

## **Test Definition: RCHLU**

Chloride, Random, Urine

## Overview

**Useful For** An indicator of fluid balance and acid-base homeostasis

**Method Name** Potentiometric, Indirect Ion-Selective Electrode (ISE)

NY State Available Yes

## Specimen

Specimen Type Urine

## **Specimen Required** Supplies: Sarstedt 5 mL Aliquot Tube (T914) Container/Tube: Plastic, 5-mL tube Specimen Volume: 5 mL **Collection Instructions:** 1. Collect a random urine specimen. 2. No preservative.

## Forms

If not ordering electronically, complete, print, and send a <u>Renal Diagnostics Test Request</u> (T830) with the specimen.

## **Specimen Minimum Volume**

1 mL

#### **Reject Due To**

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

#### **Specimen Stability Information**

| Specimen Type | Temperature              | Time    | Special Container |
|---------------|--------------------------|---------|-------------------|
| Urine         | Refrigerated (preferred) | 14 days |                   |
|               | Ambient                  | 7 days  |                   |
|               | Frozen                   | 30 days |                   |



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### **Clinical & Interpretive**

#### **Clinical Information**

Chloride is the major extracellular anion. Its precise function in the body is not well understood; however, it is involved in maintaining osmotic pressure, proper body hydration, and electric neutrality. In the absence of acid-base disturbances, chloride concentrations in plasma will generally follow those of sodium.

Since urine is the primary mode of elimination of ingested chloride, urinary chloride excretion during steady state conditions will reflect ingested chloride, which predominantly is in the form of sodium chloride. However, under certain clinical conditions, the renal excretion of chloride may not reflect intake. For instance, during states of extracellular volume depletion, urine chloride (and sodium) excretion is reduced.

#### **Reference Values**

No established reference values

Random urine chloride may be interpreted in conjunction with serum chloride, using both values to calculate fractional excretion of chloride.

The calculation for fractional excretion (FE) of chloride (Cl) is FE(Cl) =(Cl [urine] x Creat [serum])/(Cl [serum] x Creat [urine]) x100

#### Interpretation

Urine sodium and chloride excretion are similar and, under steady state conditions, both the urinary sodium and chloride excretion reflect the intake of sodium chloride. During states of extracellular volume depletion, low values indicate appropriate renal reabsorption of these ions, whereas elevated values indicate inappropriate excretion (renal wasting). Urinary sodium and chloride excretion may be dissociated during metabolic alkalosis with volume depletion where urine sodium excretion may be high (due to renal excretion of sodium bicarbonate) while urine chloride excretion remains appropriately low.

#### Cautions

High urine values of other halide ions (eg, bromide, fluoride, iodide) may lead to falsely high readings on the chloride ion-selective electrode (ISE).

#### **Clinical Reference**

1. Delaney MP, Lamb EJ: Kidney disease. In: Rifai N, Horvath AR, Wittwer CT, eds: Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. 6th ed. 2018:1308-1309

2. Toffaletti J: Electrolytes. In: Dufour DR, Rifai N, eds. Professional Practice in Clinical Chemistry: A Review. AACC Press; 1993

3. Kamel KS, Ethier JH, Richardson RM, et al: Urine electrolytes and osmolality: when and how to use them. Am J Nephrol. 1990;10:89-102

#### Performance

## **Method Description**



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The ion-selective electrode (ISE) module performs indirect measurement of electromotive force (EMF). The ISE module measures the EMF difference between an ISE and a reference electrode. The EMF of the ISE is dependent on the ion concentration of the sample. The EMF of the reference electrode is constant. An electronic calculation circuit converts EMF of the sample to the ion concentration of the sample.(Package insert: Chloride. Roche Diagnostics; 02/2018)

#### **PDF Report**

No

Day(s) Performed Monday through Sunday

**Report Available** Same day/1 to 2 days

Specimen Retention Time 7 days

#### Performing Laboratory Location

Mayo Clinic Laboratories - Rochester Main Campus

#### Fees & Codes

#### Fees

- Authorized users can sign in to <u>Test Prices</u> for detailed fee information.
- Clients without access to Test Prices can contact <u>Customer Service</u> 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact Customer Service.

#### **Test Classification**

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

#### **CPT Code Information**

82436

#### LOINC<sup>®</sup> Information

| Test ID   | Test Order Name     | Order LOINC <sup>®</sup> Value  |
|-----------|---------------------|---------------------------------|
| RCHLU     | Chloride, Random, U | 2078-4                          |
|           |                     |                                 |
| Result ID | Test Result Name    | Result LOINC <sup>®</sup> Value |
| RCHLU     | Chloride, Random, U | 2078-4                          |