



THE IMPORTANCE OF MEASURED OSMOLALITY TESTING WITH AN IN-HOUSE OSMOMETER

Measured osmolality provides the complete solute picture

Measured Osmolality is a measurement of total solute concentration of body fluids, i.e. serum, plasma, and urine. This measurement is used by Physicians and Laboratory Testing Experts to help diagnose clinical disorders such as metabolic acidosis, hyponatremia and electrolyte disorders, as well as alcohol and toxin ingestion.

Measured osmolality takes your lab beyond the limitations of calculated osmolality by providing the full range of information physicians need for quick and confident diagnoses of body fluid disorders. With an in-house osmometer, you can account for all clinically-relevant, osmotically active substances including important toxins and medications. Used in combination with calculated osmolality, measured osmolality also enables you to determine the osmolal gap (the difference between measured osmolality and calculated osmolality)¹ to identify the presence of foreign substances.

Equip your lab with a dependable osmometer that allows you to meet critical patient needs while providing the complete solute picture. Advanced Instruments products use the gold-standard freezing point depression method to ensure accurate results for confident reporting. We offer a variety of clinical osmometers to meet your sample throughput and automation needs to ensure you are ready for the quick turnaround needed for high-value testing.

	Calculated	Measured
Standard solutes (sodium, BUN, glucose)	●	●
Expanded solutes (toxic alcohols, mannitol)		●
Standardized testing method		●
Required for osmolal gap determination	●	●

Measured Osmolality provides a more comprehensive picture of the patient's lab chemistry over calculated osmolality.¹

"Calculation of osmolality introduced a systematic bias, overestimating osmolality in the lower ranges and underestimating it in the higher ranges ... sum of principal serum solutes, compares poorly with direct measurement using standard osmometry."

— Renaud Vialet MD, Marc Léone MD,
Jacques Albanèse MD, Claude Martin MD

We are ready to help you strengthen your osmolality testing capabilities.

[Visit our website](#) to learn more about the value of measured osmolality testing or [contact our team](#) for more details.



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Associated Publications

1. [CALCULATED SERUM OSMOLALITY CAN LEAD TO A SYSTEMATIC BIAS COMPARED TO DIRECT MEASUREMENT](#)

"Calculation of osmolality introduced a systematic bias, overestimating osmolality in the lower ranges and underestimating it in the higher ranges ... sum of principal serum solutes, compares poorly with direct measurement using standard osmometry." Violet, et al. J Neurosurg Anesthesiol. 17. 106-9 (2005).

2. [A RETROSPECTIVE ANALYSIS OF GLYCOL AND TOXIC ALCOHOL INGESTION: UTILITY OF ANION AND OSMOLAL GAPS](#)

"Our study concurs with other investigations that show that osmolal gap can be a useful diagnostic test in conjunction with clinical history and physical examination." Krasowski, et al. BMC Clin Pathol 12, 1 (2012).

3. [COMPENDIUM OF BIOMEDICAL INSTRUMENTATION](#)

"Osmometers based on freezing point depression method have set the gold standard for accuracy, performance, and reliability in the clinical laboratories." Khandpur, et al. Dir Gen of Centre for Electronics Design and Tech Vol 3, 1166. (2020)

Make sure you are ready to offer a comprehensive picture with the trusted industry leader in clinical osmometers and osmolality testing. Our products are based on gold-standard freezing point depression detection³ to ensure accurate results for confident reporting. [Visit our website](#) to learn more about the value of measured osmolality or [contact our team](#).