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## The Nutrition-Prevention Connection

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# The Nutrition-Prevention Connection

By E.W. McDONAGH, DO, C.J. RUDOLPH, Jr, DO, PhD, and  
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*precisely how one views the nutrition-prevention connection is largely a function of the assigned definitions for prevention and nutrition.*

## DEFINITIONS

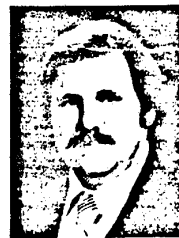
Approximately 95 cents out of each so called health dollar is delegated to solving our staggering sickness problems by treating disease with traditional techniques. Of the remaining 5 cents assigned to prevention, about four cents is devoted to what might be rightly called secondary prevention or prevention of recurrence. Thus, the surgical extirpation of a gangrenous gall bladder will surely guarantee that

never again will a gangrenous gall bladder appear. Of the remaining penny, most is devoted to primary prevention (prevention of occurrence) through investigations designed to add years to life. Only a fraction of that penny is dedicated to the real and burning issue of how to add life to years. This last issue is the essence of true primary prevention.

The terms "diet" and "nutrition" are generally used loosely, sometimes interchangeably.



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However, in a more sophisticated and analytic sense, diet is that which one eats; nutrition is that part of the diet which reaches the cellular level. Often, a large difference exists between the two terms because of problems of absorption, assimilation, use and excretion.

With these stringent limits in mind, we have observed the nutrition-prevention connection through a combined therapy including multi-vitamin-trace mineral supplementation (MTMS), as the dietary component, and chelation ethylenediaminetetra-acetate (EDTA) therapy as a means for ensuring that the vital dietary elements reach their cellular destinations. Our hope, by using this therapy, is to add to the burgeoning body of fact regarding adding life to years — the ultimate in primary prevention.

Obviously, scores of measuring monitors exist, including changes in clinical findings, physiologic state, biochemical balance, hormonal matrix, or enzymatic constellation. Because of the current concern with lipid metabolism, especially in cardiovascular pathology, and in view of the space constraints, we have chosen to describe our efforts as derived from biochemical analysis in a general private osteopathic practice.

#### EXPERIMENTS ONE AND TWO

For example, it is generally recognized that, with advancing age, average serum cholesterol rises. Thus, older persons generally have higher cholesterol levels than do younger persons. It is generally agreed that older persons die more readily than younger people. Finally, general agreement exists for the assumption that older persons with higher cholesterol levels die more readily than older persons without hypercholesterolemia, although not necessarily because of cardiovascular disease. It then follows, all other factors being equal, that lowering hypercholesterolemia is, in fact, one expression of "making people younger."

To test this hypothesis, we have performed two experiments: on 221 and 142 routine pri-

vate practice patients suffering with diverse chronic degenerative syndromes. Both test groups were treated with a combination of a MTMS and a series of EDTA infusions.

In the first study,<sup>1</sup> 221 subjects were studied before and after therapy of about two-months length. The overall evidence indicates that, within the limits of this kind of study, favorable changes occurred in serum cholesterol and suggest a possible reversal of the aging process (Figure 1). Specifically shown on the vertical axis is the mean serum cholesterol; on the horizontal axis, advancing age. At the initial examination, the mean serum cholesterol rose with age until a plateau in the oldest age category (top line). The same obtained after therapy (bottom line). However, it is clear that, in every age category, the mean cholesterol values are significantly lower following treatment.

The results of the other study<sup>2</sup> of 142 subjects indicates that, in approximately two to four weeks, it is very possible to reduce hypercholesterolemia, on the average, 14 percent. When the serum cholesterol change is viewed in terms of the initial cholesterol score, those patients with the relatively higher levels reflect a decrease of about twice as much (17 percent) as those with the lower initial values (9 percent).

