

年會學術論文發表

減重門診暴食症的研究調查

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目的：以暴食症為主題，探討本院肥胖綜合門診病患發生暴食症之比例與飲食行為特性調查，並與一般病患的減重成效進行比較。材料與方法：97年3月至8月間門診初診病患共131人（男性22位、女性109位），給予暴食症問卷，並收集複診病患相關減重指標。結果：23位有暴食症傾向（男性3位、女性20位、平均年齡 31.3 ± 9.7 歲），暴食發生平均年齡 20.3 ± 8 歲，肉類、油炸品、零食與含糖飲料是主要的飲食來源，其中7位表示有典型補償行為的發生如自我催吐、過度運動與禁食等。有73位患者繼續接受為期4週的門診治療，其中暴食症組13位（平均體重 72.8 ± 20.6 Kg）與對照組60位（平均體重 76.2 ± 27 Kg），比較兩組減重成效，暴食症組之體重減輕公斤數與體重減輕百分比少於對照組（ -3.3 ± 2.1 Kg VS -4.3 ± 3.9 Kg； $-5.1 \pm 3.3\%$ VS $-5.3 \pm 4.1\%$ ），而體脂肪減少比例則多於對照組（ $-2.1 \pm 2.8\%$ VS $-1.5 \pm 4.2\%$ ）但均未達顯著差異。結論：本院肥胖門診求診患者中確實發現有暴食症者，其中部份病患伴隨有典型的補償行為，然而透過門診治療無論罹患暴食症與否都可以獲得相同的減重效果。

關鍵詞：暴食症、自我催吐、減重成效

Bulimia Nervosa In The Obesity Clinic

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Purpose : This study was to investigate the prevalence of bulimia nervosa in the obesity clinic department. And we were compared the effect of body weight control in bulimia case and general case. Method : We collected 131 fresh patients (22 male and 109 female) and analyzed bulimia questionnaires of the obesity clinic in Jen-Ai Hospital during the March,2008 to August, 2008. This study included patients who received therapy more than once. Result : 23 patients (M=3, F=20, mean age= 31.3 ± 9.7 y/o,) reached the diagnostic criteria for bulimia nervosa, beginning age of bulimia symptom was 20.3 ± 8 y/o. Meats, fried foods, high caloric snacks, sugar drinks were the major foods. And 7 patients had compensatory behaviors such as self-induced vomiting, excessive exercise or fasting. In this study, 73 patients continued therapy for 4 weeks, 13 patients in bulimia group (M=2, F=11, mean age= 30.3 ± 9.5 y/o, BW= 72.8 ± 20.6 Kg) and 60 patients in control group (M=10, F=50, mean age= 31.8 ± 8.1 y/o, BW= 76.2 ± 27 Kg) .After 4 weeks therapy, the body weight loss of the bulimia group were less than the control group (-3.3 ± 2.1 Kg VS -4.3 ± 3.9 Kg , $-5.1 \pm 3.3\%$ VS $-5.3 \pm 4.1\%$), the body fat of the bulimia group decreased more than the control group ($-2.1 \pm 2.8\%$ VS $-1.5 \pm 4.2\%$), but difference was not significantly. Conclusion : The bulimic patients were found to have compensatory behaviors. The effect of weight reduction were not different from the control group in our clinic.

Key words : Bulimia Nervosa, body weight control, self-induced vomiting

納豆萃取物對大鼠血液粘度及血脂質的影響

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心血管相關疾病(cardiovascular disease, CVD)(腦血管疾病、心臟疾病及高血壓)仍居台灣地區十大死因之第二、三及第十名。動脈粥狀硬化是冠狀動脈心臟病、中風的原因。研究顯示亞洲人食用大豆相關製品具有較低的CVD發生率。納豆含有強纖維蛋白溶解能力的納豆激酶(Nattokinase; NK)。本實驗的目的是探討納豆萃取物對老鼠的血液粘度、血脂質、肝臟脂質及抗氧化酵素活性等心血管疾病危險因子的影響。70隻雄性之Sprague-Dawley (SD)大白鼠，隨機分為5組，負控制組食用正常飼料，正控制組及納豆組給予高脂/高膽固醇飲食。結果：中倍劑量納豆組(31.26 mg /天)血清介白質-6(IL-6)改變量顯著下降；高倍劑量納豆組(104.2 mg /天)攝食利用率顯著降低，而GSH/GSSG ratio與餵食週數呈顯著正相關；中及高倍劑量納豆組(31.26 mg, 104.2 mg /天)肝臟TC顯著下降。由本實驗得知食用未純化納豆萃取物，可降低血清IL-6及肝臟TC，對降低心血管疾病有正面的功效。

關鍵詞：冠狀動脈心臟疾病、動脈粥狀硬化、納豆萃取物、納豆激酶、血液黏度、總膽固醇、三酸甘油酯

Effects of natto extract powder on the whole blood viscosity and serum lipid

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Cardiovascular diseases, including brain vascular disease, heart disease, and hypertensive still occupy 2nd, 3rd, and 10th cause of death in Taiwan. Arteriosclerosis results in coronary heart disease (CHD), stroke and lack of blood in limbs. Natto is fermented by soybean in *Bacillus subtilis*. *Bacillus subtilis* produces a kind of serine protease, named Nattokinase (NK). The aim of this experiment was to evaluate thrombolysis and lipid regulation effects of Nattokinase *in vivo* by measuring whole blood viscosity, serum lipid, liver lipid, and antioxidant activity. Fifty 6-week-old male SD rats, weighed around 200-250g, were divided into 5 groups randomly. Equal-caloried feed with 20% fat and 1% cholesterol (high fat, high cholesterol) was assigned to 4 experimental groups (N0, N1, N3, N10) and the normal feed was for the control group. Groups N1, N3 and N10 were also fed the natto extract 10.42mg, 31.26mg and 104.2mg everyday for 9 weeks. Results indicated that compared to the control group, the weight increased significantly in N0, N1 and N3 ($p < 0.05$). However, the weight of N10 group was not significantly different from others. The liver total cholesterol (TC) in N0 and N1 ($13.69 \pm 4.26, 12.23 \pm 3.01$) were significantly higher than the control, N3 and N10 ($6.12 \pm 1.05, 8.35 \pm 1.5, 6.08 \pm 2.22$) ($p < 0.05$). The level of liver triglyceride (TG) in 4 experimental groups were all higher than control ($p < 0.05$). In conclusion, consumption of the natto extract may reduce the level of liver total cholesterol but not triglyceride.

