

**CRITERIA FOR QUALITY ASSESSMENT OF DIGITAL IMAGES OF BURNS IN  
TELEMEDICINE**

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The effectiveness of the burn treatment depends greatly on the possibility to promptly provide specialized medical care. One of the ways able to make specialized care more accessible to the population of distant areas is telemedical consulting. Telemedical assessment of burns is mainly based on analysis of digital images of the affected areas. Nevertheless, no criteria for assessment of digital images quality in telemedical evaluation of burns have been formulated yet.

To define criteria for minimal resolution of digital images of the burns, we demonstrated the set of 45 images of burns to each of 7 experts in pediatric burn center, using a specially developed software, ResolutionMark. Each new image of the set was demonstrated at a pseudo-random resolution. An expert had to evaluate the resolution of each image using five-score scale ('very bad', 'bad', 'satisfactory', 'good', and 'perfect'). Both experts' scores and factual resolutions of the images were recorded and afterwards statistically analyzed.

It was found that the images with resolution of 0.69 mega pixels had mean quality score of  $3.0 \pm 0.11$  (i.e. 'satisfactory'), while images of higher resolution (2.8 mega pixels) had mean quality score of  $4.6 \pm 0.06$  (i.e. close to 'perfect',  $p < 0.0001$ ).

Therefore, to provide the best quality of images depicting the area of burns in telemedicine, optimal resolution of digital images should be at least 2.5 mega pixels. The use of images of lower resolution (0.7-2.5 mega pixels) should be as limited as possible, while the use of resolution below 0.7 mega pixels cannot be recommended at all.