02 - THE IMPORTANCE OF PHYSICAL EXERCISE IN AID OF TREATMENT DIABETUS MELLITUS

HUGO LEONARDO BENTO LIMA
Universidade de Fortaleza
Fortaleza Ceará Brasil
personalab1@gmail.com

INTRODUCTION:

Since the eighteenth century , the exercises have been defended as a tool beneficial in the treatment of patients with Diabetes Mellitus (DM) . Thus, the present study was planned in order to show what are the benefits of exercise for DM so that it can serve as a study tool for physical educators facing with this disease , thus aiming at a better quality of life for these patients . The practice of physical exercise is very important for any individual as it is scientifically proven that a sedentary lifestyle is unhealthy. The exercise as a whole has the advantages of improved bone strength , muscle strength , body flexibility , motor fitness and metabolic fitness , and cognitive function , mental health and social adjustment . Exercise is defined as a standardized form of physical activity , carried out with the purpose of improving fitness , or by improving the general health or physical performance (Bouchard & SHEPHARD , 1994) .

Proper practice of regular physical activity (training) is recommended to patients for the same reasons given to the general population , ie , because of its benefits to the cardiovascular, metabolic and neuro -endocrine system , contributing to the improvement in quality of life individual carrying the disease . Exercise is a great way to prevent cardiovascular disease , they help reduce blood pressure and cholesterol.

It is advised that patients with diabetes perform a thorough medical evaluation before beginning to perform any physical activity .

In the present study demonstrate from the definitions and history of diabetes , its classification and diagnosis, in addition to presenting the most characteristic symptoms of this disease as well and finally show the benefits of exercise in patients with Diabetes .

OBJECTIVES

GeneralPurpose

Conduct a literature demonstrating how exercise can help in the treatment of Diabetes Mellitus .

Specific Objectives

Describe the types and characteristics of Diabetes Mellitus ;
Show the benefits that exercise cause in patients with Diabetes Mellitus ;
Evaluate how exercise helps in reducing levels of Diabetes Mellitus .

Definition: Diabetes mellitus is a syndrome due to total disability or on the secretion and / or insulin action, promoting changes in energy metabolism Sixt (2004) , caused a defect in insulin action on glucose uptake by plasma cells , mainly the muscle Gabbay (2003) , one of the major risk factors for coronary artery disease Guimarães (2002) . According to Martins (2000) is characterized by excess glucose in the blood, or ineffectiveness due to lack of insulin , a hormone produced by endocrine pancreas .

Characterized by the increased glucose (sugar) in the blood and hence the urine. There is an increase in the amount of urine (polyuria) by osmotic action , intense thirst (polydipsia) and weight loss (use of fat as energy by the inability to use glucose), so the DM is a metabolic disorder characterized by the inability of the greater or lesser body to use or " burn glucose ." We know that most of the food we eat is converted into glucose (sugar) to be used as energy for our organism. The Ministry of Health (2002) defines diabetes mellitus as a syndrome of multiple etiologies , resulting from lack of insulin perform its effects , characterized by chronic hyperglycemia with disturbances in the metabolism of carbohydrates , proteins and lipids . According to the American Dietetic Association (1998), diabetes is divided into four distinct classes : Type 1 DM (result of insulin deficiency due to autoimmune destruction of pancreatic beta cells) and Graves (2006) is strongly associated with types histocompatibility complex antigen leucótico (HAL) , a complication that direct insulin decrease is increased blood glucose levels caused by hyperglycemia caused by the reduction in both uptake by cells , as by excessive release of glucose by the liver , type 2 DM (resistance peripheral insulin secretion to compensate insufficient) ; Other specific types (secondary to other diseases) and gestational DM (inability of women to increase their insulin secretion during pregnancy) . For Graves (2006) , a complication that direct insulin decrease is caused increase of blood glucose both hyperglycemia caused by a reduction in uptake by cells and by excessive release of glucose by the liver.

