THE IRREGULAR EFFECTS OF CRUDE OIL

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Image from Flickr

Crude oil is an important resource for humans, used for many different types of fuels as well as the basis of all plastic products. Crude oil is extracted from deep underground, but some countries have greater oil **reserves** than others, so are able to export some of their oil around the world. Often this oil is carried in large oil tankers across oceans, which is an efficient method of transporting large quantities over large distances, but sometimes this can cause problems.

Every year, there are thousands of oil spills, where crude oil is released into the ocean. Some of these can be **minor** but others can be very serious. Most oil spills are caused by accidents involving oil tankers or oil rigs, where oil is drilled from the ground.

Oil spills are known to have harmful effects on aquatic environments, but recently scientists have found specific problems associated with fish and crude oil. Oil spills can be harmful both to the aquatic habitat and to plants and animals themselves if oil is absorbed or **ingested**.

Researchers at Stanford University in California wanted to investigate some of the physical consequences of oil on marine organisms. They collected oil from the Gulf of Mexico that had been spilled during a serious oil spill in 2010. They added small volumes of this oil to heart cells from bluefin and yellowfin tuna. The heart cells had been isolated and grown in petri dishes, where the effects could be monitored.

The scientists found some concerning results. Heartbeat is controlled by pacemaker cells, which send electrical impulses to the muscle to signal for contractions. These electrical impulses are normally controlled by potassium and calcium ion channels in cell membranes, which coordinate the impulses into a regular pattern. The scientists found that the oil caused an **irregular** pattern for the electrical discharges of the heart cells, which could lead to an irregular heartbeat. An irregular heartbeat can be dangerous as it can affect the amount of oxygen that is being taken to cells around the body.

Crude oil is made up of a mixture of hydrocarbons. The scientists hypothesised that it was these hydrocarbons that were blocking the ion channels and preventing the regular electrical impulses. They have also suggested that this may have **implications** for humans: if hydrocarbon pollutants are in the air, they may be linked with irregular heartbeats in humans.

Answer the following questions in full sentences:

1. What is this news story about?

2. Describe what the scientists did in this experiment.

3. Describe what the scientists found.

4. Write down the meanings of any words **in bold** in the article.