Title: Linear Regression Analysis and Correlation Findings in Hemoglobin Oxidation Studies in Diabetics Blood: Effects of Ethyl Nitrite

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Abstract.
For ethyl nitrite induced oxidation of hemoglobin a linear regression line was calculated from 40 donors, 20 of whom were type 2 diabetics and 20 of whom were normal or non-diabetics, using all their HbA1C (%) values and the measured hemoglobin oxidation times. The resultant equation was that of a straight line which is most accurately described by the equation Y = 6.70 - 0.42X where X = percent of HbA1C and Y = hemoglobin oxidation time in minutes. The standard deviation of points around the fitted line was 0.476 and the standard errors of the slope and intercept were 0.0215 and 0.204, respectively. The product moment correlation coefficient (r) was found to be - 0.95. Thus, based on the fact that the correlation coefficient obtained is less than -0.75 this study demonstrates that there is a very good to excellent inverse relationship between HbA1C percentage and the hemoglobin oxidation time for ethyl nitrite. Moreover, this study demonstrates that this linear equation can be of good use to predict rates of hemoglobin oxidation times by ethyl nitrite based solely on its HbA1C % value. It follows then that such an empirical equation of this type, i.e.,Y= mx +b, could be of good predictive value as to the susceptibility of hemoglobin induced oxidation by other alkyl nitrites.

Keywords:
Ethyl Nitrite; Diabetes; HbA1C; Hemoglobin Oxidation; Methemoglobin

References

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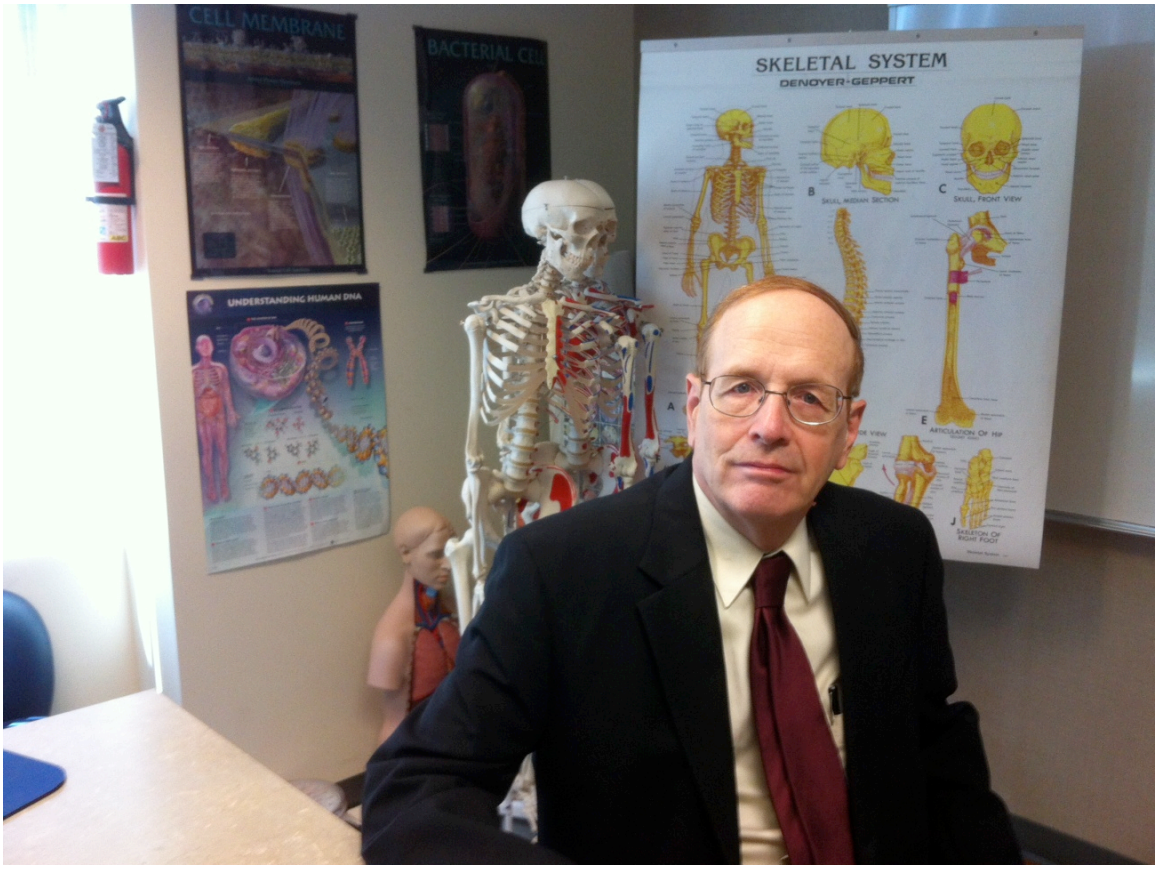
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Biography

John Philip Tarburton has completed his Ph.D at the age of 25 years from the University of Nebraska and also did postdoctoral studies at the University of Nebraska. Dr. Tarburton is an Assistant Professor at National University, the second-largest private nonprofit institution of higher learning in California and the twelfth largest in the United States. Dr. Tarburton has published more than 55 papers and abstracts in reputed journals and a book chapter about his research findings.

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