light microscopy it is therefore possible to assess cell and tumor morphology critically in the face of an independent technique for positive cell identification, namely determination of the antigenic makeup of the cell.

The method is limited only by the availability of highly specific antisera and by the ability of the antigen in question to survive the rigors of tissue fixation and processing. The range of antisera available increases daily, and the many antigens that survive to a useful degree include immunoglobulins, J chain, lysozyme, ferritin, lactoferrin, transferrin, hemoglobin, α fetoprotein, α-1-antitrypsin, many polypeptide hormones, hepatitis B surface antigen, and other viral and microbial antigens.

An indexed bibliography of more than 600 immunoperoxidase papers is obtainable free of charge from Dakopatts, 22F North Milpas, Santa Barbara, CA 93103.

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The Two-Hour Oral Glucose Tolerance Test

THE AMERICAN DIABETES ASSOCIATION has recommended the standard two-hour oral glucose tolerance test (2-hr OGTT) as "yielding the most relevant diagnostic information." This test requires five venous blood specimens: fasting, ½ hour, 1 hour, 1½ hours and 2 hours. This routine is appreciated by patients. The recommended loading dose for adults is 75 grams; for children, 1.75 grams per kg of ideal body weight up to a maximum of 75 grams. This dose is more tolerable to patients and provides data that generally are interchangeable with those from the previous larger loading doses.

The interpretation criteria given in Table 1 are for the 2-hr OGTT venous plasma levels. Criteria for venous whole blood, capillary blood and blood from pregnant women, as well as a discussion of the new classification for diabetes mellitus disorders, can be found in the July 1979 issue of *Diabetes*.

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Prostatic Acid Phosphatase (Male PAP)

SUPPORT FROM THE clinical laboratory for the diagnosis of carcinoma of the prostate has relied heavily on the determination of the enzyme acid phosphatase. Until recent developments, the determination of acid phosphatase has been carried out kinetically utilizing various chemical substrates. The ubiquitous presence of this enzyme in tissues other than the prostate, such as bone, kidney, liver, spleen, pancreas and red cells, has placed limitations on the specificity (number of true positives associated with elevated enzyme levels) associated with this method. Various attempts to make the test more specific for prostatic disease through the use of inhibitors (tartrate, formalin) have met with limited success. The sensitivity of the test (ability to measure low

TABLE 1.—*Criteria for Interpretation of the Two-Hour Oral Glucose Tolerance Test*

Normal Levels	*Diagnostic of Diabetes Mellitus*	*Impaired Glucose Tolerance*
Nonpregnant Adults		
Fasting: <115 mg/dl 2 h value: <140 mg/dl ½, 1, 1½ h values <200 mg/dl	≥140 mg/dl 2 h value and one other (½, 1, 1½ h value) >200 mg/dl	<140 mg/dl 2 h value between 140 and 200 mg/dl and a ½, 1 or 1½ h value ≥200 mg/dl
Children		
F <130 mg/dl 2 h <140 mg/dl	≥140 mg/dl 2 h and an intervening value ≥200 mg/dl	<140 mg/dl 2 h value: >140 mg/dl

h=hour

levels of the enzyme in patients with carcinoma) has also been restricted by virtue of the kinetic assay. As a result of these limitations the ability of clinicians to detect the presence of prostatic carcinoma has been confined for the most part to patients with the more advanced stages of the disease: stage C (extracapsular extension) and stage D (metastatic spread).

These limitations provided the impetus for the isolation of an acid phosphatase specific to the prostate and the subsequent development of an antibody to this enzyme. The availability of an antibody allowed for utilization of the newer immunochemical techniques recently developed in the clinical laboratory, namely RIA (radioimmunoassay) and CIE (counterimmunoelectrophoresis).

The pronounced increase in sensitivity and specificity with these newer methods has been confirmed in various research centers as well as through the National Prostatic Cancer Project under the auspices of the National Cancer Institute. The initial data from various population studies have been very encouraging. Of those patients with prostatic carcinoma clinical stage A (intracapsular and nonpalpable), 38 percent were acid phosphatase positive by immunochemical techniques as opposed to only 12 percent detected by the more conventional chemical methods. Results are similar in persons with clinical stage B disease (intracapsular with a palpable nodule), 35 percent and 17 percent, respectively. Data such as these have created understandable enthusiasm for use of the immunochemical determination of prostatic specific acid phosphatase (male PAP) to screen the age group of highest prevalence, specifically men older than 50. False positives (up to 14 percent) do occur. This has been particularly true in patients after rectal examination or prostatic surgical procedures such as transurethral prostatectomy. In these latter instances, the false positivity, however, is transient.

The advantage the male PAP offers to clinicians is the ability to detect the presence of carcinoma of the prostate at a point in its clinical development when it is either occult or confined to the prostate. This in turn carries with it the theoretical possibility of improving the therapeutic result and concomitantly the prognosis.

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