In some cases there seems to be a simple hereditary tendency for degeneration of beta cells or to defects in the regulation of secretion and / or insulin action (GUYTON and HALL , 1997; Silveira , 2000) . To Sartorelli (2003) , cities in the South and Southeast of Brazil , due to its economic development , presented the highest prevalence of diabetes mellitus and impaired glucose tolerance . According to the same factors were obesity , aging population and family history of DM . A major factor that can explain these data is that the calorie intake is higher than previous generations and that the daily caloric expenditure has decreased in the same period (Bouchard , 2003) . Also according Sartorelli (2003) , the DM may be associated with higher rates of hospitalizations , greater needs for medical care , a higher incidence of cardiovascular and cerebrovascular disease , blindness , kidney failure and non-traumatic amputations of lower limbs . According to these data we can predict how this disease can overwhelm health systems of any country , if they are not prepared .

Currently, the DM- 2 is responsible for 85 to 90% of all diabetes cases worldwide. The pathophysiology characterized by the combination of resistance to insulin (muscle , liver , kidney and adipose tissue) , pancreatic beta cell dysfunction and increased endogenous glucose production induced by acquired and genetic abnormalities (Gross and Co , 2000). The peak incidence of type 1 diabetes occurs from 10 to 14 years old , having to follow a progressive decrease in the incidence up to 35 years , so that cases of type 1 diabetes onset after this age are rare (and GROSS collaborators , 2002) . In cases of diabetes

type 1 autoimmune origin , there may be an association with other autoimmune diseases such as Hashimoto's thyroiditis , Addison's disease and myasthenia gravis among others (and Milech OLIVEIRA , 2004) . Already Diabetes type 2 (DM- 2) is much more common than type 1 , reaching about 90 % of diabetes cases . It is a heterogeneous entity , characterized by disorders of insulin action and secretion , with a predominance of one or another component (WORLD HEALTH ORGANIZATION , 1999) . The DM- 2 is a strong association of genetic predisposition of the individual with their lifestyle and environmental factors (Milech and OLIVEIRA , 2004) . Usually occurs after age 40 , often between 50 and 60 years (WORLD HEALTH ORGANIZATION , 1999).

Diagnosis is made by measuring blood glucose : Determination of glucose in the blood , usually performed on fasting . Normal values according to the criteria of the American Diabetes Association , are between 70-110 mg / dl . In case of values between 110-125 mg / dl , the person is a carrier of fasting glucose inappropriately , being necessary to carry out a test called a glucose curve (blood glucose levels for up to 2 hours in fasting and after receiving an overload of sugar) for further evaluation . Above 125 mg / dl , provided that the value is found in more than one sample of blood test , it is confirmed context of diabetes. A blood glucose above 200 mg / dl , harvested at any time of day, since the symptoms of Diabetes also is enough for the diagnosis . Another diagnosis is based on fasting plasma glucose (8 hours) at the point of fasting and 2 hours after oral 75g glucose test (oral glucose tolerance test - OGTT) and measured plasma glucose casual (and GROSS collaborators , 2002) , and the test of glycosylated hemoglobin (HbA1c) .

Glycosylated hemoglobin - reflects glycemic control in the last 2-3 months. (Diabetes without fear ; Hendrikx , Maria Hendrika ; Art Print , São Paulo , 1990) .

In 1997 , the American Diabetes Association (ADA) (THE EXPERT COMMITTEE ON THE DIAGNOSIS AND CLASSIFICATION OF DIABETES MELLITUS , 1997) proposed that the diagnostic criteria were based mainly on the measurement of fasting plasma glucose . Previously , the diagnosis of diabetes was based on criteria from the World Health Organization (WHO) defined as fasting plasma glucose ³ 140mg/dl and / or plasma glucose 2 hours after oral 75g glucose ³ 200mg/dl .

The only measured the fasting plasma glucose is considered by the ADA method of choice for the diagnosis of diabetes and oral test glucose tolerance should not be used routinely , only in some clinical or research purposes (THE EXPERT COMMITTEE ON THE Diagnosis and Classification of diabetes mellitus, 1997). The fasting plasma glucose is more economical , easy to perform , leading to the performance in a larger number of people and has a lower coefficient of inter-individual variation than the OGTT .

