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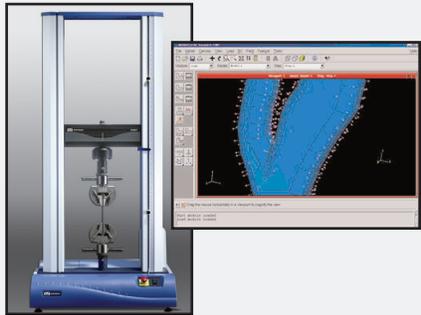
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**Application Story**

**What's Inside Your Arteries?  
Testing Could Reveal Your Risk of Stroke**

Strokes are the second most commonly feared condition; in fact 2/3 of people know someone who has suffered a stroke. In order to better understand prevention and treatment, many researchers are studying the causes of strokes, including the Department of Engineering at [The University of Cambridge](#) under the direction of Dr. Michael Sutcliffe.



Together with his colleagues, Dr. Sutcliffe is studying plaque (a material that is deposited on the walls of the arteries) and the hardening of the carotid artery, which can lead to a stroke. The aim of their research is to develop better methods for estimating a person's risk of having a stroke and to improve therapy selection.

Dr. Sutcliffe is testing plaque-filled arteries using an [Instron 3367](#) 30kN Universal Testing Machine to understand the modulus and strength changes associated with plaque growth. These results will be used in models of the carotid artery to predict rupture of the artery and fluid flow patterns.

"In the future, we will be working with others to link the way cells change their shape under stress with tissue-level testing and clinical experimental work. Our aim is to understand how the stresses these plaques experience in the arteries affect the way they grow," said Dr. Sutcliffe.

**? Ask the Expert**

**Have a question about materials testing?**  
Submit your question and you may see it featured in a future issue of TechNotes.

[Ask Us >>](#)

**🎵 FREE iPod Nano**

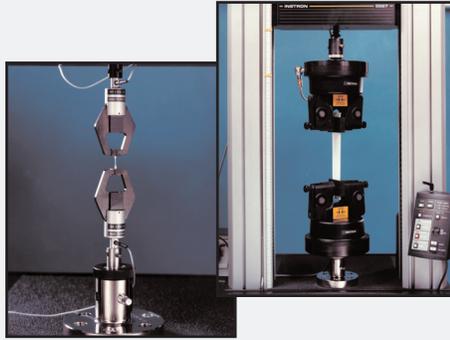
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## Tech Tip

### Faster, More Consistent Testing With Pneumatic Grips

While [screw side action grips](#) are appropriate for certain applications, you may experience long setup times, premature specimen breaking at the jaws (due to over-tightening) or specimen slippage (due to under-tightening). In addition, you will always need one hand to tighten the grip while the other hand holds the specimen, which is not always convenient and may result in a misaligned specimen.



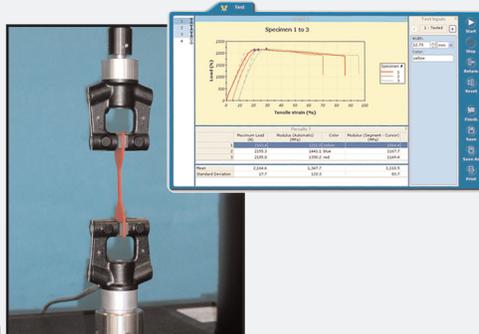
Upgrading to [pneumatic side action grips](#) could make your testing easier and faster.

If you would like to improve the consistency of your testing, reduce your overall testing time or are interested in learning more about our pneumatic side action grips, you may be a good candidate for our [grip upgrade offer](#).

## You Asked - We Answered

**Q: Why does the speed of tensile testing after yield vary from material specification to material specification? In your opinion, is there a significant difference in results?**

**A:** In tensile testing, most materials are sensitive to the rate at which they are stretched, meaning some of their properties are dependent on the rate of straining during the test. This effect is most noticeable after [plastic](#) flow occurs, although some properties can be affected while in the elastic region. There is no intrinsically correct strain rate for a given material, but to allow comparison of [test results](#) it is important for all tests to be done within a range of rates. Test standards define the range over which results will be consistent and therefore, comparable.



[What do you think? Tell us!](#)



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