

# Review Test Submission: Final Exam - Week 11

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| User              | +A1                                                                                                                                                      |
| Course            | DNRS-6630-5/NURS-6630N-5/NURS-6630C-5/NURS-6630F-5/DNRS-6630F-5- Approaches to Treatment-2021-Summer-QTR-Term-wks-1-thru-11-(05/31/2021-08/15/2021)-PT27 |
| Test              | Final Exam - Week 11                                                                                                                                     |
| Started           | 8/12/21 8:32 AM                                                                                                                                          |
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| Time Elapsed      | 1 hour, 34 minutes out of 2 hours and 30 minutes                                                                                                         |
| Results Displayed | Feedback                                                                                                                                                 |

## Question 1

L. J. is a 55-year-old male who attended a funeral and found himself laughing during the service, but later that evening he was irritated with himself for what he had done. His wife said this was abnormal behavior and took him to his doctor to be evaluated. After L. J.'s MRI was reviewed, he was diagnosed with frontotemporal dementia. Which medication is recommended to help L. J. with his emotional outbursts?

A . Memantine

**B . Escitalopram**

C . Donepezil

D . Risperidone

Response Feedback: under Treatment subtitle: "The behavioral features are sometimes helped by SSRIs, and these are the best-studied treatments for these disorders."

## Question 2

When can buprenorphine be initiated in a patient who is suffering from an opioid overdose?

- A . As soon as the patient is stabilized
- B . It should be administered as soon as you find the patient unconscious
- C . Right after naloxone is administered to prevent the patient from going back into opioid overdose
- D . When the patient is experiencing mild-to-moderate symptoms of withdrawal**

Response Feedback: "To avoid this problem, the initial buprenorphine dose should not be administered until the patient demonstrates mild-to-moderate symptoms of withdrawal."

## Question 3

Of the following neurotransmitters, which one(s) are known to be severely disrupted in the disease Dementia with Lewy Bodies?

- I. Acetylcholine
  - II. Glutamate
  - III. Dopamine
  - IV. GABA
  - V. Norepinephrine
- A . II only
  - B . III only

C . I and II

**D . I and III**

Response Feedback: under pathophysiology subtitle: “It is clear that both the cholinergic and dopaminergic neurotransmitter systems are severely disrupted.”

#### Question 4

Choose the correct statement regarding medications used for alcoholism

A . Disulfiram: NMDA receptor antagonist & GABAA agonist

**B . Naltrexone:  $\mu$ -opioid receptor antagonist that reduces the reinforcement/euphoria produced by alcohol**

C . Acamprosate: enhances the effect of the inhibitory neurotransmitter gamma-aminobutyric acid on the GABA receptors by binding to a site that is distinct from the GABA binding site in the central nervous system.

D . Lorazepam: inhibits alcohol dehydrogenase, leading to a buildup of acetaldehyde

Response Feedback: Table 15-3 has the three MOAs listed for the FDA-approved treatments of alcoholism.

#### Question 5

Patient is a 75-year-old female with a confirmed diagnosis of Alzheimer’s Disease. She is currently on Donepezil 10 mg daily. She is accompanied to your clinic today by her daughter, who informs you that her mother has recently had an increase in depressive symptoms. She has no history of mood disorders. She has a history of hypertension and tonic-clonic seizures, but both are controlled. Assuming this patient will be thoroughly evaluated for the diagnosis of depression, what would you recommend as initial therapy?

A . Amitriptyline

B . Doxepin

**C . Fluoxetine**

**D . Bupropion**

Response Feedback: SSRIs are effective in treating depressive symptoms. Answer choices A & B are both TCAs and are advised against due to side effect profile and the fact this person is treatment naive (learned from previous exam) and answer choice D is contraindicated in a patient with seizures.

**Question 6**

Which neurotransmitters are likely involved in the pathophysiology of withdrawal seizures?

