

# Endocrine system case study assignment

[Psychology](#)



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Case Study # 1 A 30 year old woman has been trying to get pregnant for a year now. She's always had irregular menstrual periods, but just recently her breasts starting secreting milk and she noticed that her sex drive was diminishing. She became so excited that she immediately took a pregnancy test, but the result was negative. She went to visit her doctor the following day to have her blood taken to confirm whether she managed to get a false negative on her pregnancy test.

After her examination, it was determined that she definitely was not pregnant, but during her appointment, she also realized that she has had persistent headaches and fatigue for many months. 1. What is the most likely diagnosis for this patient? (1 mark) A possible diagnosis for this patient could be Hyperprolactinemia. 2. What hormone is creating havoc within this patient's body? Explain how this hormone affects milk production in her breast. In a regular pregnancy, what stops milk from being ejected from the breast prematurely? 3 marks) The hormone prolactin is responsible for the patient's symptoms. Prolactin stimulates the development of mammary gland tissue and milk production (lactogenesis). During infant feeding, the never ending in the nipples becomes stimulated causing the release of prolactin-secreting hormones by the hypothalamus. This spinal reflex (neuroendocrine reflex) stimulates the production of prolactin. Before a woman gives birth the prolactin is inhibited by the neurotransmitter dopamine. Additionally, the hormone progesterone inhibits milk secretion in the breasts.

However, after delivery, progesterone levels drop and trigger Lactogenesis II.

3. Name 2 medical procedures that would confirm your diagnosis. Indicate

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what each of these tests will show to confirm your diagnosis. (4 marks) 4.

Briefly describe 2 specific treatment options and state the possible side effects of these treatments. (4 marks) Case Study # 2 With summer

approaching, a 38 year old man wanted to start exercising as he was starting to suddenly gain weight in his abdominal area and lose muscle mass in his arms and legs.

He has always been a fit man, but lately with the huge stress of his work obligations over the past year, he has not focused on his health as much as he would like to. With the weight gain around his abdominal area, he also noticed that his skin was thinner and that he was starting to get stretch marks as well. While working out vigorously with weights, he even managed to fracture his right second metatarsal. He is currently taking no meds.

When he visited his doctor a week later, his blood work revealed high blood sugar levels and normal blood ACTH levels. A CT scan revealed that his left adrenal gland was unusually larger than his right. 1. What pituitary hormone would you expect to be secreted in large amounts in his blood? How would you support your conclusion? (3 marks) I would expect cortisol to be secreted in large amounts in the man's blood. Cortisol is a pituitary hormone secreted by the adrenal glands. During elevated stress, cortisol is released in a person's body.

Small increases of cortisol can be beneficial, but constant stress causes increased cortisol levels. Cortisol can counteract the body's insulin, which is used to maintain blood sugar levels. With this interference, the man's blood sugar becomes imbalanced, explaining his blood test. Increased cortisol also

causes higher blood pressure as the vasculature becomes more sensitive to epinephrine and norepinephrine. (Wikipedia) Additionally, the omentum, which is located in the abdomen, takes in the excess cortisol and cause it store more fat. (