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This column may contain a maximum of 2,000 characters, including spaces. Please use size 11 font.

<p>Abstract title (Bold letters) Authors: Authors affiliations: (use numbers for different institutions as in example below) AB Smith¹, J Wang² ¹ Obesity Research Center...² Dept. Molecular Genetics...</p> <p>Abstract should include, Objective, Methods, Results (please be specific) and Conclusions</p> <p>See website for detailed instructions. Please note if the abstract submission does not follow the requirements it may be returned and could miss the deadline.</p> <p>Please indicate if presenting author is a student, as he/she may be eligible for a bursary at a later date.: YES</p>	<p>A new simplified method for tracking body volume changes using digital image plethysmography (DiP)</p> <p>Jordan R. Moon, Sarah E. Tobkin, Ashley A. Walter, Abbie E. Smith, Chris M. Lockwood, Travis W. Beck, Joel T. Cramer, Jeffrey R. Stout</p> <p>OBJECTIVE: Tracking body composition changes during weight-loss interventions is important in both clinical and commercial settings. Accurately tracking body volume (BV) changes can be a useful method to examine weight-loss interventions because BV is not dependent on age, ethnicity, sex, or activity level. However, measuring BV using air-displacement plethysmography (ADP) or hydrostatic weighing (HW) is expensive, time-consuming, and requires skilled technicians. Therefore, the purpose of the current investigation was to examine the validity of digital image plethysmography (DiP) for estimating BV before and after a 10-week weight-loss intervention. METHODS: Twenty-two men (M) and women (W) (33±6yr; 12M, 10W) volunteered to have their BV estimated by ADP and DiP measurements. Thirteen subjects (8M, 5W) participated in a 10-week exercise program (EX) while 9 subjects maintained their current activity level (CON). The following previously validated DiP equation (versus HW, $r^2=0.99$, total error (TE)=1.54L, SEM=0.85L) was used to track changes using the DiP method: BV=0.0011(side body pixels)+2.08415(total body pixels to empty pixel space percentage)-69.29694. RESULTS: Pre and Post TE values for both groups were less than 2.55L with high r^2 and low SEE values (EX $r^2>0.97$, SEE<1.72L; CON $r^2>0.98$, SEE<1.94L). DiP accurately estimated BV changes (EX TE=1.06L, SEE=1.00L; CON TE=0.83L, SEE=0.47L) which were not significantly different (constant error, EX=-0.53, CON=0.33p>0.05) compared to ADP. CONCLUSION: The new DiP-based BV equation produced low SEE and TE values and high r^2 values in both the EX and CON groups and accurately tracked BV changes. Therefore, DiP can be considered a valid method for estimating and tracking BV in men and women.</p>
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