OXFORD CAMBRIDGE AND RSA EXAMINATIONS
GENERAL CERTIFICATE OF SECONDARY EDUCATION

A223/01/INS

TWENTY FIRST CENTURY SCIENCE

BIOLOGY A

Unit 3: Ideas in Context plus B7 (Foundation Tier)

INSERT

FRIDAY 12 JUNE 2009: Morning
DURATION: 1 hour

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

INSTRUCTIONS TO CANDIDATES

This insert contains the article required to answer question 1.

DC (SLM/CGW) OV90852 11355

Read the article about breast cancer and use it to answer question 1.

WIDE HIPS INCREASE RISK OF BREAST CANCER

Scientists have found that female babies of mothers with wide hips are more likely to develop breast cancer later in life.

The scientists' research involved six thousand women. The scientists found that babies of women with wide hips are 3 times more at risk of developing breast cancer. If the pregnancy lasts for longer than normal term, and the babies have older brothers and sisters, the risk increases to 7 times.

The hip width is the distance from one hip bone across to the opposite hip bone. This is called the 'intercristal diameter'. The scientists found that an intercristal diameter of more than 30 cm was a wide hip. For women with wide hips, their baby's risk of developing breast cancer later in life increased by 3 times. This risk factor increased even more if the pregnancy was longer than normal term.

Scientists think that this is linked to the level of the hormone oestrogen in the mother's body during pregnancy. It is thought that high levels of oestrogen in the blood at the beginning and end of pregnancy can cause changes in the immature breast tissue of the developing fetus. Women with wide hips produce more oestrogen, so their babies are exposed to higher levels of the hormone.

Doctors have used a synthetic oestrogen for many years. It has been given to women who were at risk of having a miscarriage. Using synthetic oestrogen doubled the risk of their babies getting breast cancer later in life.

Scientists are hopeful that now these links are understood, special drugs will be developed to lower oestrogen levels. The drugs could be given to pregnant women whose babies are at risk. This would be a major breakthrough in the prevention of breast cancer.