Keywords: cardiovascular disease, arteriosclerosis, natto extract powder, nattokinase, blood viscosity, cholesterol, triglyceride

身體質量指數與定量骨盆底肌收縮力之關係

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目的在確立身體質量指數 (body mass index, BMI) 與泌尿系統之超音波參數兩者之間的相關性。研究自 2005 年 1 月至 2007 年 12 月, 在馬偕紀念醫院與國泰醫院進行, 共計收案 644 位女性, 最後完成 209 位。研究測量受試者身高、體重後計算 BMI 值並檢驗泌尿道功能, 包括骨盆腔器官脫垂的部位分析、經手指觸診的有意識骨盆底肌收縮力、經超音波評估在膀胱頸與肛門直腸交界處其休息及收縮的狀態。極座標系統所測得超音波參數, 在受試者之間及受試者內部皆呈現了良好的信度。結果發現在骨盆底肌的收縮期間所增加的膀胱頸距離和縮短的泌尿道口距離的兩個參數, 與有效增強骨盆底肌收縮力及泌尿道口距離呈負相關。泌尿道口收縮力與年齡、胎數、停經期、肥胖與盆腔器官脫垂皆無相關性存在, 除了肥胖之外, 其餘與膀胱頸收縮距離均有相關性, 與膀胱頸收縮距離及泌尿道口距離有較弱相關性, 且與最大尿道閉鎖壓有相關性; 壓縮膀胱頸距離與一小時尿墊試驗有顯著相關性。結論: 超音波參數在本研究中證明其為可靠的量化骨盆底肌收縮力的工具, 但肥胖與婦女泌尿道系統功能較無顯著相關性存在。

關鍵詞: 肥胖、身體質量指數、骨盆底肌收縮力

Relationship between BMI and Quantifying Pelvic Floor Muscle Contraction

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To determine the relationship between BMI and function correlate of ultrasound parameters. A survey was conducted a ultrasound parameters for quantifying pelvic floor muscle contraction and body height, body weight to calculate BMI, including a site-specific analysis of pelvic organ prolapse, digital palpation of voluntary pelvic floor muscle contractility, ultrasound assessment of the positions of bladder neck and anorectal junction at rest and during squeezing in 2005-2007. There were 644 subjects recruited in this study and 209 subjects were completed. Squeezing genitohiatal distance was not in association with age, parity, menopause, obesity, and pelvic organ prolapse whereas squeezing bladder neck distance was related except obesity. Squeezing bladder neck distance and genitohiatal distance were in weak, but statistically significant, association with maximum urethral closure pressure but only squeezing bladder neck distance was significantly associated with 1-hour pad test. Overall, the parameters used in this study demonstrate a reliable tool for quantifying pelvic floor muscle contractility. For assessing pelvic floor muscle contractility, the measurement of squeezing genitohiatal distance is a superior option and obesity was no effect on quantifying pelvic floor muscle contraction

Keywords: obesity, BMI, pelvic floor muscle contraction,

營養教育介入台北市信義區老人代謝症候群風險後體位改變情形

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本研究目的在探討「認識代謝症候群與增加蔬果攝取量」的營養教育介入後，台北市信義區老人體位的改變情形。受試者來源為96年地毯式篩檢台北市信義區64歲以上，能夠外出活動的老人(非臥床)；以郵寄方式招募已受檢的受試者。結果共23人參與課程。依受試者的意願及課程參與度將其分為對照組及介入組。營養教育課程為期5週，課程介入前進行前測，課程介入後一週即進行後測，並在一個月後再次進行後測追蹤。研究結果發現，在飲食攝取部分，對照組與介入組在水果攝取量與纖維的攝取量有顯著差異；而體位資料的部分則在臀圍有顯著差異。結論：在營養教育介入5週後，本研究受試者大部分的體位皆無顯著差異，可能是熱量攝取在兩組之間無顯著差異所致；後測時臀圍的資料在兩組之間有顯著差異，但受制於對照組的受試者流失率較大，因而仍需進一步研究。

關鍵詞：代謝症候群、營養教育、老人

Changing of anthropometric after nutrition education in risk of metabolic syndrome for the elderly in Xinyi district, Taipei

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To evaluate the effect of nutrition education on elderly of Xinyi district, Taipei. Subjects were from the Xinyi district's elderly after a nutritional screening program in 2007 and recruited from mail. There were 23 subjects who were greater than 64 years-old and ambulatory. Subjects were assigned to control group and interventional group by their willing and attendance. It was a 5-week intervention class, included what metabolic syndrome was and how to intake enough vegetables and fruits. After this program, there was hip circumference significant difference existed between 2 groups but no other anthropometric data difference.

