

Laura Smith  
Lesson Plan Student Teaching #1  
DNTH 660  
SP21

**Course:** DHYG 250 Dental Hygiene Theory IV

**Topic:** The Patient with Substance Use Disorder

**Audience:** Adult Learners (Senior Level Dental Hygiene Students)

**Instructional**

**Objectives:** Upon completion of the lecture, the student should be able to:

1. Explain key terms and concepts related to metabolism, intoxication effects, use patterns of alcohol.
2. Identify physical health hazards, medical effects, oral manifestations associated with alcohol other drug abuse.
3. List the names of the most commonly abused drugs and describe their intoxication effects and methods of use.
4. Describe methods for clinical assessment of potential substance abuse.
5. Advocate for patients who have a substance related disorder and tailor dental hygiene process of care to their needs.

**Materials:** PowerPoint and Zoom computer equipment  
Review Guide Handout

**References:**

Duncan, T., (2020, February 10). Spotting substance abuse in your office with Edie Gibson, RDH (No. 71). Nobody told me that. Apple podcasts.  
<http://nobodytoldmethat.otcpn.libsynpro.com/ep-71-spotting-substance-abuse-in-your-office-with-edie-gibson-rdh>

Haveles, E. B., (2020). Applied Pharmacology for the dental hygienist (8<sup>th</sup> ed.). Elsevier Saunders. St. Louis, MO.

Macy, B., (2018). Dopesick. Little Brown and Company.

Mann, B. (2020, November 18). Federal judge approves landmark \$8.3 billion Purdue Pharma opioid settlement. Retrieved February 5, 2021, from  
<https://www.npr.org/2020/11/17/936022386/federal-judge-approves-landmark-8-3-billion-purdue-pharma-opioid-settlement>

Wilkins, E. M., (2019). Clinical practice of the dental hygienist, (12<sup>th</sup> ed.). Wolters Kluwer.  
Philadelphia, PA.

**Personnel:** None needed

**Time:** 120 minutes

TIME	LESSON CONTENT	NOTES
	<b>I. INSTRUCTIONAL SET</b>	
1 minute	<u>A. Introduction</u> Thank you for hosting me in your class for my student teaching for my master's degree. I am excited to be teaching this very important topic, the patient with substance related disorder.	Slide #1 Substance Use Disorder Title
1 minute	<u>B. Established Mood</u> All of us have been affected in some way but the COVID19 pandemic. Personally, as DHYG students, you have noticed a shift in our learning (virtual/hybrid), increased PPE in our clinic, and even new screening measures for our patients.  You may have noticed your stress level and mental health affected as well. Unfortunately, the stress of this pandemic has been an instigator to an increase in alcoholism, drug use, relapse, and unfortunately opioid overdoses.	Slide #2 Attention grabbing video Q: What is your emotional reaction to this video? A: Answers will vary. (lack of community, seek professional help- don't "go it alone")
5 minutes	<u>C. Gain Attention/Motivate</u> This is a serious topic, and can be a "sobering" one, no pun intended. Let's start off by watching a short 5-minute video "an epidemic in a pandemic" which does a great job explaining the increase in opioid use and issues surrounding the issue during COVID19.	Slide #3 Pop Quiz Q: definition of terms epidemic and pandemic
1 minute	<u>D. Established Rationale</u> Adding awareness of substance use disorder to our dental hygiene toolkit, is on more way that we are truly preventive health specialists.  Although we are not mental health experts or trained professionals is substance use counseling and treatment, as a dental hygienist we are excellent providers in prevention and screenings. We have the power to recognize an issue, advocate for a patient or colleague, make a referral, and most importantly, deliver safe appropriate care tailored to our patient's individual needs.	Slide #4 A: Definition of terms epidemic and pandemic NOTE: these terms are important to know for public health course, and dental hygiene board exams
1 minute	<u>E. Established Knowledge Base</u> Do you remember the Narcan training at 2019	Slide #5 Objectives  Slide #6 Explanation of term "substance abuse" vs "substance use

TIME	LESSON CONTENT	NOTES
1 minute	<p>Health Sciences Spirit Day? What did you learn? Did you have health education in high school,</p> <p><u>F. Instructional Objective</u></p> <p>After today's lecture, you should be able to define terms of substance use related disorder, be aware of how the body metabolizes alcohol, intoxication effects, and use patterns. You will be able to identify the physical effects of alcohol and drug abuse. You will become familiar the names of frequently abused drugs and know their effects. You will become familiar with clinical assessment and risk assessment of substance abuse. Lastly, you will be able to compile your knowledge into tailoring the dental hygiene process of care to a patient's needs, in a compassionate and empathetic professional delivery.</p>	<p>disorder"</p> <p>Slide #7 Introduction</p> <p>Slide #8 Key Terms</p> <p>Slide #9 Transition slide/ Joke</p> <p><b>NOTE:</b> please realize there are jokes in this presentation, they are meant to help keep your attention, and help link your memory with key concepts, they are not meant to reduce the seriousness of this topic</p>
5 minutes	<p><b>I. Alcohol Consumption</b></p> <p>A. <b>Clinical Pattern of Alcohol Use:</b></p>	<p>Slide #10 Figure 65-1:</p>

## TIME

## LESSON CONTENT

## NOTES

### 1. Effect of Alcohol Intoxication

- a. Behavioral changes:
  - i. aggressiveness
  - ii. mood instability
  - iii. impaired judgement
  - iv. impair attention/memory
  - v. stupor
  - vi. coma
- b. Physical characteristics:
  - i. slurred speech
  - ii. lack of coordination
  - iii. unsteady gait
  - iv. nystagmus

Spectrum of Alcohol Use

**NOTE:** this is an important slide, know this for exam questions

**Slide #11**  
Alcohol Consumption

**NOTE:** be able to recognize these behaviors. Especially mood changes can vary from person to person.

### 2. Consequences of Underage Drinking

- a. Drinking and driving
- b. Suicide
- c. Sexual assault/ high risk sex behavior
- d. Alcohol induced mental impairment

**Slide #12**  
4 Main Signs of Alcoholism

### 3. 4 Main Signs of Alcoholism

- a. Craving: A strong need or compulsion to drink.
- b. Loss of control: The inability to limit one's drinking on any given occasion.
- c. Physical dependence: Withdrawal symptoms, such as nausea, sweating, shakiness, and anxiousness, when alcohol use is stopped after a period of heavy drinking.
- d. Tolerance: The need to drink greater amounts of alcohol in order to get intoxicated.