#### EXPERIMENT THREE

With the currently recognized epidemic of cardiovascular pathology has come an increasing awareness of a need for more sophisticated diagnostic, therapeutic, and par-

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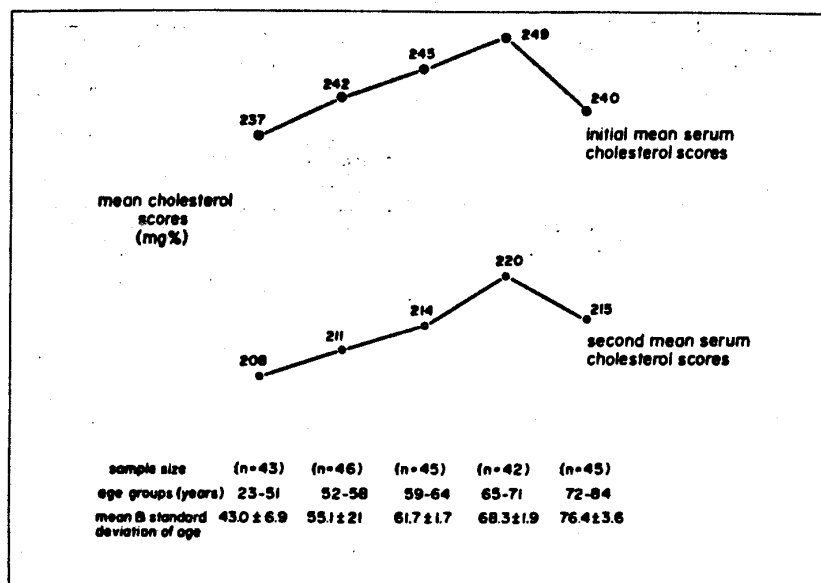


Figure 1. The relationship of age and serum cholesterol before and after EDTA therapy.

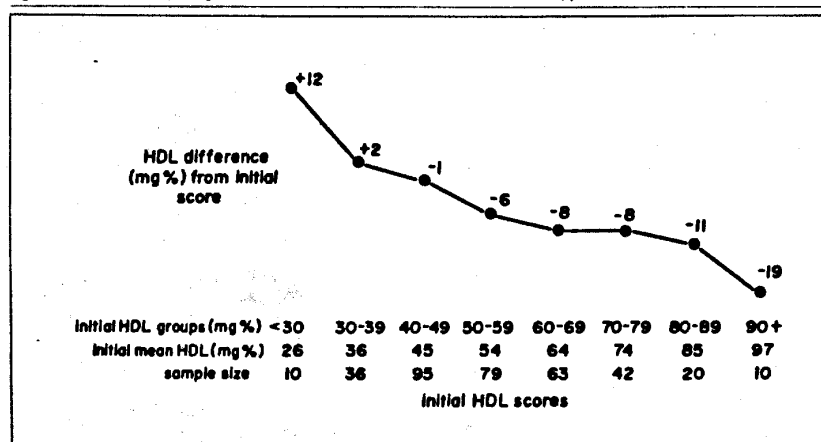


Figure 2. Homeostatic effect of EDTA plus supportive multivitamin-trace mineral supplementation (MTMS) upon high-density lipoproteins (HDL).

ticularly predictive measuring tools. For a while, serum cholesterol was touted as the most fashionable model. Today, evidence exists for the high-density lipoprotein cholesterol (HDL). We looked at this particular parameter in a group of 356 routine patients suffering from chronic degenerative problems.<sup>3</sup> We measured the HDL before, and approximately 50 days after completion of an EDTA series of infusions and MTMS. Figure 2 demonstrates the initial HDL values on the horizontal axis; plotted on the vertical axis is the difference from the initial values.

Three points warrant special mention. First, low HDL scores rise under this form of therapy (a point which, as far as we know, had not heretofore been mentioned). Second, the least change in HDL occurred around 31 to 41 percent. Lastly, and quite predictable, but not stated elsewhere, the high scores decline. In fact, an overall negative relationship ( $r$  equal to 0.819;  $P$  less than 0.05) exists between the initial HDL scores and the subsequent difference from the initial values (another point which, as far as we know, has also never been reported).