Sartorelli (2003) , tells us that physical inactivity is a major risk factor as large as inadequate diet for the onset of obesity , having direct relation to the increased incidence of DM- 2 in adults , independent of BMI or family history . In Brazil , the reduced level of physical activity is due to the modernization of production processes , including in agriculture , the television remote control , a mobile phone that is , the automatic transmission car , among others . It is estimated that by 2025 there may be 11 million diabetics in Brazil , representing an increase of over 100 % compared to the current five million diabetics . A multicenter study conducted by the Ministry of Health (HEALTH DEPARTMENT, 2000) , revealed the high degree of ignorance of the disease , 46.5 % of the diagnoses were unaware of the fact that they are DM. In Brazil the prevalence of DM in the population by age group 30-69 years is as follows: 30-39 years (2.7 %), 40-49 years (5.5%), 50-59 years (12 , 6%), 60-69 years (17.3%) (Martins , 2000).

The prevalence of diabetes is increasing in epidemic form in several countries , particularly in developing countries, and is becoming an important public health problem because it is associated with complications that impair productivity , quality and life expectancy of people (SARTORELLI and FRANCO , 2003) . As an example of these complications have the Visual Symptoms , in which the patient has blurred vision , difficulty refraction , decreased visual acuity and blurred vision Cardiac symptoms , patients have a higher prevalence of hypertension , obesity and altered fat ; Circulatory Symptoms which obstruct main vessels that can compromise the legs causing the " diabetic foot " , peripheral neuropathy , and fungal infections , and symptoms Digestive , renal , Urinary , Neurological , Orthopedic and Dermatological .

PHYSICAL EXERCISE AS A MEANS OF PREVENTION

The regular practice of physical exercise has long been regarded as a consensus along with diets and medicines for prevention , maintenance and rehabilitation of Diabetes . For this, skeletal muscle uses during exercise , your glycogen stores and triglycerides , as well as the reserves of free fatty acids derived from the breakdown of triglycerides in adipose tissue and glucose released by the liver . So that there is damage to the central nervous system , the blood glucose level is well maintained during exercise .

According Wasseman (2002) , muscle glycogen is the chief strength of the energy during the initial stages of muscular strength , and as long as the longer the duration of the exercise the contribution of circulating glucose and fatty acids in particular , will bring a significant depletion of muscle glycogen .

According ADA (2004), Hypoglycemia rarely occurs in non-diabetic subjects since they are regulated by hormones , specifically insulin and glucagon . Also according to ADA (2004) , as a consequence , when such individuals have low levels of insulin in the circulation result of a wrong therapy , a pool of hormones are released into the bloodstream during exercise which causes insulin levels and ketone bodies increase further and may cause diabetic ketoacidosis . To Devlim (1992) , exercise is considered as one of the viable strategies to increase sensitivity in non-insulin dependent diabetics and impaired glucose tolerance . For the author, the exercise is maintained as a treatment modality to improve insulin sensitivity . Lima (2006) , described in his field research , conducted with 11 subjects , with 1 session of resistance exercise could decrease the rate of glucose . At the beginning of the session the average level was 103mg/dl + 19.57 mg / dl and after the training session the new levels were 93.73 mg / dl + 19.59 mg / dl , $P < 0.01$. These values can be explained by an improvement of glucose removal and metabolism that can take hours or days after a workout acute .

Ciolac (2004) reported that a single session of exercise increased glucose disposal mediated by insulin in normal subjects and in subjects first-degree relatives of type 2 diabetes in obese patients with insulin resistance and type 2 diabetes and chronic exercise improves insulin sensitivity in healthy subjects, in obese non-diabetic and diabetic type 1 and 2 . Richter (1992) reported that metabolic changes induced in response to exercise were witnessed , in addition to changes in the metabolism of plasma lipids and lipoproteins . For a moment , during intense exercise , there is an increased concentration of plasma glicobítico , and the state of insulin resistance existed for a few hours after intense exercise . To Tuomilehto (2001) in their study of 522 patients who were overweight and impaired glucose tolerance , it was found to influence dietary advice and recommendations from regular exercise . After almost 5 years was demonstrated that healthy lifestyle could prevent -2 DIABETES MELLITUS more effectively (58%) than metformin therapy (31 %). To Helmirich (1991) , the incidence of DM was inversely related to the degree of physical activity , given that this is best

