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sEMG信号变化的对侧负荷效应 [点此下载全文](#)

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摘要:

目的: 观察一侧肢体疲劳负荷条件下对侧相应肌肉的sEMG信号变化特征。方法: 10名女性受试者完成两臂不同负荷等长疲劳实验, 同时记录两侧肱二头肌sEMG信号并考察线性指标平均肌电值(AEMG), 中位频率(MF)和非线性指标复杂度(C(n))、确定性线段百分比(%DET)的变化特征。结果: 30%受试者出现对侧肌肉MF斜率的随变现象, 且观察臂MF下降百分数为负荷臂下降百分数的50%以上; 对所有受试者对照组和实验组各指标变化斜率的均值进行配对t检验, MF, C(n)及%DET差异无显著性意义(P>0.05), 而AEMG斜率存在显著性差异(t=-4.342, P<0.01)。结论: 一侧肱二头肌等长疲劳负荷对对侧未疲劳肱二头肌AEMG斜率变化有显著影响, 存在对侧肌肉MF斜率的随变现象但具有个体差异性, 这可能是中枢神经双侧交叉控制策略的结果。

关键词: [表面肌电信号](#) [肌肉疲劳](#) [对侧效应](#)

Contralateral effect of sEMG signal characteristics [Download Fulltext](#)

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Abstract:

Objective: To observe the sEMG signal characteristics of the lateral muscle were observed when the contralateral homologous muscle fatigued. Method: Ten healthy female performed bilateral biceps brachii (BB) isometric fatigue contractions with different loads on different sides. The sEMG signals of bilateral BB were recorded. Then the parameters AEMG, MF, C(n) and %DET were analyzed. Result: 30% subjects were observed that MF of lateral BB decreased as contralateral BB fatigued and the decreasing percent of the observed lateral was more than 50% of the contralateral decreasing percent. By means of T test between control group and experiment group, no significant change of MF, C(n) and %DET slopes was observed (P>0.05), but the significant change existed in the parameter AEMG (t=-4.342, P<0.01). Conclusion: AEMG slopes of un-fatigued BB are evidently affected by the contralateral BB. Moreover, MF of un-fatigued BB shows that the same trend with the contralateral homologous muscle experiences the fatigue task. It is possible that the central control strategy of bilateral control may contribute to it.

Keywords: [surface electromyography signal](#) [muscle fatigue](#) [contralateral effect](#)

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