I. Serotonin

II. Endorphins

III. Glutamate

IV. GABA

V. Dopamine

A . I and II

B . II and V

C . I and III

**D . III and IV**

Response Feedback: “Thus when an individual suddenly ceases alcohol use, the decrease in inhibitory effects in combination with fewer GABA receptors and increased glutamatergic discharge contributes to over-excitation and possible withdrawal seizures.”

**Question 7**

Which medication below should be routine for all suspected cases of alcohol intoxication and dependence?

**A . B vitamin thiamine 100 mg**

B . Haloperidol 5 mg

C . Lorazepam 2 mg

D Acamprosate 666 mg

Feedback: vitamin thiamine (IM or IV) should be routine for all suspected cases of alcohol intoxication and dependence.”

Response Feedback: under Treatment of Wernicke’s encephalopathy:

“Administration of the B vitamin thiamine (IM or IV) should be routine for all suspected cases of alcohol intoxication and dependence.”

#### Question 8

T. C. is an 88-year-old male who is diagnosed at your clinic with Dementia with Lewy Bodies. He currently has some debilitating gait issues, which makes his quality of life very poor. His memory is still intact with minor deficits. Which medication would likely benefit T. C. as his initial therapy?

**A . Levodopa/carbidopa**

B . Galantamine

C . Memantine

D . Benztropine

Response Feedback: “Low dosages of levodopa/carbidopa (dopamine replacement) are sometimes helpful for the motor symptoms of DLB, although higher dosages of dopamine replacement therapy and direct dopamine agonists may exacerbate neuropsychiatric symptoms.” - Motor symptoms = gait issues

#### Question 9

In the pathophysiology of Alzheimer’s Disease, there are certain proteins that lead to the plaques and tangles that result in this progressive, irreversible brain disorder. Choose the appropriate protein with its corresponding pathology.

I. Tau – tangles

II. Beta-amyloid – tangles

III. Tau – plaques

IV. Beta-amyloid – plaques

A . I and II

B . II and III

C . II and IV

**D . I and IV**

#### Question 10

T. K. is a 72-year-old female who has suffered many strokes in the past, likely due to uncontrolled hypertension and hyperlipidemia. She has now been diagnosed with vascular dementia due to memory loss and motor system slowing. What is the recommended treatment for T. K.?

A . T. K. needs the drug donepezil to help with her memory loss only.

**B . T. K. needs the drug donepezil to help with her memory loss, but also needs her hypertension and hyperlipidemia controlled.**

C . T. K. needs the drug donepezil to help with her memory loss, but also needs her hypertension controlled.

D . T. K. needs her hypertension controlled only

Response Feedback: “Treatment for vascular dementia involves control of vascular risk factors (e.g., hypercholesterolemia, hypertension, inactivity, diabetes, excess alcohol use, cigarette smoking, hyperhomocysteinemia).” In addition to treating these causes of CNS vascular disease, some literature indicates that symptomatic treatments (such as cholinesterase inhibitors or memantine) may be helpful for cognition.

### Question 11

Which of the following alcohol screening tools lack sensitivity to detect hazardous/problem drinking?

A . AUDIT

B . AUDITC

C . SASQ

**D . CAGE**

Response Feedback: "Compared to the SASQ or the AUDIT and AUDIT-C, the CAGE lacks sensitivity to detect hazardous/problem drinking."

### Question 12

Which enzyme does disulfiram inhibit leading to a build-up of the ethanol metabolite acetaldehyde?

A . Alcohol dehydrogenase

B . Microsomal ethanol oxidizing enzyme

**C . Aldehyde dehydrogenase**

D . Aldehyde reductase

Response Feedback: "Disulfiram inhibits acetaldehyde dehydrogenase leading to a buildup of the ethanol metabolite acetaldehyde"

### Question 13

Which of the following drugs in the treatment of Alzheimer's Disease requires administration with food?

A . Memantine

B . Donepezil

**C . Rivastigmine**

D . Galantamine

Response Feedback: "Rivastigmine should be administered with meals to reduce gastrointestinal side effects."

