# Advanced Dental Admission (ADAT) Practice Test (Sample)

## Study Guide


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# Questions

**1. What clinical finding is commonly associated with Paget's disease?**

**A. Osteolytic lesions**

**B. Cotton wool opacities**

**C. Osteosclerotic lesions**

**D. Normal trabecular pattern**

**2. Which microbe is associated with root surface caries?**

**A. A streptococcus mutans**

**B. A israelii**

**C. A staphylococcus aureus**

**D. A candida albicans**

**3. In which trimester can conjugated hyperbilirubinemia be particularly acquired?**

**A. Second trimester**

**B. Third trimester**

**C. First trimester**

**D. Any trimester**

**4. What is a characteristic of Class I occlusion?**

**A. The mb cusp of the max first molar contacts the mesial groove of the mandibular first molar**

**B. The mb cusp of the max first molar contacts the distally of the mandibular first molar**

**C. Max canine contacts between the opposing mandibular canine and first molar**

**D. The mb cusp of maxillary molars contacts the buccal grooves of opposing molars**

**5. Which teeth are usually characterized by having a mesiodistal width greater than the faciolingual width?**

**A. Maxillary lateral incisors**

**B. Mandibular central incisors**

**C. Maxillary central incisors and mandibular molars**

**D. Maxillary canine**

**6. Which is an advantage of MTA in dental procedures?**

- **A. Inflammatory response**
- **B. Radiopaque property**
- **C. Limited sealing ability**
- **D. Low pH**

**7. Which feature of MTA contributes to its high sealing ability?**

- **A. Hydrophobic nature**
- **B. High pH**
- **C. Inert composition**
- **D. Low viscosity**

**8. What hormone is released from G Cells in the stomach?**

- **A. Secretin**
- **B. Cholecystokinin**
- **C. Gastrin**
- **D. Gastric inhibitory peptide**

**9. What adverse effects are primarily monitored in Phase IV clinical trials?**

- **A. Short-term treatment effects**
- **B. Rare or long-term adverse effects**
- **C. Immediate side effects**
- **D. Dosage-related effects**

**10. What cells in the small intestine produce secretin?**

- **A. S Cells**
- **B. I Cells**
- **C. K Cells**
- **D. Chief Cells**

# Answers

**1. B**
**2. B**
**3. B**
**4. A**
**5. C**
**6. B**
**7. B**
**8. C**
**9. B**
**10. A**

# Explanations

## 1. What clinical finding is commonly associated with Paget’s disease?

**A. Osteolytic lesions**

**B. Cotton wool opacities**

**C. Osteosclerotic lesions**

**D. Normal trabecular pattern**

**In Paget's disease of bone, one of the hallmark clinical findings is the presence of cotton wool opacities on radiographic images. These opacities represent areas of abnormal bone remodeling and are a result of the disease's characteristic disorganized bone formation and resorption processes. As Paget's disease progresses, the affected bones undergo changes that lead to thickening and expanding of the bones, which can appear as fluffy or cotton-like on X-rays. The presence of cotton wool opacities is significant because it indicates the presence of pathological alterations in the bone structure due to this condition. This finding can often be seen in the skull, but it may also present in other skeletal areas affected by the disease. In contrast, other findings related to Paget's disease, such as osteolytic lesions and osteosclerotic lesions, can also occur but do not characterize the condition in the same way. Osteolytic lesions refer to areas of bone loss, whereas osteosclerotic lesions describe regions of increased bone density. While both of these can happen in Paget's disease, the quintessential and visually distinctive cotton wool opacities are what primarily align with its clinical presentation. A normal trabecular pattern would not be expected in Paget's**

## 2. Which microbe is associated with root surface caries?

**A. A streptococcus mutans**

**B. A israelii**

**C. A staphylococcus aureus**

**D. A candida albicans**

**Root surface caries is primarily associated with specific types of microbes that thrive in the anaerobic and acidic environments characteristic of the root surface, particularly when the root surface is exposed due to periodontal disease. Among the microbes listed, Actinomyces israelii is known for its presence in dental plaque and its role in the initiation and progression of root surface caries. Actinomyces israelii is a gram-positive bacterium that commonly colonizes the oral cavity. It is particularly adept at adhering to tooth surfaces and is often implicated in the breakdown of the tooth structure, which leads to carious lesions. In the context of root surface caries, it is significant because it can invade the cementum layer of the tooth roots, where it produces acids that demineralize the tooth tissue, ultimately resulting in caries formation. While other microorganisms listed can be involved in various oral infections or conditions, their association with root surface caries is not as direct or notable as that of Actinomyces israelii. For example, Streptococcus mutans is more typically associated with caries on coronal surfaces, while Staphylococcus aureus and Candida albicans generally are not considered primary pathogens in the context of root surface caries.**

