# SEX DIFFERENCE IN MOTOR STRATEGY IN RESPONSE TO JAW LOAD

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*Introduction:* There is a close functional integration between the jaw and neck motor systems as well as comorbidity between jaw and neck disability.

*Aim:* To investigate the effect on jaw-neck motor function from resistance load applied to the lower jaw.

*Methods:* Jaw and head movement amplitudes were registered during a jaw-opening-closing task in 12 healthy men and 14 healthy women, using a 3D movement recording system (MacReflex®). Jaw-opening was performed without load and with load to the mandible (1600g, using a helmet connected to a hydraulic system). Differences in jaw and head movement amplitudes with and without load and between men and women were analysed.

*Results:* During loaded jaw-opening, jaw movement amplitudes in women, but not men, decreased compared to jaw-opening without load (P=0.005). Men, but not women, showed larger head movement amplitudes with load (P=0.034). The ratio between head and jaw movement amplitudes increased during the load tests for both women (17% vs 9%; p=0.009) and men (15% vs 7%; p=0.023).

*Conclusions:* Increased load during jaw-opening will affect integrated jaw-neck motor function with an increase in the proportional involvement of the neck. Furthermore, the results indicate sex difference in motor strategies in response to increased jaw load.