demonstrated by patients with high risk of developing DM . Daily exercise (30 min / day of moderate-intensity aerobic exercise) can reduce the use of glucose intolerance and halved the risk of DM by three quarters (19.22) . According to the ADA (1998) reported that exercise has been shown to be very effective on the metabolism of carbohydrates and insulin sensitivity , which can be kept for 5 years . For them , exercise regimens were used at an intensity 50-80 % . Max V02 , 3-4 times per week for 30 to 60 minutes per session , and the improvement of HbA1c levels was typically 10-20% better than the initial values for type 2 diabetics.

King (1992) wrote that physical exercise can be enhanced contribution in the prevention of disease in three levels : 1) prevent the occurrence of disease , and 2) early detection and reversal ; 3) Prevention of delayed complications . For the author , the benefits of exercise on metabolic control act , the prevention and delay of chronic complications in diabetics not dependent insulinos .

Pan (2003) , in their study in the city of Dae Ling , China , with 110 660 individuals who had glucose intolerance and DM- 2 , were divided into 3 groups : Individuals with treatments only diets ; Individuals only exercises ; Individuals with diets more exercise . After six years of study , with an interval every 2 years , it was observed that the cumulative incidence of DM- 2 was 67.7 in the control group , 43.8 in the group who only dieted , 41.1 % in the group that only exercise and was 46% and in the group that dieted more exercise (P < .05) .

Exercise is good for health and Matsudo (1999) notes no longer discussed the benefits of sport , but what is the most correct way to practice them in order to achieve or maintain health . For both the lack and the excess of exercises can be harmful to the body , especially in the case of people with metabolic problems such as diabetes .

We emphasize that exercise, when well directed and adjusted , is a "medicine " economical and very healthy without negative side effects , and that " it is well planned , has the ability to reduce and in some cases , according to the disease (type and degree of the same condition), eliminating the consumption of drugs"(López,2000).

According NIEMAN (1999) , based on scientific evidence , " how to prevent disease using exercise as your medicine ," physical fitness is a positive quality that is related to the prevention of most diseases and health-related , includes following components : cardiorespiratory fitness , body composition, and musculoskeletal fitness (including flexibility, muscular strength and muscular endurance) .

" Exercise is the fun part of therapy for diabetes. Think how much ' fun ' stick yourself with a needle or a lancet , taking pills , having to make changes in your diet , possibly removing some of your favorite foods . Compare this with an equally important for your health tennis game , or an afternoon of ballroom dancing , a bike ride or a hike through the woods , a refreshing shower or a day of skiing on snow or water . Absolutely , there is no comparison ! " (Graham et al , 1995). Exercise improves glucose uptake by the tissues because it increases the permeability of the cytoplasmic membrane , increasing the action of insulin , which can be made possible , including a reduction in the amount of medication needed to be used for maintenance of blood glucose levels (BorghoutsandKEIZER,2000;Martins,2000).

Also the whole exercise strengthens the cardiovascular system and increases peripheral blood circulation , which helps glycemic control and blood pressure and increases blood flow to the tissues , something essential for the diabetic because , due to frequent hyperglycemia , there is a tendency microvasculopatias that can lead to complications . Among diabetics , the incidence of cardiovascular disease is two to four times higher than in the general population , there also collaborating exercise in its prevention (Albright , 2000; N. Silveira , 2000) .

According to Peres (2008) , Knowing that muscle contraction stimulates translocation of glucose transporter to the cell membrane and in turn facilitates the entry of glucose into the cell independent of the concentration of plasma insulin , this means that the weight exercises help in the process of trying to maintain constant blood glucose becoming diabetics normal glucose . What explains this stimulating the translocation of GLUT4 to the membrane surface via twitch, would be the signal by increasing the amount of free calcium in the process of muscle contraction and the same calcium that participates in the process of muscle contraction stimulates these transporters glucose facilitating the entry of the same regardless of the amount of circulating insulin .

