CIGARETTE SMOKING

Who smokes?

- 1950 45% adults smoked self-reported
- “Doctors reports supporting it”
- Cigarette ads a thing
- 76% Indonesia
- 59% Russia
- 47% China
- 20% Males in US
- 1990’s 35% of high schoolers smoked
- Today <10% Kids

Who dies?

- Leading cause of preventable death CDC 1:5
- > risk of cancers, CV, stroke
- 13,000 deaths/ day
- Alcohol illegal drugs
- Suicide
- Car accidents
- Murder
- Still outnumbered by smoking deaths
SMOKING ADDICTION

- Nicotine in leaf of tobacco
- Target neuro-receptors in the brain
- Release chemical affect mood and cognition
- Seek more nicotine
- Highly addictive: People are willing to inhale to get nicotine
- Dirty delivery system: 7000 chemicals
- Benzene, lead, arsenic ammonia
Who wants to quit?

- 70% of US adults want to quit smoking
- How to reduce the cigarette smoking?
- Or shift smokers to other less harmful products
- Current Methods are Not very effective
- Smoking Cessation
  - 14% can quit with 1 Method
  - 17% 2+ can quit
- Vaccine: not positive results
- Bottomline: Millions of smokers want to quit but can’t since nicotine replacements therapies were not effective.
• Detrimental to youth, pregnant women, and the fetus

• Secondhand inhalation and exposure is a huge problem

• The patient who asks about the use of such products is an active learner (a somewhat captive audience) and probably has friends who will benefit from what she learns today from you.

• Our role as dental professionals encompasses total health and oral health.

• Continue to listen to your patients and always ask good questions.
DENTAL CONCERNS

- Future possibility of oral, oral-pharyngeal, and nasal cancer.
- Chronic tissue irritation/change with inflammation
- How does the inhalation of chemicals, flavoring agents, and nicotine affect the oral tissues?
- Affect esophageal tissue; nasal tissue; and oral tissue.
- With the rise in HPV infection, will this add cause additional harm?
- Will these products contribute to tissue changes such as discoloration?
- How much use will it take to see any effects?
- Are there long-term effects with the use of such high quantities of nicotine?
PERIODONTAL DISEASE

• Cigarette Smokers and Water-Pipe Smokers (JofP 2016 Javed et al)

  • Periodontal conditions were equally poor in Saudi Arabian community

• Peri-Implant health was compromised among vaping (JofP 2019 Jeong et al)

  • Inflammatory cytokine levels and Peri-implant parameters

• Electronic / cigarette use (JofP 2019 Jeong et al)

  • Significantly associated with increased perio disease

  • Suggest Vaping may not be a safe alternative to smoking

• Flavorings make bacteria 4 x more likely to stick to our teeth

• Gingivitis? Decay?
HEALTH CONCERNS

• Very heavy “hit” of nicotine; it is very concentrated.
• Pods are flavored and come in many different exotic scents/flavors.
• Delivery of a very large amount of nicotine with each use.
• Harmful chemicals still present: formaldehyde, propylene glycol and glycerol
• Respiratory symptoms, phlegm, congestion, persistent cough and bronchitis with burning in the throat
• Report suggest insulin resistance and type 2 diabetes, increased heart rate, and increased blood pressure with vaping devices.
• Changes noted in the brain may lead to chronic addiction practices.
VAPING
WARNING:
This product contains nicotine. Nicotine is an addictive chemical.
WARNING: This product contains nicotine. Nicotine is an additive chemical.