## 3. In which trimester can conjugated hyperbilirubinemia be particularly acquired?

**A. Second trimester**

**B. Third trimester**

**C. First trimester**

**D. Any trimester**

**Conjugated hyperbilirubinemia is an elevated level of conjugated bilirubin in the blood, often associated with liver function and biliary obstruction. In the context of pregnancy, the third trimester is a critical period for the development of certain complications that can lead to conjugated hyperbilirubinemia. During the third trimester, hormonal changes and the physical stresses of pregnancy can affect liver function and metabolism. Conditions such as cholestasis of pregnancy, which is characterized by bile flow obstruction and can lead to elevated levels of conjugated bilirubin, are more commonly observed in this stage. Additionally, the increased demand on the mother's liver due to the growing fetus and changes in bile composition can contribute to the risk of developing this condition. Understanding the timing of these physiological changes is crucial for recognizing the potential for conjugated hyperbilirubinemia, making the third trimester a particularly relevant period in this context. The first and second trimesters typically do not showcase the same risk factors or physiological changes that would lead to this condition, while saying "any trimester" does not accurately highlight the specific increased risk associated with the third trimester.**

## 4. What is a characteristic of Class I occlusion?

**A. The mb cusp of the max first molar contacts the mesial groove of the mandibular first molar**

**B. The mb cusp of the max first molar contacts the distally of the mandibular first molar**

**C. Max canine contacts between the opposing mandibular canine and first molar**

**D. The mb cusp of maxillary molars contacts the buccal grooves of opposing molars**

**Class I occlusion is characterized by having a specific relationship between the maxillary and mandibular molars that reflects a normal bite pattern. In this classification, the mesiobuccal (mb) cusp of the maxillary first molar aligns with the mesial groove of the mandibular first molar. This relationship is indicative of a well-aligned dental arch and proper occlusion where the teeth fit together harmoniously. This alignment is significant because it allows for optimal dental function, including effective chewing and speaking. Additionally, Class I occlusion helps maintain dental health by distributing occlusal forces evenly across the dental arches, reducing wear and potential issues stemming from misalignment. Other options describe different relationships that do not fit the criteria for Class I occlusion. For instance, the second option describes a contact that would be found in a Class II relationship, whereas the third option mentions canine and molar contact that is not characteristic of Class I occlusion. The fourth option similarly describes a contact that is not indicative of this classification. Understanding these relationships can help recognize the importance of occlusal classifications in dental practice.**

## 5. Which teeth are usually characterized by having a mesiodistal width greater than the faciolingual width?

**A. Maxillary lateral incisors**

**B. Mandibular central incisors**

**C. Maxillary central incisors and mandibular molars**

**D. Maxillary canine**

**The teeth typically recognized for having a mesiodistal width greater than the faciolingual width are indeed the maxillary central incisors and the mandibular molars. This characteristic is important in dental anatomy and tooth morphology. Maxillary central incisors have a broad, flat surface that is wider from mesial to distal than it is from the facial to lingual surfaces, reflecting their function in cutting through food. Similarly, mandibular molars, particularly the first molars, exhibit a greater mesiodistal width compared to their faciolingual measurement. This design supports their role in grinding and crushing food. The other options do not fit this description. For instance, maxillary lateral incisors generally possess a more balanced width, while mandibular central incisors are narrower and exhibit a more equal distribution between mesiodistal and faciolingual dimensions. Maxillary canines have a prominent mesiodistal width but usually do not surpass their faciolingual width in the same manner as the selected teeth. Understanding these morphological features is crucial for identifying teeth and their respective functions within dental practice.**

## 6. Which is an advantage of MTA in dental procedures?

**A. Inflammatory response**

**B. Radiopaque property**

**C. Limited sealing ability**

**D. Low pH**

**The advantage of mineral trioxide aggregate (MTA) in dental procedures is its radiopaque property. This characteristic allows dental practitioners to easily visualize the material in radiographs, which is crucial for assessing the location, integrity, and effectiveness of the treatment over time. Radiopacity benefits the practitioner during follow-up evaluations, ensuring that the material can be distinctly identified against surrounding tissues. In contrast, while an inflammatory response can occur following some dental procedures, it is not considered an advantage of MTA. Limited sealing ability does not represent a benefit, as MTA is known for its excellent sealing properties. The low pH of MTA when mixed is also not favorable, as a more neutral pH generally promotes biocompatibility and reduces irritation to surrounding tissues. Therefore, the radiopaque property stands out as a significant advantage of using MTA in various dental applications, such as pulp capping, apexification, and root-end fillings.**

