dysfunction for women and men
- b. Decreases in fertility for women and men
- c. Menstrual irregularities
- d. All of the above**

The answer is D. All of the above are examples of seizures' impact on sex steroid regulation.

8. A commonly used model for Parkinson's disease involves the neurotoxin 6-hydroxydopamine (6-OHDA). What sex difference has this model identified?

- a. Male rats have lower survival of TH+ neurons compared to females after 6-OHDA injections to the striatum.**
- b. Female rats have lower survival of TH+ neurons compared to male rats after 6-OHDA injections to the striatum.
- c. This model has not identified sex differences.

The correct answer is A. Male rats showed lower survival of TH+ neurons in the substantia nigra after 6-OHDA injections as compared to females.

9. Stroke incidence in women increases and surpasses stroke incidence in men 10 years after what event?

- a. Puberty
- b. Menarche
- c. Menopause**
- d. Childbirth

The answer is C. Stroke incidence in women increases and surpasses stroke incidence in men 10 years after menopause.

10. Preclinical data on ischemic stroke show females are more susceptible to caspase-independent cell death, while males are more susceptible to caspase-dependent cell death.

a. True

**b. False**

The answer is False. Preclinical data show females are more susceptible to caspase-dependent cell death, while males are more susceptible to caspase-independent cell death.