**Q:** What would be a sign of an "alcoholic"?

**A:** Many answers can be correct, possible answers could be: "need" to have alcohol, cannot function without it, interferes with daily life, can drink a lot and not feel the effects

## B. Etiology

### 1. Genetics

- a. GABRA2 and CHRM2 as two genes involved in the predisposition

**Slide #13**  
Etiology of Alcoholism  
**Q:** What might be something to

TIME	LESSON CONTENT	NOTES
5 minutes	<ul style="list-style-type: none"> <li>b. ALDH2 carriers from developing alcoholism by making them ill after drinking alcohol.</li> </ul>	<p>contribute to alcoholism?</p> <p><b>A:</b> Family history, genetics, culture (for example, if you are in a faith that does not consume alcohol, very slim chance you will develop alcoholism, even if you have the gene for it)</p>
	<ul style="list-style-type: none"> <li>2. Biopsychosocial               <ul style="list-style-type: none"> <li>a. Alcohol-specific parenting is a distinct and influential predictor of adolescent alcohol use initiation that is partially shaped by parents' own drinking experiences.</li> <li>b. Parental conversations and communication with child about teen drinking or binge drinking</li> <li>c. Children of alcohol-dependent parents are exposed to a higher level of multiple risk factors that lead to alcohol related problems:                   <ul style="list-style-type: none"> <li>i. Mental and behavioral disorders and adverse family environments.</li> <li>ii. Decreased sensitivity to intoxication effects of alcohol.</li> </ul> </li> </ul> </li> <li>3. Environmental               <ul style="list-style-type: none"> <li>a. Psychological stress, family, peers, and social forces.</li> <li>b. Current lifestyle, culture, advertisements, and economics.</li> </ul> </li> </ul>	
	<p><b>II. Metabolism of Alcohol</b></p> <p><b>A. Ingestion and Absorption</b></p> <ul style="list-style-type: none"> <li>1.alcohol is absorbed promptly from the stomach and small intestine into the bloodstream.</li> <li>2.Transported to liver for metabolism.</li> </ul> <p><b>B. Liver Metabolism</b></p> <ul style="list-style-type: none"> <li>1.90% of ingested alcohol is converted into acetaldehyde, then acetone, and finally into carbon dioxide and water by action of various liver enzymes.</li> <li>2.High acetaldehyde levels and chronic alcohol consumption impair liver function and lead to liver</li> </ul>	<p><b>Slide #14</b></p> <p>Metabolism of Alcohol</p> <p><b>Q:</b> Where is alcohol mostly metabolized?</p> <p><b>A:</b> LIVER!</p>

TIME	LESSON CONTENT	NOTES
	<p>damage.</p> <p><b>C. Diffusion</b></p> <ol style="list-style-type: none"> <li>1.5 minutes after ingestion, alcohol can be detected in the blood</li> <li>Alcohol is quickly diffused into all</li> <li>Less than 10% is excreted directly through the lungs, skin, and kidney (breath, sweat, and urine).</li> <li>A person's alcohol level can be determined by several tests of the blood, urine, saliva, or water vapor in the breath.</li> </ol> <p><b>D. Blood Alcohol Concentration (BAC)</b></p> <ol style="list-style-type: none"> <li>law enforcement agencies primarily test the BAC of automobile drivers using the breath test. The results are then converted to equivalent BACs.</li> <li>A BAC of 0.08% has been established as the legal level of intoxication.</li> <li>The amount of alcohol by weight, in a set volume of blood, measured in milligrams per deciliter (mg/dL).</li> <li>tolerance level varies among individuals. Novice drinker will feel effects sooner with less alcohol vs experienced drinker has built up a tolerance</li> <li>BAC measurement reflects a person's drinking rate and rate of metabolism.</li> <li>The rate at which the body will absorb and metabolize alcohol is based on: <ol style="list-style-type: none"> <li>age</li> <li>gender</li> <li>percentage of fatty</li> </ol> </li> </ol>	<p><b>Slide #15</b> BAC <b>Q:</b> What is the legal limit of BAC to drive? <b>A:</b> .08%</p> <p><b>NOTE:</b> remember learning about some alcohol excreted into breath, this is why a "breathalyzer" can determine level of intoxication. (different than blood test for BAC)</p> <p><b>Slide #16</b> <b>Q:</b> What effects BAC? <b>A:</b> Gender, body mass, time, amount of drinks, contents of stomach</p> <p><b>Slide #17</b></p>
10 minutes		

## TIME

## LESSON CONTENT

- tissue in the body
- d. food in stomach

### III. Health Hazards of Alcohol

#### A. Liver Disease (or ALD Alcoholic Liver Disease)

1. Fatty liver with degeneration: early stages are reversible with abstinence.
2. Alcoholic hepatitis: inflammation of the liver.
3. Early fibrosis: healthy cells replaced by scar tissue.
4. Cirrhosis: scarring of the liver with irreversible damage.
5. Individuals with hepatitis C virus are more susceptible to ALD.

