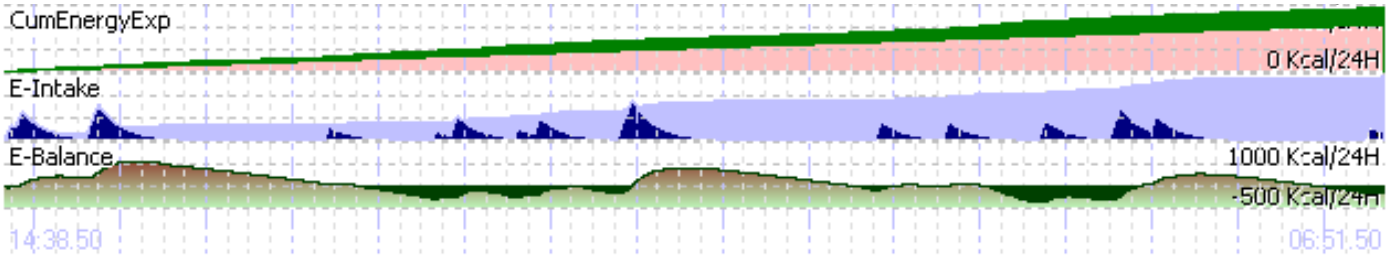
ENERGY EXPENDITURE

IN GENERAL

Objective and accurate information about a patient's energy expenditure during daily life is of fundamental importance for research in addition to clinical practice. Such information can help to gain a clear insight into the lifestyle of a patient and the effectiveness of weight and activity intervention programmes, supports in evaluation and optimization of therapy on both an individual and group level. There are other methods that provide rough indications of a persons energy expenditure, however VitaMove with it's fundamentally different method of measuring provides precise results. Therefore VitaMove is also extremely relevant for athletes and sports medicine.

METHOD

VitaMove's activity recognition is used to classify the type of activity (lying, stand, walk, running, cycling, etc.). These activities are converted into their energy equivalent using M.E.T. (Metabolic Equivalent Task) tables. These are tables where by each activity type corresponds with a certain energy range. These MET tables are widely referred to in medical publications. In addition to this by using the Metabolic Rest Rate of a subject which depends on gender, height and weight, M.E.T. values become subject specific. The movement intensity or motility is used to narrow the range in M.E.T. values for each activity type thereby giving an increased accurate estimation of the energy consumed. Due to this it is possible to discriminate between slow, medium and high energy expenditures. For example, Nordic walking as opposed to strolling. An ECG signal is also present. The heart rate is used to make the energy expenditure even more precise. The heart function helps to discriminate between normal walking and walking with a heavy backpack. These three steps lead to one of the most accurate energy expenditure estimated today available in the market.



OUTCOMES

Accurate energy expenditure quantification
Total Energy Expenditure is the sum of Rest Metabolic Rate and physical activity based energy expenditure. The current VitaMove energy expenditure report shows cumulative energy expenditure over the total measurement period or over 24 hour time periods. However it is also possible to only look at the physical activity energy expenditure consumed per minute or per hour of day.

Energy intake
A care provider can easily enter energy intake levels of the various meals and snacks in case the subject keeps a simple food diary, often standard practice in weight management programs.

Energy balance in time.
Display the energy balance as a function of time from energy (food)-Intake and energy expenditure. If this E-Balance level is above zero, there is an excess of energy and below zero there is an energy deficit. The cumulated E-Balance, after a number of days, should be below (or above) zero to reduce (or gain) weight over that period of time. This can help dieticians to provide valuable feedback to the subject on how often and how much to best eat.

Energy expenditure per activity
The energy expenditure per activity is provided, including its total duration and percentage contribution to the total energy expenditure.

Accurate and advanced Rest Metabolic Rate
The VitaMove software supplies advanced methods to calculate Rest Metabolic Rate via various anthropometric measures.

REPORT

Objective of the 'Energy Expenditure Analysis Report' is to obtain accurate and objective information about the energy expenditure of a patient's during daily life. Reports can always and easily be customized to individual needs and taste.