#### EXPERIMENT FOUR

As we have learned, for a number of years, principal attention was accorded total serum cholesterol as a possible predictor of cardiovascular pathology. More recently, as we have just indicated, emphasis has been shifted to HDL. Now consideration is turning to the ratio of total serum cholesterol to high-density lipoproteins. In fact, it has just been in the past year or so, that a ratio of 4 to 5 (total serum cholesterol to HDL) has been suggested as the ideal combination in terms of optimal cardiovascular health.

We<sup>4</sup> have also examined this ratio with the aid of 358 randomly chosen patients suffering with chronic degenerative problems (heart disease and maturity-onset diabetes mellitus). The pattern is clear (Figure 3) and resembles the model for HDL. Specifically, those subjects

with ratios below 4.0:4.9 rose; those with ratios above 5:0 declined with an optimal approaching 4:5.

#### EXPERIMENT FIVE

If, indeed, these lipid parameters are of clinical importance, clinical reverberations should then be seen in the combined chelation vitamin-mineral regimen. We have examined one such avenue through oculoserebrovasculometric (OCVM) analysis of the effect of this treatment on vascular stenosis.<sup>5</sup>

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*Prior to therapy, the percentage of stenosis ranges from 3 to 74 percent with a mean of 28 percent. Following therapy, statistically significant stenosis was reduced 18 percent.*

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Fifty-seven routine patients suffering with chronic degenerative disorders participated in this experiment. Each patient underwent OCVM, a unique noninvasive tonometric system for the detection of vascular insufficiency (stenosis). This noninvasive system simultaneously measures intraocular pressure and ocular pulse in the undisturbed state and with the eye pressure increased to the ophthalmic arterial pressure. The procedure actually measures the ophthalmic arterial pressure, which, when compared to the brachial blood pressure, provides a reasonably accurate method of assessing carotid occlusive disease, cerebrovascular disorders, and ocular vascular pathology. This test was performed before and after a series of EDTA infusions (mean 28) and MTMS. Five points warrant special consideration.

First, the percentage of stenosis ranged from a low of 3 percent to a high of 74 percent, with a mean of 28 percent. Following therapy, the range was 0 percent to 54 percent with a mean of 10 percent. Overall, statistically significant

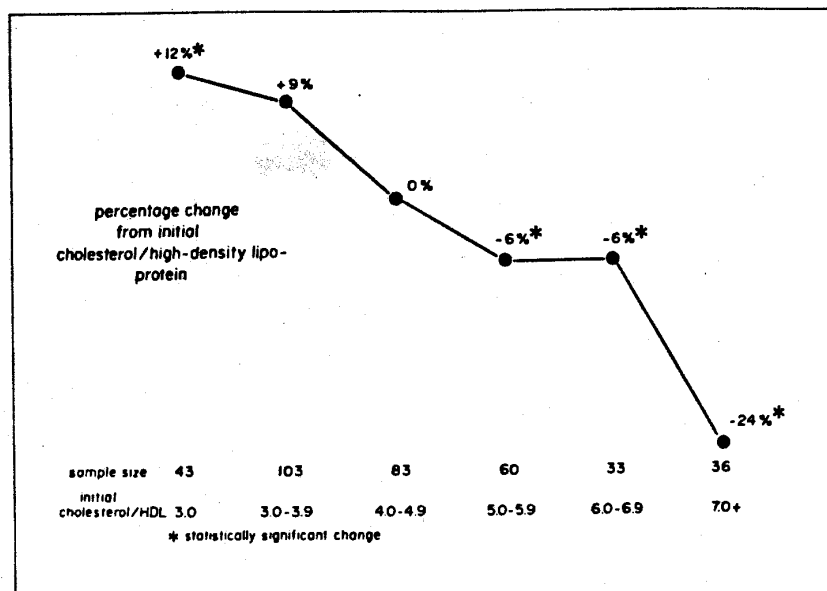


Figure 3. Influence of EDTA salts plus multivitamin-trace mineral supplementation (MTMS) upon cholesterol/high-density lipoprotein (HDL).

stenosis was reduced (P less than 0.001) 18 percent. Second, as shown in Figure 4, with advancing age (horizontal axis), vascular insufficiency increases from 23 percent in the youngest age group to 32 percent in the oldest, at the initial examination. Third, following treatment, at every temporal point, a significant mean reduction in stenosis occurs on the order of 18 percent, 22 percent, and 15 percent. Fourth, of the 57 patients, 50 (88 percent) improved and 7 worsened (not shown).

