Content

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❖ ALPHABETICAL AUTHOR INDEX

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Technical Requirements to Elaborate Scientific Papers

TITLE OF THE PAPER

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Technical requirements to elaborate the structured informative abstract:

Abstract

Objective. The aim of this study is to examine the relationship between skinfolds method (accu-measure caliper) and near-infrared method (FUTREX 1000 Personal Body Fat Tester)

Methods. We used Romanian university students (27 males and 97 females). The body fat percentage was measured by two methods: the skinfolds measurements...

Results. Body fat estimated with accu-measure caliper was moderate correlated with body fat estimated with FUTREX for women (r = 0.41)…

Conclusions. We cannot consider that one method of body composition analysis (skinfolds method or near-infrared method) is more accurate than…

*Key Words:*skinfolds method, near-infrared method, percentage of body fat, fat mass, free fat mass, Romanian students.

Technical requirements to elaborate the non-structured indicative or informative abstract:

Abstract

The aim of this study was to examine the relationship between skinfolds method (accu-measure caliper) and near-infrared method (FUTREX 1000 Personal Body Fat Tester) for body fat percent, fat mass and free fat mass estimations, in Romanian university students. We used Romanian university students (27 males...

Key Words: skinfolds method, near-infrared method, percentage of body fat, fat mass, free fat mass, Romanian students.

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The page layout of the research paper is 2.5 cm from the top, bottom, left and right margins (Page Layout, Margins, Top 2.5cm, Bottom 2.5cm, Left 2.5cm, Right 2.5cm), portrait oriented (Page Layout, Orientation, Portrait), A4 (Page Layout, Size, A4 - 21cm x 29.7cm).
The title of the paper, the name of the author (authors) and the abstract will be written on a single column, following the rules of laying out the page.
The chapters: Introduction, Methods, Results, Discussions, Conclusions, Thanks (if necessary) and Bibliography will be written on two columns, except for the tables and charts which will be written on a single column, following the rules of laying out the page..
The space between the title of the paper, the name of the author or authors of the paper, abstract, introduction, methods, results, discussions, conclusions and bibliography is one line (Enter, Font Size 10); the space between the writing and the tables or charts is also one line (Enter, Font Size 10).
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Example of laying out the page and arranging the text:

Relationship between skinfolds and near-infrared (FUTREX 1000) methods for body fat estimation in Romanian university students

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IONESCU TUDOR MADALIN, PHD [1], MARCU ANDREI, MS [2]

Abstract
Objective. The aim of this study was to examine the relationship between skinfolds method (accu-measure caliper) and near-infrared method (FUTREX 1000 Personal Body Fat Tester) for body fat percent, fat mass and free fat mass estimations, in Romanian university students.
Methods. We used Romanian university students (27 males and 97 females). The body fat percentage was measured by two methods: the skinfolds measurements (accu-measure caliper) and near-infrared measurement (Futrex 1000).
Results. Body fat estimated with accu-measure caliper was moderate correlated with body fat estimated with FUTREX for women (r = 0.41) and for men (r = 0.55). Fat mass (skinfolds method) skinfolds method and free fat mass (skinfolds method) were moderate correlated with fat mass (near-infrared method), respectively free fat mass (near-infrared method) for women (r = 0.41, respectively r= 0.41) and correlated for men (r = 0.60, respectively r = 0.60).
Conclusions. We cannot consider that one method of body composition analysis (skinfolds method or near-infrared method) is more accurate than the other because we don't apply a gold standard method of measurement, for subjects. However, near-infrared method trends to have higher estimations of body fat, then skinfolds method on Romanian students.
Key Words: skinfolds method, near-infrared method, percentage of body fat, fat mass, free fat mass, Romanian students.

Introduction
The increase in obesity is a global phenomenon that is even being addressed by the World Health Organization (World Health Organization, 2003), as well as by medical and government organizations in the world.
One of factors that contribute to body composition changes, respectively to body fat percent grow up is physical inactivity or sedentary lives (National Institutes Of Health, 1998).

Factors, such as age, gender, level of adiposity, physical activity and ethnicity influence the choice of method and equation. To date, race-specific SKF (American Indian women, Black men, and Asian adults), BIA (American Indian women and Asian adults), and NIR (American Indian women and White women) equations have been developed (Heyward, 1996).
Infrared is not an indicator of body composition in the pre-adolescent population on an individual basis. This method continues to be no accurate, cost-

effective means to assess individual body composition by a rapid, noninvasive methodology (Michael, Jan, Wendy, 2003).