Question 14

If a patient is being managed for chronic pain and is not getting better after months of therapy with multiple agents (i.e., NSAIDs with opioids, muscle relaxants with NSAIDs, etc.), what should be your next step in helping the patient?

- I. Add a high-dose opioid if patient is not already on the maximum dose.
- II. Assess for a co-morbid psychiatric condition.
- III. Tell the patient you have exhausted all your options and there is nothing more you can do.
- IV. Refer the patient for a second opinion.

A . I and II

**B . II and IV**

C . III only

D . IV only

Response Feedback: Both are good options. If the patient has never been assessed for a psychiatric condition, then it needs to be done to treat the underlying cause of his or her pain. And doing a referral will help get a second set of eyes on the patient to see where something may have been missed when initially treating the patient. - Page 208, Box 17-1 has a blurb: If treated with opioids for more than 3 months then get a second opinion. - Page 209 under conclusions: It explains how if the patient has a comorbid psychiatric condition, it will worsen their pain and disability and should be addressed in addition to treating the pain.

Question 15



Choose the correct statement regarding an anti-ADHD medication and its respectful mechanism of action

A . Methylphenidate – blocks reuptake of dopamine in the pre-synaptic neuron and promotes release of dopamine from their storage sites in the pre-synaptic neuron

B . Amphetamines – blocks reuptake of norepinephrine and dopamine into presynaptic neurons

C . Clonidine – blocks reuptake of dopamine in the pre-synaptic neuron and promotes release of dopamine from their storage sites in the pre-synaptic neuron

**D . Atomoxetine – acts by blocking the norepinephrine pump on the pre-synaptic membrane**

E . Guanfacine – blocks reuptake of norepinephrine and dopamine into presynaptic neurons

Response Feedback: under atomoxetine subtitle: A & B are having their MOAs switched and C & E is completely incorrect since they are alpha-adrenergic agonists

#### Question 16

Of the following neurotransmitters, which ones play a critical role in modulating attention in ADHD?

I. Dopamine

II. Epinephrine

III. GABA

IV. Norepinephrine

V. Glutamate

A . II, III, and V

B . II and IV

**C . I and IV**

D . III only

Response Feedback: "Stimulants increase intra-synaptic concentrations of dopamine (DA) and norepinephrine (NE)"

#### Question 17

Which medication below would you use in addition to benzodiazepine treatment if the patient is experiencing psychosis during alcohol withdrawal delirium?

A . Naltrexone

**B Haloperidol**

C . Propofol

D . Chlordiazepoxide

Response Feedback: "Haloperidol 50 to 10 mg PO or IM may be added and repeated after 1 to 2 hours when psychosis or agitation is present."

#### Question 18

If a patient suffers from a multitude of small strokes and later begins experiencing mood disturbances in an acute fashion that sometimes resolve, from what type of dementia would you think that patient may suffer?

Response Feedback: under the clinical features and diagnosis subtitle

#### Question 19

What is the difference between Ritalin and Focalin?

**A. Focalin is a D-isomer**

B . Ritalin is the D-isomer

C . Focalin is the S-isomer

D . There is no difference other than the formulations involved.

Response Feedback: “The primarily active form of MPH appears to be the d-threo isomer, which is available in both immediate-release tablets (Focalin 2.5, 5, and 10 mg)”

#### Question 20

The patient is a 16-year-old girl with a past history of substance use disorder. She has been known to abuse prescription opioids and smokes one pack of cigarettes every day. She has been in and out of recovery for the past year. During her last admission into a recovery center, she was diagnosed with ADHD, which may have contributed to her addictive personality. She presents to your clinic today to initiate pharmacotherapy for her new diagnosis. What would you recommend in this patient? Her current weight is 55 kg.

