

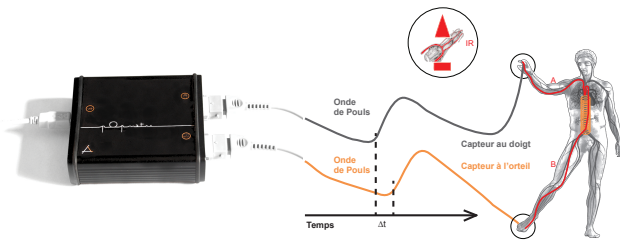
## pOpscore® a new index to evaluate arterial ageing independently of arterial blood pressure.

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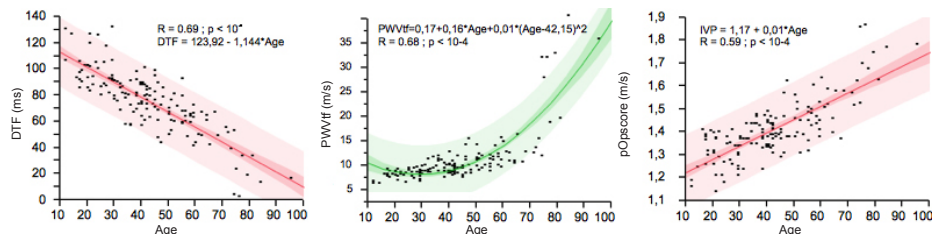
**Hypothesis:** PWV don't correlate with age in the upper limb but in the aorta and lower limb.

**Aim:** To study the relationship between ageing and indices based on pulse wave transit time (PWTT) between toe and finger.

**Material and methods:** measurements were performed in 300 patients in primary care and occupational practice, after 5 minutes of supine rest using a new device **pOpmètre®** - Axelife SAS - France - which measures the toe and finger PWTT relative to R-ECG wave. Difference of PWTT between the toe and finger (DTF) was computed and, using a chart based on body height, we calculated the PWVtf [PWVtf = k \*subject's height / DTF] and the **pOpscore®** (toePWV / fingerPWV) indices.



	Sex anova (F; p)	Age (years) (r <sup>2</sup> ; p)	Weight (Kg) (r <sup>2</sup> ; p)	Height (cm) (r <sup>2</sup> ; p)	SBP (mmHg) (r <sup>2</sup> ; p)	DBP (mmHg) (r <sup>2</sup> ; p)	MBP (mmHg) (r <sup>2</sup> ; p)	BMI (Kg / m <sup>2</sup> ) (r <sup>2</sup> ; p)
DTF sec	0.01; ns	0.69; 10 <sup>-4</sup>	0.001; ns	0.02; 0.08	0.29; 10 <sup>-4</sup>	0.07; 10 <sup>-3</sup>	0.18; 10 <sup>-4</sup>	0.04; 0.01
PWV tf m/s	0.10; ns	0.69; 10 <sup>-4</sup>	0.003; ns	0.01; ns	0.22; 10 <sup>-4</sup>	0.03; 0.02	0.12; 10 <sup>-4</sup>	0.014; ns
pOpscore®	0.04; ns	0.60; 10 <sup>-4</sup>	0.008; ns	0.01; ns	0.23; 10 <sup>-4</sup>	0.07; 10 <sup>-3</sup>	0.15; 10 <sup>-4</sup>	0.02; 0.04



**Results:** Of the tested 300 patients, 147 (93 men and 54 women aged 45yrs ± 2 vs. 40yrs ± 2, p=0.048 respectively) with 0 or only 1 conventional risk factor and without known POAD or Vasodilator therapy.

Using stepwise regression analysis, (variables to enter: Age, BMI, SBP, DBP, MBP), 1) DTF was dependent with age (p < 0.0001) and SBP (p < 0.01); 2) PWVtf with age (p < 0.0001), SBP (p < 0.01) and DBP (p < 0.05); 3). **pOpscore®** was dependent only with age (p < 0.0001) not with SBP (p > 0.07).

### Conclusions:

- All variables were correlated to age and blood pressure.
- **pOpscore®** is related only to ageing independently from blood pressure.
- **pOpmètre®** is a promising technique for the routine determination of vascular ageing in primary care medicine.