

How to Interpret Metamatrix Laboratory Report Results

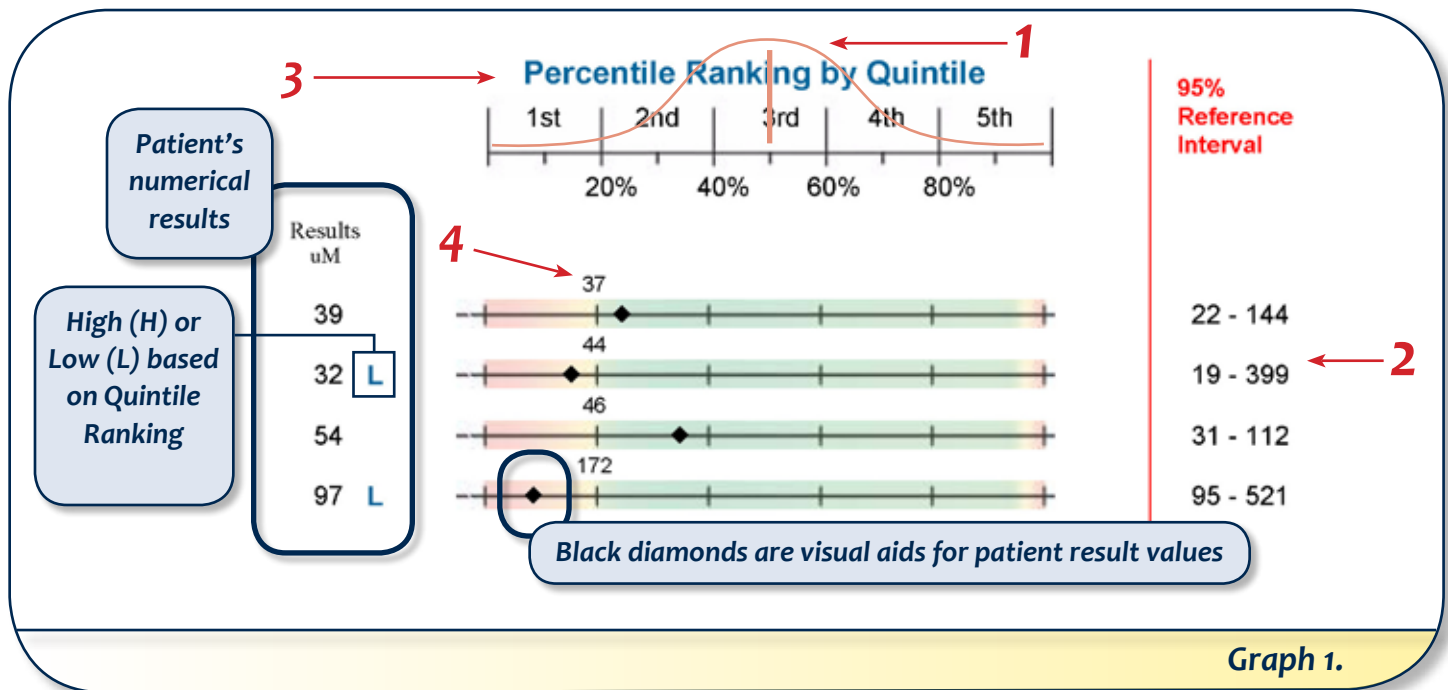
Reference ranges and how they are determined:

Reference ranges (also termed reference intervals or limits) are used to give meaning to test results. When patient results are compared to these ranges, it is simple to determine whether the result is low, normal, or high. Reference ranges are based on populations from 120-1000+ people. These numbers are evaluated and updated regularly and may change due to new laboratory methods or instrumentation.

Metamatrix uses two methods to inform clinicians about the clinical significance of patient test results. One employs a standard statistical method used for many clinical chemistry tests. Another uses quintile rankings to place the result in a context of population percentiles.

95% reference interval:

The red curve (1) represents the distribution of a test result for a given population. The mean of average value is represented by the solid red bar in the middle of the curve. The majority of results, when a population is tested, groups around this mean. Assuming a standard bell-shaped curve, two standard deviations from this mean would comprise 95% of all results. The numerical range for this is indicated on the right side of the page (2). This is referred to as the 95% reference interval. A test result outside this interval indicates it is outside the results of 95% of the population. In general, this would indicate a significant abnormality.