TRUE
FLAVOR.
TRUE
FEEL.
THE ANATOMY OF A JUUL POD

- POD COVER
- OUTER SHELL
- COIL AND WICK
- GOLD PLATED CONTACT
- CHIMNEY
- RUBBER GASKET
- MOUTHPIECE
MOUTHPIECE

- Funnels vapor from the atomizer to your mouth
- May not be recognizable
ATOMIZER

• Connects to the battery

• Turns nicotine into vapor

• Heating coil within it to vaporize the nicotine
TANK

• Storage location for e-liquid

• Refillable

• Can be called a cartridge if disposable

• Sometimes combined with atomizer to make a Cartomizer
BATTERY

• Rechargeable Lithium-ion batteries

• Some devices carry more than one battery
WHY IS VAPING A PROBLEM IN THE US?

• Vaping to quit appeals to adults: “Victory?”
• Vaping for young kids to start: “Disaster?”
  • To get them to not cigarette smoking
  • Can vaping still lead to cigarettes?
• American Lung Association: 5,700+ kids start daily
• Limited oversight on these products in the US
• Led to increased foothold and use in US
## SMOKING CESSATION PRODUCTS

### APPROVED
- Patches
- Gums

### NOT APPROVED
- FDA granted jurisdiction over tobacco products 2009
- E-cigarettes were new.
- FDA did not classify as tobacco products
- But as Drug delivery device: much stronger restrictions
- FDA declared them illegal
- Sale was banned so the vape companies sued

**Result:** E-Cigs companies sued and won.
- FDA re-classified e-cigs as tobacco products
- Can’t marketing as smoking cessation since a “cigarette”
## Two Different Approaches

<table>
<thead>
<tr>
<th><strong>US</strong></th>
<th><strong>UK</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>A substitute for cigarettes</td>
<td>Not great substitute</td>
</tr>
<tr>
<td>Limited regulations</td>
<td>More regulated</td>
</tr>
<tr>
<td>No nicotine restrictions: 50 mg/ml</td>
<td>Harm reduction policy</td>
</tr>
<tr>
<td>1 Juul pod = 4 pack cigarettes.</td>
<td>Ltd nicotine conc: 20 mg/ml</td>
</tr>
<tr>
<td>Banning approach: backfired</td>
<td>Juul is here but no youth problem</td>
</tr>
<tr>
<td>Youth: 28% high schoolers</td>
<td>Regulatory Approach: how to get people to stop</td>
</tr>
<tr>
<td>Youth: &lt;2% 18 or younger</td>
<td></td>
</tr>
</tbody>
</table>

---
DIFFERENT VIEWS

UNITED STATES VS UNITED KINGDOM

GOVERNMENT EDUCATION

FDA FEAR ADVERTISING
The U.S. FDA uses baseless fear to educate the population. They do not provide science-based facts about vaping.

95% LESS HARMFUL THAN SMOKING
The message is simple.

SCIENCE BASED RESEARCH
The United Kingdom's Public Health provides science-based awareness to its population.

PUBLIC HEALTH EDUCATION

Vaping: what we find scary at Halloween.
Just a little more formaldehyde!

FEAR BASED ADVERTISING
False ad with no science-based information. This ad is designed to scare, not educate the population on vaping.

EDUCATING THE POPULATION
The Cancer Institute UK provides data on the positive effects vaping provides to help people quit smoking.

MEDICAL COMMUNITY SUPPORT

FALSE ADS
These ads portray doctors as against vaping, when in reality, most doctors all over the U.S. support vaping.

SUPPORTS VAPING
The British Medical Association makes an effort to let people know the benefits vaping has to current smokers.

British Medical Association supports vapers
DIFFERENT APPROACHES

UNITED STATES VS UNITED KINGDOM

NICOTINE STRENGTH LIMIT

NO NICOTINE LIMIT
In the U.S., nicotine levels can far exceed pesticide levels.

20MG LIMIT
In the U.K., nicotine levels can’t be more than a cigarette.

BOTTLE CAPACITY REQUIREMENTS

NO SIZE LIMIT
In the U.S., it can be a serious concern if kids accidentally ingest large amounts.

10ml SIZE LIMIT
The U.K. only allows for small 10ml bottles. This helps protect kids.