A . Ritalin 10 mg twice daily

B . Focalin 10 mg twice daily

C . Daytrana 30 mg patch worn for 12 hours daily

**D . Atomoxetine 60 mg once daily**

Response Feedback: Ritalin and Focalin have abuse potential due to their short half-lives and multiple times a day dosing. Daytrana has the wrong instructions for the patch and still has an abuse potential due to being a stimulant (See table 10-1 for dosing instruction of the patch being worn for 9 hours but lasts 12 hours). Atomoxetine has the least abuse potential and appropriately dosed for patient’s weight. Page 110 in upper right column: “In these populations use of extended delivery stimulant preparations, which are more difficult to misuse, or non-stimulants should be considered.”

#### Question 21

Select the correct description of a somatoform disorder.

A . Somatization disorder – manifests as a pain syndrome with a significant loss of or alteration in physical function that mimics a physical disorder

B . Conversion disorder – pain that causes significant impairment in occupation or social function, induces marked distress, or both

**C . Hypochondriasis – persistent belief that one has a serious illness, despite extensive medical evaluation**

D . Pain disorder – intentional production or feigning of physical symptoms

Response Feedback: - Option A That description goes with conversion disorder. - Option B That description goes with pain disorder. - Option D That description goes with factitious disorder with physical symptoms.

#### Question 22

FILL IN THE BLANK: \_\_\_\_\_ is the main neurotransmitter behind reward systems in the brain, which usually leads to addiction when altered in any way.

A . Norepinephrine

B . Serotonin

**C . Dopamine**

D . Acetylcholine

Response Feedback: “Distribution of the endogenous reward systems in the brain is a common feature of drug abuse; most addictive drugs act by disrupting central nervous system (CNS) dopamine circuits.” - Table 16-1 as well all the drug types show alterations of dopamine pathways in some way

#### Question 23

Of the following medications, which one is contraindicated with stimulants such as Ritalin or Adderall?

A . Atomoxetine

B . Clonidine

C . Amitriptyline

**D . Phenelzine**

Response Feedback: under Medication Interactions with Stimulants; Co-administration of MAO is the only true contraindication

#### Question 24

A new patient presents to your clinic today. The patient is a 13-year-old boy who complains that he has no interest in anything. The patient states, "I just want to sleep more than I normally do, and I don't care much for playing my video games anymore." His mother states he cannot focus on anything for more than a few minutes at a time, and that he often gets in trouble at school because he cannot sit still. What would you recommend at this time?

**A . Recommend doing a full evaluation to distinguish if this patient is presenting with ADHD symptoms or depressive symptoms**

B . Begin a stimulant at appropriate dose once patient's weight is known

C . Refer to a behavioral counselor

D . Begin an SSRI at lowest initial dose and provide counseling on the increased risk of suicide during the first few months of therapy

Response Feedback: under Attention-Deficit/Hyperactivity Disorder Plus Depression subtitle: "In ADHD patients, depression is not an artifact, and it must be distinguished from demoralization." Page 99 under overview also mentions, "Before using medications, clinicians should complete a thorough clinical evaluation that includes a complete history of symptoms, a differential diagnosis, a review of prior assessments/treatments, a medical history, and a description of current physical symptoms."

#### Question 25

The experience of pain is ALWAYS subjective

**A . True**

B . False

Response Feedback: "The experience of pain is always subjective."

#### Question 26

E. B., a 55-year-old female, is a patient at your clinic today who has a past medical history significant for breast cancer, hypertension, hepatic cirrhosis, type 2 diabetes, and a recent diagnosis of alcohol use disorder. She has no known drug allergies. She states she is ready to quit drinking but fears the cravings that it may bring. Which medication would you recommend for E. B. to begin?

A . Naltrexone

**B . Acamprosate**

C . Any benzodiazepine

D . Thiamine

Response Feedback: "It is preferred for patients with liver damage since acamprosate is metabolized through the kidneys and not the liver" & Table 15-3 shows it reduces alcohol cravings; benzodiazepines are used in the acute setting if a patient is experiencing severe alcohol withdrawal that leads to seizures; thiamine is if a patient is admitted for alcohol intoxication.

#### Question 27

Which of the following drugs is structurally similar to tramadol; thus, its opioid-mediated analgesia can be reversed by naloxone in mice?

