Hypertension and diet exercise2

Science, Statistics

Hypertension and diet/exercise2

Hypertension and Diet/ Exercise: an Annotated Bibliography of Two Resources Supporting the Presented Hypothesis Source Appel, L. J., Brands, M. W., Daniels, S. R., Karanja, N., Elmer, P. J. & Sacks, F. M. (2006). Dietary Approaches to Prevent and Treat Hypertension: A Scientific Statement From the American Heart Association. Hypertension. Vol. 47. Pp. 296 – 308.

The authors of this report have attempted to review the effects of a variety of dietary approaches on reducing hypertension as studied through a number of studies. This report is not based on particular data collected by the authors; but on the results on a large number of studies; and it attempts to provide a scientific and precise understanding of the mechanisms that control the effect of diet on bold pressure across age, gender, weight, race and lifestyles. Percentage and range data has been used to explain the effects reviewed in a number of places.

The report opens with a review if the percentage statistics available about the prevalence of hypertension in different demographic groups; and the co-morbid factors associated with hypertension. Factors that affect blood pressure and the value of reducing the same have also been reviewed. The effect of weight loss in individuals with differing BMI has been reviewed, and the authors conclude that reduced weight is associated with reduced blood pressure in individuals who are at risk as well as those who are not. According to the authors, reduced blood pressure is also associated with reduced salt intake; and that maintaining salt intake at 1. 5 gm / d helps most individuals. Effects are stronger for certain demographic groups, but some effect is seen on almost all participants across studies. Associated

increase in potassium has also been implicated in reduction of bold pressure. Aggregate changes have been mentioned, and they are promising in nature. Effects of potassium consumption are moderated by salt intake; and population measures of potassium intake seem to be lower than the recommended 4. 7 g/ d. significant blood pressure reductions related to lowered alcohol intake have been reviewed and accepted.

Results of comparative studies reviewing types of diets have been cited to validate the efficacy of a vegetarian diet in reducing and controlling blood pressure. The mechanisms of the same have also been discussed. Dietary patterns like the DASH diet and similar others that emphasize fruits, vegetables, low-fat dairy products as well as whole grains, poultry, fish and nuts and reduced emphasis on fats, red meat and sweets have been reviewed and recommended as measures to control blood pressure especially for those who are hypersensitive. The efficacy of dietary supplements like fish oil, fiber, calcium and magnesium in controlling bold pressure have been reviewed alongside an analysis of the effects of dietary components like carbohydrates, fasts of different kinds, proteins, vitamins and cholesterol. The effects of diet and genetic interactions have been mentioned. The report pays special attention to the effects of susceptible populations, and has isolated children, older adults and individuals of Negroid decent as particularly susceptible.

This report does not mention particular statistics, but uses static values in percentages, ranges, and absolute figures for dietary requirements, as well as aggregated changes in blood pressure values and other changes recorded by the included studies. This report stands in support of the chosen

hypothesis that ‘ diet and exercise regimens in patients with hypertension will reduce the participants’ bold pressure readings’. The report provides overwhelming evidence for the efficacy of dietary measures in the reduction and control of bold pressure; and also mentions the efficacy of exercise and lifestyle factors for the same.

Source # 2

Miller, E. R., Erlinger, T. P., Young, D. R. Jehn, M., Charleston, J., Rhodes, D. Wasan, S. K., Appel, L. J. (2002). Results of the diet, exercise, and weight loss intervention trial (DEW-IT). Hypertension. Vol. 40. Pp 612 – 618.

The authors of this study wished to evaluate the efficacy of combining sodium reduction, weight loss, the DASH diet, and regular aerobic exercise to reduce blood pressure in participants. The participants included were hypersensitive overweight adults who were already taking medication for controlling blood pressure. These 44 adults were distributed randomly across a treatment and a control group; and were stratified within each group for race. Daily meals for the treatment participants were provided to them in order to ensure adherence to the diet plan. Mean 24-hour ambulatory BP, Daytime blood pressure, Nighttime blood pressure, Fasting blood specimens and 24-hour urine collections were used to measure cholesterol, high-density lipoprotein cholesterol, triglycerides, and glucose. A treadmill test estimated cardiovascular fitness.

The study reported means and standard deviations for normally distributed variables and medians and inter-quartile ranges for skewed ones. Percentages were used to explain details about the sample included so that

the final analyses could take special factors into consideration. Average values were reported for the observed changes in the participants' readings on study variables in both pounds and kilograms. Percentages were used to report changes in control rates. T-test, ANOVA and Chi-square statistics were applicable to the data; and confidence intervals were also provided for the same.

The results of this study demonstrate that the comprehensive lifestyle intervention designed was particularly useful in reduction of blood pressure and other symptoms in the participants; and the results showed changes that were equal to those achieved through medication. The study does not mention long term outcomes beyond the 9 weeks of the treatment; but reasons that the effects should be similar to those observed elsewhere. They caution about the indiscriminate use of results; and also do not explore the mechanisms that operate in this intervention in detail. These factors need to be addressed by further research.

This study again provides evidence in support for the proposed hypothesis ' diet and exercise regimens in patients with hypertension will reduce the participants' bold pressure readings'. Since the study is a combination of dietary and exercise factors; it provides evidence that supports both elements hypothesized to reduce hypertension.

References

Appel, L. J., Brands, M. W., Daniels, S. R., Karanja, N., Elmer, P. J. & Sacks, F. M. (2006). Dietary Approaches to Prevent and Treat Hypertension: A Scientific Statement From the American Heart Association. Hypertension. Vol. 47. Pp. 296 – 308.

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