

Breakthrough in understanding how blood clots by forming a branching network
known as a **fractal structure**

Stroke test aim of blood research

A team at a casualty unit is working on a blood test to identify potential stroke and heart disease victims.

Doctors, scientists and engineers at Swansea's Morriston Hospital's say how a patient's blood clots could act as a key warning sign.

They say they have discovered a blood-clotting bio-marker which could help screen potential victims before they suffer the effects of the illnesses.

It could save thousands of lives and save patients disabling side-effects.

The research team studies the clotting properties of blood.

It concentrates on detecting early changes in clot structure in patients who because of other medical conditions, such as poor lifestyle or family history, are likely to suffer from thrombotic disease such as stroke and heart disease.

Dr Adrian Evans, head of the unit, said the team had made a breakthrough in understanding how blood clots by forming a branching network known as a **fractal structure**.



Researchers say it will be several years before it is routinely available

It determines whether the clot is going to be too weak or strong and likely to break-up in the blood stream and block vessels in organs such as the brain or heart.

He said: "The **fractal structure** of blood could act as a simple bio-marker of the key stage in the development of strokes and heart disease.

"Most importantly it could easily be used as a simple blood test for early strokes and heart disease and could save thousands of lives and prevent many patients from suffering disabling side-effects.

"Stroke and heart disease has a high prevalence in Wales, claiming a disproportionate number of lives each year and leaving many survivors with permanent and serious health problems."

The hospital is working with Swansea University on the project.

Professor Rhodri Williams of the university's department of engineering added:

"Discovering the fractal structure bio-marker was a real breakthrough.

"We want to develop a simple, inexpensive screening test.

"We are making excellent progress but it will be further few years yet before it will be available routinely."



“ Our aim is develop an easy and accessible screening test ”

Dr Adrian Evans