

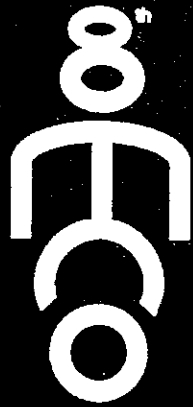
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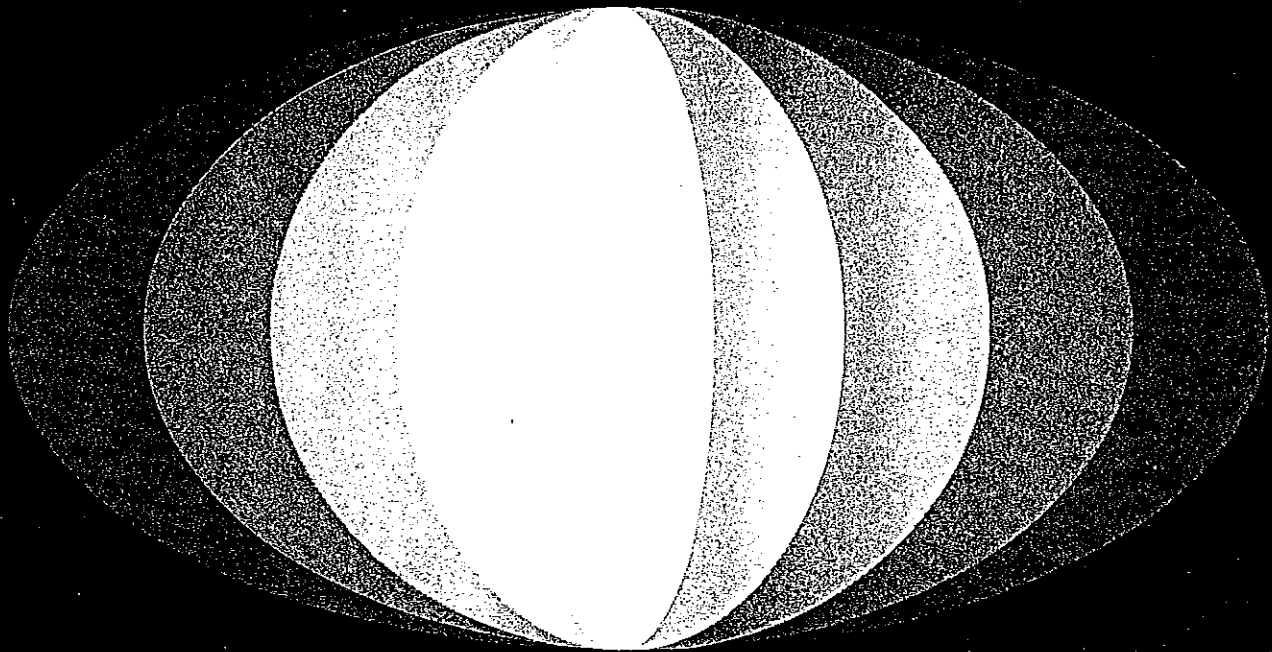
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ABSTRACTS




STOCKTON

Editors: Jean-Pierre Després
Ian Macdonald

VERY LOW CALORIE DIETING DOES NOT REDUCE QRS VOLTAGE

Lars B. Jensen, Jørn Badskjær & Flemming Quaade
The Obesity Clinic, Copenhagen 2000 F, Denmark

A few years ago, Greenway et al.(1) found that the sum of the QRS voltage in leads I, II and III was lower at week 12, 16 and 20 in a group of 29 obese women on 420 kcal/d (1.8 kJ/d) as compared to a group on 600 kcal/d (2.1 kJ/d). Both programs contained 70 g/d of protein. After this publication it has been widely suggested that VLCDs should be abandoned in favour of regimens with a considerably higher energy allowance.

We have recorded the ECG before and after weight loss on VLCD (388-450 kcal/d, 1.62 kJ/d Nupo®). The cardiologist (JB) had no knowledge of clinical data except age, sex and the time interval between the 2 ECGs. Multivariate statistical methods were used. The tables show the main data of our patients.

90 women BMI: 36.2 (25.8-51.0)

age	BW kg	BW loss	weeks	loss/week
51	101.1	12.9	11.4	1.2
23-78	68.8-142.4	3.0-33.5	4-23	0.4-2.8

14 men BMI: 36.5 (30.4-51.3)

age	BW kg	BW loss	weeks	loss/week
48	118.7	17.0	10.1	1.8
25-68	95.5-158.8	10.6-26.4	6-15	0.8-4.2

Results: The mean deviation in ECG voltage was not different from zero, and no pathological ECG changes were observed. Duration of treatment (compliance to the diet), great and/or rapid weight loss did not influence QRS voltage.

Conclusion: In obese patients, even great and rapid weight loss induced by very-low-calorie dieting (388-450 kcal/d) is not accompanied by an abnormal reduction in QRS voltage nor by other unfavourable ECG changes.

