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THE PROBLEMS OF DEFINING AND MEASURING DIABETIC CONTROL AND DIETARY COMPLIANCE IN FIELD STUDIES ON DIABETICS.

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The Diabetes Education Programme at Royal North Shore Hospital was set up to develop and evaluate a set of strategies to improve patient compliance to their diabetic management regimens and the effects of this on improving diabetic control. We have found inadequacies and unreliability in the definition and measures of both patient compliance and diabetic control described in the literature (Williams et al 1966; Bondy and Felig 1971) While we are seeking to improve the definition and measures of these parameters, it is important that personnel of other diabetic education programmes become aware of the inadequacies of present evaluation tools and techniques.

The problem of defining diabetic control has been a major problem due to lack of evidence as to the reliability and validity of the indicators used, and the best set of criteria to use in interpreting the results of these tests.

Problems related to validity and reliability of the measures of control include: 1) the extent to which control is affected, in a transient manner, by many variables such as stress, infection, menses, activity rate, insulin action, and several dietary factors; 2) the lack of correlation between results of various tests which measure control; 3) the documented daily fluctuations in control as measured by various tests; 4) patient errors in specimen collection and lack of validated cross checks to assess this; 5) significant and frequent laboratory error and lack of reported quality control programmes (Malone et al 1976).

The problems of defining and evaluating dietary compliance are again related to unresolved questions in the literature such as: 1) the extent to which certain dietary factors, in combination with others, best predict diabetic control; 2) the efficacy of various dietary regimens in improving diabetic control; 3) the degree and way in which patients can deviate from recommendations and still maintain good control.

These questions have stimulated our project to conduct an exploratory field study which measured the following variables in 17 diabetics each day for 7 days: 1) recorded dietary intake analysed by meal for 7 factors; 2) activity rate between meals calculated from patient records of activity over 24 hours; 3) insulin units and predicted peak and duration of action; 4) 24 hour fractional urine glucose and creatinine; 5) random blood glucose. A multivariate analysis is being performed on these data. Preliminary results will be discussed.

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