

Implementation of New Analyzers in the Clinical Chemistry Laboratory

Effective July 10, 2017, UIC Chemistry Laboratories will switch chemistry analytical instruments from the Beckman DxC to Beckman AU system. The overall efficiency of chemistry testing will be improved with the new Beckman AU system. Based on the validation of the technical features of the new instruments and updated guidelines, the reference interval of certain serum tests and the cutoff values of certain urine drug abuse tests have been updated. In addition, the reference intervals for immunoassay tests performed on the Beckman Dxl platform have also been reviewed. The changes are represented in Table 1 and Table 2 below.

Table 1. Changes of Reference Intervals of Serum Chemistry Tests

Test	Current Reference Interval	New Reference Interval
Amylase	25-125 U/L	29-103 U/L
Calcium, total	>12 years: 8.6-10.6 mg/dL 2-12 years: 8.5-10.5 mg/dL 8 days-<2 years 8.0-11.0 mg/dL ≤7 days: 6.3-11.9 mg/dL	>12 years: 8.6-10.6 mg/dL 2-12 years: 8.5-10.5 mg/dL 8 days-<2 years: 8.0-11.0 mg/dL ≤7 days: 7.3-11.4 mg/dL
Cholesterol, total	100-200 mg/dL	<200 mg/dL
Cholesterol, HDL	40-60 mg/dL	>40 mg/dL
Cholesterol, LDL	50-129 mg/dL	<130 mg/dL
Complement component 3 (C3)	79-152 mg/dL	90-180 mg/dL
C-reactive protein	<0.8 mg/dL	<8.0 mg/L (unit changed to mg/L)
C-reactive protein, high sensitivity	Lowest Risk: <0.5 mg/L Moderate Risk: 0.5-2.0 mg/L Highest Risk: >2.0 mg/L	Low risk: <1.0 mg/L Average risk: 1.0-3.0 mg/L High risk: ≥3.0 mg/L
Gentamycin	Peak: 5.0-10.0 µg/mL Trough: ≤2.0 µg/mL	Peak: 5.0-12.0 µg/mL Trough: ≤2.0 µg/mL
Lactate	0.5-2.2 mmol/L	0.5-2.0 mmol/L
Lipase	22-51 U/L	11-82 U/L
Potassium	>3 months: 3.5-5.3 mmol/L 1 day-3 months: 4.0-6.2 mmol/L <1 day: 5.0-7.5 mmol/L	>1 year: 3.5-5.2 mmol/L ≤1 year: 3.2-6.1 mmol/L
Phosphorus	>10 years: 3.0-4.5 mg/dL ≤10 years: 4.5-6.5 mg/dL	>10 years: 2.5-4.5 mg/dL ≤10 years: 4.0-7.0 mg/dL
Thyroxine, total (total T4)	>1 year: 6.1-12.0 µg/dL 1 month-1 year: 7.5-16.0 µg/dL 0-30 days: 8.8-20.0 µg/dL	>1 year: 5.0-12.0 µg/dL 1 month-1 year: 7.5-16.0 µg/dL 0-30 days: 8.8-20.0 µg/dL
Triiodothyronine, total (total T3)	87-178 ng/dL	80-178 ng/dL
Triglycerides	45-150 mg/dL	<150 mg/dL

Table 2. Changes of Cutoff Values of Urine Drug Abuse Tests

Test	Current Cutoff Value	New Cutoff Value
Amphetamines	1000 ng/mL	500 ng/mL
Barbiturates	200 ng/mL	200 ng/mL, no change
Benzodiazpine	200 ng/mL	200 ng/mL, no change
Cannabinoid	50 ng/mL	50 ng/mL, no change
Cocaine	300 ng/mL	150 ng/mL
Methadone	300 ng/mL	300 ng/mL, no change
Opiates	300 ng/mL	300 ng/mL, no change
Phencyclidine	25 ng/mL	25 ng/mL, no change

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