INGREDIENT RESTRICTIONS

NO LIMIT
The U.S. doesn’t regulate what goes into e-liquid. Potentially creating a witch’s brew.

INGREDIENT LIMIT
In the U.K., restrictions are set against items that can’t be added to e-liquid. Safety first.

VITAMINS

CAFFEINE

ARTIFICIAL FLAVORS

STIMULANTS

TAURINE

ADVERTISING GUIDELINES

NO GUIDELINES
In the U.S., there are no guidelines. Vape products like JUUL can target kids.

STRICT GUIDES
In the U.K., there are many marketing and advertising restrictions.
Youth initiation is driven by high nicotine strengths, expensive advertising campaigns and lack of reasonable regulations.
HARM REDUCTION IN THE US

- No variation in nicotine dosage available, cannot “step down”
- Juul is not recommended if want to decrease or quit nicotine use.
- “Smoking Cessation” allowed?
- 30% vapers quit smoking for now
- Recent evidence suggests that vaping products in general lead to the use of other tobacco products such as cigarettes in the adolescent population (Chaffee, et al. 2018).
CURRENT NEWS

• Trump / FDA planned to ban of most flavoring e-cigs: Decision was reversed
• Juul eliminated though all flavorings: Menthol, Virginia and Classic
• Flavors attract adults to quit smoking
• Flavors attracted kids to use
• Black Market
  • Flavorings
  • THC / CBD
• Battery Explosions
• EVALI
FUTURE PROJECTIONS

• Sales have skyrocketed
• 40 million now (10 years ago at 7 million)
• Touted as a mechanism to decrease tobacco use
• 54% of e-cig users smoke regular cigs
• Juul products do not have a nicotine step-down approach
• JUUL starter kit: Device, charger, and 4 Juul pods for $49.
• Blu starter kit: Device and Charger $20 Pod sold separately
• Are e-cigs and vaping gateway devices for other addiction products?
• If first-time users do not like the taste, they may not continue to use the products
• Younger Kids

Laura Bach in “Campaign for Tobacco Free Kids,” (March 2018)
VAPING

- Heated, inhaled, and sometimes exhaled with the option of re-inhaling the smoke again from the mouthpiece.
- The scent is unlike tobacco products and not easily detectable.
- Students will exhale the vapor into a hoody or a jacket. Often used in classrooms or restrooms during school hours.
- Newer generation devices, such as the Juul equipped with a high-capacity battery, deliver 35% to 72% increased nicotine.
VAPING

- Highest 18-24 yrs old
- 20% of high schoolers vape regularly
- > 2x those who smoke cigarettes
- Most vapers did not smoke cigarettes
- Youth addiction to nicotine is a problem
- Sweet and fruity products increased appeals
- Almost 40% of kids have vaped at least once.
- Vaping is easy to hide, so know the signs.
JUUL

- Sleek device: Minimalist
- Flavors: Mango and cucumber mint
- US leader 1:3 e-cigs
- From 2015 to 2018: valued at $38 Billion
- Sold off 35% to Altria (formerly Phillip Morris)

- Success due to Nicotine Salt: even more addictive
- Benzoic Acid in the flavorings is another source of addiction
- Absorbed quickly like a real cigarette
- Discreet method of inhaling nicotine could lead to oral health concerns

- Toxicity: Much less than cigarettes
  - Some studies show no to a few detectable foreign chemicals.
  - Much ”safer” than 7,000 chemical from cigs
IS YOUR PATIENT JUULING?

- Very trendy behavior for young adults—even used by adolescents
- “iPhone of vapes” and charges on a laptop or other USB port.
- Easy to use and discreet: Increase use at school
- No tobacco odor. Prevalent in many high schools.
- Flavorings for better taste
- Can purchase “skins” to decorate their Juul devices
• Opposes the use of oral tobacco, including vaping nicotine from e-cigarettes, and urges people using any type of tobacco product to quit.

