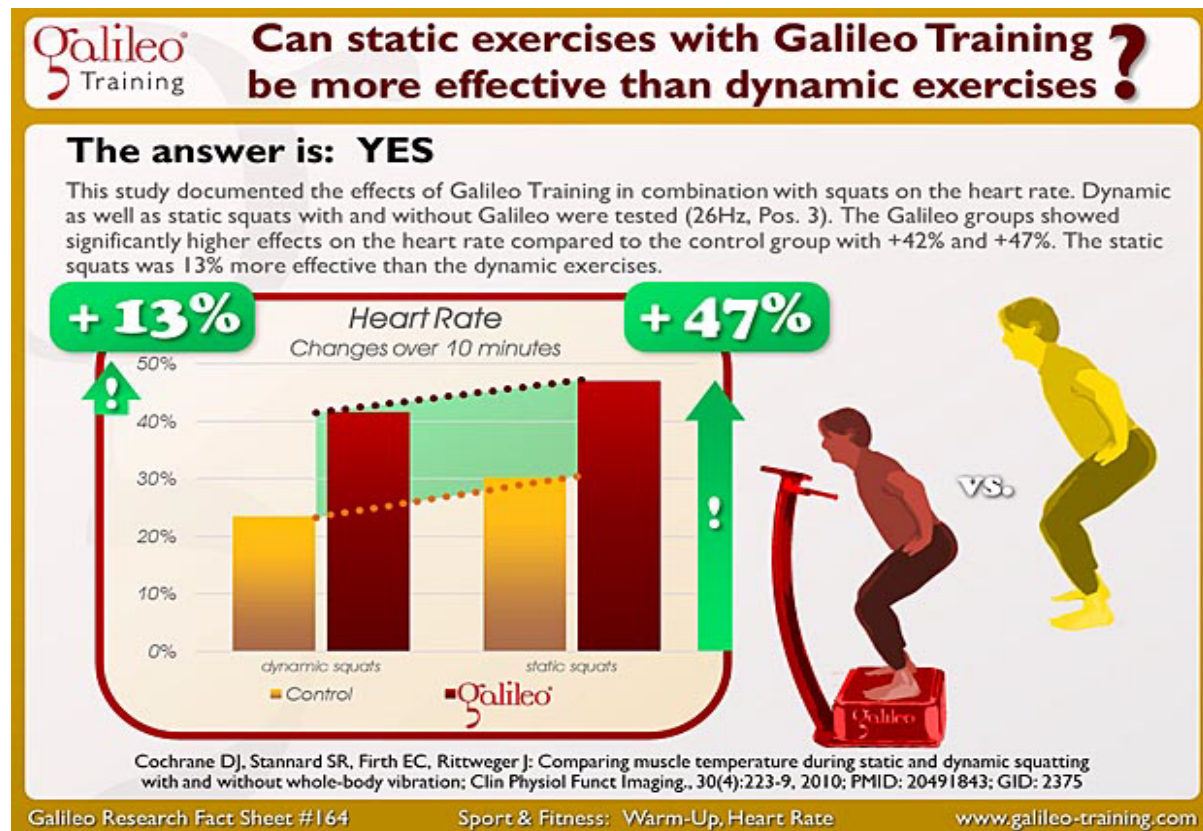


## Galileo Research Fact Sheet #164: Can static exercises with Galileo Training be more effective than dynamic exercises?



As discussed in #GRFS129, this study originally investigated the short-term effects of Galileo Training on warmup effects based on muscle temperature and heartrate. Main outcome of the study were therefore the advantages of Galileo Training compared to traditional warm-up training. But another interesting aspect results from comparing the different training modalities: For training with and without Galileo Training dynamic as well as static exercises where used. For the used outcome parameters static exercises showed an increase of 13% compared to dynamic exercises.

One of the Backgrounds of this observation is the Time under Tension (basically how long is the muscle activated during the exercise) – the longer the time under tension the faster the exhaustion. Between each repetition of a dynamic exercise there is a short time of relaxation of the muscle, therefore, for a given period of time, a static exercise will cause a longer time under tension compared to a dynamic exercise.

For practical training this offers an interesting benefit: static exercises are easier to perform and therefore more controlled and reproducible – and according to the study results they are also more effective. However, according to training science exercises should not be carried out as one specific joint angel only – simple because different joint angles target different aspects of the muscle. Therefore, when using static exercises, there should still be certain variation of the used joint angles. For example, the knee angle can be changed between sets (1st set 90°, 2nd: 70°, 3rd 50°) or alternatively also within one set – just make sure changes are very slowly so to prevent relaxation of muscles.