

**THE EFFECT OF RANGE OF MOTION EXERCISES OF THE WRIST AND  
TOES ON THE SHIVERING OF PATIENTS  
POST SPINAL ANESTHESIA SURGERY  
(IN THE RECOVERY ROOM AT LAVALETTE HOSPITAL, MALANG)**

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**ABSTRACT**

*Shivering is one of the side effects that needs to be considered in post-spinal anesthesia surgery patients, because it causes hypothermia which can result in increased oxygen consumption. This study aims to determine the effect of wrist and toe range of motion exercises on shivering in patients after spinal anesthesia surgery. This type of research is quasi-experimental with a pre-test post-test control group design and purposive sampling technique and a sample size of 36 respondents consisting of treatment and control groups. The inclusion criteria in this study were post-operative patients with spinal anesthesia who experienced grade 2 - 4 shivering, with the independent variable namely range of motion of the wrist and toes while the dependent variable was shivering. Range of motion exercises for the wrists and toes were carried out for 30 minutes, observed in the first and second 15 minutes. Data were collected using SOPs and observation sheets for degrees of shivering according to the Crossley and Mahajan scales. The results of the influential data using the Man Whitney test on the degree of shivering pre test-post test obtained a p-value of 0.000 (<0.05). Range of motion exercises carried out for 30 minutes can have an effect on reducing the degree of shivering. Range of motion exercises for the wrists and toes have an effect because muscle contractions cause the body's metabolism to increase so that heat production in the body also increases.*

*Keywords : Range of motion, shivering, post surgery, spinal anesthesia*