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In this Issue. . .

“Normal” Versus “Normal” Criteria!

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GUEST EDITORIAL

“Normal” Versus “Normal” Criteria!

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Doctor Cheraskin has been trained both in medicine and dentistry and is now Professor and Chairman of the Department of Oral Medicine at the University of Alabama in Birmingham, School of Dentistry in Birmingham, Alabama. He is the author of numerous publications and books, the latest being a lay book entitled *Psychodietetics* designed to relate food and behavior.



Doctor Warren Marshall Ringsdorf, Jr. is a native of Alabama. He received an A.B. degree from Asbury College (Wilmore, Kentucky) in 1951, a M.S. degree in 1956 from the University of Alabama Graduate School (Tuscaloosa, Alabama), and a D.M.D. degree in 1956 from the University of Alabama School of Dentistry (Birmingham, Alabama).

Doctor Ringsdorf joined the University of Alabama School of Dentistry faculty in 1960 following two years in the United States Air Force and two years in private practice. He is currently a full-time Associate Professor in the Department of Oral Medicine.

Perhaps the single most significant distinction between *therapeutic* versus *preventive* medicine is the area, if not the line, which delineates the healthy from the sick. The failure to properly distinguish between these two disciplines is, in part, a semantic trap. Thus, when the word “normal” is used, it means “average” to some people and “physiologic, ideal or healthy” to others.

There are today published standards of health ranging from height and weight to blood pressure and serum cholesterol to dietary recommendations. Without exception, these so-called health criteria stem from an assumption that the mean plus two standard deviations of the population is normal, meaning healthy. Thus, an examination of standard medical textbooks yields a normal, presumably healthy, fasting blood glucose of 60-100 milligrams percent. Likewise, pursuing the same logic (or illogic), the total white cell count should be 5000 to 10000 cells per cubic millimeter. The Recommended Dietary Allowances (RDA) for vitamin A is recognized as 5000 International Units.

In all of these instances, the assumption is that 95 percent of Americans are well when, in fact, 95 percent of Americans are sick. For example, 95 percent of Americans suffer with tooth decay, clearly a sign of illness!

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If one begins with the hypothesis that relatively symptomless and signfree persons are healthier than those with clinical symptoms and signs, then the distinction between "normal" versus "normal" criteria changes. In fact, it becomes abundantly clear that traditional norms imply that since normal (average) and normal (healthy) prevail, and things equal to the same thing are equal to each other, then average and healthy are the same.

Table 1
fasting blood glucose in
one hundred routine dental patients

group	number	mean fasting blood glucose	standard deviation
without polyphagia, polydipsia, and polyuria (extraoral symptoms)	50	80	+20
perfect gingival status	16	78	+11
without oral symptoms (gingival tenderness, dry and burning mouth)	38	78	+ 7
full complement of teeth and no clinical tooth mobility	16	76	+ 8
no positive x-ray findings (no alveolar bone loss and no periodontal widening)	11	76	+ 6
no positive x-ray findings, full complement of teeth and no clinical tooth mobility	5	74	+ 2
no positive x-ray findings, no oral symptoms, full complement of teeth and no clinical tooth mobility	3	75	+ 1

We have developed a clinical model for distinguishing between average (normal) and healthy or physiologic (normal) health criteria. By progressive selections from a large group of people, subgroups are chosen with fewer and fewer clinical symptoms and signs of disease. Invariably, with this selection process, the standard deviation of whatever biochemical parameter is being measured will shrink (Table 1) (Cheraskin & Ringsdorf, 1961). This model has also been used to develop the physiologic glucose and cortisone-glucose tolerance tests (Ringsdorf & Cheraskin, 1962; Ringsdorf, Cheraskin & Keller, 1962). Thus, much of the so-called "normal range" for health criteria is associated with the early stages of disease.

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Table 2
relationship of reported daily
vitamin A consumption (food frequency
questionnaire) and reported total
clinical findings (Cornell Medical
Index Health Questionnaire) in a
presumably healthy male and female sample

	sample size	clinical findings (affirmative CMI responses)		daily intake of vitamin A (I.U.)	
		range	mean & S.D.	range	mean & S.D.
1) entire sample	1056	0-125	15.9±12.4	1000-98209	19096±11912
2) CMI <50	1033	0- 49	14.8±10.1	1000-98209	19219±12096
3) CMI <40	1003	0- 39	14.0± 8.8	1000-98209	19244±11999
4) CMI <30	928	0- 29	12.4± 7.1	1000-98209	19368±11964
5) CMI <20	754	0- 19	9.8± 4.9	1000-98209	19641±12181
6) CMI <10	379	0- 9	5.7± 2.3	1000-98209	20448±12343
7) CMI < 5	116	0- 4	2.8± 1.2	1000-68889	22463±12629
8) CMI < 4	75	0- 3	2.1± 0.9	5200-63688	23595±12464
9) CMI < 3	46	0- 2	1.5± 0.7	5702-63688	24299±13005
10) CMI < 2	17	0- 1	0.6± 0.5	8646-43000	26043±12251
11) CMI 0	6	0	0.0± 0.0	18748-48908	32529±12563

The same clinical model has also been utilized to distinguish between average (normal) and healthy or ideal (normal) daily allowances for nutrients (Table 2) (Cheraskin, Ringsdorf & Medford, 1976a). For all nutrients evaluated, the progressively healthier samples showed a progressive change in mean nutrient intake (Cheraskin, Ringsdorf & Medford, 1976b, 1977a; Cheraskin, et al., 1977b).

With larger subject samples, this clinical model can properly delineate the ideal or physiologic values for a wide variety of health parameters. This will be of great value getting people well and/or keeping them well.

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