Larger prediction errors have been reported with the lower cost, hand-held Futrex 1000 model. Because of these errors, the manufacturer's equations for the Futrex 1000 are not recommended to assess body composition (Wagner and Heyward, 1999).

Kamimura et al. cannot consider that one method of body composition analysis (SKF method, bioelectrical impedance analysis, or NIR method) is more accurate than the other because they didn't apply a gold standard method, for patients on long-term hemodialysis therapy. However, the most simple, long-established, and inexpensive method of SKF thickness seems to be still very useful for assessing body fat (Kamimura, Jose Dos Santos, Avesani, Fernandes Canziani, Draibe, Cuppari, 2003).

In a healthy group of 29 subjects examined by Elia et al., NIR method had little or no advantage over other simple methods in predicting body composition measured by classical whole-body densitometry. NIR method was also found to underestimate body fat increasingly as the degree of adiposity increased. This under-estimation was found to be particularly marked in a small and separate group of grossly obese women, BMI greater than 50 kg/m^2, whose body composition was assessed by total body potassium as well as by densitometry (Dumitru, 1997).

Heyward et al. concluded that all three field methods, respectively SKF, bioelectric impendance and NIR compared with hydrostatic weighting, accurately estimate the percent of body fat for nonobese women; however, none of these three methods is suitable for estimating the percent of body fat for obese women (Heyward, Cook, Hicks, Jenkins, Quatrochi, Wilson, 1992).

One study concluded that, SKF is higher correlated with under water weighting than did FUTREX 5000 with under water weighting for males (0.95 versus 0.80), females (0.88 versus 0.63), and the whole group (0.94 versus 0.81) and FUTREX 5000 overestimated body fat in lean subjects with less than 8% fat and underestimated it in subjects with greater than 30% fat. Analyzing this, the authors concluded that, SKF give more information and more accurately predict body fat, especially at the extremes of the body fat continuum (McLean and Skinner, 1992).

The present findings indicate that, the FUTREX 5000 provide more accurate estimates of body fat percent than the FUTREX 5000A or FUTREX 1000 instruments (Smith, Johnson, Stout, Housh, Housh, Evetovich, 1997). Continued research with expanded populations is needed to further demonstrate and evaluate the utility of FUTREX 5000A device (Cassady, Nielsen, Janz, Wu, Cook, Hansen, 1993).

Conway et al. concluded that, body composition (percentage fat) estimated in 53 adults (23 to 65 years of age) by infrared interactance, is correlated with SKF (r = 0.90) measurements. They conclusioned that, the method is safe, noninvasive, rapid, easy to use, and may prove useful to predict percentage body fat, especially in the obese (Conway, Norris, Bodwell, 1984).

SKF method is still a reliable technique of BF estimation, but if it's not realized with the most accurately instruments the results trends to have errors in BF estimation and FM, respectively FFM (Cyrino, Okano, Glaner et al., 2003). The NIR method is still a questionable technique for BF estimation (McLean and Skinner, 1992; Michael, Jan, Wendy, 2003; Wagner and Heyward, 1999).

The objective of this study is to examine the relationship between skinfolds (SKF) method (accu-measure caliper) and near-infrared (NIR) method (FUTREX 1000 Personal Body Fat Tester) for body fat percent (BF), fat mass (FM) and free fat mass (FFM) estimation, in Romanian university students.

Methods

The subjects were white Caucasian and students at faculties of Ovidius University in Constanta. The aims and methods of the study were explained to the participants, who chose freely to participate in this study. As a result, the sample included 127 students (97 females and 27 males), with age between 18 and 23 years old.

Body height was evaluated with an error of 0.1 centimeters and body weight was evaluated with a calibrated digital scale, with an error of 0.25 kilograms. For this measurement the subjects were dressed summarily. BMI was calculated to estimate the category of weight for each subject by using the Quetelet formula (Dumitru, 1997).

