IU Health Pathology Laboratory
News Bulletin July, 2019

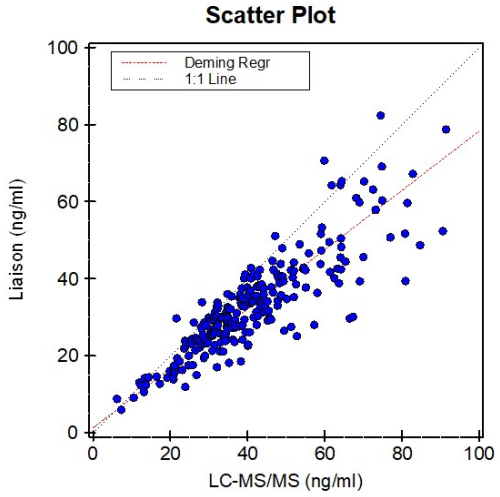
Chemistry Update

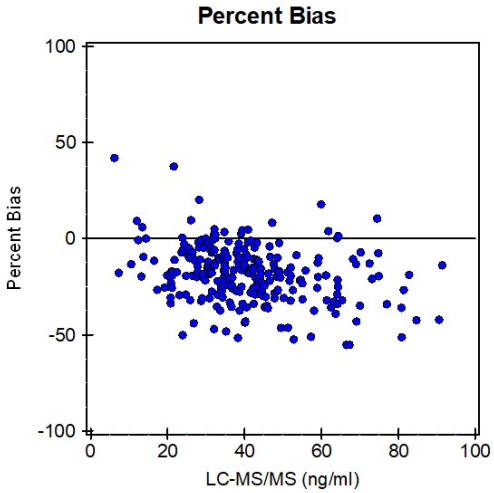
Effective Tuesday July 23, 2019, Indiana University Health Pathology Laboratory (IUHPL) will be offering two versions of 25-hydroxy vitamin D testing:

1. 25 hydroxy-vitamin D, total by immunoassay (IA)
2. 25-hydroxy-vitamin D2 and D3 by LC-MS/MS (the currently offered test)

Reasoning: The total vitamin D is used for monitoring vitamin D sufficiency. Fractionating it into vitamin D2 and D3 is unnecessary for most patients.

Compared to our in-house vitamin D total test by LC-MS/MS, our in-house assay validation data (below) shows that the vitamin D total by IA has a negative bias. This is secondary to the presence of the C3 epimeric form of 25-hydroxy-vitamin D. Our current LC-MS/MS assay is not able to separate these two isomeric compounds due to co-elution and identical elemental composition.





Below: from Bailey D, et al, Clinical Biochemistry, 2013.

Figure: Vitamin D external quality assessment survey, Oct 2011. First sample (open bars) contained only 50 nmol/L of 25(OH) D3; second sample additionally contained 50 nmol/L 3-epi-25(OH) D3 (gray bars).

Table: Quantifications in pediatric, infant, and adult populations (adapted from paper's table 1).

Weighted mean (range across studies)		
	Epi-25(OH)D_3 nmol/L	% 3-epi-25(OH)D_3 of total 25(OH)D_3 nmol/L
Infant (< 1 yr of age)	18.2 (0—230)	21.4 (0—61.1)
Pediatric (>1 yr-18 yrs of age)	2.5 (0—7.5)	5.9 (0—20.0)
Adult (>18 yrs of age)	4.3 (0—22.5)	6.1 (0—47.0)

Indiana University Health

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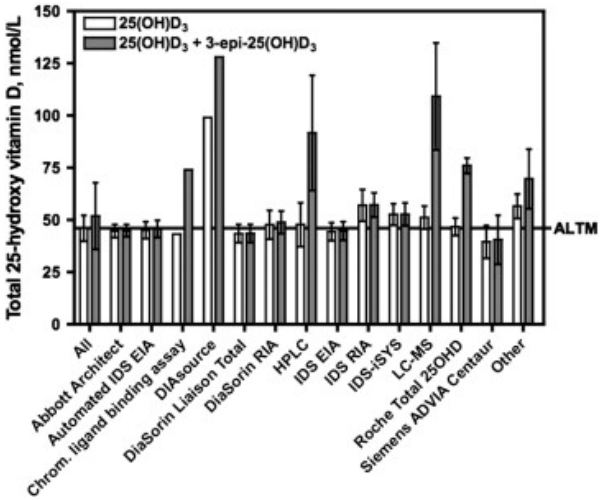
Chemistry Update (cont.)



25-hydroxy-vitamin D, total by IA will be available seven days a week. 25-hydroxy-vitamin D2 and D3 by LC-MS/MS will continue to be available Monday through Friday, day shift only.

With questions on test requirements or ordering, please call Customer Care at 317.491.6000 or 800.433.0740.
With other concerns/questions, please contact Dr. Michelle K. Zimmerman, Director of Clinical Chemistry, IU Health Pathology Laboratory at 317.491.6558 or mkzimm@iupui.edu.

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