**A . Venlafaxine**

B . Ketorolac

C . Duloxetine

D . Gabapentin

Response Feedback: "Structurally, venlafaxine is similar to tramadol, and in mice, venlafaxine demonstrates opioid-mediated analgesia that is reversed by naloxone."

#### Question 28

Which of the following psychiatric conditions is present in both domains (i.e., core psychopathology & pain-related psychological symptoms) of chronic pain that will likely lead to an outcome of disability, pain, and poor quality of life?

- A . Major depression
- B . Personality disorder
- C . Anger
- D . Anxiety**

Response Feedback: Figure 17-4 and in the text on the page discussing how anxiety is present in both, therefore, a review is needed of the exact cause of the anxiety

#### Question 29

Disorientation, tremor, hyperactivity, fever, hallucinations, marked wakefulness, and increased autonomic tone are all features that are consistent with which part of alcohol withdrawal?

- A . Alcohol withdrawal seizures
- B . Korsakoff's Psychosis
- C . Wernicke's encephalopathy
- D Alcohol withdrawal delirium**

Response Feedback: "The principal features are disorientation (to time, place, or person), tremor, hyperactivity, marked wakefulness, fever, increased autonomic tone, and hallucinations."

### Question 30

Which features are consistent with delirium?

- I. Acute onset
- II. Gradual onset
- III. Course of disease fluctuates
- IV. Course of diseases does not fluctuate
- V. Impaired attention
- VI. Normal attention

A . II, IV, and VI

B . I and III

C . II and IV

**D . I, III, and V**

Response Feedback: "The onset of delirium is typically acute or subacute, the course often has marked fluctuations, and level of consciousness and attention are impaired."

### Question 31

Of the axons involved in the transmission of pain, which one is thinly myelinated and conducts that first feeling of pain that is often felt as coming on as a sharp, rapid feeling?

A .  $\beta$ - $\Delta$  fibers

**B . A- $\Delta$  fibers**

C . A- $\beta$  fibers

D . C fibers



Response Feedback: “A-Δ fibers are 2 to 5 μcm in diameter and are thinly myelinated. They conduct “first pain,” which is immediate, rapid, and sharp with a velocity of 20 m/sec.”

### Question 32

Patient is a 10-year-old female with diagnosed ADHD who was started on Ritalin 5 mg twice a day over 2 months ago. She is still experiencing the triad of symptoms associated with ADHD (impaired attention, impulsivity, and excessive motor activity). Her mother reports that she is now having difficulty in falling asleep since starting the medication. She has been on no other anti-ADHD medications and the mother reports full compliance with medication regimen. What is the appropriate recommendation to make based on this scenario?

- A . Recommend psychotherapy in addition to current treatment
- B . Switch to low dose Focalin
- C . Add Clonidine

**D Switch to low-dose Adderall and titrate as appropriate in addition to psychotherapy**

Response Feedback: upper right column: “Consideration of another stimulant or ATMX is recommended when symptoms aren’t responsive or the patient experiences clinically significant side effects to initial medication. Given their pharmacodynamic differences, if an MPH product was initially selected, then moving to an amphetamine-based medication is appropriate.” - Choice A would be recommended if the patient had improvement in any of her symptoms, but the scenario makes it obvious she is not getting better, even after 2 months of therapy - Choice B is staying within the same stimulant class, therefore, would likely not see a big improvement in symptoms - Choice C is not considered first-line. Patient has never tried the amphetamine-based stimulant, so she has not exhausted first-line options yet.

### Question 33

What baseline levels should you perform before initiating an anti-ADHD medication?

A. Electrolytes, height, weight, white blood cells

B. ECHO, heart rate, pulse

**C. Height, weight, blood pressure, pulse**

D. Blood pressure and pulse

Response Feedback: under Overview: "Before treatment with medications, it is usually important to measure baseline levels of height, weight, blood pressure, and pulse and to monitor them over the course of the treatment."

Question 34

This medication cannot be used for more than 5 days, it is a non-steroidal, anti-inflammatory drug, and it is often substituted for morphine due to its rapid onset and high potency. What is this medication?