Keywords: metabolic syndrome, nutrition education, elderly

血清高敏感性C-反應蛋白與人體測量學的相關性探討

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目的：本次實驗目的在於找出血清高敏感性C-反應蛋白與人體測量學之間的相關性。血清高敏感性C-反應蛋白是一種發炎的指標，而且是心血管疾病的獨立危險因子，肥胖與C-反應蛋白有相關性存在。方法：實驗期總共3個月，總共收集受試者37人，其中15人為健康組，11人為第二型糖尿病並沒有心血管風險組，其餘11人為第二型糖尿病並有心血管風險組。人體測量與血液分析數據會在實期的開始與結束的時候取得。結果：高敏感性C-反應蛋白與肥胖（BMI $\geq 24\text{kg/m}^2$ ）、三酸甘油酯、糖化血色素、年齡、身體質量指數、腰圍與臀圍間皆存在正相關。但經過校正所有血脂質以後則相關性不存在臀圍是其中一個可以預計高敏感性C-反應蛋白的人體測量值（R square = 0.2487, p = 0.0069）。總結：高敏感性C-反應蛋白經過血脂質方面的校正後與肥胖之間不呈現相關性。臀圍可作為預測高敏感性C-反應蛋白的指標之一。

關鍵詞：高敏感度 C 反應蛋白、心血管疾病肥胖、第 2 型糖尿病、身體質量指數

The Relation between serum high sensitivity C-reactive protein concentration and anthropometric data

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Aim: The purpose of this study was to investigate the relationship of baseline hs-CRP concentration and anthropometric data. Serum High sensitivity C-reactive protein (hs-CRP) is an inflammatory marker and also an independent risk factor for cardiovascular disease. Obesity is relation to the concentration of hs-CRP. Methods: To conducted a 3-month experiment period study. A total of 37 subjects were involved, including health (n=15), type 2 DM without cardiovascular risk (n=11) and type 2 DM with cardiovascular risk (n=11). Anthropometric and blood analysis data were collected at the baseline and the end of the study. Results: hs-CRP has positive relation to obesity (BMI $\geq 24\text{kg/m}^2$), TG, HbA1C, Age, BMI, waist and hip circumference. After adjusted all lipid profile data, no relation was found. Hip circumference is one of anthropometric data that can predict hs-CRP concentration ($R^2 = 0.2487$, p = 0.0069). Conclusions: hs-CRP has no relation to obesity after adjusted lipid profile data. Hip circumference may predict the concentration of hs-CRP.

Keywords: :hs-CRP, CVD, type 2 DM, BMI

體位及體型對血壓的相關性探討

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本研究為探討體位及體型對血壓的相關性研究。研究在 2007 年在台北市信義區 41 里進行。共計收案 232 位年齡大於或等於 30 歲，小於 65 歲成年人，其中男性 77 位 (33.2%)，女性 155 位 (66.8%)。測量其身高、體重、體脂肪，就身高和體重值計算出身體質量指數，並量測腰臀圍以計算腰臀比等體位資料與血壓值。取體脂肪比率，男性體脂肪 $\geq 25\%$ ，女性 $\geq 30\%$ 者，共計有 179 位，佔總樣本 77.2%，依腰臀比將男性腰臀比 > 0.95 ，女性 > 0.85 ，分為蘋果型體型組， $n=77$ (43.0%)，反之為梨型體型組， $n=102$ (57.0%)。結果顯示， $> 130/85$ mmHg 有 93 位，佔總人數 40.1%。體位測量部分，男性主要有體重過重的情形，女性則是體脂肪比率明顯超出正常標準(25%)許多。血壓值與體重、身體質量指數、體脂肪重、腰圍、臀圍、腰臀比具相關性，其中收縮壓較舒張壓更具代表意義。而蘋果型體型組之體組成和身體型態與肥胖的關係顯著，且血壓值也顯著較高。總結：藉由體位的改變可用來預測發生高血壓的風險。而樣本人群體脂過高比例高達 77.2%，顯示身體質量指數在正常範圍內者仍有體內囤積過多脂肪的現象。

關鍵詞：體脂肪、身體質量指數、蘋果型體型、梨型體型

The association between anthropometry, body shape and blood pressure

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In this study, we evaluate the effect of anthropometry and body shape on blood pressure (BP) for adults. A sample of 232 adults (77 men and 155 women) with complete anthropometric data, age ≥ 30 y and < 65 y. Anthropometric data included height, weight, body fat percentage, waist circumference, hip circumference, BP and to calculate body mass index (BMI) and waist-hip ratio (WHR). 179 (77.2%) subjects' body fat $\geq 25\%$ (men) and $\geq 30\%$ (women). 77 (43.0 %) subjects' WHR > 0.95 (men) and > 0.85 (women) were defined as apple body shaped group, the opposite ($n=102$, 57.0%) were defined as pear body shaped group. Results showed 93 subjects (40.1%) were defined as hypertension, which BP $> 130/85$ mmHg. Moreover, for anthropometric measurements, men were almost overweight, and women were almost with body fat percentage exceed the normal standard (25%). BP was correlated with weight, BMI, body fat mass, waist circumference, hip circumference and WHR, significantly with systolic pressure than diastolic pressure. Results also showed composition and shape of apple body shaped were significantly correlated with obese and had higher BP. In conclusion, by means of changing anthropometry can predict the risk of hypertension. Moreover, 77.2% of the study population have higher body fat mass, which showed even BMI was under normal range (18.5-22), they still have many body fat accumulated in the body.

Keywords: body fat, body mass index, apple body shape, pear body shape

體位、健康狀態對於參加健康活動意願的影響

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本研究欲了解體位、疾病對於參加健康活動的意願影響。研究經過台安醫院人體試驗委員會通過進行。時間為 2008 年 8 月到 9 月，受試者為參加「新起點」(NEWSTART)，簽署同意書並且有完整體位資料者。共計 37 人，男性 14 人 (38%)，女性 23 人 (62%)。年齡介於 20-77 歲，平均 49.8 歲；BMI 介於 19.3-32.8，平均 24.5。將體位分成正常 (18.5- <24.0)、過重 (≥ 24.0 - <27.0) 和肥胖 (≥ 27.0) 三組，分別為 22 人 (60%)、3 人 (8%)、12 人 (32%)，顯示參加人員以正常組人數多於過重與肥胖組；將受試者依健康狀態資料分成：健康組、與飲食有關疾病組 (癌症、心臟病、高膽固醇、高血脂、高血壓、糖尿病、痛風、腸胃潰瘍、脂肪肝、輕度肝纖維化)，D 組、與飲食無關疾病組 (失眠、過敏、身心症、乾燥症候群、重症肌無力、關節炎、坐骨神經痛)，ND 組。結果，體位正常組：健康組 5 人、D 組 3 人、ND 組 8 人、D+ND 組 6 人，過重與肥胖組：健康組 1 人、D 組 4 人、ND 組 1 人、D+ND 組 9 人，顯示參加者多患有與飲食有關疾病者 (22 人，59.5%) 居多。結論：參加者並非以過重或肥胖者佔多數，然多數患有與飲食有關疾病。

