

Pomiary temperatury powietrza w jamach nosa i jamie ustnej

Air temperature measurements in nasal cavities and oral cavity

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Summary

Aim. Aim of this study was to check at the hospital the electronic thermometer for fast measurement of air temperature in upper airways. The nose ability of heating of inspired air and heat recovering from expired air was evaluated. Measurements from respiration through the oral cavity were compared. **Material and methods.** The study was carried out in a group of 30 people (6 female and 24 male), age group 18 to 62 (mean age: 33.5 years old). Almost the half of participants had no deviation from normal state in laryngologic examination. The rest of participants had nasal septum deviation (7 persons), nasal vonchae hypertrophy (3 persons) and grade I nasal polyps (2 persons). The measurements of air temperature in upper air ways was done using specially designed and constructed measurement system. **Results.** The air inspired through the nose and oral cavity is heated during respiration. For typical external conditions ($T = 22^{\circ}\text{C}$ i $\text{RH} = 50\%$) the nose heats inspired air 1,5 times better then oral cavity (short time range of measurement ~ 1 min.). Heat from expired air is recovered for both nasal cavities and oral cavity. Nasal cavities respiration ability for heat recovery from expired air is 3 times higher then oral cavity respiration. **Conclusion.** The paper concerns the system for inspired and expired temperature measurements by miniature thermometer in different places of upper airways. Presented system can be a useful instrument for evaluation of thermal nasal cavities function.