Reference: Obesity Research 1994; 2:95-9.

METHYLISOBUTHYLXANTHIN INCREASES THE ANGIOTENSIN II PRODUCTION IN 3T3-L1 PREADIPOCYTES

Helfried Mallow and Georg Löffler
Institut of Biochemistry, Genetic and Microbiology,
University of Regensburg, Universitaetsstr.31,
D-93053 Regensburg, Germany

The renin-angiotensin system is important in the maintenance of blood pressure. In addition in several tissues including adipose tissue local renin-angiotensin systems with less clear functions exist.

In the present study we examined the production of angiotensin II peptide by 3T3-L1 preadipocytes *in vitro* using a specific radioimmunoassay.

3T3-L1 cells induced to differentiate to adipocytes in serum-free medium by addition of insulin, corticosterone and methylisobutylxanthin (MIX) showed highest angiotensin II production during the first four days of the differentiation period, while the inducing agents being present. With removal of the inducers angiotensin II production declined.

Furthermore cells, which didn't receive the optimal differentiation cocktail and accordingly showed a diminished extent of differentiation, nevertheless produced high amounts of angiotensin II as long as MIX was present during the induction period.

MODULATION OF RAT FOOD INTAKE BY MANIPULATION OF LIVER TEMPERATURE *IN VIVO*

Eva Neira, Ruth Vilà, Cristina Cabot, Xavier Cañas, José-Antonio Fernández-López, Marià Alemany and Xavier Remesar
Departament de Bioquímica i Biologia Molecular, Universitat de Barcelona, 08028 Barcelona, SPAIN

Male Zucker lean rats weighing 200-220 g, fed and housed under standard conditions, were implanted between two liver lobules with an epoxy-covered aluminum microcirculation wafer-thin chamber. The chamber received hot/cold water from a circulation thermostatted bath and its temperature, as well as that of aorta, liver and other organs was recorded with K-type probes and a data-logger. After implantation of the chamber, the rats were left to recover weight and appetite for 6 days. Then the temperature of the chamber and that of the liver in close contact with it was raised to 41°C (warming) or lowered to 33°C (cooling) for 48 h. Controls had no water circulating through their chambers. Ambient temperature was maintained at 19-21°C. Control and warm-treated rats tend to increase their weight after exposure, but cold-treated animals tend to maintain or lower their weight. Cold increased food intake, and warm-exposure diminished it. After exposure ceased, cold-treated rats recovered the level of food intake of control rats, but warm-treated rats tended to overshoot. IBAT weight of warm-treated rats was smaller than either that of controls or cold-treated rats. The latter was not different from controls two days after ceasing the exposure. Liver weight was increased in warm-treated rats after exposure, but two days later the differences with the other two groups disappeared. Cold-exposed rats tended to increase neuropeptide Y levels in the arcuate nucleus. Warm-exposed rats showed lower preoptical NPY levels compared to controls.

BODY COMPOSITION MEASURED BY BIOELECTRICAL IMPEDANCE IN MORBID OBESITY

J. Martínez-Valls*, J. Ascaso, J.T. Real, R. Carmena
Servicio de Endocrinología y Nutrición. Hospital Clínico Universitario. Valencia.
Avda. Blasco Ibáñez, 17. 46010. VALENCIA. SPAIN

The impedance is a non invasive, rapid and reproducible technique useful in the analysis of body composition. The technique uses mathematical models which include age, weight, height, waist hip ratio, resistance,.... The validity of the technique depend upon the definition of the model, which relate the impedance with total body water and the capacity to measure the fat-free mass (FFM) and the fat (FAT) in obese subjects.

AIM: To compare different models from different authors: Deuremberg, Lukaski, Segal, Van Loan, with the mathematical method of Rovira Virgili University (Spain) specific for body composition in morbid obesity.

MATERIAL and METHODS: We have studied 24 subjects (16W, 8M), age (x±DS) 37.2±12.4, weight 121.6±15.3 kg, BMI 44.2±5.8 Kg/m². In all subjects a bioelectrical impedance (BIA HUMAN-IM SCAN multifrequency 100, 50, 10, 5 and 1 kHz) was done.

STATISTICAL METHODS: ANOVA

RESULTS: Comparing the FFM obtained with different models we found significant differences (p<0.03) between Deuremberg 46.10±6.0, Lukasky 47.81±6.34 and Segal 51.5±5.32 versus Van Loan 55.5±3.46 and Universidad Rovira y Virgili 55.31±8.36. When we compared the FAT we also found significant differences (p<0.019) between Deuremberg (53.81±5.99), Lukasky (52.12±6.31), Segal (49.33±6.59) and Van Loan (44.37±3.5), Universidad Rovira y Virgili (44.6±8.38).

CONCLUSIONS: The models from Deuremberg, Lukasky and Segal decrease FFM value (16.6%, 13.5% and 6.8%) and increase FAT value (20.6%, 16.8% and 6.8%) with respect to Van Loan and Universidad Rovira y Virgili models.