關鍵詞：體位、飲食、新起點

The effects of body mass index and health status on inclination to participate a healthy activity

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Aim of this study is to evaluate the effects of body mass index (BMI) and health status on inclination to participate a healthy activity. Study had been approved by Medical Ethnics of Taiwan Adventist Hospital (TAH). Subjects were recruited from the member of NEWSTART program from August to September 2008. Anthropometric data, questionnaire of health status and 3-day dietary records were taken. There were 14 males (38%) and 23 females (62%), age range 20-77 y, average age was 49.8 y. BMI range 19.3-32.8, average BMI was 24.5. To divided subjects into 3 levels according to BMI value: normal (BMI 18.5- < 24.0), n=22 (60%) ; overweight (BMI ≥ 24.0 - < 27.0), n=3 (8%); obesity (BMI ≥ 27.0), n=12 (32%). Cancer, heart disease, hypercholesterolemia, hyperlipidemia, hypertension, diabetes, gout, peptic ulcer, fatty liver, mild liver fibrosis were categorized as diet-related disease (D group) . Insomnia, allergy, physical and mental disease, dry syndrome, myasthenia gravis, arthritis, sciatica were categorized as diet-non related disease (ND group). The results were as following, normal weight group: healthy: 5, D group: 3, ND group: 8, D+ND group: 6; overweight to obesity group: healthy: 1, D group: 4, ND group: 1, D+ND group: 9. It concluded that most participants had diet-related disease (n=22, 59.5%).

Keywords: BMI, diet, NEWSTART

間歇性療法在減重停滯期之角色

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內湖長春診所

本研究主要的目的是要探討連續用藥及間歇性用藥，在減重處方之角色及成效。一般減重過程中，一般減重過程中都會遇到，『所謂的減重停滯期』在本研究過程中，從96年2月～96年10月，共收集了40位，BMI>27之肥胖患者，年齡從25～45歲之間，在服用減重處方第6週開始出現了，停滯期現象，在將此40位有減重停滯期之病患分為兩週。一組為實驗組及連續服用減重處方12週（減重處方以市面之合格合法之藥物減重處方為主）及對照組及服用減重處方8週後休息2週，再開始服用原先相同之減重處方2週，此兩組參與減重治療期間，都有給予飲食熱量之衛教，在第12週以後，統計其BMI及Fat之變化發現，實驗組部份在連續服用減重處方12週，其體重下降了9%、BMI降低了12.2%、Fat降了8%，而對照組部份在服用8週後停2週，再用2週，結果其體重下降15%、BMI降低了16.3%、Fat降低了10%。

綜合本實驗之結果發現遇到減重停滯期時暫時停藥2週後再開始治療比連續治療之效果來的好。

關鍵詞：減重停滯期；間歇性治療法；抗藥性；復胖。

Effect of intermittent therapy on the body-weight loss formula

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The purpose of the study was to investigate the effect of intermittent therapy of body-weight loss formula. In clinic body weight loss treatment, most of the patients will encounter the 『lag of body-weight loss』. We collected 40 (BMI>27) obesity cases, aged from 25 to 40 during the Feb. to Oct 2007. The lag of body weight loss was noted from 6th week. We divided the participator to two groups. One group was continued using the formula; the others stopping the formula 2 weeks. At the end of 12th week, the body weight: BMI and the Fat% was about 9% ↓, 12.2% ↓ and 8% ↓ of the continuing group. The body weight, BMI and Fat% of the intermittent group was 15% ↓; 16.3% ↓, 10% ↓. From the result of this clinic experiment, we came to the conclusion the effect of intermittent therapy of body weight formula was better than the continuing group.

Key words: lag of body weight、intermittent therapy、drug resistance and rebounding of body weight.

燕麥片飲食介入對改善青少年心血管疾病危險因子之影響

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本研究主要目的，擬探討藉由燕麥片飲食之介入對於具有心血管疾病危險因子之青少年的體位、血糖及血脂質是否有調節作用。本研究在台北市某完全中學內進行，於新學期身體檢查時進行體位測量，並依 2002 年衛生署所公佈之青少年肥胖定義標準，進行篩選，之後進一步從中篩選出腰圍大於 90 公分者，且經過本人及家長同意，共有 82 名男學生進行血液生化值分析。此外，再依據 2006 年衛生署公佈之代謝症候群診斷標準或是高血總膽固醇值 (≥ 170 mg/dL) 作為篩選標準，最後共有 25 位具代謝症候群或具高膽固醇血症的青少年 (12~18 歲) 同意參加試驗。每天早晨，受試者至學校健康中心吃早餐，每次食用 75 公克大燕麥片加脫脂奶粉，每週 5 次，共進行 8 週試驗。燕麥片早餐熱量約 400 大卡，約佔青少年每日需要熱量的 27%。結果顯示，在 1985 位國高中學生中，肥胖盛行率約為 16.02%，代謝症候群之盛行率為 0.60%。25 位受試者經過 8 週燕麥片飲食介入之後，其血糖、血漿總膽固醇及低密度脂蛋白膽固醇均明顯降低，降低幅度分別為 4.33%，10.56% 及 11.29%。在體位測量方面，包括體重、身體質量指數、腰圍及體脂肪，亦有顯著性的下降，分別為 1.94%，1.98%，2.42% 及 0.98%。且受試者中代謝症候群的比例從 32% 下降至 24%。綜合本試驗之結果，每日攝取 75 公克燕麥片飲食，持續 8 週，可降低及改善青少年之心血管疾病危險因子的發生。