• “Vaping is not a safe alternative to cigarettes or other tobacco products,”

• “When it comes to your teeth and gums, vaping could be just as dangerous as cigarette smoking.”

• Advocates for scientific research examining the effects of both tobacco and non-tobacco nicotine delivery products

• “Vaping” and any other alternative nicotine delivery systems to be added to tobacco use prevention, research and regulation.

• Supports end to youth vaping epidemic (current legislation)

• Joins more than 50 organizations led by the Campaign for Tobacco-Free Kids commended the White House for its plan to remove all non-tobacco flavored e-cigarettes from the market, including mint and menthol flavors.
ADA STATEMENT ON VAPING

• Policy in alignment with the American Medical Association

• New Interim Policy calling for a total ban on all vaping products that aren’t approved by the FDA for tobacco cessation purposes.

• Urgently advocate for regulatory, legislative, and/or legal action at the federal and/or state levels to ban the sale and distribution of all e-cigarettes and vaping products except those noted above

• Advocate for research funding to study the safety and effectiveness of these products for smoking cessation

• Encourages dentist and other health care providers to report potential vaping-associated respiratory illness by using the FDA safety reporting portal [www.safetyreporting.hhs.gov](http://www.safetyreporting.hhs.gov)
EVALI

E-CIGARETTE OR VAPING ASSOCIATED LUNG INJURY
HOW DOES EVALI PRESENT?

- Chest pains, shortness of breath, vomiting
- Overwhelming concentration on young people. 8 in 10 under 35 years old
- As of January 14, 2020,
  - 2,668 hospitalized EVALI cases or deaths have been reported
  - 60 deaths have been confirmed
- Responsible: Product or Device?
  - None: So all lumped in together
  - E-cigs too
  - Banning products in some states and cities
- Impact on deaths?
  - None reported in UK from Juuling and other devices
WHAT CAUSES EVALI?

• Vitamin E Acetate
  • An additive, most notably in THC-containing e-cigarette, or vaping, products.
  • Usually does not cause harm when ingested; however, when inhaled, it may interfere with normal lung functioning.

• All EVALI patients have reported a history of using e-cigarette, or vaping, products.
  • THC-containing e-cigarette, or vaping, products, re linked to most EVALI cases and play a major role in the outbreak.
  • Vitamin E acetate is strongly linked to the EVALI outbreak.
  • Vitamin E acetate has been found in patient lung fluid samples tested by CDC from geographically diverse states.
• Revenues from California Black Market is 3x greater than Permitted sources
• CDC
  • Deaths 89% cases are attributable to THC or Black Market vaping OILS
  • Vitamin E acetate is strongly linked to the EVALI outbreak.
  • Evidence is not sufficient to rule out the contribution of other chemicals of concern, including chemicals in either THC or non-THC products.
• Nicotine liquids are water or alcohol based: Not associated with store bought products
• THC liquids are oil based
• Anticipate the switch back to cigarettes
• CDC analyzed THC-containing product brands by EVALI patients.

• 152 THC-containing products were reported by EVALI pts

• Dank Vapes, a class of largely counterfeit THC-containing products of unknown origin, was the most commonly reported product brand used by patients nationwide.

• Data supports EVALI is associated with THC-containing products and not associated with a single THC-containing product brand.
THE TRUTH ABOUT POPCORN LUNG
What is Popcorn Lung and Can Vaping Cause It?

“Popcorn lung” is the nickname for bronchiolitis obliterans, a serious and irreversible lung disease that can damage the smallest airways in your lungs, resulting in coughing and shortness of breath.

