

**POSSIBILITIES FOR APPRECIATION OF MANUAL  
THERAPY IN CASES OF CERVICAL BLOCKS USING  
ELECTRODERMATOMETRY**

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With the development of modern manual therapy and its straight effect on the intervertebral joints, disks and muscles, concerned by functional blocks, appears the problem of its objectifying. Electrodermatometry is an objectifying factor after physical therapy with super-sound, tissue-massage, low frequency current. Lewit shows the ability for application of electrodermatometry after manual therapy but publications and studies about this factors are quite insufficient. Aim of examination: Objectifying the effect of manual therapy (MT) in cases of cervical blocks by electrodermal resistance (EDR). Object of examination were 88 patients with blocks at C<sub>1/2</sub> and C<sub>2/3</sub> levels combined with blocks at C<sub>6/7</sub>-Th<sub>1</sub> level. Patients were divided into 2 groups: a) - experimental - 64 patients (17 men and 47 women) with mean age of 40,8 ± 7,0 years. They were treated only with manual therapy by one person; b) - control - 24 patients (10 men and 14 women) with mean age of 40,9 ± 7,1 years. They were treated with medicaments - Neuralgin (3x1 dr.) and massage neck (7-10 procedures). EDR was measured by digital multimeter Tektronix (USA) and our appliance for bipolar measurement of EDR. EDR was measured paravertebrally in corresponding dermatoms C<sub>3</sub> and C<sub>6</sub> at levels C<sub>2/3</sub> and C<sub>6/7</sub>. At the beginning a third measurement was done in the indifferent zone at level C<sub>4/5</sub> which was out of blocks and we used it for reference point for EDR values at intact level.

Table 1. EDR values in kΩ in group A

Level	Prior to MT	Just after MT	At the end of MT
C <sub>2/3</sub>	x = 94,6 ± 17,9	x = 91,9 ± 15,4 t = 0,93; p < 0,1	x = 107,5 ± 18,6 t = 4,39; p < 0,001
C <sub>6/7</sub>	x = 100,2 ± 21,9	x = 97,8 ± 18,3 t = 0,64; p < 0,1	x = 112,3 ± 24,3 x = 2,7; p < 0,0 <sup>1</sup>
Ind. zone	x = 108,0 ± 20,2		

In this group before MT 49 patients showed values lower than these in the indifferent zone (76,6%). Fifteen patients showed values above 108 K for C<sub>2/3</sub> segments. The fall below indifferent zone before MT at level C<sub>6/7</sub> was registered in 44 patients (68,7%) but light uprise was registered in 20 ones (31,2%). Just after MT 56 patients (57,8%) reacted with fall; 8 ones (12,5%) - with uprise at level C<sub>2/3</sub>; 37 ones (57,8%) reacted with fall and 27 (42,2%) with uprise at level C<sub>6/7</sub>. When the course of MT was finished significant uprise was showed at the two levels. Only 6 patients/9,4%/ showed fall at level C<sub>2/3</sub> and 10 patients (15,5%) showed fall at level C<sub>6/7</sub>. In two patients there was no change.

Table 2. EDR values in k $\Omega$  in the control group B

Level	Before treatment	After treatment
C <sub>2/3</sub>	x = 97,04 ± 18,2	x = 104,2 ± 17,6 t = 1,41; p < 0,1
C <sub>6/7</sub>	x = 101,1 ± 18,8	x = 110,1 ± 20,6 t = 1,5; p < 0,1
Ind. zone	x = 106,7 ± 17,7	

Seventeen patients (70,7%) reacted with EDR uprise at level C<sub>2/3</sub> and 6 ones (25%) - with fall after treatment. One patient did not show any change; 17 patients (70,7%) reacted with EDR uprise at level C<sub>6/7</sub> and 7 patients (29,2%) with fall. It is shown that not only the connection between vegetative nervous system (VNS) and skin dermatoms but also the connection between VNS and cervical part of the vertebral column. In this region the relations between vegetative nerve points and articulation apparatus are very close. So we look at EDR as reflex reaction connected with nociceptive irritation of deep structures of the disk or of intervertebral ones caused by corresponding blocks. We consider that this fall is caused by sympathicotonic reaction as a result of striking technics manipulation. The uprise of EDR in the other patients is caused by the softer manual technics used by us (mobilizations, tractions) and it is of the higher blocks. Nociceptive irritation of intervertebral structures as a result of persistant functional blocks with high localization leads to uprised sympathetic excitation in the corresponding segment which reflects on the EDR fall. More significant fall of the same after manipulation with following regulation of the vegetative balance leads us to the conclusion that good therapeutic effect of MT goes through the way of short sympathicotonic reaction in result of the technics of this method.