

CONCLUSION

Even with the relatively rough surface the Nanovea Mechanical Tester, in Nanoindentation mode, reliably determined the mechanical properties of the fat and meat areas. The fat area was about half the hardness of the meat areas. The response in the fat area was also more plastic than what was observed in the meat area. It is interesting to see that the darker meat area is harder than the light meat area because of the meat treatment. Elastic modulus and hardness are in direct relation to mouth feel chewiness of the meat/fat areas. It is also interesting to see that the fat and the light meat area have creep that continues at a higher rate even after 60 seconds while the dark meat area slows down comparatively. In conclusion, this demonstrates the wide and unmatched capability of the Nanovea Mechanical Tester. In addition to providing the precise measurement of mechanical properties on extremely hard materials the same system can also be used for soft biological tissue with low kPa hardness values.

The precision load cell in closed loop control with the piezo table ensures accuracy of hard or soft gel materials from 1 to 5kPa. Using the same system, it is possible to test biomaterials at higher loads up to 200N. Multi-cycle loading tests can be used for fatigue testing. Using a flat cylindrical diamond tip can give yield strength information in each zone. In addition, with DMA "Dynamic Mechanical Analysis", the viscoelastic properties, including loss and storage moduli, can be evaluated with high accuracy because of the close loop load control.

With the additional extended 50mm Z motorized table and the possibility of using a large probe of 25mm in diameter, the Nanovea Mechanical Tester truly has been and continues to be the superior tool for biological and soft polymer/gel applications. Tests at various temperatures and under liquids are also available on the same system.

To learn more about [Nanovea Nanoindentation](#).