The main symptoms of popcorn lung are a dry cough and shortness of breath.
ORAL INJURIES - EXPLOSIONS
CDC

- CDC.gov/tobacco/basic_information/e-cigarettes/severe-lung-disease.html
- CDC.gov/e-cigarettes

ADA: ADA.org/AAPvaping

American Lung Association: Lung.org/stop-smoking/vape-talk/

Freakonomics Radio 11-20-2019 Podcast

Betobaccofree.com

Fightflavoredecigs.org
REFERENCES


7. Qasim H, Karim ZA, Rivera JO, Khasawneh FT, Alshbool FZ. Impact of Electronic Cigarettes on the Cardiovascular System. Downloaded from http://jaha.ahajournals.org/ by guest on April 18, 2018


11. The New England Journal of Medicine
Downloaded from nejm.org on April 18, 2018. engl j med 372;4 nejm.org january 22, 2015.


13. NANCY W. BURKHART, AFAAOM, BSDH, EdD, at nburkhart@tamhsc.edu
QUICK CLASSIFICATION SYSTEM UPDATE
Diagnosis
The foundation to then determine the impact of care on Prognosis

Prognosis
We do not render therapy unless we can anticipate the results of our care.
# PERIODONTITIS: STAGING

Staging intends to classify the severity and extent of a patient's disease based on the measurable amount of destroyed and/or damaged tissue as a result of periodontitis and to assess the specific factors that may attribute to the complexity of long-term case management.

Initial stage should be determined using clinical attachment loss (CAL). If CAL is not available, radiographic bone loss (RBL) should be used. Tooth loss due to periodontitis may modify stage definition. One or more complexity factors may shift the stage to a higher level. See [perio.org/2017wwdc](http://perio.org/2017wwdc) for additional information.

<table>
<thead>
<tr>
<th>Severity</th>
<th>Periodontitis</th>
<th>Stage I</th>
<th>Stage II</th>
<th>Stage III</th>
<th>Stage IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interdental CAL</td>
<td>1 – 2 mm</td>
<td>3 – 4 mm</td>
<td>≥5 mm</td>
<td>≥5 mm</td>
<td></td>
</tr>
<tr>
<td>(at site of greatest loss)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RBL</td>
<td>Coronal third (&lt;15%)</td>
<td>Coronal third (15% - 33%)</td>
<td>Extending to middle third of root and beyond</td>
<td>Extending to middle third of root and beyond</td>
<td></td>
</tr>
<tr>
<td>Tooth loss (due to periodontitis)</td>
<td>No tooth loss</td>
<td>≤4 teeth</td>
<td></td>
<td>≥5 teeth</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Complexity</th>
<th>Local</th>
<th>In addition to Stage II complexity:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Max. probing depth ≤4 mm</td>
<td>• Probing depths ≥6 mm</td>
</tr>
<tr>
<td></td>
<td>• Mostly horizontal bone loss</td>
<td>• Vertical bone loss ≥3 mm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Furcation involvement</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Class II or III</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Moderate ridge defects</td>
</tr>
</tbody>
</table>

### Extent and distribution

Add to stage as descriptor

For each stage, describe extent as:
- Localized (<30% of teeth involved);
- Generalized; or
- Molar/incisor pattern

In addition to Stage III complexity:
- Need for complex rehabilitation due to:
  - Masticatory dysfunction
  - Secondary occlusal trauma (tooth mobility degree ≥2)
  - Severe ridge defects
  - Bite collapse, drifting, flaring
  - ≤20 remaining teeth (10 opposing pairs)
<table>
<thead>
<tr>
<th>1998</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen or Loc</td>
<td>Gen or Loc or Mand/Incisor</td>
</tr>
<tr>
<td>Chronic or Aggressive</td>
<td>No longer used</td>
</tr>
<tr>
<td>Periodontitis</td>
<td>Periodontitis</td>
</tr>
<tr>
<td>Slight</td>
<td>Stage I (Slight)</td>
</tr>
<tr>
<td>Moderate</td>
<td>Stage II (Mod)</td>
</tr>
<tr>
<td>Severe</td>
<td>Stage III (Severe)</td>
</tr>
<tr>
<td>No designator for risk</td>
<td>Stage IV (Very Severe)</td>
</tr>
<tr>
<td></td>
<td>Grade A or B or C</td>
</tr>
</tbody>
</table>
**PERIODONTITIS: GRADING**

Grading aims to indicate the rate of periodontitis progression, responsiveness to standard therapy, and potential impact on systemic health.