#### B. Immunity and Infection

1. Risk for many bacterial infections is increased, particularly pulmonary diseases (pneumonia, tuberculosis) and viral infections (hepatitis B and C).

#### C. Digestive System

1. Alcohol ingestion alters the stomach mucosa, stimulates gastric acid secretion, and affects gastric function.
2. Ulcers
3. Damage to small intestines: diarrhea, weight loss, and vitamin deficiencies.

#### D. Nutritional Deficiencies

1. Alcohol provides an excess of caloric intake, little nutritional value.
2. Might not eat enough nutritious foods if you are binge drinking
3. Deficiencies result from malabsorption of vitamins

## NOTES

BAC calculator simulation

**Q:** Why is this a good simulation? What are the limitations?

**A:** Great for education, to understand that BAC is variable. Not 100% accurate, only an estimation

**Slide #18**

At home BAC meters

**Q:** Are these “good”?

**A:** Yes, can be great for someone who is proactive in preventing drinking and driving. However, “bad” if it gives the impression that you can drink and then legally drive

**Slide #19**

“Beer Belly”

**Q:** Why do people get a “beer belly”?

**Slide #20**

Alcohol caloric value/ non-nutritional value

**A:** Alcohol has 7 cal/gram, very caloric rich and nutrient poor

**Slide #21**

CDC infographic: what is



## TIME

## LESSON CONTENT

and essential nutrients.

### E. Cardiovascular Diseases

1. Risk for cardiomyopathy, coronary artery disease, hypertension, arrhythmias, and hemorrhagic stroke.
2. Decreased risk for heart attack and stroke is associated with light-to-moderate alcohol use.
3. Heavy consumption increases the death rate from cardiovascular disease.

### F. Nervous System

1. Central and Peripheral
  - a. Early changes affect intellectual actions, judgment, and learning ability.
  - b. Long-term alcohol abuse combined with malnutrition can lead to damage of both central and peripheral nervous systems.
  - c. Prolonged and heavy alcohol use leads to chronic brain damage.
2. Wernicke–Korsakoff’s Syndrome
  - a. Brain disorder of the cerebellum is the result of a thiamine deficiency associated with chronic alcohol consumption. Two syndromes are involved as follows:
  - b. *Wernicke’s encephalopathy*:

## NOTES

considered a drink

**Slide #22**

CDC infographic: what is excessive alcohol use

**Q:** How many drinks per day is “moderate” for a woman (who is 21 and older and not pregnant)

**A:** only 1

**Slide #23**

Health Hazards of Alcohol

**Slide #24**

Wernicke-Korsakoff’s Syndrome

**NOTE:** it is important to recognize these are 2 syndromes together, and due to alcohol inhibiting absorption of B1 or thiamine

**Q:** What are good sources of B1 or thiamine?

**A:** fortified

TIME	LESSON CONTENT	NOTES
5 minutes	<p>symptoms of mental confusion, ocular dysfunction, and gait disturbances.</p> <p>c. <i>Korsakoff's psychosis</i>: persistent knowledge and memory problems characterized by forgetfulness, easy frustration, lack of muscle coordination, and retrograde and anterograde amnesia.</p> <p><b>G. Reproductive System</b></p> <ol style="list-style-type: none"> <li>1. Alcohol affects every branch of the endocrine system, directly and indirectly, through the body's organization of the endocrine hormones.</li> <li>2. Female: increased risk for menstrual disturbances, infertility, and miscarriage, stillbirth, or premature delivery.</li> <li>3. Male: diminished testicular function and male hormone production resulting in increased risk for impotence, infertility, and reduction of secondary sex characteristics.</li> </ol>	<p>sources (cereal and bread), fish, lean meats, milk</p>
	<p><b>IV. Fetal Alcohol Spectrum Disorders (FASD)</b></p> <ol style="list-style-type: none"> <li>A. Distinct orofacial characteristics and various psychological and physical symptoms</li> <li>B. May affect a dental hygiene treatment plan.</li> <li>C. Etiology: women who use alcohol to excess during pregnancy have</li> </ol>	<p><b>Slide #25</b> Fetal Alcohol Spectrum Disorders (FASD)</p> <p><b>Slide #26</b> FASDE images and box 54-1</p> <p><b>Slide #27</b> Image Nursing</p>

TIME	LESSON CONTENT	NOTES
5 minutes	<p>an increased risk for developmental disorders that range from subtle to lifelong serious effects.</p> <p>D. Alcohol Use During Pregnancy</p> <ol style="list-style-type: none"> <li>1. There is no known safe amount of alcohol use during pregnancy.</li> <li>2. The amount of alcohol required to produce adverse fetal consequences varies among fetuses.</li> <li>3. Complete abstinence during pregnancy is safest to prevent FASD.</li> <li>4. No Placental Barrier, alcohol passes freely across the placenta.</li> <li>5. Increased incidence of spontaneous abortions and stillbirths associated with alcohol consumption.</li> </ol>	<p>mother</p> <p><b>Q:</b> Can alcohol cross into breastmilk?</p> <p><b>A:</b> Yes. Will appear 20-30 minutes after consumption, and can last 2-3 hours later (even after mother no longer feels effects, can still be in breastmilk)</p> <p><b>Slide #28</b></p> <p><b>Q:</b> What other (oral) condition is known to have association with preterm low birth weight?</p> <p><b>A:</b> Periodontal disease is associated with PTLBW</p>
	<p>V. Alcohol Withdrawal Syndrome</p> <p>A. Withdrawal consists of the disturbances that occur after abrupt cessation of alcohol intake in the alcohol dependent person.</p> <p>B. Withdrawal signs appear within a few hours after drinking has stopped.</p> <p>C. Even a relative decline in blood concentration can precipitate the syndrome.</p> <p>D. Predisposing Factors: Malnutrition, fatigue, depression, and physical illnesses</p> <p>E. Signs and Symptoms</p> <ol style="list-style-type: none"> <li>1. Tremor of hands, tongue, and eyelids. Nervousness and irritation; anxiety.</li> <li>2. Malaise, weakness, and headache.</li> <li>3. Dry mouth.</li> <li>4. Autonomic hyperactivity: sweating, rapid pulse rate, and elevated blood</li> </ol>	<p><b>Slide #29</b></p> <p>Alcohol Withdrawal Syndrome</p> <p><b>Slide #30</b></p> <p>Signs of Alcohol withdrawal</p> <p><b>NOTE:</b> “eye openers” or “hair of the dog” drinks after a night of binging can be a sign of alcoholism, going through early stages of withdrawal</p>

