

# The effects of posture on nasal resistance to airflow

*R. Eccles, Cardiff, United Kingdom*

Nasal resistance to airflow is influenced by changes in posture due to changes in sympathetic tone to nasal blood vessels and also due to changes in jugular venous pressure (Rundcrantz, 1969; Hasegawa, 1982; Haight and Cole, 1984; Davies and Eccles, 1985). There is some confusion over the relative importance of sympathetic tone and venous pressure as regards changes in nasal resistance caused by changes in posture and we have performed experiments to illustrate how both factors influence nasal resistance.

Our results obtained on normal subjects demonstrate that on changing from sitting to supine there is an increase in total nasal resistance due to an increase in jugular venous pressure. This increase in nasal resistance is mainly due to engorgement of the blood vessels in the nasal passage with the non dominant airflow (i.e. the side with the lowest sympathetic tone).

On changing from the supine to the lateral recumbent position there was a reciprocal change in nasal resistance, with an increase in resistance in the down-side nasal passage and a decrease in nasal resistance in the up-side nasal passage. Similar reciprocal changes in nasal resistance could be induced by applying pressure to the axilla with the subject in the supine position. These results indicate that the changes in nasal resistance brought about by adoption of the lateral recumbent posture are due to reflex changes in sympathetic tone caused by a pressure stimulus to one side of the body.

## REFERENCES

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R. Eccles, Ph.D.

Dept. of Physiology, University College  
Cardiff CF1 1XL, United Kingdom

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