CONCLUSION

So , nothing better than putting physical activity oriented and professional that it is concerned as having a very pivotal role in the overall program of Education and Treatment in Diabetes (MATOS andDullius,2002;Dullius,2003).

REFERENCES

Diagnostic criteria for diabetes mellitus and other categories of glucose intolerance: 1997 criteria by the Expert Committee on the Diagnosis and Classification of Diabetes Mellitus (ADA), 1998 WHO Consultation criteria, and 1985 WHO criteria. Volume 44, Issue 1, April 1999, Pages 21–26

ALBRIGHT, Ann; FRANZ, Marion; HORNSBY, Guyton; KRISKA, Andrea; MARRERO, David; ULLRICH, Irma; VERITY, Larry S. 2000."American College of Sports Medicine(R) position stand on exercise and type 2 diabetes."Medicine and Science in Sports and Exercise. 32 (7): 1345-1360, julho.

BOUCHARD, Claude; Atividade Física na Obesidade, 2003 Ed. Manole

BORGHOUTS, L.B.; KEIZER, H.A. 2000."Exercise and insulin sensitivity: A review."International Journal of Sports Medicine. 21 (1): 1-12.

CIOLAC, Emmanuel Gomes and Guimarães, Guilherme Veiga. Exercício físico e síndrome metabólica. Rev Bras Med Esporte, Ago 2004, vol.10, no.4, p.319-324.

DULLIUS, Jane. 2003."Educação em Diabetes através de Programa Orientado de Atividades Físicas (PROAFIDI)". Diabetes Clínica 7(3), Maio-junho.

DULLIUS, Jane; Lopez, Ramón F. Alonso; www.judobrasil.com.br, acessado em 23/03/08 às 16:40 Atividade física é parte do tratamento para diabéticos: mas quem é o profissional que a deve prescrever?

GABBAY, Monica; Cesarini, Paulo R; Dib, Sergio A. Diabetes melito do tipo 2 na infância e adolescência: revisão da literatura. ;79(3):201-208, maio-jun. 2003.

GRAHAM, Claudia; BIERMANN, June; TOOHEY, Barbara. 1995. The Diabetes Sports and Exercise Book. Los Angeles: Lowell House.

GRAVES, James E.; Treinamento Resistido na Saúde e na Reabilitação. 2006. ed. Revinter.

GROSS, J.L. ; SILVEIRO, S.P. ; CAMARGO, J.L. ; REICHELT, A.J. ; AZEVEDO, M.J.Diabetes melito: diagnóstico, classificação e avaliação do controle glicêmico. Arq. Bras. Endocrinol. Metab., 46(1): 16-26, 2002.

GUIMARÃES, Fernanda Pontin de Mattos; Takayanagui, Angela Maria Magosso. Orientações recebidas do serviço de saúde por pacientes para o tratamento do portador de diabetes mellitus tipo 2. ;15(1):37-44, jan.-abr. 2002

GUYTON, Artur C; HALL, John E.. Tratado de Fisiologia Médica. Rio de Janeiro: Guanabara Koogan, 2002.

HELMRICH SP, Ragland DR, Leung RW, Paffenbarger RS Jr. Physical activity and reduced occurrence of non-insulin-dependent diabetes mellitus. N Engl J Med 1991;325:147-52.

King, H. and AM Kriska. Prevention of type II diabetes by physical training. Epidemiological considerations and study methods. Diabetes Care 1992 15: 1794-1799.

JANICE Charles, Ying Pan and Helena Britt. Prevalence of overweight and obesity in Australian children and adolescents: reassessment of 1985 and 1995 data against new standard international definitions. Med J. Aust. 2003 April 7; 178(7):346-7.

LIMA, Hugo Leonardo Bento. Nível de glicemia no pré e pós exercícios de musculação nos indivíduos de 3ª idade. Monografia de graduação. Fortaleza: Universidade De Fortaleza, 2006.

LÓPEZ, Ramón F.A.; SAFONS, Marisete P. 2000. "A reabilitação física e o professor de Educação Física".

MARTINS, Denise Maria. Exercício Físico no Controle do Diabetes Mellitus. Guarulhos, São Paulo: Phorte, 2000.

