The correlation between auto - algometry - threshold and subject's height is due to the test execution speed

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Pain transmission is modulated by many peripheral and central factors. To permit the objective evaluation of pain threshold in humans, an auto-algometric procedure has been described. A still unexplored question is whether the execution speed of this procedure can affect the estimation of the pain threshold. To this end, 20 healthy volunteers were asked to execute the test slowly or quickly on two different days in random order. The test consisted of applying increasing pressure of the fingertips and finger-backs of four fingers (i.e. eight sites were evaluated) for two times: until a minimum pain sensation (first time, minimal test) or a maximally tolerable pain sensation were evoked (second time, maximal test).

The results showed an important correlation between subjects’ height and pain thresholds when performed quickly (r\textsuperscript{2} = 0.29 for the minimal test, r\textsuperscript{2} = 0.32 for the maximal test), while this correlation almost disappeared when the test was performed slowly (r\textsuperscript{2} = 0.01 for the minimal test, r\textsuperscript{2} = 0.09 for the maximal test) (fig. 1).

This result shows the importance of instructing the subjects under algometric evaluation to execute the test slowly, and to check the execution speed to obtain a more reliable measure; a dedicated software to obtain an objective evaluation of the execution speed is probably the best solution.