

INFORMATION SHEET**CRIME SCENE INVESTIGATION**

A **forensic scientist** is a scientist who analyses material (biological, chemical or physical samples) found at a crime scene which can be used as evidence in a court of law. This work will provide the proof that the police need to bring a case to court. The three main branches of forensic science can be classified as biology, chemistry and drugs/toxicology.

The **Benedict's test** for glucose (reducing sugars) is a quantitative test used to determine the presence of glucose in solution.

- Place 2 ml of Benedict's solution into a test tube containing your sample. The Benedict's solution should remain a clear blue colour.
- Place the test tube in a boiling water bath for at least 5 minutes.
- Examine the sample after 5 minutes.
- An unchanged clear blue colour indicates no glucose present. A green precipitate* indicates a very small amount of glucose present. A yellow precipitate indicates a limited amount of glucose present. An orange-red precipitate indicates large amounts of glucose present.

Type I Diabetes is a disease which is characterised by the impaired (poor) production of insulin in the body. This results in high concentrations of glucose in the blood. The patient will suffer from dehydration because more water is found in the urine. The treatment of diabetes is very effective and requires the patient to inject themselves regularly (at least daily) with the hormone insulin. These insulin injections result in a lowering of blood sugar. Complex carbohydrates, e.g. starch have a lower glycaemic index (GI) and therefore do not cause problems for diabetics. Left untreated, the diabetic sufferer will ultimately fall into a coma which terminates in death.

The **iodine test** for starch is a qualitative test which only indicates the presence or absence of starch in a sample. This simple test uses a prepared solution of iodine which is orange/brown in colour. The iodine solution turns blue/black in colour when it comes in contact with a sample containing starch.

*precipitate = an insoluble solid that emerges from a liquid solution and collects on the bottom of a test tube.

A **qualitative test** is one which indicates the presence or absence of a particular substance in a sample.

A **quantitative test** is one which indicates the actual amount of a particular substance which is present in a sample. Quantitative tests range from extremely accurate and sensitive to very crude (not sensitive).