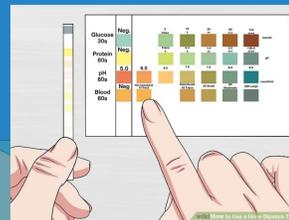


The Benefits of Multimodal Interactive Case Studies



a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

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Baby William is being held by his Grandfather for the 1st time.
Three different forms of Diabetes have affected this family.
Let's investigate!



Introduction

For my pre-COVID19, 2nd year Nursing Pathophysiology course, I created case studies that were visual, hands-on, as well as electronically interactive, enabling instant feedback & opportunities to review again. It is well known that students find the realistic nature of case studies to be compelling and can be used to foster mastery of course content. I wanted these practice exercises to be interesting, engaging, memorable, and helpful in reviewing challenging topics. Case studies include Osteoporosis, Fracture, Heart Disease, Peptic Ulcers, Endocrine Homeostasis, and Diabetes.

Diabetes

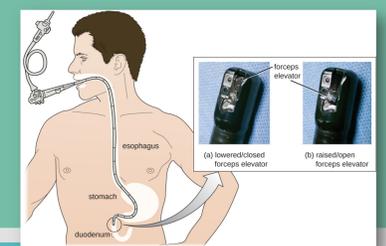
Sample Questions include:

- Q2. Look at Shawn's test strip and determine whether he has glucosuria.
- Q3. Fill in the chart to compare risk factors for Type I, Type II, and Diabetes as well as treatment options.
- Q4. Bill is pre-diabetic, select signs & symptoms of Diabetes that he will be told to watch for.

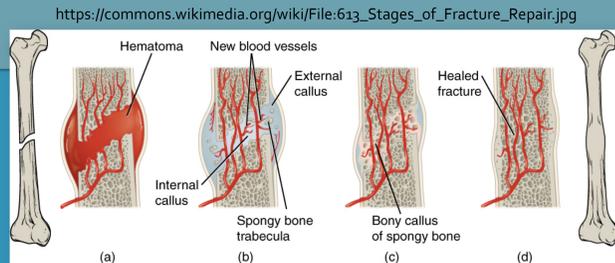
Peptic Ulcers

Polly is a 29-year old smoker, experiencing intermittent right epigastric pain. It gets worse about 90 minutes to 3 hours after eating and is relieved by food. She's been waking up at night with abdomen pain. She's worried that her pain medication is not agreeing with her. She took a nasty fall when snowboarding and has been taking the maximum dosage of ibuprofen every day for 3 months. She also wonders if her new job is stressing her out as her boss is a real tyrant. Polly decides to go see a doctor. Sample Questions include:

- Q3. Watch video & write down what esophagogastroduodenoscopy reveals.
- Q4. Watch video clip & write down common causes of peptic ulcers.
- Q5. Identify the following on the plastic model:
 - antral gastritis, bleeding ulcer, perforated ulcer



<https://en.wikipedia.org/wiki/Esophagogastroduodenoscopy>



Osteoporosis & Fracture Case Study

Elsie is a healthy 89 year old that falls while walking her dog and hears the sounds of a bone breaking. What has happened? Were there any risk factors? What is the treatment? What is the likely outcome? Each step and question in this case study involves pictures as well as plastic models to help answer questions that pop up while students read about Elsie's story. Sample Questions include:

- Q2. Diagnosis using X-ray image
- Q3. Describe use of pins shown in repairing femur
- Q4. Could osteoporosis be a risk factor? – take the [Osteoporosis Risk Check](https://www.iofbonehealth.org/iof-one-minute-osteoporosis-risk-test) & find out if you are at risk
- Q4. Identify the following on the in-class plastic model: spondylophyte, disc prolapse, vertebral compression, sciatic nerve.



https://www.medscape.org/viewarticle/413202_4
All other images: Pixabay Creative Commons

Student Anonymous Satisfaction Survey Results & Conclusions

The students completed a satisfaction survey after each case study. For each case study, the majority of students reported that:

- ✓ the pictures, X-rays, video clips, and plastic models were helpful in their learning.
- ✓ the case studies were both engaging, suited their way of learning.
- ✓ would likely help them remember content for the final exam.
- ✓ Improved their understanding of the subject matter.
- ✓ thought the case studies should be used in the future.

Future considerations include keeping case studies short and succinct, with takeaway study guides, and finding space to house models for open lab viewing.

Acknowledgment

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