關鍵詞：青少年、心血管疾病危險因子、代謝症候群、燕麥片飲食介入

Effect of Oat meal Intervention on the Improvement of the Cardiovascular Disease Risk Factors of Adolescents

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The purpose of the study was to investigate the effect of an oat meal intervention on the risk factors of cardiovascular diseases among junior & senior high school students in Taipei City. The students with the waist circumference greater than 90 cm were enrolled according to the results of anthropometric measurements in the new term. The fasting blood was analyzed to determine the serum lipids and blood sugar levels. Finally, 25 subjects defined as metabolic syndrome (MS) according to the criteria provided by the Department of Health, Taiwan in 2006 or mild hypercholesterolemia (≥ 170 mg/dL) were recruited. Each subject was asked to consume 75 g oat meal (ca. 400 kcal) as breakfast, 5 times per wk for 8 weeks. Results showed that the prevalence rate of obesity was about 16.02% and the overall prevalence of MS was 0.60% among 1985 students of the whole school. The oat meal intervention resulted in significant decreases in fasting blood sugar, total cholesterol and low-density lipoprotein (4.33%, 10.56% and 11.29%) ($p < 0.05$). The anthropometric measurements, including the body weight, body mass index, waist circumference and body fat percentage were also reduced significantly after the 8-wk oat meal intervention (1.94%, 1.98%, 2.42% and 0.98%) ($p < 0.05$). Moreover, the ratio of MS decreased from 32% to 24%. In conclusion, the intervention of oat meal for 8 weeks was beneficial on the prevention of the risk factors of cardiovascular diseases.

Keyword: adolescent, cardiovascular disease, metabolic syndrome, oat meal intervention

探討以大豆飲品介入之熱量控制計畫對高血脂且合併肥胖者的成效評估

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本研究旨在探討富含大豆蛋白的飲品搭配限制熱量飲食之介入，對於血脂異常且合併肥胖之患者，其血脂組成和體位狀態的改善效應評估。受試者為 20 位具有高脂血症（血中總膽固醇濃度均 ≥ 200 mg/dL）的肥胖患者（身體質量指數平均 27.76；體脂百分比：女性平均 35.9%，男性平均 29.55%）。受試者經 2 週的飲食調整期後，即進入 8 週的飲食介入期，在此 8 週期間須每天攝取所提供之大豆飲品並配合限制熱量飲食，每日總熱量依個體差異平均限制於 1500~1800 大卡（25~28% 脂質、14~17% 蛋白質及 50~60% 醣類）。每週給予體位測量、個人飲食諮詢與營養教育減重課程，於飲食介入期的開始前、介入 4 週後及介入期結束後，皆須進行血液樣本收集以檢測相關生化值。結果顯示，受試者經為期 8 週的減重計畫後，發現其體重、身體質量指數、體脂百分率、腰圍、臀圍、舒張壓等均顯著降低（ $p < 0.05$ ）。在血脂組成方面，可明顯改善其血清總膽固醇（TC）、高密度脂蛋白膽固醇（HDL-C）、低密度脂蛋白膽固醇（LDL-C）及血清三酸甘油酯（TG）的濃度（ $p < 0.05$ ），亦可顯著降低用以預測動脈硬化危機率的 TC/HDL-C 和 LDL-C/HDL-C 等值（ $p < 0.05$ ）。由此可知，以大豆飲品介入之減重計畫，能有效改善高血脂且合併肥胖患者之血脂組成和體位狀態，不只可達到減脂與減重之健康目的，還能減緩動脈硬化進展，進而預防心血管疾病之發生。

關鍵詞：大豆蛋白、限制熱量飲食、肥胖、體脂肪、血脂質

Soy-based Drink Replacement Intervention with Energy-restricted Diets for Obese Adults with Hypercholesterolemia

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The purpose of the present study was to evaluate the effects of a soy-based drink replacement intervention with energy-restricted diets on weight control, body composition and blood lipid profiles for obese adults with hypercholesterolemia. Subjects were 20 obese adults with hypercholesterolemia. After a 2-wk run-in period, subjects received a soy-based drink replacement intervention with an energy-restricted diet for 8 wk. The total calorie was restricted between 1500-1800 kcal/day (25-28% lipid, 14-17% protein, 50-60% carbohydrate) based on the subjects' individual difference. The dietary consulting class and anthropometric measurement were provided every week. Biochemical data before, after the 4-wk and after the 8-wk experiment were compared. Results showed that body weight, body mass index, body fat percentage, waist circumference, hips circumference, serum cholesterol, LDL-cholesterol and triglycerides concentrations significantly decreased ($p < 0.05$). HDL-cholesterol concentrations significantly increased. Besides, this diet-intervention could significantly lower the probability of arteriosclerosis risk (TC/HDL-C, LDL-C/HDL-C) ($p < 0.05$). In conclusion, a soy-based drink replacement intervention with an energy-restricted diet effectively improved body composition and blood lipids for obese adults with hypercholesterolemia. It has not only health benefits in reducing weight and body fat, but also has a protective effect against cardiovascular diseases.

