INTEGRATIVE CARE

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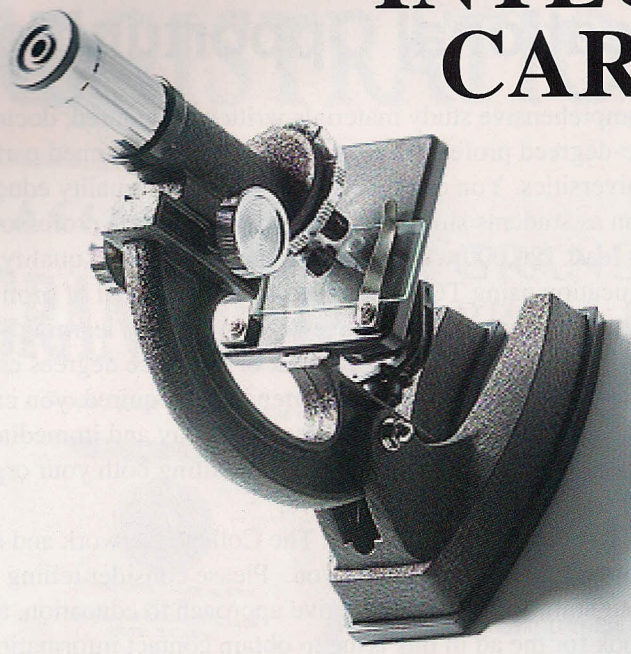


Personalizing Blood Tests

New Frontiers of Blood Testing to Identify Individual Risks

A variety of studies are underway to explore how genetic fingerprinting can assist in identifying risks and treatment decisions. One such study being conducted by Medco Health Solutions in collaboration with the Mayo Clinic is studying the genetic profile of people with atrial fibrillation who are using Coumadin. It is recognized that genetic differences can cause some people to break down warfarin faster or slower than others; genetic fingerprinting can aid in recognizing these differences and adjusting dosages accordingly. Similar studies are being planned and conducted by researches at Harvard and the federal government. As bleeding complications kill abut 8000 people yearly and are the second highest reason for medication-related visits to the ER, improved efforts to keep blood levels within a range that is safe for the individual can have quite an impact.

Another study, reported in the January 10 issue of the Journal of the American Medical Association, is testing a biomarker called brain-type natriuretic peptide (BNP) in tandem with prohormone BNP (NT-proBNP) which seems to predict future cardiac problems in people with heart disease. When levels of NT-proBNP are elevated, they provide useful information in helping determine who's at highest risk for developing heart attack, stroke, heart failure or death. Although results of the study are not conclusive at this point, this type of testing shows promise in identifying people who are at highest risk and who could benefit from lifesaving treatments.

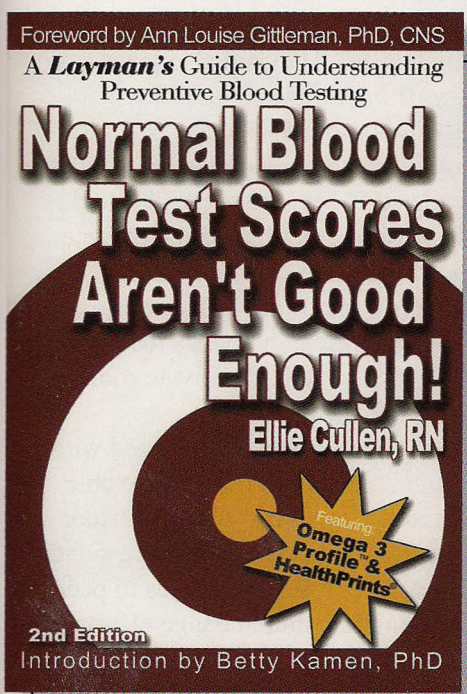
Variations in the UGT1A1 gene can affect the processing of certain drugs, such as irinotecan that is used in treating colorectal cancer. Studies have shown that people with certain variations in this gene can be five times more likely to experience irinotecan toxicity. The blood test, Invader UGT1A1 Molecular Assay can determine an individual's enzyme level and allow their medication dosage to be adjusted, thereby reducing the risk of side effects.

Similar tests to identify individual risks among people with similar diseases are being developed and most likely will be part of routine monitoring.

Normal May Not be Normal

All nurses are familiar with lab reports that show the normal ranges. Many people believe that results that fall within the range indicate that all is well and levels outside the range are cause for concern. This thinking is being challenged, however, as some practitioners are proposing that blood tests be interpreted using physiology and unique biochemistry, such as weight, age, gender, race, and health history. It also is suggested that sleep patterns, diet, exercise, drugs, and supplements be considered when evaluating test results.

Changes in an individual's lab results over time could yield considerably more valuable insights into health status than looking at a single test or comparing where one is within the range of "normal" on test results. This certainly supports comparing your residents' lab data to identify changes—even changes that still fall within normal ranges. Further, it emphasizes the importance of obtaining and tracking blood tests for yourself and your family so that you can discover health problems in an early stage. Hopefully, you are keeping a file containing your own test results and other health information—and if you're not, we'll suggest that you start one now. Identifying progressive rises or declines in your lab tests (even if they do fall within a normal range) could help you to spot a problem in an early stage.



Ellie Cullen is an example of a nurse being proactive in using progressive thinking about lab tests to help people improve their health. In her book ***Normal Blood Test Scores Aren't Good Enough*** (YFH Press, www.yourfuturehealth.com) she describes how people differ in their biologies and how these differences can affect the recognition of disease, medication prescription, and other factors. Cullen has a practice in which she helps people to track changes in their blood levels that could reflect health problems and develop personalized plans for supplement dosages, decisions to seek further diagnostic testing, and effective treatments. Her book, written in layman's terms, offers case examples that demonstrate how this approach has been implemented.