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基于sEMG的按摩椅绩效人机评价模型实验研究

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摘要:
针对机械式按摩椅缓解肌肉疲劳的绩效,提出了基于表面肌电（sEMG）信号的人机评价模型。实验要求两名被试者在执行静力性标准俯卧撑（SPU）动作之间,分别采用静坐与按摩两种方式恢复肌肉疲劳,并在SPU过程中采集竖脊肌的sEMG信号。根据模型的评价指标对实验数据进行了比较与分析,结果表明,SPU后采用拍打按摩恢复对竖脊肌疲劳缓解的效果好于静坐恢复的效果,从而验证了模型在按摩椅人机评价上的可行性。

关键词:
按摩椅;表面肌电;工效学;评价模型;肌肉疲劳

A Pilot Study on Ergonomics Evaluation Model of Massage Chair Performance Based on sEMG

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Abstract:
The purpose of this paper was to evaluate the effects on the relaxation of muscular fatigue using an automated massage chair.
Two healthy participants performed the static standard push-up(SPU) exercise respectively before and after recovering from sitting still without massage and beat massage on the massage chair.The sEMG signals were recorded during SPU
exercises.An ergonomics evaluation model was developed based on sEMG,in which experimental data were analyzed by indexes. Results show the effects on the relaxation of
erector spine fatigue from beat massage are better than that from sitting still.In this respect, the feasibility of the model on massage chair ergonomics evaluation was verified.

Keywords:
massage chair;surface electromyography(sEMG);ergonomics;evaluation model;muscular fatigue

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