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8h驾驶工作中对中年出租车驾驶员腰部肌肉sEMG变化的影响 [点此下载全文](#)

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摘要:

目的: 本研究以驾龄5年以上的中年男性出租车驾驶员为研究对象, 观察其腰部竖脊肌和胫骨前肌表面肌电图相关疲劳指标的变化, 以评价8h驾驶的工作负荷对人体相应部位肌肉疲劳状况的影响。方法: 30名从业5年以上的中年男性出租车驾驶员(年龄 45.6 ± 5.0 岁)为司机组, 15名中年男性坐姿工作者(年龄 46.1 ± 4.8 岁)为对照组。对司机组8h驾驶工作前、后及对照组工作前后双侧腰部竖脊肌和双侧胫骨前肌进行1min持续收缩耐力测试, 同时使用表面肌电测试系统进行表面肌电测试。结果: 8h驾驶工作前后, 司机组双侧胫骨前肌各项指标差异无显著性($P > 0.05$); 双侧腰部竖脊肌各项指标表明, 8h驾驶工作能够引发明显的疲劳反应(MF斜率、MA斜率明显增大, $P < 0.05$; MF截距明显降低, $P < 0.05$), 左侧疲劳反应大于右侧(左侧MF斜率、MF截距明显增大, $P < 0.05$; 左侧MA斜率明显增大, $P < 0.01$; 右侧变化不显著); 安静状态下, 司机组双侧腰部竖脊肌及双侧胫骨前肌的疲劳反应均明显高于对照组。结论: 8h驾驶工作负荷能够引发腰部竖脊肌明显的疲劳反应且两侧不对称; 长时间驾驶能够导致腰腿部肌肉疲劳的慢性累积。

关键词: [长时间驾驶](#) [驾驶员](#) [肌肉疲劳](#) [表面肌电图](#)

The effect of 8 hour driving on sEMG signal changes of lumbar muscles and the tibialis anterior muscles in middle-aged male taxi drivers [Download Fulltext](#)

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Abstract:

Objective: To investigate the muscles fatigue with surface electromyography (sEMG) changes pre- and post- driving. Method: Thirty middle-aged male taxi drivers with over 5 years experience of driving were collected in the study, fifteen age-matched sedentary-worked men were volunteered as control. sEMG was recorded on bilateral tibia anterior muscles and erector spinae muscles with NORAXON EMG device pre-driving and after 8 hours driving. The MF, MA, iEMG of sEMG were analyzed for muscles fatigue. Result: The MF, MA and iEMG showed: significant differences were displayed on bilateral erector spinae muscles, whereas there were no significant change on bilateral tibialis anterior muscles before and after 8h driving. Even more remarkable changes were seen on the left erector spinae muscle than that on the right side. The fatigability of bilateral tibialis anterior muscles and bilateral erector spinae muscles before work in taxi drivers' s group increased significantly compared to that of control group. Conclusion: Eight hour driving job can cause significant and unsymmetrical fatigue in bilateral erector spinae. Long-term prolonged driving can promote fatigue up chronically in lumbar and legs muscles of taxi driver.

Keywords: [prolonged driving](#) [drivers](#) [muscle fatigue](#) [surface electromyography](#)

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