TIME	LESSON CONTENT	NOTES
10 minutes	<p>pressure.</p> <ol style="list-style-type: none"> <li>5. Transient visual, tactile, or auditory hallucinations.</li> <li>6. Insomnia.</li> <li>7. Grand mal seizures.</li> <li>8. Nausea or vomiting.</li> </ol> <p><b>VI. Treatment for Alcoholism</b></p> <ol style="list-style-type: none"> <li>A. The overall objective of treatment is to help the person achieve and maintain total abstinence.</li> <li>B. Also referred to as “sobriety” where are person consumes no alcohol</li> <li>C. Treatment might include: <ol style="list-style-type: none"> <li>1. Combination of medical and psychiatric therapy with self-help.</li> <li>2. Elimination of other drugs</li> <li>3. Early Intervention is key</li> <li>4. Detoxification, managing acute withdrawal</li> <li>5. Treatment for Immediate Emergencies if</li> <li>6. Restore Nutrition</li> </ol> </li> <li>D. Pharmacotherapy <ol style="list-style-type: none"> <li>1. Alcohol-sensitizing agents (cause aversive reactions in combination with alcohol). Such as Disulfiram (Antabuse)</li> <li>2. Anticraving agents (decrease desire for and consumption of alcohol). Such as Naltrexone (ReVia):</li> <li>3. Amethystic agents (reverse the acute intoxicating and depressant effects of alcohol).</li> <li>4. Anticonvulsants might also be used</li> </ol> </li> <li>E. Rehabilitation <ol style="list-style-type: none"> <li>1. Counseling and Education, recognition that alcoholism is a serious disease and be agreeable to accept help.</li> <li>2. Family and support system</li> </ol> </li> </ol>	<p><b>Slide #31</b> Treatment for Alcoholism <b>Q:</b> Do you already know of any treatments for alcoholism? <b>A:</b> Many answers, might be detox, AA support groups</p> <p><b>Slide #32</b> Detoxification <b>NOTE:</b> Liquor stores are “essential” and were open</p> <p><b>Slide #33</b> Photo Antabuse (Disulfiram)</p> <p><b>NOTE:</b> Stigma is a huge roadblock for patients to seek</p>

TIME	LESSON CONTENT	NOTES
5 minutes	<p>needed for successful outcomes</p> <p>3.Group Therapy</p> <ol style="list-style-type: none"> <li>Alcoholics anonymous: individuals</li> <li>Al-Anon: family members</li> <li>Alateen: teenagers</li> </ol>	<p><b>Slide #34</b> Alcoholics Anonymous</p>
5 minutes	<p><b>VII. Abuse of Prescription and Street Drugs</b></p> <p>A. Types of abuse:</p> <ol style="list-style-type: none"> <li>Drug abuse: habitual use of drugs not needed for therapeutic purposes.</li> <li>Prescription drug abuse: taking prescription medication that is not prescribed for that person; using a prescription for reasons or in dosages other than prescribed.</li> <li>Street drug abuse: taking drugs or substances purchased illegally from nonmedical sources and/or for nonmedical reasons.</li> </ol> <p>B. Systemic effects</p> <ol style="list-style-type: none"> <li>Drugs interfere with the function of the brain and create long-term effects on brain metabolism and activity.</li> <li>Dependency develops after periods of drug use followed by pathologic abuse.</li> </ol> <p><b>VIII. Risk Management for Legal Prescriptions</b></p> <ol style="list-style-type: none"> <li>Prescription drugs may become misused</li> <li>RX drugs can also be sold to drug traffickers.</li> <li>Prescription pad etiquette: <ol style="list-style-type: none"> <li>never pre-sign</li> <li>only prescribe minimum</li> </ol> </li> </ol>	<p><b>Slide #35</b> Transition slide/ Cartoon with joke</p> <p><b>NOTE:</b> There are statewide databases that helps track opioid prescriptions, Prescription drug monitoring programs, PDMP. This is especially important for a patient who is “drug seeking” and visits many different offices.</p> <p><b>Slide #36</b> Risk Management for Legal Prescriptions</p> <p><b>Slide #37</b> Maryland Dental Hygiene Well Being Committee</p> <p><b>NOTE:</b> this is free</p>

