



TITLE: ENERGY REQUIREMENTS AND PHYSICAL ACTIVITY LEVEL OF ACTIVE ELDERLY PEOPLE IN RURAL AREAS OF CUBA

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BACKGROUND

Physical activity levels (PALs) values of urban elderly of developed countries obtained by the DLW-method are usually higher than the recommendations of the Expert Committee on Energy and Protein. This underestimation should be more evident for the rural elderly.

HYPOTHESIS

Total energy expenditure and physical activity of healthy elderly people living in rural areas is higher than previous estimated values for this population.

SUBJECTS

Forty eight adults aged 60 to 78 years (26 males and 22 females), apparently healthy or with absence of degenerative diseases were selected from the original sample.

METHODS

- Clinical records
- Body weight height, skinfolds
- OGTT
- Blood pressure recorded three times
- Body composition by BIA
- PAL by questionnaire
- RMR by indirect calorimetry
- $TEE = RMR \times PAL$

DLW-STUDY

Subjects

Five healthy men and five healthy women with reported stable weight in the previous 6 months were selected for the DLW-study.

Parameters Studied

- TEE by the DLW-method:
- Physical activity was additionally registered by questionnaire
- Energy intake by 3-day weighed records.

RESULTS AND DISCUSSION

- Glucose intolerance found 40% of the 48 subjects.
- Arterial hypertension in 23 % (8 % of the men and 41 % of the women)
- Only 1.8% higher cholesterol levels, a 7.3% higher triglycerides levels, 14% lower values of cholesterol-HDL and none had pathological values of cholesterol-LDL.
- Standard error of estimate of CO₂ production averaged 6.1 %
- PAL values in rural elderly subjects by the DLW-method of 2.13 for men and 1.77 for women, higher than reported values for subjects of the same age group in developed countries.
- The values of energy expenditure of men measured by the factorial method using physical activity questionnaires were 27 % lower than the measured by DLW.
- Dietary intake underestimated TEE in 11% for women and 55% for men.

Physical activity levels determined by the DLW method are considerably higher than previous published estimates for this age group and are in agreement with the type of activities in the community. Average BMI for the ten subjects was 23.3 ± 4.4 . Nevertheless, 3 of the subjects had BMIs of 18.5, 17.5 and 16.8 which could be considered marginal in terms of chronic energy deficiency depending on the PAL level. Of these, one subject with a BMI of 17.5 had a PAL of 1.4, which is borderline chronic energy deficiency (CEE) degree 1; another subject with a BMI of 16.8 had PAL of 1.5 which definitely classifies as CEE degree 1. The third subject had a BMI of 18.5 and a PAL of 2.1 and classifies as normal, however, his BMI is marginal and could vary potentially with seasonality activities. These subjects represent 30 % of the individuals analyzed.

CONCLUSIONS

The PALs obtained by the questionnaires underestimated energy expenditure and physical activity compared to the doubly labelled water method. Total energy expenditure and PAL by the DLW method showed a much higher level of what has been reported for similar age groups in other studies. This would indicate an important underestimation of their energy requirement, especially, in view of the fact that in subjects of these level of BMI, there is a potential risk for falling into a chronic energy deficiency processes.

FURTHER INVESTIGATIONS THAT WOULD ENHANCE THE VALUE OF THIS CRP

WORK IN PROGRESS

In spite of the fact that these results are limited with respect to sample size, currently, part of this same study conducted in Chile and Mexico in the same age group, rural conditions and protocol is being finalized and will provide very important information for final conclusions from the perspective of energy requirements and recommendations.

RECOMMENDATIONS FOR FUTURE CRPS

TAKE HOME MESSAGE.

A follow-up of these subjects extremely important for it shall shed light on matters of energy balance due to the marginal status of some of the individuals and in the group as a whole which will be necessary for appropriate interpretation and final conclusions.