Clinicians should initially assume grade B disease and seek specific evidence to shift to grade A or C. See perio.org/2017wwdc for additional information.

<table>
<thead>
<tr>
<th>Progression</th>
<th>Grade A: Slow rate</th>
<th>Grade B: Moderate rate</th>
<th>Grade C: Rapid rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary criteria</strong></td>
<td>Direct evidence of progression</td>
<td>Radiographic bone loss or CAL</td>
<td>No loss over 5 years</td>
</tr>
<tr>
<td>Indirect evidence of progression</td>
<td>% bone loss / age</td>
<td>&lt;0.25</td>
<td>0.25 to 1.0</td>
</tr>
<tr>
<td>Case phenotype</td>
<td>Heavy biofilm deposits with low levels of destruction</td>
<td>Destruction commensurate with biofilm deposits</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grade modifiers</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk factors</td>
<td>Smoking</td>
<td>Non-smoker</td>
</tr>
<tr>
<td>Diabetes</td>
<td>Normoglycemic/no diagnosis of diabetes</td>
<td>HbA1c &lt;7.0% in patients with diabetes</td>
</tr>
</tbody>
</table>

The 2017 World Workshop on the Classification of Periodontal and Peri-Implant Diseases and Conditions was co-presented by the American Academy of Periodontology (AAP) and the European Federation of Periodontology (EFP).
# Prognosis Chart

<table>
<thead>
<tr>
<th>Age</th>
<th>Excellent 25+ yrs</th>
<th>Good 15-25 yrs</th>
<th>Fair 10-15 yrs</th>
<th>Poor 5-10 yrs</th>
<th>Questionable / Guarded &lt; 5 yrs</th>
<th>Hopeless 0 yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage</td>
<td>Stage I Grade A</td>
<td>Stage II</td>
<td>Stage III</td>
<td>Stage IV</td>
<td>Stage IV Grade C</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Probing</td>
<td>1-3 mm</td>
<td>4-5mm</td>
<td>5+mm</td>
<td>5+ mm</td>
<td>5+ mm</td>
<td>5+ mm</td>
</tr>
<tr>
<td>Depths</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility</td>
<td>None</td>
<td>None</td>
<td>Class 1</td>
<td>Class 2</td>
<td>Class 3</td>
<td>Class 3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Furcation</td>
<td>None</td>
<td>Mand Class 1</td>
<td>Mand Class 2</td>
<td>Mand Class 3</td>
<td>Through</td>
<td></td>
</tr>
<tr>
<td>Concavity</td>
<td></td>
<td>Max Class 1</td>
<td>Max Class 2</td>
<td>Max Class 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Molar Type</td>
<td>None</td>
<td>Mand Molars</td>
<td>Max Molars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Smoking</td>
<td>None</td>
<td>None</td>
<td>&gt;10 cigs</td>
<td>&gt; 10 cigs</td>
<td>&gt; 10 cigs</td>
<td>&gt; 10 cigs</td>
</tr>
<tr>
<td>Diabetes</td>
<td>None</td>
<td>&lt;7.0</td>
<td>&gt;7.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Stage</td>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>--------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Localized</td>
<td>I</td>
<td>A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mand-Incisor</td>
<td>II</td>
<td>B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Generalized</td>
<td>III</td>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Periodontitis</td>
<td>IV</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Stage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>I #2-3, 15</td>
<td>B</td>
</tr>
<tr>
<td>Generalized</td>
<td>II</td>
<td>C</td>
</tr>
</tbody>
</table>
QUESTIONS?

REVIEW OF ANSWERS

LECTURE AT
WWW.NORTHSTATEPERIO.COM