SL Paper 2

d. This study also showed a significant reduction in insulin sensitivity when participants were given fructose-sweetened drinks, but not when they were given glucose-sweetened drinks. [1]

State the disease that could be caused by excessive consumption of fructose.

g. Suggest how sugar uptake might be related to pancreatic cancer. [2]

Markscheme

d. diabetes type II / late/adult-onset diabetes

Do not award mark for type I diabetes.

g. a. cancer is uncontrolled mitosis/cell division;

b. sugar is an energy source/nutrient needed for mitosis/cell division;

c. ribose is used to produce nucleic acids/DNA/RNA;

d. production of nucleic acid is necessary for mitosis;

Examiners report

d. Students who did not score the mark usually failed to do so because they mentioned diabetes alone without referring to diabetes two. Others did not receive the mark for mentioning low insulin sensitivity, repeating information supplied by the question.

g. All examiners found this question very hard for students. Some said that none of the students managed to get this question right of all the scripts they marked. It was noticed that students could not link the production of ribose to nucleic acid synthesis and cancer occurrence. Even the students who achieved high scores in the whole script could not get this part correct. There was much confusion about how fructose could cause pancreatic cancer as most candidates linked this to insulin sensitivity rather than increased sugars would cause increase cell division. Poor ability to distinguish between correlation and causation when interpreting data. There was a mistake in the translation of the question, in the Spanish scripts, so we have been forced to add another marking point to compensate for this error. As the question was now "Suggest what sugar uptake could be related to pancreatic cancer" m.p.a was added to the markscheme for Spanish examiners only. This was the only mark scored by most of the Spanish candidates.