## 7. Which feature of MTA contributes to its high sealing ability?

**A. Hydrophobic nature**

**B. High pH**

**C. Inert composition**

**D. Low viscosity**

**The high sealing ability of MTA, or Mineral Trioxide Aggregate, is primarily attributed to its high pH. When MTA is mixed, it results in an alkaline pH typically around 12-13. This high pH not only fosters an environment that is conducive to the formation of hydroxyapatite, which aids in the sealing quality, but it also possesses antibacterial properties that help in the maintenance of the integrity of the sealing over time. The ability to create a strong alkaline environment is crucial in promoting tissue healing and preventing bacterial invasion, thus enhancing the overall sealing capability of MTA in dental procedures. While the hydrophobic nature and low viscosity of MTA may influence its performance in specific contexts, they do not directly correlate to the sealing capacity. Similarly, the inert composition of MTA reflects its biocompatibility and minimizes adverse reactions but does not significantly contribute to sealing ability like the high pH does.**

## 8. What hormone is released from G Cells in the stomach?

**A. Secretin**

**B. Cholecystokinin**

**C. Gastrin**

**D. Gastric inhibitory peptide**

**The hormone released from G cells in the stomach is gastrin, which is a key player in the digestive process. G cells, located primarily in the gastric mucosa, respond to various stimuli, such as the presence of food in the stomach, by secreting gastrin into the bloodstream. Gastrin has several vital functions: it stimulates the secretion of gastric acid (hydrochloric acid) from the parietal cells in the stomach, which is critical for the digestion of food. It also promotes gastric motility, enhancing the movement of the stomach muscles to facilitate digestion and mixing of food with gastric juices. Additionally, gastrin aids in maintaining the integrity of the gastric mucosa through its trophic effects. The other hormones listed have different sources and functions. Secretin is produced by the S cells in the duodenum and plays a role in regulating water homeostasis and acidity by stimulating the pancreas to release bicarbonate. Cholecystokinin, mostly produced in the cells of the small intestine, is involved in stimulating the gallbladder to release bile and promoting the release of digestive enzymes from the pancreas. Gastric inhibitory peptide (GIP) is also produced in the small intestine and helps to inhibit gastric motility and secretion**

## 9. What adverse effects are primarily monitored in Phase IV clinical trials?

**A. Short-term treatment effects**

**B. Rare or long-term adverse effects**

**C. Immediate side effects**

**D. Dosage-related effects**

**Phase IV clinical trials, often referred to as post-marketing surveillance, primarily focus on monitoring the long-term effects of a drug once it has been approved and is available for general use. This phase is crucial for identifying rare or long-term adverse effects that may not have been evident during earlier phases of clinical trials, where participant numbers are often limited and the duration of exposure to the drug is shorter. In the pre-marketing phases, studies typically involve a controlled environment and a select group of individuals, which may not accurately represent the diverse patient population that will ultimately use the drug. This limitation can leave certain adverse effects undetected, particularly those that occur infrequently or develop after prolonged usage. Phase IV trials help gather real-world data on the safety profile of the medication. They can highlight issues such as rare allergic reactions, interactions with other medications, or long-term health risks, which are crucial for ensuring ongoing patient safety and informing clinical guidelines. By observing these effects in a broader population over an extended time, healthcare providers can make more informed decisions on the drug's benefits and risks.**

## 10. What cells in the small intestine produce secretin?

**A. S Cells**

**B. I Cells**

**C. K Cells**

**D. Chief Cells**

**Secretin is a hormone that plays a crucial role in regulating water homeostasis and pH levels in the small intestine. It is produced by specialized cells known as S cells, which are located in the mucosal lining of the duodenum, the first segment of the small intestine. When acidic chyme from the stomach enters the duodenum, the S cells detect the low pH and respond by secreting secretin into the bloodstream. Upon its release, secretin stimulates the pancreas to release bicarbonate-rich fluid, which helps neutralize gastric acid. This creates a more favorable environment for the functioning of digestive enzymes in the small intestine. Additionally, secretin also acts on the liver to promote bile production, which is important for lipid digestion. The other cell types listed have distinct functions in the digestive system. I cells produce cholecystokinin (CCK), K cells release gastric inhibitory polypeptide (GIP), and chief cells secrete pepsinogen in the stomach. Thus, the action and significance of S cells in producing secretin are pivotal for maintaining the appropriate conditions for digestion in the small intestine.**