

**September 2009**

Update for paragraph 11.3.2

### **US GOVERNMENT RESEARCH SHOWS NUTRIGENETIC TESTS PURCHASED FROM FOUR WEB SITES MISLED CONSUMERS**

It is becoming increasingly apparent that most, if not all, diseases have a genetic component. Consequently, genetic testing is becoming an integral part of health care with great potential for future test development and use. Some genetic tests are sold directly to the consumer via internet or retail stores, and purport to use genetic information to deliver personalized nutrition and lifestyle guidance. In such cases consumers need to self-collect a sample of genetic material, usually from a cheek swab, and then send the sample to a laboratory for analysis. Companies marketing this type of test claim to provide consumers with the information necessary to tailor their diet and exercise programmes to their genetically determined health risks. The United States Government Accountability Office (GAO) was asked to investigate the legitimacy of these claims.

The GAO purchased tests from four websites and created 'fictitious consumers' by submitting for analysis 12 DNA samples from a female and 2 samples from an unrelated male. This DNA was described as coming from adults of various ages, weights, and lifestyle descriptions. GAO also consulted with experts in genetics and nutrition.

The results from all the tests GAO purchased misled consumers by making predictions that were medically unproven and so ambiguous that they could not provide consumers with meaningful information. Although there were numerous disclaimers indicating that the tests were not intended to diagnose disease, all 14 results predicted that the fictional consumers were at risk of developing a range of conditions. Moreover, although the test results from one website recommended 'personalized' supplements costing approximately \$1, 200 p.a., GAO found that they were substantially the same as typical vitamins and antioxidants that can be found in any grocery store for about \$35 p.a. In some cases, taking supplements such as those recommended may have been harmful. Some websites did not make recommendations based on a unique genetic profile, but instead provided a number of common sense health recommendations.

The report concluded: 'With further advances in science, nutrigenetic tests like those we purchased may in the future be valid, allowing consumers to use DNA-based analysis to make diet and lifestyle changes that will actually prevent the development of disease. However, as demand for these new tests continues to rise, it will become increasingly important for consumers to have reliable information in order to determine which tests are accurate and useful.'

Website reference:

<http://www.gao.gov/new.items/d06977t.pdf>