Quintile rankings:

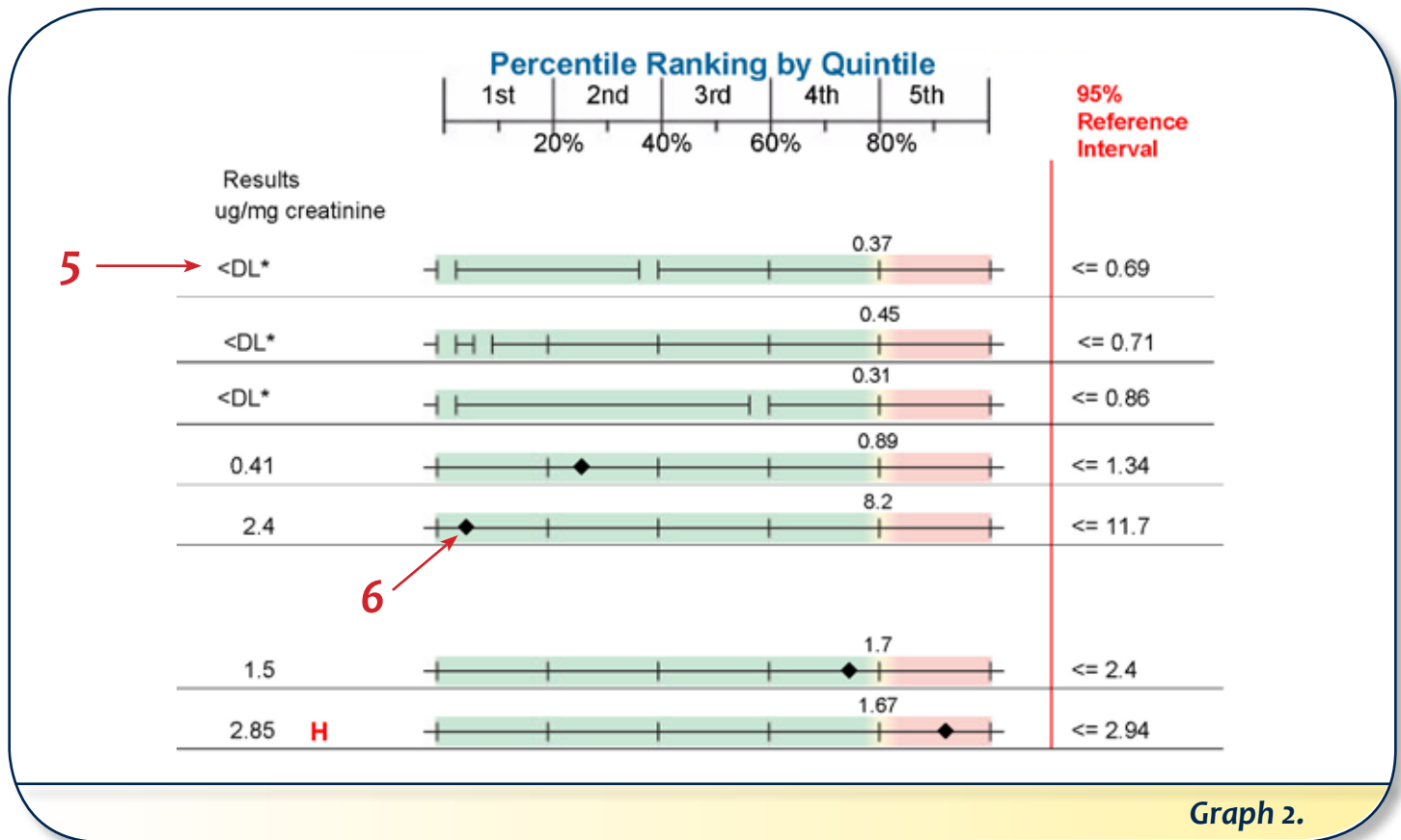
Quintile rankings are a percentile breakdown of population results (3). These are obtained arranging all the test results in a reference population from lowest to highest. These are then divided into 5 groups of equal numbers. The lowest 20% of results comprise the 1st quintile. Those results in the next 20% to 40% range are the 2nd quintile, and so forth. The 5th quintile would be the highest 20% of the results. This percentile ranking by quintile has proved useful in medical research by providing insight as to how test results in populations might relate to particular illnesses. For example, high sensitivity C-reactive protein was developed as a risk factor for heart disease by noting that those individuals in the 5th or highest quintile had significantly more risk of heart disease than those in lower quintiles.

Range bar graphs:

The range bars are divided into 5 equal areas representing the 5 quintiles from low to high. The test result of the patient is indicated on the bar by a small diamond (6). Green represents the normal range, yellow and red represent increasingly abnormal results. The number above the bar (4)(see Graph 1.) is the actual value of the quintile cut off point. An L or an H next to the result number indicates the value falls into an outside quintile, i.e. either the 1st or 5th quintile depending on the analyte. Note that this, by definition, makes 20% of all test results reported by Metamatrix using this quintile system either L or H.

Less than detection limit (< DL):

The “less than detection limit” (<DL) value is shown (5) when the analyte is so low in concentration that the instrumentation cannot accurately measure it. When this occurs no diamond is printed on the bar graph. The hash mark (–| –) represents the quintiles were this <DL occurs in the reference range.



Please visit www.metamatrix.com and choose “Learning Center” and click on “Report Interpretations” to view an audio visual presentation of How to Interpret Metamatrix Laboratory Report Results.



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