

Urine Dipstick for Monitoring Dietary Salt Intake for Hypertensive Patients

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Technology description

This invention provides methods, kits and nomograms for estimating 24-hour urinary excretion of sodium from a spot urine sample.

Salt intake is an important factor in the control, or lack of control, of hypertension and of congestive heart failure. Salt intake also affects the blood pressure response to most classes of antihypertensive medications. Patients are advised to reduce their salt intake as a means to reduce medication and better control their blood pressure, yet patients have no way of knowing whether or how much changes they have made in their diet have reduced their salt intake.

At present the gold standard for monitoring salt intake, is the 24-hour urine collection to measure sodium excretion. However, the inconveniences of carrying a bottle and collecting all urine for a day, and delivering it to a laboratory or doctor's office, make this method too impractical for repeated monitoring. Further, the amount of sodium excreted that day often is not representative of average sodium intake over a longer period of time. Also, urine collection is often incomplete, yielding inaccurate results. The alternative of measuring urine sodium concentration from a spot urine sample would be much more convenient, and could be done repeatedly, but it has not been clear that this method adequately reflects 24 hour sodium excretion.

Weill Medical College scientists have developed a novel test based on the principle that the amount of a substance excreted in the urine in a day can be assessed by indexing its concentration to the concentration of a substance whose 24-hour excretion is constant, such as creatinine. This test uses devices, such as dipsticks, to conveniently measure the concentration of two materials present in the urine, eliminating the problem of varying and unmeasured urine volume. This method does not require submission to a laboratory, and could be performed by a physician or patient as often as desired.

Application area

A kit for estimating sodium intake from a spot urine sample

Advantages

Sodium intake can be monitored by physicians or patients as often as desired

Quick, convenient and inexpensive

Provides a reasonably accurate estimate without the need for 24-hour urine collections

Institution

[Cornell University](#)

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