REFERENCE

1. American Diabetes Association: Position statement: screening for diabetes. *Diabetes Care* 12:588–90, 1989

I was pleased to read the American Diabetes Association's position statement on screening for diabetes (1). I believe these guidelines will be most beneficial in assisting organizations that provide such screenings for their communities.

However, I am somewhat confused regarding the term *plasma glucose level* when screening for diabetes. To my knowledge, any screening done outside of a hospital or physician's office would obtain a whole-blood glucose level not a plasma glucose level. Throughout this position statement, the screening test is referred to as a plasma glucose level, yet references are made to lancets and lancet-holding devices that would not be used to obtain a plasma specimen.

Please advise me if I am interpreting this statement incorrectly. I would greatly appreciate your clarification of this matter because others may be just as puzzled as I am.

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1. American Diabetes Association: Position statement: screening for diabetes. *Diabetes Care* 12:588–90, 1989

The recent American Diabetes Association (ADA) position statement regarding screening for diabetes (1) reverses a long-standing and, in our opinion, well-founded consensus that screening for non-insulin-dependent diabetes mellitus (NIDDM) is not appropriate (2–5). Although the position statement suggests that only high-risk individuals be screened for diabetes, the high-risk criteria cited are sufficiently common to include a large fraction of the U.S. population >40 yr of age. Considering the significant departure from past and more recent recommendations not to screen (6), we thought it worthwhile to review the commonly accepted rationale for screening and examine whether any new data support the change in ADA's position.

Six criteria proposed by Frame and Carlson (2) in their thorough review of periodic health screening remain the accepted standards to justify screening. Those criteria include the following. The disease must have *1*) significant morbidity and/or mortality, *2*) high enough incidence to justify the cost of screening, *3*) an asymptomatic phase during which detection and treatment significantly reduce morbidity or mortality, *4*) methods to detect disease in its asymptomatic phase must be available, *5*) acceptable therapy must be available, and *6*) treatment of disease during the asymptomatic phase must yield results superior to those obtained if treatment were delayed until symptoms appeared.

NIDDM easily satisfies criteria 1, 2, 4, and 5. It is accompanied by profound complications with resulting morbidity and mortality and is highly prevalent in both symptomatic and asymptomatic phases (7). The availability of screening methods (oral glucose tolerance test) and acceptable therapy (diet, oral hypoglycemic agents, or insulin) are also unarguable, although the efficacy of such treatments in restoring normal metabolic control is debatable.

The objections raised in the past to screening for NIDDM have focused on criteria 3 and 6. Long-term studies to date have been unable to demonstrate a beneficial effect of therapy in reducing long-term complications. Thus, in the absence of symptoms to be ameliorated, therapy of NIDDM does not demonstrably improve the lot of NIDDM patients. The position statement refers to "many studies suggesting that tight control of blood glucose levels (i.e., normal or near normoglycemia) in a hyperglycemic individual may help prevent or retard the onset of complications." Note, although the recommendations in the position statement are predicated almost entirely on this assumption, no references are provided to support it. Although we agree that an association between long-term glucose control and microvascular (8) and perhaps macrovascular (9) complications has been established in NIDDM, no acceptable study has demonstrated a beneficial impact of intervention on long-term outcome. The most comprehensive trial of different therapies on long-term outcome in NIDDM (University Group Diabetes Program) was not able to conclude that there was any impact of intensive therapy on outcome. Thus, there are no convincing data to suggest that identifying NIDDM patients in their asymptomatic phase will benefit them.

Other arguments that support screening, even in the absence of demonstrable benefit of therapy, have been advanced by its proponents. These include the proposition that earlier identification will motivate physicians and individuals who screen positive to provide better care (self-care) and improve their health. The largest screening study conducted in the U.S. (Cleveland, 1967–1971) examined >600,000 individuals (10). The Cleveland study documented a modest (2.9%) weight loss 3 yr after identification in individuals who screened positive, which was not sustained at 5 yr. Another argument marshalled in favor of screening is that by identifying diabetes, we may unmask other abnormalities, such as hyperlipidemia or hypertension, that accompany diabetes and require therapy. This represents a weak justification for screening for diabetes: it is much more effective and economical to screen for cholesterol or hypertension per se rather than detect them during screening for diabetes.

The knowledge that there are many undiagnosed