Percent of body fat was estimated with two methods. The first method consisted in calculation of body fat percent with Jackson and Pollock, (1978), equation, for male subjects and Jackson, Pollock and Ward, (1980), equation, for female subjects. The abdominal (taken vertically with a broad grip, 5cm. lateral to the omphalion (centre of the umbilicus)), chest (taken obliquely along the natural cleavage line of the pectoral between the axilla and nipple) and thigh (vertical fold taken midway between the inguinal crease and proximal border of the patella) skinfolds were measured for …

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Results

In table 1 the differences between sexes were significant only for body height (t = 9.838) and body weight (t = 5.841).

Table 1. Physical characteristics of the subjects

Variables	M ± SD Males (n = 27)	M ± SD Females (n = 97)
Age (years ^{months})	$19^{7} \pm 0^{11}$	$20^{1} \pm 2^{8}$
Body height (cm)	1.789 ± 0.078 *	1.63 ± 0.059
Body weight (kg)	66.074 ± 11.135 *	52.722 ± 7.842
BMI (kg/m^2)	20.598 ± 2.929	19.811 ± 2.485

* differences between sexes, p<0.05.

BMI, body mass index; M, mean; SD, standard deviation; n, number of subjects.

In table 2 the differences between sexes were significant for all variables (BFskf, t = 13.278; FMskf, t = 6.346; FFMskf, t = 11.498; BFnir, t = 7.856; FMnir, t = 2.883; FFMnir, t = 9.861). All variables from SKF method had significant correlations with their correspondent variable from NIR method, when body height, body weight and age were controlled. BFskf was moderate correlated with BFnir for women (r = 0.41) and for men (r = 0.55). FMskf and FFMskf were moderate correlated with FMnir, respectively FFMnir for women (r = 0.41, respectively r = 0.41) and correlated for men (r = 0.60, respectively r = 0.60).

Table 2. Differences between SKF method and NIR method

Variables	Skinfold method (Accu-measure caliper) M ± SD Males (n = 27)	Skinfold method (Accu-measure caliper) M ± SD Females (n = 97)
BFskf (%)	8.962 ± 4.407 * †	21.886 ± 4.704 *
FMskf (kg)	6.25 ± 4.006 * †	11.806 ± 4.085 *
FFMskf (kg)	59.824 ± 8.207 * †	40.915 ± 4.512 *
Variables	**Infrared method (Futrex 1000) M ± SD Males (n = 27)**	**Infrared method (Futrex 1000) M ± SD Females (n = 97)**
BFnir (%)	13.074 ± 5.988 †	22.805 ± 4.475
FMnir (kg)	8.97 ± 5.431 †	12.164 ± 3.615
FFMnir (kg)	57.104 ± 8.225 †	40.557 ± 5.486

* correlated with BFnir, FMnir and FFMnir for males, respectively for women, when height, weight and age are controlled, p<0.05;
† differences between sexes, p<0.05.

BFskf, body fat - skinfolds method; FMskf, fat mass - skinfolds method; FFMskf, free fat mass - skinfolds method; BFnir, body fat - infrared method; FMnir, fat mass - infrared method; FFMnir, free fat mass - infrared method; M, mean; SD, standard deviation; n, number of subjects.

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Discussion

Compared with the anthropometric reference data 1988 – 1994 from United States (National Health and Nutrition Examination Survey, 2005), body height for our subjects was slightly higher for men and slightly lower for women, compared with the corresponding values for Americans. The body weight was lower, for both men and women, compared with the corresponding values for Americans.

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Acknowledgments

I thank all students for participating in this study. No funding was used for this study.

References

Cassady, S.L., Nielsen D.H., Janz K.F., Wu, Y.T., Cook, J.S., Hansen, J.R., 1993, Validity of near infrared body composition analysis in children and adolescents, Med Sci Sports Exerc, 1993 Oct; 25(10):1185-1191.

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National Institutes of Health (NIH). Clinical Guidelines On The Identification, Evaluation, And Treatment Of Overweight And Obesity In Adults. The Evidence Report. Publication No. 98-4083, 1998 Sep: XI-XXX.

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Attention!!! First of all, the article is written on a single column until it is finalized. After finalizing it, you select the whole text after the abstract until the first table or chart and you turn it into two columns. The same operation is done, in order, for (the whole) texts between charts and/or tables; also, the (whole) text, from the last table or chart until the bibliography inclusive, will be turn into two columns. **The paper must be 5-10 pages**.

