Gingival Crevicular Fluid [GCF]-
Collecting Device for Analyzing Microvolume Sample Solutions

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(Received October 7, 2000; accepted February 5, 2001)

Key words: gingival crevicular, noninvasive, blood glucose, testing tape, capillary, diabetic mellitus

The authors aim to develop noninvasive methods of measuring blood glucose levels by analyzing body fluids collected painlessly. In this report, we describe the manufacturing of a gingival crevicular fluid (GCF)-collecting device with a highly sensitive glucose testing tape that causes no pain for the subjects and has proven its usefulness and medical safety. The testing tape must be adequately colored for measurement. This study clarified the following: 1. The structure of a GCF-collecting device that can analyze very small volumes of GCF has been devised, and the quantity collected can be adjusted by varying the size of the testing tape. 2. Two types of GCF-collecting device are proposed which can be used even in cases of periodontitis. The GCF-collecting devices can be used as noninvasive devices in dolorimetry. 3. The manufacturing procedure for the glucose testing tape has been clarified with N, N-diethyl-p-phenylenediamine sulfate selected as a chromogen. The advantage of this procedure is that no materials with toxic or carcinogenic properties are used.