**3.6 Excretory & Digestive Pathologies**

**Case Studies**

You will be assigned one of the attached case studies that relate back to the urine and stool samples that you analyzed during the Excrement Lab Activity. Your challenge is to use the additional patient information combined with the lab results to determine a diagnosis.

Your case study report must include the following:

* A clear description of how and why you selected your diagnosis
* A detailed explanation of the pathology and why specific symptoms and lab results were observed
* A patient prognosis and discussion of treatment options
* Reference to at least three reputable sources and proper citations
* Use of proper terminology when discussing various human body systems

I encourage you to be creative with your discussion of the pathology and your selected diagnosis. Your case study summary will be shared with your fellow classmates during a brief, in class presentation. The information from your report will also be shared to ensure that all students have exposure to the different pathologies.

Please review the assessment rubric to ensure that you include all of the required elements to achieve your desired mark on this assignment.

**Case Study #1: Laura (Stool Sample # 2)**

Laura is a 22 year old female who is currently attending her fourth year of university. She is registered in five upper level biology courses with labs every afternoon and her course load has been causing her a significant amount of stress. During high stress periods, Laura experiences abdominal cramps, gas, and bouts of constipation followed by a few days of diarrhea. During the past week, Laura’s abdominal cramps have increased in severity and she finds herself unable to move without experiencing stabbing pains. Laura’s mother finally convinces her to go see a doctor in the emergency room. After several hours in the ER, Laura is told that her blood work, urine sample, and rectal exam were all completely normal. The only abnormality was her type 5 stool sample that contained visibly undigested food. What diagnosis does Laura leave the hospital with?

**Case Study #2: Frank (Urine Sample #2)**

Frank is a 39 year old male who is 6’ 7” tall and approximately 280 pounds. For the last few months, Frank’s wife has noticed that he has been irritable, lethargic and fatigued. He has also had to start using reading glasses recently because his vision has declined fairly rapidly. Following extensive pressure from his wife, Frank decides to book a physical with his family doctor for the first time in three years. After providing a routine urine sample, the doctor determines that Frank is excreting abnormally high levels of glucose and ketones in his urine. The doctor immediately orders additional blood work and the results indicate that Frank has hyperglycemia. What diagnosis does his doctor provide?

**Case Study #3: Anika (Stool Sample # 1)**

Anika is a very active 7 year old who loves gymnastics, diving, and playing outdoors with her siblings. For the last year or so, Anika’s mother has noticed that she complains about her stomach hurting quite regularly and it has been harder to get her to consume a decent sized meal. Anika’s younger brother is almost the same height as her now and it is starting to become apparent that her growth is slightly delayed. During her annual check-up with the pediatrician, Anika’s mother expresses her concerns and the doctor requests a stool sample. The lab technician immediately notices blood in Anika’s stool and the doctor determines that further tests are required. Following a capsule endoscopy, the doctor is able to identify regions of Anika’s digestive tract that demonstrate inflammation or swelling. What do these results suggest?

**Case Study #4: Jessie (Urine Sample #1)**

Jessie is a 45 year old female who has been experiencing frequent urges to urinate and difficulty controlling her bladder function. Recently, the frequent urination has been accompanied by a burning sensation and lower abdominal discomfort. When Jessie woke up this morning and went to the washroom, she stood up to find that the toilet bowl water was bright red and she finally decided that a trip to the doctor was required. The urine sample that her family physician ordered confirmed the presence of blood and revealed an elevated pH level. What urinary pathology is Jessie experiencing?

**Case Study #5: Arthur (Urine Sample #3)**

Art is a 65 year old male who has a medical history of high blood pressure, obesity, and diabetes. During the last few months, Art has been experiencing chronic fatigue and weakness. He has also noticed that his feet and ankles tend to be very swollen by the time he is done work at the end of the day. Art has committed to keeping himself hydrated by drinking large quantities of water during the day, but he realizes that his urine output has not increased to match his water intake. After a weekend of complaining about feeling tired and lethargic, Art’s wife drags him to their family doctor. The initial routine urine sample revealed an elevated level of protein in Art’s urine. To ensure that it was not a temporary elevation, the doctor requested a second urine sample the following week. Both samples contained equally high levels of protein. Follow up blood tests revealed the presence of waste products such as urea and creatinine in Art’s blood. What diagnosis does his doctor provide?

**Case Study #6: Raelynn (Stool Sample # 3)**

Raelynn is a 15 year old female who is very athletic and rarely contracts any of the common illnesses that her parents or sisters experience throughout the year. Following a week-long vacation in Mexico over the Christmas break, Raelynn finds herself experiencing extreme abdominal cramps, fever, and persistent diarrhea. She has had the symptoms for three full days since they returned home and her mother has started to be concerned about her being dehydrated. Raelynn goes to see her family doctor and he immediately asks if she has travelled anywhere or eaten anything unusual recently. Her mother informs the doctor that their entire family has just returned from Mexico, but she is confident that everyone ate the same food at their all-inclusive resort. After a few minutes of discussing her symptoms, Raelynn remembers that she ate one of the chicken dishes that nobody else tried on the final day of their vacation. After requesting a stool sample, the doctor classifies Raelynn’s bowl movement as type 7 with some undigested food particles. He runs additional tests on the stool sample to look for sources of infection. What do these tests reveal?