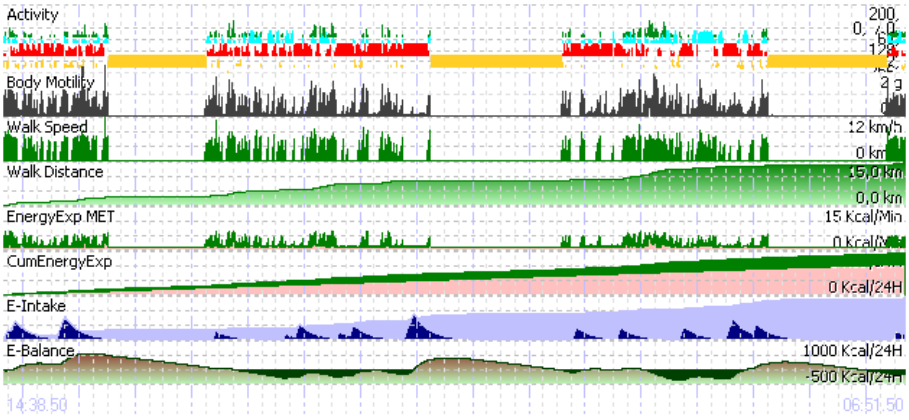
Report Header

Patient Information

Recording Overview

Last Name	VM_32Hz	Subject ID	VM_32HZ	Date / Time	13-7-2010 / 14:38:50
Date of Birth	20-2-1968 (42)	Gender	Male	Hip / Wrist / Forearm	/ /
Weight / Height	64 / 172 (BMI: 21.6)	Neck (Fat %)	35 (22.4)	Waist / Abdomen	86 / 90

Energy Expenditure Report



'Enery - Balance' table

Energy - Balance	Body Fat %	Rest Metabolic Rate	E - Intake	E - Balance	Total Energy Expenditure	Active Energy Expenditure	Sedentary Energy Expenditure
Kcal / 66Hrs	22.4	1592	**5720**	**-149**	**5869**	1317	4552

Duration, Energy Expenditure table

Duration, Energy Expenditure	Min.	%	Total Energy Expenditure	% TEE	% AEE	% SEDEE
Lying	1613.2	41.9	1672	28		37
Sitting	1371.9	35.6	1781	30		39
Standing	504.5	13.1	1029	18		23
Walking	218.3	5.7	986	17	75	
Running	0	0				
Bi-cycling	0.4	0	2	0	0	
Drving wheelchair	0	0				
Movement	86.8	2.3	329	6	25	
..Standing..(% Mov.)	*4*	*4.6*	*12*	*0*	*1*	
..Sitting....(% Mov.)	*82.4*	*94.9*	*316*	*5*	*24*	
..Lying.....(% Mov.)	*0.5*	*0.5*	*1*	*0*	*0*	

'Walking / Running Periods' tables

Walking Periods	#	Dur (Min)	EE (Kcal)	Distance (km)
0 - 10 Sec	250	28	128	2.12
10 - 60 Sec	280	101	478	7.81
1 - 5 Min	27	65	356	5.4
5 - 30 Min	2	15	81	1.28
30 - .. Min	0	0	0	0
Running				
0 - 60 Sec	0	0	0	0
1 - 5 Min	0	0	0	0
5 - 30 Min	0	0	0	0
30 - .. Min	0	0	0	0

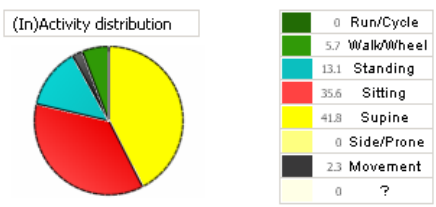
Comments

Diagnosis:

'Standing Periods' tables

Standing Periods	#	Dur (Min)	EE (Kcal)
0 - 10 Sec	224	25	61
10 - 60 Sec	350	145	302
1 - 5 Min	53	94	168
5 - 30 Min	22	230	354
30 - .. Min	0	0	0

Activity distribution



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