TIME	LESSON CONTENT	NOTES
	<p>necessary</p> <p>3.do not automatically give refills</p> <p>4.do not automatically include DEA number</p> <p>5.keep a watchful eye on amount of scripts, or how many electronic scripts written</p> <p>6.never allow self-prescribing</p> <p>D. Healthcare professionals need to safeguard against becoming an easy target for drug diversion.</p> <p>1.Background checks upon hire</p> <p>2.Review of policies and CE on</p> <p>3.Establish office policy</p> <p>E. Dental Team Responsibilities</p> <p>1. Educate the patient about how to safeguard prescription given for pain medication.</p> <p>2. Be mindful of the inherent abuse potential of opioids.</p> <p>3. Understand and comply with federal and state regulations regarding legitimate prescribing and administration of controlled substances.</p> <p>4. The ADA encourages dentists to:</p> <p>a. Obtain continuing education that promotes responsible prescribing practices.</p> <p>b. Ensure that opioids are available only to the patients who need them.</p> <p>c. Implement policies to limit instances of abuse and diversion.</p> <p><b>IX. Most Common Drugs of Abuse</b></p> <p>A. The most common drugs of abuse are alcohol and those found in the categories in this section.<sup>24</sup> Examples of the substance names in each category and the commercial and street names are</p>	<p>and confidential help. You can call for yourself or even a coworker</p> <p><b>Slide #38</b> Maryland State Board Disciplinary actions</p> <p><b>NOTE:</b> Do not let your dental hygiene license be in jeopardy if you have a disease (alcoholism and drug use is an illness, and treatment and help is available!)</p> <p><b>Slide #39</b> Most common drugs of abuse</p> <p><b>Slide #40</b> THC &amp; CBD <b>NOTE:</b> since medical cannabis</p>
5 minutes		

TIME	LESSON CONTENT	NOTES
15 minutes	<p>listed in Table 65-2.</p> <p>B. Cannabinoids(Marijuana)</p> <p>C. Depressants</p> <p>D. Dissociative Anesthetics</p> <p>E. Hallucinogens</p> <p>F. Opioids and Morphine Derivatives</p> <p>G. MDMA (3,4 dimethoxymethamphetamine) or Ecstasy</p> <p>H. Cocaine</p> <p>I. Steroids</p> <p>J. Inhalants</p> <p><b>X. Medical Effects of Drug Abuse</b></p> <p>A. Cardiovascular Effects</p> <ol style="list-style-type: none"> <li>1.Increase blood pressure.</li> <li>2.Cause vasoconstriction.</li> <li>3.Alter electroactivity of the heart.</li> <li>4.Promote a cardiac stimulant effect.</li> <li>5.Induce angina; precipitate myocardial infarction.</li> <li>6.Cause a variety of arrhythmias and palpitations including sudden cardiac death.</li> <li>7.Contribute to early subclinical atherosclerotic cardiovascular disease.</li> </ol> <p>B. Neurological Effects</p> <ol style="list-style-type: none"> <li>1. Memory lapses</li> <li>2. Decision-making or attention problems.</li> <li>3. Euphoric effects.</li> <li>4. Seizures, stroke, or intracerebral hemorrhage.</li> <li>5. Depression, paranoia, aggression, or hallucinations.</li> <li>6. Amnesia, delirium, or dementia.</li> <li>7. Mood or anxiety disorders.</li> <li>8. Sleep disorders.</li> </ol> <p>C. Gastrointestinal Effects</p> <ol style="list-style-type: none"> <li>1. gastro- intestinal and abdominal pain</li> <li>2. life-threatening hemorrhage.</li> </ol>	<p>is legal in Maryland, it is important to ask patient's about ALL medications. If using medical marijuana, what dose and form is being used.</p> <p><b>Slide #41</b> Transition/Title Slide: Medical Effects of Drug Abuse</p> <p><b>Slide #42</b> Cardiovascular Effects</p> <p><b>Slide #43</b> Neurological Effects</p> <p><b>Slide #44</b> Gastrointestinal Effects</p>

**TIME****LESSON CONTENT**

3. severe bowel gangrene due to reduced blood flow.
4. nausea and vomiting
- D. **Kidney Damage**
  1. Poor renal function
  2. Kidney failure
- E. **Liver Damage**
  1. Liver detoxifies substances
  2. Inability to metabolize drug leads to increase in toxic levels
  3. The liver combines cocaine and alcohol to form a third substance: cocaethylene, intensifies cocaine's euphoric effects, potentially increases the risk of sudden death.
- F. **Musculoskeletal Effects**
  1. Malaise
  2. Muscle Cramping
  3. Decreased growth if steroids used that effect sex hormones and growth
- G. **Respiratory Effects**
  1. A compromised respiratory system can result in a reduced respiration rate, asthma, bronchitis, emphysema, and lung cancer.
- H. **Prenatal Effects**
  1. Miscarriage.
  2. Premature birth.
  3. Low birth weight.
  4. FASD.
  5. Other birth defects
- I. **Infections**
  1. Drug users are at risk for acquiring a large range of infections.
  2. Skin and soft tissue: abscesses and cellulitis located at injection sites.
  3. Musculoskeletal infections, septic arthritis, and osteomyelitis, a local extension of soft tissue infection.
  4. Poor nutrition and human immunodeficiency virus

**NOTES**

**Slide #45**  
Kidney Damage

**Slide #46**  
Liver Damage

**Q:** Can the liver heal itself?  
**A:** YES! If damage is not too severe, the liver is an organ that can repair itself and improve

**Slide #47**  
Musculoskeletal Effects

**Slide #48**  
Respiratory Effects

**Slide #49**  
Pre-natal Effects

**Slide #50**  
Infections



**TIME**  
5 minutes

**LESSON CONTENT**

(HIV) infection can result in immunosuppression and increase the risk for:

