pad results, the number of leukocytes and (or) erythrocytes will often be disproportionately low in the sediment. Although specimens of inappropriately acidified urine probably are rarely submitted for UA, awareness of the possible circumstances and the laboratory signs for recognition of the problem helps to avoid inaccurate reports.

Gyorgy Csako

Clin. Chem. Service
Clinical Center
National Institutes of Health
Bldg. 10, Rm 2C-407
Bethesda, MD 20892

Proposed Change to “Information for Authors”: Precision

To the Editor:

Recent articles (1, 2) have pointed out that the requirements for analytical precision as stated in the “Information for Authors” (paragraph headed Precision) are confusing. First of all, to conform to currently accepted usage (e.g., as in NCCLS documents) the term “precision” in the text of this paragraph should be changed to “imprecision,” or, better, replaced by “standard deviation,” because this is what is really being estimated. More importantly, the expression “between-run” precision (or rather imprecision) is ambiguous, some workers interpreting this to mean the pure component of variance due to variation among the means of separate runs, while others equate “between-run” to total variance, including both within-run and the pure between-run components of variance.

In our opinion, the requirements should call for estimates of “within-run” and “total” standard deviations. Specifically, we suggest that the present Precision paragraph be rewritten as follows:

“Precision: Studies must include estimates of “within-run” and “total” standard deviations. Each should be determined at low, normal, and above-normal concentrations with use of specimens that are in an appropriate biological fluid matrix. The most nearly accurate method of estimating both within-run and total standard deviation is the analysis-of-variance experiment described in NCCLS EP5 (13), which calls for two replicates per specimen per run and two runs per day for 20 days. This permits separate estimation of between-day and between-run, with-day standard deviations, as well as within-run and total. Acceptable alternatives, which include only one run per day, are also discussed in the cited document.”

Incidentally, this NCCLS document does consider (on p 209) the case where the variance among daily means is less than within-run variance, mentioned by Krouwer and Stewart (4). The document states that in this case, the day-to-day component should be set equal to zero, as these authors propose. This is common statistical practice; however, it should also be noted that where two or more comparable estimates of day-to-day variance components exist, some negative and some positive, they should all be averaged together to derive an overall estimate.

References

R. Neill Carey

Clin. Labs.
Peninsula General Hosp.
100 East Carroll St.
Salisbury, MD 21801

Eugene K. Harris

Dept. of Pathol.
Clin. Lab.
Box 168
Univ. of Virginia Med. Center
Charlottesville, VA 22908

Ed. note: This suggestion is being implemented in our 1988 version of Information for Authors.

Optimizing Sensitivity of Serum Retinol and α-Tocopherol Assay

To the Editor:

While evaluating the Proposed Selected Method (1) for simultaneous determination by reversed-phase “high-performance” liquid chromatography (HPLC) of α-tocopherol (vitamin E) and retinol (vitamin A), we noticed a discrepancy in the wavelength used by the authors (280 nm) and the Evaluators (290 nm and 292 nm).

To define the optimum wavelength for the assay, we determined the absorbance spectra of methanolic solutions of retinol, retinyl acetate, and α-tocopherol, finding absorbance maxima of 324, 325, and 288 nm, respectively. A compromise wavelength of 300 nm is optimal. At 300 nm, the sensitivity for detecting retinol is decreased by 14% from its absorbance maximum, by 36% at 280 nm. Sensitivity for α-tocopherol is decreased by 40% but, owing to the 10-fold greater physiological concentration of α-tocopherol than of retinol, sensitivity is still excellent.

Thus we recommend measurement of all three analytes at 300 nm instead of 280 nm. The sensitivity for retinol and retinyl acetate is significantly increased, and the decrease in sensitivity for detection of α-tocopherol is not significant.

Reference

Frank S. Ibarra
Mark Zeigler
Jack L. Rudy
J. Craig Argyle

Dept. of Pathol.
Children’s Med. Center of Dallas
1935 Motor St.
Dallas, TX 75235

Availability of Plasma with Target Values for Certain Lipids

To the Editor:

Accurate measurement of blood cholesterol is essential. The National Cholesterol Education Program (1) recommends that clinical laboratories use uniform national cutoff points for interpretation, which requires that laboratory results be standardized or consistent with the accuracy base of the National Reference System for Cholesterol (2).

Since 1985 the Northwest Lipid Research Center has offered sets of actual plasma specimens with accurate target values for cholesterol, triglycerides, high-density lipoprotein (HDL), and HDL subclasses (3). Each set consists of six plasma specimens, frozen, with a range of lipid values. In addition, three HDL supernates with low-, middle-