A . Naproxen

**B . Ketorolac**

C . Sulindac

D . Etodolac

Response Feedback: under non-steroidal, anti-inflammatory drugs

Question 35

Which medication(s) requires a test dose to determine accurate use of the drug (i.e., how addicted the patient truly is on a certain drug) before beginning a titration schedule to withdrawal the patient?

I. Butalbital

II. Lorazepam

III. Hydrocodone

**A . I only**

B . II only

C . III only

D . I and II

Response Feedback: "Treatment should begin with an oral test dose of 200 mg of pentobarbital, a short-acting-barbiturate."

Question 36

Which of the following drugs is often used in the management of opioid addiction due to its ceiling effect?

**A . Buprenorphine**

B . Naloxone

C . Clonidine

D . Methadone

Response Feedback: "Because of the ceiling effect seen with partial opiate agonists, there is no pharmacological benefit from doses higher than 32 mg/day."

Question 37

Which club drug is structurally similar to GABA?

A . 3,4 – methylenedioxy-methamphetamine

B . Ketamine

**C .  $\gamma$ -hydroxybutyrate**

D . Ecstasy

Response Feedback: under club drugs; Options A & D are the same drug

### Question 38

Select all the criteria for what is considered “At-Risk Drinking.”

I. Women: > 7 drinks in any given week

II. Men: > 4 drinks per day

III. Women: > 4 drinks per day

IV. Men: > 14 drinks per week

A . I, and II

**B . I, II, and IV**

C . I, II, and III

D . III and IV

Response Feedback: III is wrong because it’s > 3 drinks per day for women

### Question 39

Drug addiction includes many prescription medications and illegal substances. Of the drugs listed, which ones can be withdrawn abruptly WITHOUT medical intervention to prevent withdraw seizures?

A . Alcohol

**B . Adderall**

C . Lorazepam

D . Butalbital

Response Feedback: “Amphetamines can be withdrawn abruptly”

### Question 40

Y. R. is a 35-year-old woman who presents to your clinic today complaining of ankle pain. She said she was running the trail when she saw a snake. During a quick turn to run away from the snake, she twisted her ankle. Which of the following medications may be a good choice in helping Y. R. with her pain?

A . Oxycodone

B . Amitriptyline

**C . Ibuprofen**

D . Duloxetine

Response Feedback: No specific page number, but ibuprofen would be the best choice since oxycodone isn't recommended first-line (Box 17-1 on page 208) since no other medications have been trialed; TCAs and SNRIs wouldn't be a good choice because the patient doesn't show any signs of depression.

#### Question 41

What should our treatment goal be with our patients when it comes to managing chronic pain?

A . The goal is to make the pain go completely away.

B . The goal is to make the patient feel numb so that the pain cannot be thought about.

C . There are no specific treatment goals that we should discuss with our patients, just so they don't get their expectations too high.

**D . The goal is to improve their function and to drop their pain scale to less than 5 out of 10.**

Response Feedback: "In general, treatment goals are reports of pain less than 5 out of 10 and an improvement in function."

#### Question 42

There are many different types of dementia. Which dementia is NOT a direct result of disrupted neurotransmitters, but a result of degeneration of different regions in the brain? Onset of the disease is typically before the age of 60, and very rare after the age of 75.

**A . Alzheimer's Disease**

B . Dementia with Lewy Bodies

C . Creutzfeldt-Jakob Disease

D . Frontotemporal Dementias

Response Feedback: under subtitle "Epidemiology and genetic risk factors"

Question 43

A 59-year-old male has been admitted to the E. D. due to a methamphetamine overdose. The patient's friend reported he ingested up to 2 grams because "he thought cops were coming to get him." The patient's vitals are all within normal limits, except his blood pressure is 180/110. What is the best recommendation to make at this time?

A . Administer a beta-blocker like labetalol to help bring his blood pressure down

B . Patient's blood pressure is considered a hypertension urgency, but it is probably due to the drug overdose. No action is needed at this time until the drug has cleared his system.