MATSUDO, Vítor. 2001."Exercício na Dose Certa" (Rev. Época, setembro/2001) em Diabetes Clínica 5(5):5.

MINISTÉRIO DA SAÚDE. 2001."Campanha Nacional de Detecção de Suspeitos de Diabetes Mellitus: Relatório das Ações e Resultados Alcançados". Brasil: MS/CDCD.

NIEMAN, David C. Exercício e Saúde. São Paulo: Manole, 1999.

OLIVEIRA, J.E.P. & MILECH, A. Diabetes mellitus – clínica, diagnóstico, tratamento multidisciplinar. São Paulo: Atheneu, 2004. 362p.

Richter EA, L Turcotte, P Hespel, and B Kiens. Metabolic responses to exercise. Effects of endurance training and implications for diabetes. Diabetes Care 15: 1767-1776.

SARTORELLI, Daniela Saes and Franco, Laércio Joel. Tendências do diabetes mellitus no Brasil: o papel da transição nutricional. Cad. Saúde Pública, 2003, vol.19, suppl.1.

SILVEIRA NETO, Eduardo. 2000. Atividade Física para Diabéticos. Rio de Janeiro: Sprint.

SIXT, Sebastian et al. Opções terapêuticas atuais para diabetes mellitus tipo 2 e doença arterial coronariana: prevenção secundária intensiva focada no treinamento físico versus revascularização percutânea ou cirúrgica. Rev Bras Med Esporte, Jun 2004, vol.10, no.3, p.220-223.

TUOMILEHTO J, Lindstrom J, Eriksson JG, et al. Prevention of type 2 diabetes mellitus by changes in life-style among subjects with impaired glucose tolerance. N Engl J Med 2001;344:1343-50.

WASSERMAN DH, Davis SN, Zinman B: Fuel metabolism during exercise in health and diabetes. In Handbook of Exercise in Diabetes. Ruderman N, Devlin JT, Schneider SH, Eds. Alexandria, VA, American Diabetes Association, 2002, p. 63–99.

PETERSON, C.M.; JONES, R.L.; ESTERLY, J.S. et al. 1980."Changes in basement membrane thickening and pulse volume concomitant with improved glucose control and exercise in patients with type 1 diabetes mellitus". Diabetes Care 3:586.

PETRELLA, Robert J. 1999."Exercise for Older Patients With Chronic Disease."The Physician And Sportsmedicine. 27(11), October 15.

Address: Av. Sargento Hermínio, nº 1415 block Orchid Ap. 302-A, neighborhood: Monte Castelo,Fortaleza- Ceará. CEP:60320-105

Email: personalab1@gmail.com

THE IMPORTANCE OF PHYSICAL EXERCISE IN AID OF TREATMENT DIABETUS MELLITUS

ABSTRACT

Diabetes Mellitus disease is extremely prevalent in the population . The guided physical activity is an essential part of the treatment of diabetes and brings numerous benefits to the practitioner . However, it should be prescribed and monitored by a qualified professional with knowledge of the pathophysiology of diabetes , but also and especially on physical assessment , exercise physiology , and physical education (sports, gymnastics , dance , recreation, etc. .) . To guide and achieve the potential therapeutic benefits resulting from physical activity for diabetics it is necessary extensive knowledge in exercise metabolism , diabetológica therapeutic modalities and options for practices , and didactic- pedagogic training . Thus , the professional indicated to prescribe and monitor physical activity with diabetes , regardless of type, especially with regard to guidance, to be Professor of Physical Education specifically qualified to do so . We conclude that the effects provided by the regular practice of physical exercise for individuals with NIDDM , retains the known effects for non-pathological cases , and particularly when we put the physiological effects , they always end up being related to glycemic control .

KEY WORDS: Physical Education, Diabetes Mellitus, Physical Exercise.

