

- 原著 -

咬合支持の安定性が持続的身体運動に及ぼす影響

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How the condition of occlusal support affects the back
muscle force and masticatory muscle activity?

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Abstract:

This study was conducted to determine how the condition of occlusal support affects the back muscle force and masticatory muscle activity. Two groups of subjects were enlisted: sport-trained group and normal group. While electrodes of the electromyography (EMG) were attached to the surface of the masticatory muscles, each subject's back muscle force was recorded during upper body stretching using a back muscle force-measuring device. The task was performed under four different occlusal support conditions: without occlusal splint, with a full-mouth occlusal splint, with a molar splint, and with a anterior splint.

Results showed that without occlusal splint, the masticatory muscle activity was observed in all the subjects when they made the task "freely" (without clenching instruction). However, upon clenching instruction, the back muscle force did not always increase. The back muscle force decreased accordingly under the four conditions: without splint, with full-mouth splint, molar splint, and anterior splint. The importance of mandibular stability was demonstrated by the molar occlusal support. In all conditions, the sport-trained group showed greater back muscle force than the normal group.

抄録: 咬合支持の状態が, 身体運動の1つである背筋力計の引き上げ運動にどのような影響を及ぼすかについて, 運動に対する熟練度の高いスポーツ人と一般人との2群を対象として, 咀嚼筋筋電図を同時記録しつつ検討を行なった。

その結果, 背筋力の引き上げ運動を「自由に」行かせた場合, 全被験者に咀嚼筋活動量が観察された。また, 噛みしめを指示した場合には, 背筋力値は必ずしも向上しなかった。

スプリントを装着して, 咬合支持の状態を変化させると, 背筋力値は「自由に」「全歯列型」>「臼歯部型」>>「前歯部型」の傾向を示し, 運動実行時に臼歯部の咬合支持による下顎位の安定性の重要性が明らかになった。

また, 一般人と比べスポーツ人は, どの状況下においても高い運動能力を示すことが明らかとなった。