

# Body composition, energy expenditure and caloric intake among breast cancer patients at a teaching hospital in Nigeria—a cross sectional study

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Table 1. Socio-demographic and anthropometric characteristics of study group. (Continued)

FFMI (kg/m <sup>2</sup> )	
<18	37 (82.2)
18–19.9	8 (17.8)
20–21.9	0 (0.0)
≥22	0 (0.0)
Mean ± SD	16.42 ± 1.43
REE (HBE)	1,370.9 ± 152.9
TEE	2,073.6 ± 210.2
REE/kg FFM	32.9 ± 2.0
REE/kg BW	20.2 ± 2.6

BMI – body mass index; FMI – fat mass index; FFMI – free-fat mass index; REE – resting energy expenditure; TEE – total energy expenditure

Table 2. Spearman correlation of energy expenditures and body composition in breast cancer patients.

	HBE		HBE/FFM		HBE/BW	
	r	p-value	r	p-value	r	p-value
Body fat (%)	0.24	0.018	-0.12	0.239	-0.84	<0.001
BMI (kg/m <sup>2</sup> )	0.38	<0.001	0.02	0.889	-0.88	<0.001
FM (kg)	0.50	<0.001	-0.11	0.303	-0.92	<0.001
FFM (kg)	0.84	<0.001	-0.66	<0.001	-0.44	<0.001
FMI (kg/m <sup>2</sup> )	0.31	0.002	0.05	0.642	-0.91	<0.001
FFMI (kg/m <sup>2</sup> )	0.53	<0.001	0.02	0.86	-0.73	<0.001

BMI – body mass index; FMI – fat mass index; FFMI – free-fat mass index; HBE – Harris-Benedict equation; FFM – free-fat mass; FM – fat mass

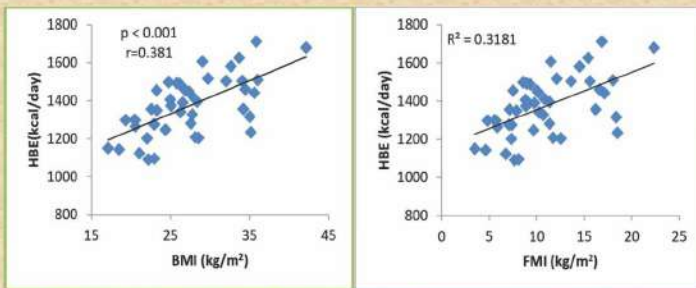


Figure 1. REE as related to BMI and FMI in 45 breast cancer patients. All correlations are significant.

## OBJECTIVE

This cross-sectional study was conducted on the associations between body composition, energy expenditure and caloric intake among 45 Nigerian breast cancer patients.

## METHODS

Forty-five Nigerian breast cancer patients were measured and analysed for their body composition, energy expenditure and caloric intake. Statistical analyses included a chi-square test, Student's t-test, paired t-test, Spearman correlation and linear regression using Statistical Package for the Social Sciences 23.0.

## RESULTS

The body fat indices (body mass index (BMI), fat mass index (FMI), and body fats percentage) show that more than 50% of breast cancer patients were either overweight or obese. The Spearman correlation showed that fat-free mass (FFM) was the most strongly correlated with energy expenditure ( $r = 0.84$ ). BMI and (FMI – fat mass in relation to height) were significantly correlated with the Harris-Benedict equation for energy expenditure ( $p < 0.001$ ;  $p = 0.002$ ), but they were not correlated significantly with the Karmofsky performance status. A paired t-test showed that caloric intake was significantly higher than total energy expenditure ( $p < 0.001$ ). FFM was the best predictor of resting energy expenditure (REE).

## CONCLUSIONS

In conclusion, FFM remains the best predictor of REE. High body mass and high caloric intake indicate the need for support from nutritional programmes.

## Keywords:

body composition, energy expenditure, breast cancer, fat-free mass, dietary recall.

## REFERENCES