#### EXPERIMENT SIX

Clearly, all therapy must be viewed according to a risk-to-benefit ratio. In the case of EDTA, one of the alleged contraindications is possible renal damage.

Accordingly, we examined the renal function of 383 subjects with chronic degenerative problems before and after EDTA and MTMS therapy. We used serum creatinine as the mea-

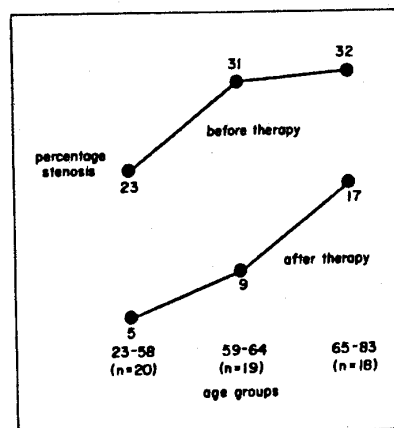


Figure 4. Effect of EDTA and multivitamin-trace mineral therapy upon total (right and left) percentage stenosis

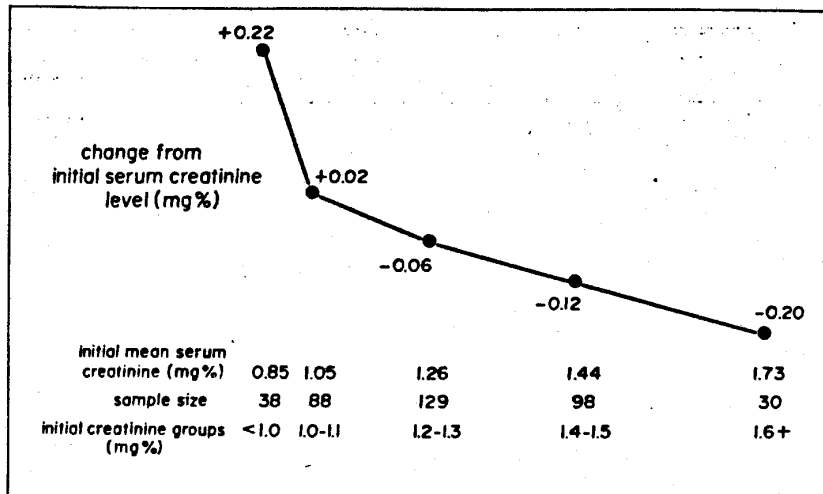


Figure 5. The influence of EDTA and supportive multivitamin-trace mineral supplementation (MTMS) upon serum creatinine levels.

asuring tool.<sup>6</sup> Overall, the fasting serum creatinine declined ( $P$  less than 0.05). Specifically, the number of relatively low initial serum creatinine levels increased (Figure 5); the number of relatively high serum creatinine levels generally held within the physiologic range, declined; the number of levels in the area of approximately 1.0 mg/dL (the supposed ideal in terms of renal clearance) remained unchanged.

It would appear, within the limits of this study, that this therapeutic regimen is not nephrotoxic. As a matter of fact, this treatment procedure may possibly improve kidney function.

#### SUMMARY

We have reason to believe, from experiments performed in our private practice, that the combination of EDTA and supportive MTMS may contribute to primary prevention. These findings are based on changes in serum cholesterol, HDL, the ratio of serum cholesterol to HDL, and, finally, from a study of serum creatinine.

Detailed information on the chelating therapy program is available from the authors. Write to them at the McDonagh Medical Center, Inc, 2800-A Kendallwood Parkway, Gladstone, MO 64119. □

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