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A Lingual Vitamin C Test: VIII. Vitamin C State in a Dental Prepayment Program

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Summary: The nonfasting lingual vitamin C test scores were determined in 1305 employees in the culinary industry and in 762 child dependents of employees in the retail clerks industry. Utilizing a physiologic standard of less than 20 seconds, 51 per cent of the group show scores which can be regarded as marginally suboptimal and 21 per cent of the sample display values consistent with an ascorbic acid deficiency.

Introduction

Early reports in this series demonstrated the constancy and reproducibility of the lingual vitamin C test [1, 2], the relationship of this test procedure to plasma ascorbic acid level [3], intradermal time [4], dietary intake of ascorbic acid [5], and changes in the test scores following vitamin C supplementation [6]. The last in this series [7] demonstrated a correlation between the nonfasting serum cholesterol and nonfasting lingual time. This report is designed to analyse the range of scores encountered in routine dental patients in a dental prepayment program.

Method of Investigation

Two thousand sixty-seven subjects participated in this experiment. The lingual test was performed as previously described [1] in 1305 members and dependents of six unions affiliated with

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the culinary industry in metropolitan Los Angeles. These workers include cooks, waiters, waitresses, bartenders, etc. The remaining 762 participants were children of members of Retail Clerks Local 770 in Los Angeles.

Results

Table 1 summarizes the results. It will be observed that, for the entire sample, the mean and standard deviation is 29.0 ± 14.0 seconds. Thus, two-thirds of the sample ranges from 15 to 43 seconds. The majority of subjects (51 per cent) showed lingual times of approximately 20 to 39 seconds. The rest of the scores were almost equally dispersed between short times (0-19 seconds) and relatively long times (40+ seconds).

Tab. 1: Lingual vitamin C scores.

| Nonfasting lingual time groups (seconds) | Number and percentage of subjects | | |
|--|-----------------------------------|--------------------------------|-----------------------|
| | Culinary workers | Dependents of retail clerks | Total |
| 0-19 | 361 [27.7 %] | 225 [29.5 %] | 586 [28.4 %] |
| 20-39 | 743 [56.9 %] | 311 [40.8 %] | 1054 [51.0 %] |
| 40+ | 201 [15.4 %] | 226 [29.7 %] | 427 [20.7 %] |
| totals | 1305 [100.0 %] | 762 [100.0 %] | 2067 [100.0 %] |
| mean | 27.6 | 31.4 | 29.0 |
| standard deviation | 12.7 | 15.7 | 14.0 |

* approximate

Discussion

Earlier reports [8, 9] have indicated that the physiologic range is approximately 15 to 20 seconds with a maximal limit of 25 seconds. Utilizing this criterion, it would appear that about one in four subjects demonstrated a definitely physiologic score, one-half a marginal value, and one in five a definitely abnormal response.

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