**NOTES**

**Slide #51**  
Treatment  
Methods-  
Behavior Change

**Slide #52**  
Treatment  
methods- drug  
withdrawal  
medications

**Q:** What drug  
withdrawal  
medications did  
you learn about in  
your  
pharmacology  
course?

**A:** Answers may  
vary, most likely  
methadone

**XI Treatment Methods**

**A. Behavioral Change Interventions**

1. Counseling
2. Support groups psychotherapy
3. Family therapy

**B. Drug Withdrawal Medications**

1. Methadone
  - a. Suppresses withdrawal symptoms and drug craving, associated with narcotic addiction. In methadone maintenance programs, a daily dose (usually a minimum of 60 mg) is administered.
2. LAAM (Levo-Alpha-Acetyl-Methadol)
  - a. Suppresses withdrawal symptoms and drug cravings.
  - b. Administered three times per week only.
3. Naltrexone
  - a. Competes with opioids at the opioid receptor sites, therefore blocking the effects of heroin.
  - b. Does not eliminate drug craving, works best with highly motivated patients.
4. Phenobarbital or Diazepam
  - a. Longer-acting sedatives used to treat sedative withdrawal symptoms.
  - b. The dose is reduced gradually until there are no signs of withdrawal.

15 minutes

**Slide #53**  
Dental Hygiene  
Process of Care  
**Q:** What are the  
steps of ADPIE?  
**A:** Assessment,

**XII Dental Hygiene Process of Care**

**A. Assessment**

1. Patient History
  - a. update each appointment

TIME	LESSON CONTENT	NOTES
	<ul style="list-style-type: none"> <li>b. include personal, medical, and dental histories</li> <li>c. some patients will be reluctant to reveal alcoholism or drug use disorder</li> <li>d. some patients might be in denial</li> <li>e. Precautions, modifications, or adaptations may be needed to prevent an emergency situation.</li> </ul>	<p>Diagnosis, Planning, Implement, Evaluate, Document</p> <p><b>Slide #54</b> Dental Hygiene Assessment</p>
	<p>2. The Interview</p> <ul style="list-style-type: none"> <li>a. Practice effective communication</li> <li>b. Keep the lines of communication open; refrain from using comments that will place the patient on the defensive.</li> <li>c. Remain empathetic, respectful, and nonjudgmental; patients may be far more likely to respond to questions.</li> <li>d. Discuss the effects of drug use on physical, psychosocial, and economic well-being at a level appropriate for patient understanding.</li> <li>e. Obtain patient confidence</li> <li>f. The patient needs to be assured that personal information will remain confidential.</li> </ul>	<p><b>Slide #55</b> Medical History Form</p>
	<p>3. Screening:</p> <ul style="list-style-type: none"> <li>a. The CAGE Questionnaire <ul style="list-style-type: none"> <li>i. Cut down</li> <li>ii. Annoyed</li> <li>iii. Guilty</li> <li>iv. Eye-opener</li> </ul> </li> <li>b. The Five A's <ul style="list-style-type: none"> <li>i. Ask</li> <li>ii. Advise</li> <li>iii. Assess</li> <li>iv. Assist</li> <li>v. Arrange</li> </ul> </li> </ul>	<p><b>Slide #56</b> CAGE Questionnaire</p> <p><b>Slide #57</b> The 5 A's <b>Q:</b> What else is the 5 A's used for? <b>A:</b> Tobacco Cessation counseling</p>
	<p>4. Vital Signs</p> <ul style="list-style-type: none"> <li>a. BP</li> <li>b. Respiration</li> <li>c. Pulse</li> <li>d. Pulse ox</li> <li>e. Temperature</li> </ul>	
	<p>5. Clinical Examination</p>	

TIME	LESSON CONTENT	NOTES
	<ul style="list-style-type: none"> <li>a. Breath and body odor of alcohol and of tobacco:</li> <li>b. Tremor of hands, tongue, eyelids: Signs of withdrawal.</li> <li>c. Skin: Redness of forehead, cheeks, dilated blood vessels that produce spider petechiae on the nose; may worsen pre-existing acne rosacea.</li> <li>d. Eyes: Red, baggy eyes or puffy facial features; bloated appearance. Wears sunglasses</li> <li>e. Pupils <ul style="list-style-type: none"> <li>i. dilated (amphetamine, LSD, cocaine, marijuana).</li> <li>ii. constricted (heroin, morphine, methadone),</li> </ul> </li> <li>f. Lips: Angular cheilitis related to poor nutrition.</li> </ul>	<p><b>Slide #58</b> Pupils Photos showing dilation, normal, constriction</p> <p><b>Slide #59</b> Clinical Signs of Drug Use <b>NOTE:</b> be aware these signs could be indicative of something other than substance use, make sure to take history as well</p>
	<p>6. Intraoral Examination</p> <ul style="list-style-type: none"> <li>a. Mucosa, lips, tongue Dry; drug-induced xerostomia, soft tissue abnormalities.</li> <li>b. Tongue coated; glossitis related to nutritional deficiencies.</li> <li>c. Gingiva</li> <li>d. Generalized poor oral hygiene; heavy biofilm not unusual.</li> <li>e. Calculus deposits may be generalized, depending on patient neglect.</li> <li>f. Moderate to severe gingival inflammation.</li> <li>g. Gingiva that bleeds spontaneously or on probing.</li> <li>h. Palate Perforation of palate due to chronic cocaine snorting</li> <li>i. Teeth Chipped and fractured from falls and injuries; stained from tobacco use.</li> <li>j. Attrition secondary to bruxism.</li> <li>k. Erosion secondary to frequent vomiting, wine consumption, and</li> </ul>	<p><b>Slide # 60</b> <b>Q:</b> What causes “meth mouth”? <b>A:</b> effects of methamphetamine s: Xerostomia, lack of oral hygiene from drug binges, increased consumption of sweets, all combine for rampant caries</p>