Tables

The tables including data will be done on a single column and they cannot be introduced into the text as photographs. The counting (consecutive) and the title of the table (conclusive and concise) will be written on the top right hand. The reference to the table (the quotation in the text) will be found in the text that precedes the table. The number of the table, the title of the table, the results, the statistical section and the abbreviation section will be a constitutive part of the table. It is recommended that you merge the data in as few tables as possible. The additional black lines in the tables including data will be colored in white (Table Tools, Design, Pen Color, White, urmat de Draw Table prin care se trasează peste liniile negre suplimentare culoarea albă).

Table 1. Physical characteristics of feminine subjects

Variables	Subjects with dominant upper and lower right limb(n = 8)		Subjects with dominant upper and lower left limb (n = 8)	
Height (cm.)	163,25 ± 4,95	3,032%	162,5 ± 4,309	2,652%
Weight (kg.)	66,088 ± 7,343	11,111%	67,038 ± 5,352	7,984%
IMC (kg/m^2)	24,745 ± 1,827	7,383%	25,368 ± 1,439	5,673%
Percentage of body fat(%)	26,625 ± 2,873	10,791%	26,55 ± 2,964	11,164%
Fat mass (kg.)	17,739 ± 3,56	20,069%	17,91 ± 3,235	18,063%
The values are presented as M ± DS şi CV%.				
IMC, index of body mass; M, mean; DS, standard deviation; CV, variability coefficient; n, number of subjects.				

The connection between the data in the table and the statistical section will be done through identification letters counted in alphabetical order or identification symbols used in the order *, †, ‡, §, ‖, ¶, **, ††, ‡‡, etc.; inside the table, the letters or the identification symbols will be written in the superscript(Home, Superscript) immediately after the data, and inside the statistical section, the identification letters will be written before the hyphen and the statistical comments and the identification symbols immediately before the statistical comments (without a hyphen).

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The tables from other publications should be used with the author's (authors') permission, indicating the bibliographic source where it was taken from.

Example: 0,851 ± 0,044 [a]

Example: a – significantly different compared to the force ratio F150 Right side flexion/ F150 Left side flexion, 0º, for the subjects who practise football, respectively athletics (triple jump), F(2, 12) = 5,5;

Table 2. Means of results of maximum isometric force ratios for feminine subjects who practise different sports

Force ratio	Handball (n = 5)	Football (n = 5)	Athletics (triple jump) (n = 5)
F130 Flexion/ F110 Extension (30º)	0,589 ± 0,109 18,506%	0,556 ± 0,075 13,489%	0,565 ± 0,05 8,85%
F150 Right side flexion/ F150 Left side flexion (0º)	0,851 ± 0,044 [a b] 5,17%	0,942 ± 0,056 [c] 5,945%	0,919 ± 0,03 [d] 3,264%
F120 Right side rotation/ F120 Left side rotation (-30º)	0,972 ± 0,07 7,202%	0,825 ± 0,227 27,515%	1,052 ± 0,019 [e] 1,806%

a – significantly different compared to the mean of the force ratio F150 Right side flexion/ F150 Left side flexion, 0º, for subjects who practise football, respectively, athletics (triple jump), F(2, 12) = 5,5;
b – significantly different compared to the mean of the force ratioF150 Right side flexion/ F150 Perfectly ballanced left side flexion (when all the force ratios are equal to 1), 0º, t=7,572;
c – significantly different compared to the mean of the force ratio F150 Right side flexion/ F150 Perfectly ballanced left side flexion (when all the force ratios are equal to 1), 0º, t=2,316;
d – significantly different compared to the mean of the force ratio F150 Right side flexion/ F150 Perfectly ballanced left side flexion (when all the force ratios are equal to 1), 0º, t=6,037;
e – significantly different compared to the mean of the force ratio F120 Right side rotation/ F120 Perfectly ballanced lesft side rotation (when all the force ratios are equal to 1), -30º, t=6,12;
The values are presented as M ± DS and CV%; Significance limit established at p<0,05.

M, mean; DS, standard deviation; CV, variability coefficient; n, number of subjects; t, test t student ; F, test ANOVA.

