# Combistix*

1 DIP 10 SECONDS 3 URINE RESULTS

Combistix

for

every

new

patient

# At every surgery visit a practical inclusion in diagnostic routine

## the neglected art of urine testing

"The examination of urine is a much underestimated clinical laboratory test . . . A urine specimen is so readily obtained, and the tests are so easily accomplished, that we intuitively tend to minimize the importance of the results. It is an everyday experience to see physicians order complicated renal function tests when an ordinary urinalysis, well done and correctly interpreted, would furnish as much or more information."[1]

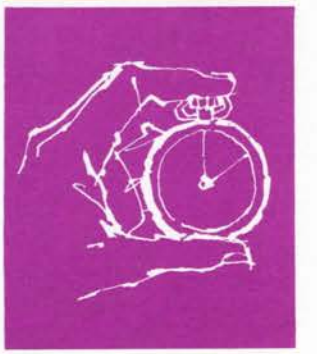
Attitudes toward urinalysis which assume that it is a "lowly" procedure, simply because it is relatively simple to perform, are ill founded. Most of the newer developments which have increased the accuracy of the more common biochemical tests on urine have also simplified the techniques. **This simplification, which has made it possible for the nurse, technician, and even the patient to obtain reliable results is an indication of technical refinement, not of lessened importance.**

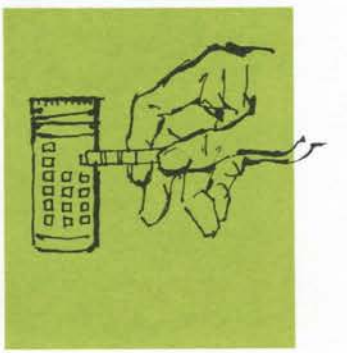
## medical support for Combistix —the 3 in 1 urine test

"The data which have been presented in this paper demonstrate that the combination stick test is a convenient means for the rapid testing of urine for glucose, protein, and pH. Only a little more than 10 seconds is required to test a single urine specimen for all three constituents. There is no need for any preliminary treatment of the urine specimen and there is only a single paper strip to dispose of afterward. The data presented in this paper indicate that the combination strip test could be a useful adjunct in the performance of routine hospital urinalyses. It is also a reliable means for the preliminary screening of large numbers of urines from presumably healthy people. Data indicate that the glucose and protein test portions have adequate sensitivity for either purpose and that the pH portion is an accurate means of estimating the pH of all these urines.

The simplicity of the test is such that satisfactory results can be obtained regardless of experience or inexperience of the person using the combination stick test. This may be a feature of great importance in many laboratories because of the shortage of trained personnel. The combination stick test facilitates the use of ancillary personnel and allows trained technologists to spend more time in carrying out the newer and more complicated clinical laboratory procedures."[2]

## 1 dip 3 results





nbistix—Dip →

## pH

Urinary pH is an important diagnostic index when integrated with clinical findings. Urine may be strongly acid in diabetes, severe diarrhoea, starvation, emphysema, dehydration, and fever[7]. Persistently alkaline urine occurs in urinary tract infections caused by urea-splitting organisms, chronic ingestion of antacids, loss of gastric HCl, and conditions resulting in prolonged hyperventilation. Determination of pH may thus be useful in both diagnosis and management of genito-urinary infections[10,11] and certain types of urinary calculi[11]. Frequent pH testing is indicated for maintenance of a specific pH, e.g., to protect the kidney from crystalluria in sulphonamide therapy[7], or to assure maximal antibacterial action in chemotherapy of genito-urinary infection[12].

## glucose

Glycosuria may be the first observed sign of diabetes[5]. Examining urine for glucose is thus a basic test in routine urinalysis[9] and the best method of screening for diabetes[7] and guiding its day-by-day control. The initial appearance of glycosuria due to diabetes often occurs during pregnancy. The glucose portion of Combistix, unlike copper-reduction tests for total sugar, is specific for glucose and will not react to lactose in urine obtained during the perinatal period.

## protein

Proteinuria is "the best single indicator of a renal abnormality"[3], and its absence is especially reassuring[4]. Proteinuria may be the earliest evidence of serious vascular disease or chronic pyelonephritis[5]. It may warn the diabetic patient of either renal infection or progressive nephropathy[6]. It may be the first sign of pre-eclampsia[7]. By a reagent technique of established specificity[8], even inexperienced operators can quantitatively estimate proteinuria in a few seconds with Combistix.

# Combistix*

## clinical utility
## with laboratory reliability

### description

Combistix reagent strips are firm paper strips at one end of which are three reagent-impregnated test areas. The yellow tip is the protein test area; the red centre section is the glucose test area; the orange section is the pH test area. The test areas are separated by water-impervious barriers for better colour diffusion. Combistix provides instant laboratory data at the bedside, or for immediate surgery appraisal. Test can be completed in 10 seconds.

### simplicity of use

Dip reagent-impregnated end of reagent strip into a fresh urine specimen. Remove promptly, wait ten seconds only, and compare each of the three test portions for corresponding colours as indicated on the standardized colourimetric chart.

### packaging

Combistix are available in air-tight bottles of 100 strips, complete with colour chart, from all surgical supply houses and normal pharmaceutical channels.

**references:** (1) Wells, B. B.: Clinical Pathology: Application and Interpretation, Philadelphia, W. B. Saunders Company, 1950, p. 185. (2) Marion Cook Fetter, John Rebar, Jr., Ingrid Metzler, Journal Medical Technology, 1959. (3) Lippman, R. W.: Urine and the Urinary Sediment, ed. 2, Springfield, Illinois, Thomas, 1957, p. 8. (4) White, A. G.: Clinical Disturbances of Renal Function, Philadelphia, Saunders, 1961, pp. 413-417. (5) Wells, B. B.: Clinical Pathology: Application and Interpretation, ed. 2, Philadelphia, Saunders, 1956, p. 233. (6) El Mahallawy, M. N., and Sabour, M. S.: J.A.M.A. 173: 1783, (Aug. 20), 1960. (7) Kark, R. M., et al.: A Primer of Urinalysis, ed. 2, New York, Hoeber, 1963, pp. 13-40, 51-56, 66-69. (8) Free, A. H.: Rupe, C. O., and Metzler, I.: Clin. Chem. 3: 716, 1957. (9) McCune, W. G.: M. Clin. North America 44: 1479, 1960. (10) Williamson, P.: Practical Use of the Office Laboratory and X-ray including the Electrocardiograph, St. Louis, Mosby, 1957, p. 41. (11) Mehlman, J. S.: Zitman, I. H., and Platt, S. S.: M. Clin. North America 43: 615, 1959. (12) Brumfitt, W., and Percival, A.: Brit. J. Clin. Pract. 16: 253, 1962.

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