TIME	LESSON CONTENT	NOTES
	<p>meth mouth.</p> <ol style="list-style-type: none"> <li>l. Removable or fixed partial dentures: chipped or broken, may require frequent repairs.</li> <li>m. Dental caries</li> <li>n. Increased risk factors: poor diet, lack of dental care, accumulation of biofilm, and xerostomia.</li> <li>o. Diet high in cariogenic substances.</li> <li>p. Root caries when gingival recession is evident.</li> <li>q. Open rampant carious lesions: abuse of Meth, diet of sweets, alcohol and soda pop as</li> </ol> <p><b>B. Dental Hygiene Diagnosis</b></p> <ol style="list-style-type: none"> <li>1. Rampant caries related to the changes in the addicted patient's lifestyle including:</li> <li>2. Periodontal infections related to:</li> <li>3. Xerostomia related to methamphetamine use (many drugs have dry mouth as a side effect).</li> </ol> <p><b>C. Planning</b></p> <ol style="list-style-type: none"> <li>1. Develop strategies to meet the individual needs of the</li> <li>2. Priorities and goals are determined by the immediacy of the condition, severity of the problem.</li> <li>3. Use of fluoride toothpaste and fluoride mouthrinse without alcohol.</li> <li>4. Apply fluoride applications such as fluoride varnish in office or custom trays for at home use.</li> <li>5. Do not administer local anesthetic for any procedure if unsure whether the patient has taken meth within the last 24 hours—as meth users are resistant to local anesthesia.</li> </ol> <p><b>D. Implementation</b></p> <ol style="list-style-type: none"> <li>1. Consult with patient's physician to determine whether prophylactic antibiotic</li> </ol>	<p><b>Slide #61</b> Example treatment plan</p>

TIME	LESSON CONTENT	NOTES
5 minutes	<p>premedication is indicated.</p> <ol style="list-style-type: none"> <li>2. Preprocedural rinse, antibacterial agents, and oral hygiene products that contain alcohol are to be avoided</li> <li>3. Scaling and Debridement               <ol style="list-style-type: none"> <li>a. Use of anesthesia: drug interactions, use of epinephrine, and choice of nitrous oxide/oxygen versus local anesthesia is reviewed and discussed with the patients' physician.</li> <li>b. Consult with physician if need to consider using nitrous oxide</li> <li>c. considerations for local anesthesia with or without epinephrine</li> <li>d. Power-Driven Instruments, use caution for patients with respiratory and pulmonary problems, tuberculosis,</li> <li>e. High-powered suction is essential.</li> </ol> </li> </ol>	<p><b>Slide #62</b> Factors to teach the patient</p>
	<p><b>E. Evaluation</b></p> <ol style="list-style-type: none"> <li>1. The usual oral tissue response expected following periodontal instrumentation may be limited by the changes in the patient's tissues</li> <li>2. Impaired healing.</li> <li>3. Interference with collagen formation and deposition.</li> <li>4. Decreased immune system function.</li> <li>5. Increased susceptibility to post care infection.</li> </ol> <p><b>F. Documentation</b></p> <ol style="list-style-type: none"> <li>1. Use patient medical alert box for possible substance abuse alerts dental personnel to:               <ol style="list-style-type: none"> <li>a. use a nonalcoholic mouth rinse.</li> <li>b. review score of CAGE questionnaire.</li> <li>c. avoid using local anesthetic with vasoconstrictors if patient is identified as an active user or has a positive CAGE score.</li> <li>d. possible aggressive</li> </ol> </li> </ol>	<p><b>Slide #63</b> Fact check- <b>Q</b>: alcohol rinses contribute to oral cancer risk?</p>

TIME	LESSON CONTENT	NOTES
	behavior.	Slide #64 A: No
	<b>XIV Factors to Teach the Patient</b>	
	A. Drug abuse is a great risk to overall health.	Slide #65 Resources about Listerine rinses
	B. Risk of oral cancer is increased by the use of alcohol, tobacco, and marijuana.	
	C. Need for routine oral screening at least twice a year for signs of early cancer.	
	D. Drinking alcohol and using other drugs (prescription or over the counter) can lead to medical emergencies. Always check each drug and its actions before using it in combination with alcohol or in combination with another drug.	Slide #66 OHI Mouth rinses
	E. Commercial antibacterial and fluoride mouthrinse may contain up to 30% alcohol. Labels must be read carefully. Keep mouthrinse bottles out of reach of children.	Slide #67 Transition Slide-Q: What OHI do you recommend
	F. Alcohol and other drugs readily enter the breast milk and are transmitted to the infant during nursing.	Slide #68 A: Homecare products
5 minutes	G. Illicit drug use during pregnancy can pose serious risks for unborn babies.	
	<b>XV. CLOSURE</b>	
	A. <u>Summary of Major Points - Relate Back to Objectives</u> I hope after this presentation your knowledge of substance use has been refreshed and that you learned something new.	Slide #69 Questions?
	B. <u>Provide a Sense of Accomplishment</u> I hope you will be more comfortable and able to recognize signs of substance use disorder, and be confident in your ability to complete an accurate assessment of a patient, document key vital signs and medical history items	Slide #70 Resource: Maryland Dental Hygiene Well Being Committee
	C. <u>Assignment:</u> For a better understanding of our topic today you should:	Slide #71 Bonus Resource: Podcast "Spotting substance abuse in your office"
	1. Read the shared DentalCare.com Articles. (Feel free to complete for your CE certificate!)	Slide #72 Bonus Resource: Podcast "Treating substance use disorder..."