Figures
The tables which contain figures will be done on a single column. The counting (consecutive) and the title of the figure (conclusive and concise) will be written on the bottom left side immediately after the figure. The reference to the figure (the quotation in the text) will be found in the text that precedes the table which contains the figure. The figure, the number of the figure, the title of the figure, the statistical section (if necessary) and the abbreviation section will be a constitutive part of the table that contains the figure. When symbols, numbers or letters are used to identify the parts of the figure, each of them should be explained clearly in the statistical section.It is recommended that you merge the data in as few figures as possible. The lines of the table that contains the figure will be transparent. (Table Tools, Design, Borders, No Borders).

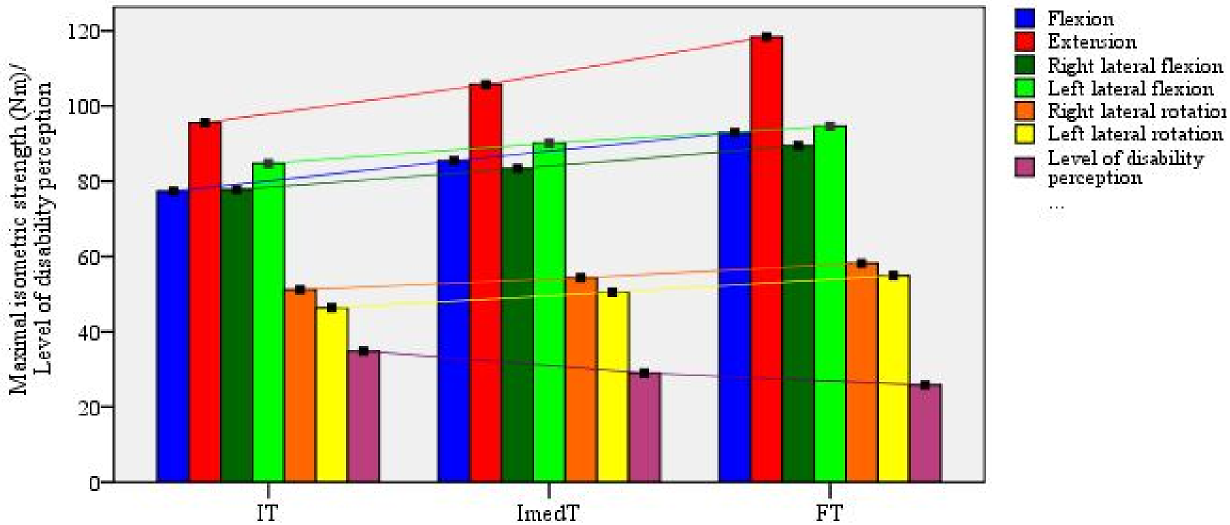

Figure 27. The evolution of means of maximum isometric force and the degree of perception at different tests. Nm, Newton*meter; IT, initial testing; ImedT, intermediary testing; FT, final testing.

The figures will have a resolution of minimum 250 dpi for a better understanding after the print The figures will be presented in original sizes in the text (sizes chosen by the author(s) of the paper), not to be subsequently modified. The electronic formats accepted are: Bitmap (.bmp), JPEG (.jpg, .jpeg) or GIF (.gif).
The results and the statistical explanations will be presented in one way – data in the table, figure in the table or text; these ways of presenting can be combined but they do not have to repeat themselves.

Measures
Length, height, weight and volume will be specified in metrical units (meter, kilogram or litre or their decimal multiples). Temperature will be specified in degrees Celsius (°C). Blood presure will be specified in mm column of mercury (mmHg). Other clinical measurements will be specified in the International System of Units (International System of Units (SI)).

Abbreviations and symbols
The standard abbreviations must be used. You should avoid introducing abbreviations into the title or in the abstract.An abbreviation in parantheses will be preceded by the full description, only the first time the abbreviation is used in the text and only if the abbreviation is not a standard measure unit .

Example: Body weight, body composition, resting metabolic rate (RMR), respiratory quotient (RQ), temperature, fasting serum glucose, insulin, free fatty acids, and ghrelin were assessed at baseline and after 21 d (12-h fast) and 22 d (36-h fast) of alternate-day fasting.
RMR and RQ did not change significantly from baseline to day 21, but RQ decreased on day 22 (*P* < 0.001), which resulted in an average daily increase in fat oxidation of ≥15 g.

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