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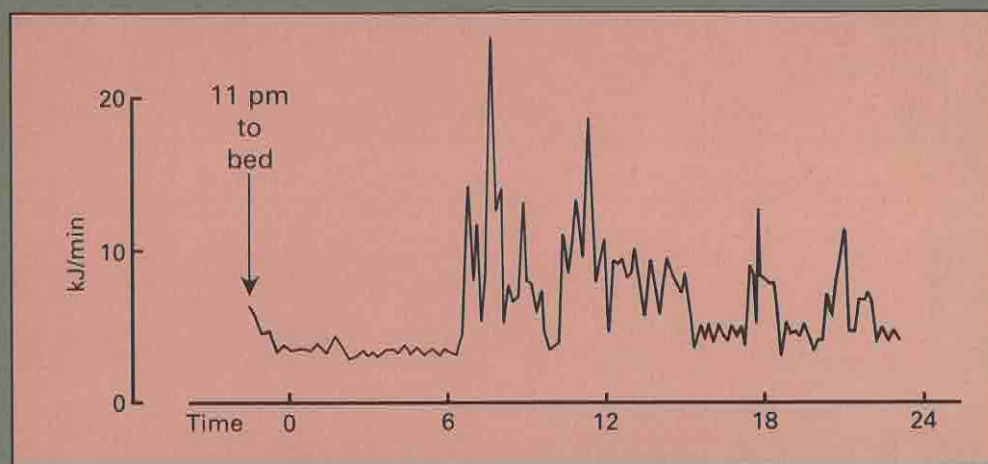
Human

Energy



Requirements

A Manual for Planners and Nutritionists



W. P. T. James and E. C. Schofield

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Human Energy Requirements

HUMAN ENERGY REQUIREMENTS

A Manual for Planners
and Nutritionists

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Foreword

P. Lunven, Director, Food Policy and Nutrition Division, FAO

This manual represents a milestone in the continuous involvement and experience of FAO of almost forty years in human energy requirements. The report of the first Committee on Calorie Requirements was published by FAO in 1950. Reports of subsequent committees and expert consultations were published in 1957 (FAO), 1973 (FAO/WHO) and most recently in 1985 under the WHO Technical Report Series (FAO/WHO/UNU). Thus far in the reports emphasis had been placed on methodological progress based on the latest scientific information available with a view to deriving estimates of human energy requirements while less attention was paid on how to apply the requirements to practical food and nutrition planning. However, following the 1973 report it was realized that the practical application of requirements in general and of energy in particular was a complex topic which required serious consideration and deserved to be fully treated in a special report.

Following the publication of the 1985 FAO/WHO/UNU report and on the basis of additional information obtained on certain factors used in calculating requirements, FAO began to make arrangements for preparing a manual aimed at advising and guiding planners and nutritionists, among others, on how to apply the methodology presented in the 1985 report. The present Manual is the result of more than two years of intense work and fruitful cooperation between a group of consultants and FAO staff. It addresses issues identified during discussions with experts at a meeting held in FAO in December 1987 as well as with other potential users of requirements and includes a number of methodological refinements developed by using computer modelling techniques. In the course of the work, a micro computer spreadsheet programme based on the computer modelling was developed. The spreadsheet replicates the calculation steps described in the manual, drawing upon data supplied with the programme. The computer software is included as companion to the manual.

The first part of the report, under Chapter 1, is a general overview of how energy requirement levels affect a wide range of economic and developmental issues. This brief and illustrative section describes summarily the method of calculating energy requirements and predicts the effect of different assumptions on the final energy requirement value.

The remaining seven chapters of the manual present a more detailed discussion addressed to nutritionists and others who wish to examine the basis of energy requirements in greater depth. The manual describes not only the factors used in calculating energy requirements and how to apply the methodology but also provides sets of data needed to apply the methodology. At this stage, we are aware that much more work is needed to document people's activities and their corresponding relative energy costs, as the manual has been prepared on the basis of information currently available in 1985.

The manual is based on the work of W. P. T. James and E. C. Schofield in collaboration with the technical staff of the Nutrition Planning, Assessment and Evaluation Service of the Food Policy and Nutrition Division of FAO and with A. Ferro-Luzzi of the Istituto Nazionale della Nutrizione, Rome. The spreadsheet programme was written at the Rowett Research Institute, Aberdeen, Scotland by T. A. Travis in collaboration with E. C. Schofield with assistance from D. A. Grubb. The User Guide for the spreadsheet was written by J. E. Solesbury and R. C. Weisell of FAO. Collation and editing of the manual was provided by J. H. James.

Professor James, Director of the Rowett Research Institute in Aberdeen, Scotland, was Co-chairman of the Energy Group at the 1981 Expert Consultation which produced the 1985 Report and E. C. Schofield collected, collated, and evaluated additional BMR data from the literature which was used in this manual. Their involvement in the development and finalization of this manual has by far exceeded their original terms of reference as consultants to the activity. We acknowledge with gratitude their unfailing commitment and contribution as well as the contributions of the many others who reviewed and provided comments on the various drafts of the manual.

Contents

Glossary	ix
I An overview of energy requirements and allowances	1
1.1 Introduction	1
1.2 Allowances at individual, household, and national levels	16
1.3 Simplified approach to calculating population energy needs	23
1.4 Comparison of the 1973 and 1985 recommendations on energy requirements	31
1.5 Summary of the principal determinants of a population's energy allowance	32
2 Principles of energy balance and energy needs	35
3 Different levels of analysis in estimating requirements	42
3.1 Simplifying the components of energy expenditure	42
3.2 Progressive simplification of estimates of physical activity and its costs	44
3.3 Simplification Stage I: Detailed activity monitoring	46
3.4 Simplification Stage II: Average activity estimates for periods of the day	49
3.5 Simplification Stage III: Single values for the whole 24 hours	54
4 Impact of urbanization and population structure	58
4.1 Data in urban and rural populations	58
4.2 Activity patterns	59
4.3 Population structure and changes	62
5 Energy allowances	67
5.1 Introduction	67
5.2 Allowances for the different growth patterns of children	69
5.3 Allowance for childhood infections	72
5.4 Allowance for 'desirable' physical activity in children	73

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