Key words: soy protein, energy-restricted diet, obesity, body fat, serum lipids

胃內水球減肥術在腸胃科診所施行之安全性與有效性評估-初報

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目的：為評估胃內水球(BIB, bioenteric intra-gastric balloon, INAMED[®])減肥術在基層腸胃科診所施行之安全性與有效性，特進行本研究。材料與方法：蕭敦仁診所自民國 97 年 2 月至 97 年 7 月，共完成 10 位病患由內視鏡專科醫師完成胃內水球置入術。病患在水球置入前皆接受完整身體檢查、問卷調查、及生化檢查。其均符合 BMI ≥ 30 ，且無嚴重逆流性食道炎及肝心肺腎疾病、並未接受過腹部手術等健康問題。病患在術前一天晚上 12 點後禁食，早上到診所後依標準步驟完成胃內水球置入。病患於術後休息約 7-8 小時後可離開診所，同時開給 omeprazole 20 mg QD 及 primperan 1 TID 使用以預防併發症，回診計畫為第 1, 2, 3, 4, 6, 8, 10, 12, 16, 20, 及 24 周，分別給予 20-30 分鐘之飲食衛教課程。置入後 6 個月，取出日前三天只可使用流質食物，前一夜 12 時後禁食，早上到診所後施予 IV sedation，再依標準步驟移除胃內水球(BIB)，於休息 1-2 小時後即可回家。結果：十位接受 BIB 減肥術者男女比 5:5，平均年齡 36.8 ± 10.7 歲，平均體重 96.0 ± 10.9 公斤，平均 BMI 33.5 ± 2.6 ($30.0-37.3$)，水球置入術在早上進行，平均所用時間約 30 分鐘，病患在休息室恢復後於當日下午 5-7 點離開診所，不需住院，主要副作用為上腹不適、惡心、嘔吐、無胃口，前三天副作用較大，之後逐漸改善，大部份症狀在一週後消失。至 97 年 9 月止，共有四位已完成水球取出，男女比 3:1，24 週平均體重下降 17.7 ± 5.8 公斤(原體重之 $18.4 \pm 5.0\%$)。討論：副作用控制是胃內水球減重法最需克服之障礙，因這因素偶讓病患萌放棄之意。水球置放及取出對內視鏡專科醫師而言應可勝任，但術後之飲食衛教及運動指導等生活習慣改變則是另一挑戰。結論：在腸胃專科診所進行胃內水球置放術是安全的，不需住院當天可回家，半年減肥成效可達 17.7 ± 5.8 公斤(原體重之 $18.4 \pm 5.0\%$)，是一種安全又有效的減肥方法。

關鍵詞：胃內水球、減肥、肥胖症、胃鏡

Assessment of the safety and effectiveness of the treatment of obese subjects with intra-gastric balloon in gastroenterology clinic

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Aim: To evaluate the safety and effectiveness of the treatment of obese subjects with intra-gastric balloon (BIB, BioEnteric intra-gastric balloon, INAMED[®]) in gastroenterology clinic.

Material and methods: During February to July 2008, there were 10 subjects with BMI ≥ 30 treated with BIB at Hsiao's gastroenterology clinic by endoscopy specialist. Before the treatment, they received comprehensive physical examination and biochemical tests. The exclusion criteria were as follows: severe gastro-esophageal reflux disease, past gastric operation, and severe hepatic, renal, cardiac, and pulmonary diseases. BIB was inserted under the inspection by endoscopy under intravenous sedation of the patients with Dormicum 2.5-5 mg and Demerol 25-50 mg. BIB was removed by 6 months after insertion.

Results: The mean age of the subjects were 36.8 ± 10.7 years old, and the male to female ratio was 5:5. The average body weight was 96.0 ± 10.9 kgs, and the mean BMI was 33.5 ± 2.6 kg/m² ($30.0-37.3$). The main side effects after the procedure were nausea, vomiting, poor appetite, and epigastralgia. And the symptoms were prominent in the first 3 days and subsided gradually by 7 days. BIB was removed smoothly at 4 patients by September 2009. They were 3 men and 1 woman. The mean body weight loss was 17.7 ± 5.8 kgs, or $18.4 \pm 5.0\%$ of initial body weight.

Discussion: The main difficulty in BIB treatment for obese subjects was the management of the side effects in the few days after balloon insertion. The education of nutrition and exercise is important for the better outcome of the method. **Conclusions:** No admission to hospital is necessary in our series. And the mean body weight loss was 17.7 ± 5.8 kgs or $18.4 \pm 5.0\%$ of initial body weight. We concluded that BIB treatment in gastroenterology clinic is safe and effective.

Key Words: intragastric balloon, BIB, obesity, body weight loss, endoscopy

含共軛亞麻油酸牛奶對減重與體脂蓄積之影響
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本研究的目的是評估含有共軛亞麻油酸(conjugated linoleic acid, CLA)的牛奶對於體脂肪堆積的影響。招募 40 位體重過重或肥胖受試者，分成共軛亞麻油酸組(n=20)及控制組(n=20)，年齡分別為 42.0±10.9、50.0±11.0 歲；體重 73.1±11.4、63.7±6.5 公斤；BMI 28.3±4.5、25.8±1.6 公斤/公尺²。共軛亞麻油酸組每日給予兩瓶添加共軛亞麻油酸牛乳輔以低熱量飲食，控制組則給予不含受試物之牛奶，實驗為期 8 週。在實驗的第 0 週和第 8 週收集受試者禁食血液樣本進行相關生化數值分析。結果發現，共軛亞麻油酸組的體重變化量、BMI 變化量、體脂肪百分比變化量與控制組比較具有統計差異($p<0.05$)，體重平均顯著減少 5.5±1.8 公斤、BMI 顯著減少 2.1±0.7 公斤/公尺²、體脂肪百分比顯著減少 4.3±2.5%、及腰圍共減少 7.0±4.6 公分。在血脂質方面，共軛亞麻油酸組和控制組血清三酸甘油酯濃度分別較減重前顯著下降 31.2±25%和 29.2±17.9% ($p<0.05$)，其他生化數值和血液常規檢查等生理狀況均則無明顯影響。因此，利用牛奶添加共軛亞麻油酸輔以熱量控制的減重計畫，可顯著改善肥胖者的體重、BMI、及體脂肪含量，進而達到促進健康的效果。

關鍵詞：肥胖、共軛亞麻油酸、牛奶、低熱量飲食、減重

Effectiveness of Weight Loss and Fat Accumulation by Using Milk Contained Conjugated Linoleic Acid