L'IMPORTANCE DE L'EXERCICE PHYSIQUE EN SOINS DE TRAITEMENT DIABETUS MELLITUS

RÉSUMÉ

La maladie du diabète sucré est très répandue dans la population . L'activité physique guidée est une partie essentielle du traitement du diabète et apporte de nombreux avantages pour le praticien. Cependant, il devrait être prescrit et surveillé par un professionnel qualifié ayant connaissance de la physiopathologie du diabète , mais aussi et surtout sur l'évaluation physique , la physiologie d'exercice, et de l'éducation physique (sports, gymnastique , danse , loisirs, etc .) . Afin de guider et de réaliser les bénéfices thérapeutiques potentiels résultant de l'activité physique pour les diabétiques , il est nécessaire de vastes connaissances dans le métabolisme de l'exercice, les modalités thérapeutiques diabetológica et des options pour les pratiques et la formation didactique et pédagogique. Ainsi , le professionnel a indiqué de prescrire et surveiller l'activité physique avec le diabète, indépendamment du type, notamment en matière d'orientation , d'être professeur d'éducation physique spécialement habilitée à cet effet . Nous concluons que les effets prévus par la pratique régulière de l'exercice physique pour les personnes ayant DNID , conserve les effets connus pour des cas non pathologiques , et en particulier lorsque nous mettons les effets physiologiques , ils finissent toujours par être liés au contrôle de la glycémie.

MOTS CLÉS: éducation physique, le diabète sucré, l'exercice physique

LA IMPORTANCIA DEL EJERCICIO FÍSICO EN LA AYUDA DE TRATAMIENTO DIABETUS MELLITUS

RESUMEN

Enfermedad Diabetes Mellitus es muy prevalente en la población . La actividad física guiada es una parte esencial del tratamiento de la diabetes y aporta numerosos beneficios para el practicante . Sin embargo, se debe ser prescrito y supervisado por un profesional calificado con el conocimiento de la fisiopatología de la diabetes, pero también y sobre todo en la evaluación física , fisiología del ejercicio y la educación física (deportes , gimnasia , danza , recreación , etc .) . Para guiar y lograr los beneficios terapéuticos potenciales resultantes de la actividad física para los diabéticos es necesario un amplio conocimiento en el metabolismo del ejercicio, diabetologica modalidades terapéuticas y las opciones para las prácticas y la formación didáctico-pedagógica. Por lo tanto , el profesional indicado para prescribir y supervisar la actividad física con diabetes,

independientemente del tipo, en especial con respecto a la orientación , para ser profesor de educación física especialmente habilitado para ello . Llegamos a la conclusión de que los efectos previstos por la práctica regular de ejercicio físico para personas con DMNID , conserva los efectos conocidos de los casos no patológicos , y en particular cuando ponemos los efectos fisiológicos , que siempre terminan por estar relacionados con el control glucémico.

PALABRAS CLAVE: educación física, la diabetes mellitus, el ejercicio físico.

A IMPORTANCIA DOS EXERCÍCIOS FÍSICOS NO AUXÍLIO DO TRATAMENTO DO DIABETUS MELLITUS

RESUMO

Diabetes Mellitus é patologia extremamente prevalente na população. A atividade física orientada é parte essencial do tratamento da DM e traz inúmeros benefícios ao praticante. Contudo, deve ser prescrita e acompanhada por profissional qualificado com conhecimentos sobre fisiopatologia da diabetes mas, também, e sobretudo, sobre avaliação física, fisiologia do exercício e educação física (esportes, ginásticas, danças, recreação etc.). Para orientar e alcançar os possíveis benefícios terapêuticos decorrentes da atividade física para diabéticos faz-se necessário amplos conhecimentos sobre metabolismo no exercício, terapêutica diabetológica e opções de modalidades para práticas, além de formação didático-pedagógica. Assim, o profissional indicado para prescrever e acompanhar atividades físicas com diabéticos, independente do tipo, especialmente no que diz respeito à orientação, deve ser o Professor de Educação Física especificamente qualificado para tal. Conclui-se que os efeitos proporcionados pela prática regular de exercícios físicos para indivíduos com DMNID, conserva os já conhecidos efeitos para casos não patológicos, e que em particular quando colocamos os efeitos fisiológicos, estes sempre acabam por estar relacionado ao controle glicêmico.

PALAVRAS- CHAVES: Educação Física, Diabetes Mellitus, Exercício Físico.