TIME	LESSON CONTENT	NOTES
10 minutes	<ol style="list-style-type: none"> <li>If you have not already done so, complete a training in Narcan/Naloxone Opioid overdose.</li> <li>Be aware of local resources for patients (recovery support, safe medication disposal, etc)</li> </ol>	<p><b>Slide #73</b>          Bonus Resource:          Book “Dopesick”</p>
	<p><b>CRITICAL THINKING ACTIVITY</b></p> <p>Think-Pair-Share</p> <p>The class will read a news article about the Purdue Pharma settlement. After reading the article, students will pair into partners and discuss the questions below. Then, groups will discuss answers with the class.</p> <p>Critical Thinking Questions:</p> <ol style="list-style-type: none"> <li>What role does dentistry have in the opioid epidemic?</li> <li>Was it “fair” that the pharmaceutical company had to pay a large settlement?</li> <li>How should settlement money be used?</li> <li>What other pain management strategies can be used in the dental industry besides opioids?</li> <li>Should dental hygienists be required to have training on naloxone/Narcan overdose?</li> </ol>	<p><b>Slide #74</b>          Current Events-          news article about          Purdue Pharma          settlement</p> <p><b>Slide #77</b>          Transition slide-          Case Study</p> <p><b>Slide #78</b>          Case study          Activity</p>





## Test Questions

1. **Objective #1:** Explain key terms and concepts related to metabolism, intoxication effects, use patterns of alcohol.

**Test Item:** Match the term with its corresponding definition.

Term:

- a. Euphoria
- b. Delirium tremens
- c. Nystagmus
- d. Antabuse
- e. Tolerance

Definition:

- 1. Involuntary, rapid, rhythmic movements of the eyeballs
- 2. Brand name of the generic drug disulfiram; used to deter consumption of alcohol by persons being treated for alcohol dependency by inducing vomiting
- 3. A serious acute condition associated with the last stages of alcohol withdrawal
- 4. Ability to endure without effect or injury. Increased amount of the drug is needed to achieve the same effect.
- 5. Feeling of well-being, elation; without fear or worry

2. **Objective #2:** Identify physical health hazards, medical effects, oral manifestations associated with alcohol other drug abuse.

**Test Item:** A patient who is in recovery for methamphetamine use might display \_\_\_\_\_ caries, and a possible dental hygiene intervention would be \_\_\_\_\_.  
appointment

- a. Xerostomia, referral to primary care physician
- b. Rampant cervical caries, fluoride varnish and restorative dentistry
- c. Gingivitis, dry mouth product recommendations
- d. Oral mucositis, water flosser and electronic toothbrush instruction

3. **Objective #3:** List the names of the most commonly abused drugs and describe their intoxication effects and methods of use.

**Test Item:** The following is a list of commonly abused drugs by persons with substance use disorder, **EXCEPT** one. Which one is the **EXCEPTION**?

- a. alcohol
- b. acetaminophen
- c. opioids
- d. codeine

4. **Objective #4:** Describe methods for clinical assessment of potential substance abuse.

**Test Item: What does the CAGE questionnaire assess?**

- a. Screening tool for signs of
- b. Screening tool for caries risk
- c. Screening tool for signs of alcoholism
- d. Screening tool for potential drug use

**5. Objective #5. Advocate for patients who have a substance related disorder and tailor dental hygiene process of care to their needs.**

**Test Item:** A patient you have seen since their first dental visit returns home from their first semester at college for their periodontal recare appointment. You are very excited to see them and hear about their college experience, as you usually have a good rapport. You notice that their blood pressure and pulse are elevated, their appearance is untidy, and express an irritable mood. The plaque free score is 40%, and you see incipient caries that are new.

In 3-4 sentences, give a possible explanation for these clinical observations. Also include what modifications to dental hygiene treatment you would make, and what OHI you will include in your care. Specifically, what verbiage and follow up questions would you ask this patient.

**Correct Answers:**

1. a=5, Euphoria: Feeling of well-being, elation; without fear or worry  
b= 3, Delirium tremens: A serious acute condition associated with the last stages of alcohol withdrawal.  
c=1, Nystagmus: Involuntary, rapid, rhythmic movements of the eyeballs  
d= 2, Antabuse= Brand name of the generic drug disulfiram; used to deter consumption of alcohol by persons being treated for alcohol dependency by inducing vomiting.  
e=4, Tolerance= Ability to endure without effect or injury. Increased amount of the drug is needed to achieve the same effect.
2. D, rampant cervical caries, fluoride varnish and restorative dentistry. Although xerostomia and gingivitis might be present in patient who is recovering from drug use disorder, it is not the classical sign of “meth mouth” or rampant caries associated with methamphetamine use.
3. B, Acetaminophen. Acetaminophen, also known by the brand name Tylenol, is not typically an abused drug. However, note that prescription formulas may combine acetaminophen with other drugs such as codeine or oxycodone which may be commonly abused. (see pharmacology text page 64, table 6.6)
4. C, Screenings tool for signs of alcoholism

5. Answers may vary.

Remember never jump to conclusions about a person. In a kind manner, ask simple questions such as: How was your semester, what was your oral care routine while away at school, what is your social life like at college, how are you adjusting now back home over the summer. Patient could simply be exhausted from finishing final exams, or have had a person issue such as a death in the family. It is very possible that this patient was participating in underage binge drinking behaviors at college, and now experiencing alcohol withdrawal symptoms.

Some key dental hygiene interventions would include dietary counseling, plaque removal, and fluoride use. Dietary counseling- ask about increased sugar consumption. If patient discloses alcohol use, educate about caloric and carbohydrate and calorie content of alcohol. Discuss caries etiology (sugar and carbs converted to acids plus bacteria).

For plaque removal, a recommendation of an eclectic brush, or increasing brush frequency for improved plaque removal.

An in-office fluoride varnish and at home prescription strength fluoride product would be key for arresting caries.