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The purpose of this study was to assess the effects of milk contained conjugated linoleic acid (CLA) on body fat accumulation. Forty overweight or obese subjects were divided into two groups: CLA group and control group. They were aged 42.0±10.9 years; 50.0±11.0 years, with body weights of 73.1±11.4 kg; 63.7±6.5 kg and a BMI of 28.3±4.5 kg/m²; 25.8±1.6 kg/m²; respectively. The milk with CLA was used to replace two meals, and total energy intake was 1200 kcal/day for 8 weeks. We measured anthropometric data and blood biochemical data respectively at 0 and 8 weeks. Results showed that the changes of body weight, BMI, body fat percentage in CLA group were significantly different compared with those of control group ($p<0.05$). In CLA group, there were significant reductions in body weight by 5.5±1.8 kg, BMI by 2.1±0.7 kg/m², body fat percentage by 4.3±2.5%, and waist circumference by 7.0±4.6 cm ($p<0.05$). In both groups, serum triglyceride levels significantly lowered compared with baseline. No effect on serum cholesterol, low density lipoprotein-cholesterol, high density lipoprotein-cholesterol, and the indicators of liver function, renal function and complete blood count was found. Therefore, we concluded that using milk contained CLA on weight loss program had more significantly reduced in body weight, body mass index (BMI), and body fat percentage.

Keywords: obesity, conjugated linoleic acid, milk, low-calorie diet, weight loss

含共軛亞麻油酸優格對減重與體脂蓄積之影響
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本研究的目的是評估含有共軛亞麻油酸(conjugated linoleic acid, CLA)的優格對於體脂肪堆積的影響。招募 40 位 BMI 超過 24 公斤/公尺² 的體重過重或肥胖參與，並隨機分為兩組，分成共軛亞麻油酸組及控制組。共軛亞麻油酸組每日飲用添加共軛亞麻油酸的優酪 2 瓶輔以低熱量飲食(1200 kcal/day)，控制組給予一般的優酪，且詳細記錄確實進食量，實驗為期 8 週。每週上課一次並測量體組成。在實驗的第 0 週和第 8 週收集受試者禁食血液樣本進行血液生化數值分析。結果發現，八週後，共軛亞麻油酸組的體重減輕量、BMI 減少量、體脂肪重量減少量與顯著多於控制組且有統計差異 ($p < 0.05$)。在血脂質濃度方面，共軛亞麻油酸組血清總膽固醇、三酸甘油酯及低密度膽固醇濃度皆較減重前顯著下降($p < 0.05$)。因此，利用優格添加共軛亞麻油酸輔以低熱量控制的減重計畫，可顯著改善肥胖者的體重、BMI 及體脂肪含量，進而達到促進健康的效果。

關鍵詞：肥胖、共軛亞麻油酸、優格、低熱量飲食、減重

Effectiveness of Weight Loss and Fat Accumulation by Using Yogurt Contained Conjugated Linoleic Acid

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The purpose of this study was to assess the effects of yogurt contained conjugated linoleic acid (CLA) on body fat accumulation. Forty overweight or obese subjects were randomly divided into two groups: CLA group and control group. In CLA group, we provide two bottles of yogurt with CLA per day and low energy diet (1200 kcal/day) for 8 weeks. In control group, we provided two bottles of yogurt and the same energy. We measured anthropometric data and blood biochemical data respectively at 0 and 8 weeks. Results showed that the lost of body weight, BMI, body fat percentage in CLA group were significantly different compared with those of control group after 8 weeks ($p < 0.05$). In the field of lipid profile, serum cholesterol, triglyceride and LDL-C levels significantly lowered compared with baseline. Therefore, we concluded that using yogurt contained CLA with low energy diet on weight loss program had more significantly reduced in body weight, body mass index (BMI), and body fat percentage.

Keywords: obesity, conjugated linoleic acid, yogurt, low-calorie diet, weight loss

比較不同季節實施體重控制課程之效益

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肥胖人口近幾年在全球各國以驚人的速度成長，成為相當值得重視的健康議題。本研究目的在於探討不同季節實行體重控制課程之效益，依照氣象學 (meteorology) 區分：冬季 (12 月、1 月、2 月) 及夏季 (6 月、7 月、8 月)，皆執行 2 個月體重控制課程，每週進行 2 次團體運動課程及 1 次營養衛教課程，評估季節性減重效益。統計自西元 2004 年 12 月份起至 2007 年 2 月止共計 36 個月，參加某醫學中心之減重中心舉辦的健康體重控制課程，人數統計為 3187 人次，收集此期間每年冬季及夏季之減重班資料，有效樣本為 600 名，為身體質量指數 ≥ 24 者，共計夏季有女性 216 位、男性 84 位，女性平均年齡 43.7 歲、男性 41.3 歲；平均體重為 81.2 公斤，冬季有女性 229 位，男性 71 位，女性平均年齡 46.6，男性 42.6 歲；平均體重為 79.0 公斤；結果發現夏季受試者平均減重 7.1 公斤顯著高於冬季受試者的 5.5 公斤 ($p < 0.05$)，體脂肪率、BMI 值、腰圍、飯前血糖、尿酸、肝功能 GOT、GPT、總膽固醇及三酸甘油酯皆顯著下降 ($p < 0.05$)。由此研究發現不論夏季與冬季執行體重控制課程，皆可以達行政院衛生署之建議減重速度 (每週減輕 0.5~1 公斤範圍)，但在夏季進行體重控制課程成效較冬季佳。

關鍵詞：季節、體重控制、肥胖

The Seasonal Effect on Weight Loss in Hospital Weight Control Program

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The global boom of obesity raised high attention and studies all over the world. Proper weight control has become a hot topic for modern people either for improving health or out-looking. In our previous observation, the intervention performed in summer might cause more weight loss than in winter. Since there is no current literature investigating the connection between the effect of weight control and seasonal effect, we conducted a study to compare the different performance of weight control in summer and winter. A two-month weight control program which consisted of two weekly exercises and one weekly diet education was implemented in one medical center in Taipei. Subjects who entered the weight control program in summer time and winter time during the span from December 2004 to February 2007 were collected. Subjects with BMI less than 24 were excluded. Paired *t*-test and ANOVA test were used for within-group and between-group analysis, respectively. There were 300 subjects in summer group (84 male and 216 female, BW: 81.2kg) and 300 subjects in winter group (71 male and 229 female, BW: 79.0kg). An average 7.1 kg of weight loss was noted in summer group, compared with 5.5 kg in winter group. Both reached statistical significance ($p < 0.05$). Percentage of body fat, BMI, circumference of waist, blood sugar, uric acid, and lipid profiles all decreased significantly in both groups. The between-group analysis shows significant difference in the respect of body weight and BMI. ($p < 0.05$) A weight control program during summer time might have a better effect on weight and BMI reduction than winter time.

