**From Q35, 2016 ATAR Paper**

*Note: you can answer this question even though we have not discussed this disease in class.*

Cushing’s syndrome, otherwise known as hypercortisolism, is a disease caused by prolonged

exposure to excessive levels of cortisol. It is often caused by a tumour growing on the pituitary

gland that alters its normal hormonal secretions. Patients with Cushing’s syndrome can have

many different symptoms, including high blood pressure, weight gain, depression, memory

dysfunction and bone and muscle weakness.

A patient with Cushing’s syndrome had a large pituitary tumour.

(c) (i) Which lobe of the pituitary gland would the tumour have affected? (1 mark)

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(ii) Which pituitary hormone would have had its secretion altered by the tumour?

(1 mark)

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d) Treatment for Cushing’s syndrome may require the removal of part of the pituitary gland

or adrenal gland. Removing the affected endocrine gland may eliminate the high levels of

cortisol; however, it can create other problems. Identify **one** such problem. (1 mark)

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Individuals who have an endocrine gland removed will normally need hormone replacement

treatment, which often involves the use of synthetic hormones.

(e) (i) What is a synthetic hormone? (1 mark)

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(ii) Sometimes synthetic hormones produce side-effects that hormones produced

normally by the body do not. Explain why. (2 marks)

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