In an Obese Diabetic Adult Patient (P) Will a Structured
Exercise Regimen and Diet Plan Versus No Structured Exercise Or Diet
Plan (C) Reduce HAIC (O) Within 12 Weeks Or 24 Weeks (T).

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 *Taheri, S., Chagoury, O., Zaghloul, H., Elhadad, S., Ahmed, S. H., Omar, O., & El Nahas, K. (2018). Diabetes Intervention Accentuating Diet and Enhancing Metabolism (DIADEM-I): a randomized controlled trial to examine the impact of an intensive lifestyle intervention consisting of a low-energy diet and physical activity on body weight and metabolism in early type 2 diabetes mellitus: study protocol for a randomized controlled trial. Trials, 19(1), 284.*

 While comparing the adult regime exercises and diet plan with a structured workout that reduce HAIC in 12-24 weeks, these scholars research on the impact of LED-based ILI (Intensive lifestyle intervention) on body weight and diabetes remission in 18-50 years old individuals. An outcome of their study incorporates the quality of life, mental health, physical activity, cardiovascular health and complications of diabetes. Remissions of type 2 diabetes mellitus can be achieved with a significant loss in weight among those who are younger and required fewer medications. Low energy diet has substantial impacts on healthcare services across the world. The meal replacement approach along with physical activity is positively integrated for the promotion of younger individual health in the early stages of type 2 diabetes.

*Sloan, R. P., Shapiro, P. A., McKinley, P. S., Bartels, M., Shimbo, D., Lauriola, V., & Scodes, J. M. (2018). Aerobic Exercise Training and Inducible Inflammation: Results of a Randomized Controlled Trial in Healthy, Young Adults. Journal of the American Heart Association, 7(17), e010201.*

The authors in their randomized control trial, reflect the inflammation and training exercises for individual facing type 2 diabetes. The exercise contains time for 12 weeks and a wait-list control by four weeks of sedentary deconditioning. The capacity by cardiopulmonary exercise was measured by the study entry (T1). There were no changes occur in inflammatory markers, and further analysis unfolded that the activity is affected by lipopolysaccharide level. The condition training exercise has anti-inflammatory effects. However, scholars have commented that aerobic exercise is progressive for properties of health promotion. During the weeks of research, they fail to support the primary hypothesis regarding the promotional aspects of exercise on the pro-inflammatory response. For healthy subjects and patients, the training and conditioning have specific effects of cardio protective. Aerobic capacity is enhanced through the twelve weeks of exercise.

*Van Den Hoek, D. J., Miller, C. T., Fraser, S. F., Selig, S. E., & Dixon, J. B. (2017). Does exercise training augment improvements in quality of life induced by energy restriction for obese populations? A systematic review. Quality of Life Research, 26(10), 2593-2605*.

Since there is a significant difference between the structured and non-structured exercises, the authors in their systematic review raise the question that training improves the quality of life or not. They concerned about the energy restrictions faced by obese population. Type 2 diabetes and obesity have a close link with each other. The outcome of the study provided that after assessing nine hundred and fifty-two papers, four studies supported the health effects of exercise. It also contains the energy restriction and health-related quality of life among adults with diabetes.

Due to substantial heterogeneity, the finding of this study is limited. However, one thing is very much clear that improvement in the capacity of exercise play a progressive role for facilitating more significant improvement in health and diet. For the obese adult, the existing study illustrates that exercise is not feasible unless the body is regularized through specific and other measures. Comparable readings should be utilized in the future research for sufficient health-related quality of life assessment.

*Duscha, B. D., Piner, L. W., Patel, M. P., Craig, K. P., Brady, M., McGarrah III, R. W., ... & Kraus, W. E. (2018). Effects of a 12-week health program on peak VO2 and physical activity patterns after completing cardiac rehabilitation: A randomized controlled trial. American heart journal, 199, 105-114.*

Exercise, education, and motivation are essential for patients of diabetes and HAIC, and these patients are also influenced by cardiac health. According to the randomized control trial the authors asses the effects of a 12-week health program. They incorporate cardiac rehabilitation through activity patterns and supervised exercise. By using the physical activity trackers and health coaching the program was implemented through the participation of twenty-five patients which were randomized in moderate health or usual care after completing heart rehabilitation.

The program as mentioned by the scholars is effective and can sustain the gains in physical activity by site-based rehabilitation of heart disease. A significant purpose of this study was to assess the health program which can maintain the well-being of the patient through physical activity with increasing levels that are attained after the exercise. Divergent changes between the health and usual care resulted in creating differences among various groups.

*Thind, H., Fava, J. L., Guthrie, K. M., Stroud, L., Gopalakrishnan, G., Sillice, M., & Bock, B. C. (2018). Yoga as a Complementary Therapy for Adults with Type 2 Diabetes: Design and Rationale of the Healthy, Active, and Control (HA1C) Study. International journal of yoga therapy, 28(1), 123-132.*

 The researcher in this study used yoga as therapy for adults with type 2 diabetes through HAIC research. The prevalence of diabetes in well-known fact in the United States and the scholars provide that medication is not enough to achieve glycemic control. They paid significant attention to the issues of stress management, regular exercise, and a sustainable diet. Yoga in this regard is a mindful practice which is examined under the healthy, active and in control study design. The 12-week yoga exercise incorporates stationery cycling and walking. With 3 to 6-months post-intervention, the activity was conducted at the end of 12 weeks of treatment with a particular focus on acceptability and feasibility.

 The HAIC research reflects the satisfaction, retention, and attendance of glycemic outcomes like the blood glucose, fasting blood glucose and HbA1c. The changes in the physiological and behavioral factors are related to the intervention of type 2 diabetes. At the end of the response, the study showed for the exploration of participants’ views for the program and their potential for the utility of yoga in managing diabetes.

 *Kim, K. T., Cho, D. C., Sung, J. K., Kim, C. H., Kang, H., & Kim, D. H. (2017). Changes in HbA1c levels and body mass index after successful decompression surgery in patients with type 2 diabetes mellitus and lumbar spinal stenosis: results of a 2-year follow-up study. The Spine Journal, 17(2), 203-210.*

 The prospective longitudinal and observational study was conducted to examine the changes in HbA1c level and body mass index after the decompression surgery in patients of diabetes. According to the authors diabetic and LSS patients (Lumbar Spinal Stenosis), a successful operation can facilitate glycemic control. It can increase the physical activity or training capacity of the patient to reduce the weight of the body. Without systematic resolution of the surgery or medical intervention, LSS can hinder the exercise of individual along with impairment of glucose tolerance and regulation of body weight. It is crucial for the patients of diabetes to improve leg and back pain. Comparison of two groups was considered in the research, and it was found that after the surgery sugar and overweight become regulated. After the second year of surgery, significant BMI reduction was estimated by the researchers.

**References**

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