C . Blood pressure is not a concern right now, but supportive therapy should be provided in the incidence of respiratory depression.

**D . Administer an alpha-blocker like phentolamine to help bring his blood pressure down.**

Response Feedback: "When severe hypertension arises, phentolamine is recommended for vasodilation. Beta- or mixed alpha- and beta-adrenergic blockers (such as propranolol or labetalol) are to be avoided because they may exacerbate stimulant-induced cardiovascular toxicity."

#### Question 44

Benzodiazepines can be withdrawn abruptly despite duration of therapy/abuse.

A . True

**B . False**

Response Feedback: Benzodiazepines should never be stopped suddenly; Page 194 "Under no circumstances should benzodiazepines be stopped abruptly."

#### Question 45

Select the correct treatment regarding drugs involved in addiction management and their corresponding mechanism of action.

A . Benzodiazepines – GABA antagonist

B . Buprenorphine – opioid antagonist

C . Naltrexone – partial opiate agonist

**D . Flumazenil – GABA antagonist**

Response Feedback: under Overdose subtitle: "Flumazenil, a specific benzodiazepine antagonist, reverses the life-threatening effects of a benzodiazepine overdose."

#### Question 46

Daytrana is the MPH transdermal system of methylphenidate approved for the treatment of ADHD in children aged 6 years and older. What is the difference in terms of the metabolism compared to the other formulations in this class?

A . It is mainly metabolized by the enzyme carboxylesterase once absorbed.

**B . It does not undergo first-pass metabolism by the enzyme carboxylesterase in the liver.**

C . It can be cut up and sprinkled onto food so it can bypass first-pass metabolism in the liver.

D . It uses an osmotic releasing oral system technology to slowly deliver the drug to the enzyme carboxylesterase in order to make the drug last longer.

Response Feedback: referring to MPH transdermal system (MTS; Daytrana):  
“Since the MPH is absorbed through the skin, it does not undergo first-pass metabolism by CES-1 in the liver, resulting in higher plasma MPH levels”

#### Question 47

T. B. is a 55-year-old male who has diagnosed with type 2 diabetes 10+ years ago. He has since had complications from the disease and is suffering from severe neuropathy. On top of that, T. B. is struggling with his mental health and was recently told he could be depressed but he had refused treatment at that time. Besides getting his blood sugar under control, what medication(s) can we use that may be useful in helping T. B.?

I. Nortriptyline

II. Venlafaxine

III. Duloxetine

IV. Fluoxetine

A . I, II, and III

B . I and II

**C . II and III**

D . IV only

Response Feedback: “Among the antidepressants these include the TCAs and SNRIs (duloxetine and venlafaxine).” - SSRIs – page 204: “There is little evidence to support the independent analgesic activity of SSRIs.”

#### Question 48



Disulfiram has been proven effective in the treatment of alcoholism, but recently it has been trialed in the management of cocaine addiction. What is the mechanism of action that likely helps produce these aversive effects?

**A . Inhibition on dopamine beta-hydroxylase**

B . Inhibition on aldehyde dehydrogenase

C . Inhibition on alcohol dehydrogenase

D . Inhibition on aldehyde reductase

Response Feedback: "These reactions are thought to be mediated by the inhibitory effect of disulfiram on dopamine beta-hydroxylase. This action will elevate depleted plasma dopamine levels in chronic users and will produce abnormally high dopamine levels if cocaine is ingested; this results in a dysphoric experience in most users."

Question 49

SSRIs can be used in alcohol use disorder and offer modest drinking reduction through an anti-craving effect.

**A . True**

B . False

Response Feedback: "SSRIs have produced only modest drinking reductions— independent of the antidepressant effects—through an anti-craving effect"

Question 50

Which of the following drugs in the treatment of Alzheimer's Disease helps normalize glutamate by antagonizing the NMDA receptor?

**A . Memantine**

B . Donepezil

C . Rivastigmine

D . Galantamine