



Whole-body Electric Bioimpedance Measurement in the Evaluation of Vascular Function

Citation

Koivistoinen, T. (2016). *Whole-body Electric Bioimpedance Measurement in the Evaluation of Vascular Function*. (Tampere University of Technology. Publication; Vol. 1389). Tampere University of Technology.

Year

2016

Version

Publisher's PDF (version of record)

Link to publication

TUTCRIS Portal (<http://www.tut.fi/tutcris>)

Take down policy

If you believe that this document breaches copyright, please contact cris.tau@tuni.fi, and we will remove access to the work immediately and investigate your claim.

Errata

Whole-body Electric Bioimpedance Measurement in the Evaluation of Vascular Function

Page 11: IDF International diabetes **federation**

Page 21: **Missing reference;** Parameters commonly used to characterise the (local) elastic behaviour of the arteries are compliance (C) and distensibility (dist), defined as the absolute (ΔV) and relative ($\Delta V/V$) change in local arterial volume (V) for a change in pressure (Δp) (**Reneman et al. 2005**).

Page 23: **Missing reference;** When applied simultaneously to the posterior and anterior walls of the artery, direct information on the change in diameter over time (distension waveform) is provided (Figure 2.2) (**Nichols et al. 2001**).

Page 24: ...the major determinants of PWV are arterial wall thickness and lumen diameter (Asmar et al. 1995, Cavalcante et al. 2011).

Should read; ...the major determinants of PWV are arterial wall thickness, **wall material properties** and lumen diameter (Asmar et al. 1995, Cavalcante et al. 2011).

Page 31: **Equation 20 (v_0-v_1 , not v_1-v_0);** $\Delta R=R_n-R_0=\rho \cdot l^2 \cdot [(v_0-v_1)/(v_0 \cdot v_1)]=-(\rho \cdot l^2 \cdot \Delta v)/(v_0 \cdot v_1)$
 $=-(\rho \cdot l^2/v^2) \cdot \Delta v$

Page 31: **Missing reference;** where v_0 is the original volume of the object and v_1 the volume after the addition of blood, which for small changes in v is $v_0 \approx v_1$. Thus, the relationship between the volume of a blood pulse and the related resistance change can be rewritten as (**Kauppinen 1999**):

Page 31: ΔR (from the equation 21) is replaced by the first derivative (dZ/dt) of the amplitude of the heart synchronous impedance variation (ΔZ).

Should read; ΔR (from the equation 21) is replaced by the **product of the maximum negative rate of the** first derivative (dZ/dt) of the amplitude of the heart synchronous impedance variation (ΔZ) **and T**.