Key words: Seasonal, weight control, obesity

1997~2000 年與2003~2005 年台北市學齡前兒童體位值調查比較

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研究的目的是為調查1997~2000年間與2003~2005年間學齡前兒童身高及體重數值，並試著比較兩時期間學齡前兒童的身高、體重與身體質量指數（body mass index, BMI）等數值是否有差異性存在。調查收集1997~2000年間與2003~2005年，到台北醫學大學附設醫院做健康檢查的學齡前兒童之身高體重資料，分別共計有2102與3281名3-6歲學齡前兒童資料，其中男童有1122位(53.4%)與1724位(52.5%)，女童有980位(46.6%)與1557位(47.5%)。測得身高、體重後再計算其BMI，依性別、年齡分析身高、體重和BMI的數值，以SAS 8.2版統計軟體進行分析。結果2003~2005年間學齡前兒童之男童身高有增加的趨勢，其中3歲($p = 0.0281$)與4歲($p = 0.0131$)有顯著增加，女童身高除了6歲是降低外外，3歲到5歲也有增高趨勢。體重部份，2003~2005年間學齡前兒童之男童與女童均有下降的趨勢，其中男童5歲($p = 0.0468$)與女童5歲($p < 0.0001$)有顯著下降，BMI部份，2003~2005年間學齡前兒童之男童與女童均有下降的趨勢，其中男童4歲($p = 0.0022$)、5歲($p = 0.0004$)與女童4歲($p = 0.0004$)有顯著下降，由結果可以看出身高有增加的傾向，而體重、BMI有減輕的傾向。

關鍵詞：學齡前兒童、身高、體重、身體質量指數

A comparison of the anthropometric data of preschool children in Taipei city between 1997 to 2000 and 2003 to 2005

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The purpose of this study was to compare the body height and weight of preschool children in Taipei city, aged from 3 to 6 years old, between 1997-2000 and 2003-2005 years. Subjects were recruited from Taipei Medical University Hospital's health examination children. A total of 2102 and 3281 preschool children were recruited in this study, 1122 (53.4%), 1724 (52.5%) boys and 980 (46.6%), 557 (47.5%) girls. We took the body height and body weight then calculated their BMI. The body heights of preschool children have increased trend in 2003 to 2005. And the 3 years old ($p = 0.0281$) and 4 years old boys ($p = 0.0131$) have significant increased. In girls, besides 6 years old, it have increased trend from 3 to 5 years old. In body weights, both boys and girls have reduced trend. And the boys of 5 years old ($p = 0.047$) and the girls of 5 years old ($p < 0.0001$) have significant reduced. In BMI, both boys and girls have reduced trend: of 4 years old boys ($p = 0.0022$), 5 years old boys ($p = 0.0004$) and 4 years old girls ($p = 0.0004$) have significant reduced. It was concluded that body height of Taipei's preschool children have increased and the body weights, BMI have reduced trend in this study.

Keywords: preschool children, body height, body weight, BMI

台灣族群肥胖易感基因 ADRB2, ADRB3, GNB3, 與 PPAR 多型性研究：初步探討多變

異位點肥胖基因檢測

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一般肥胖是典型的多因子疾病，同時包含了基因與環境及其交互作用。由於西式的生活型態逐漸全球化，肥胖的比例快速的提升，體重管理已是現代人的重要課題。我們調查四個肥胖易感基因，ADRB2, ADRB3, GNB3, 與 PPAR 並進行與肥胖的關聯性分析。單一基因多型性的結果顯示 ADRB3/Trp64Arg and PPAR ~Pro12Ala 與肥胖具顯著關聯性，ADRB2/Gln27Glu 的 CC 基因型, ADRB3/Trp64Arg 的 AA 基因型, and PPAR ~Pro12Ala 的 CG+GG 基因型顯著的勝算比(OR)表示應為肥胖的風險因子。更進一步分析兩兩基因多型性的協同效果，發現其造成肥胖的風險或避免肥胖的機會更為顯著。應用於肥胖基因檢測上，這個結果建議使用多基因多型性協同分析，會比只用單一基因多型性的結果更為有效的預測肥胖。

關鍵詞: Obesity, ADRB2, ADRB3, GNB3, PPAR

Polymorphisms of Obesity Susceptibility Genes, ADRB2, ADRB3, GNB3, and PPAR in Taiwanese Population: A Prior Study for Genetic Testing by Multiple Variants

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Obesity is a typical multifactorial disease in the environmental and genetic factors interaction. The large rise in the number of obesity cases is mainly due to the rapid globalization of the Westernized way of life. We assessed 5 SNPs in ADRB2, ADRB3, GNB3, and PPAR in Taiwanese population and searched for the association with common obesity presenting by body mass index (BMI). In a single polymorphism association analysis, the polymorphisms of ADRB3/Trp64Arg and PPAR ~Pro12Ala are associated with obesity. The CC genotype of ADRB2/Gln27Glu (marginal significance), AA genotype of ADRB3/Trp64Arg, and CG+GG genotypes of PPAR ~Pro12Ala showed significant odd ratio as risk for obesity phenotype. Moreover, the genotype synergistic analysis showed that the co-contribution of two functional SNPs were either riskier or protective from obesity. For obesity genetic testing, the results suggest that prediction for potentially developing obesity by genotype co-occurring method is more powerful than prediction by individual polymorphism.

Key Words: Obesity, ADRB2, ADRB3, GNB3, PPAR

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