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## To study the role of the nervous system in temporomandibular joint arthritis

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Substance P-, calcitonin gene-related peptide-, and neuropeptide Y-like immunoreactivity in the trigeminal ganglia and temporomandibular joint of rats was examined. Arthritis was induced in female Lewis rats through bilateral injection of a suspension of heat-killed *Mycobacterium butyricum* in paraffin oil into the temporomandibular joint. Control rats received paraffin oil via the same route. Tissues were collected for neuropeptide extraction 28 days after injection and analysed by radioimmunoassay and reverse-phase

high-performance liquid chromatography. Calcitonin gene-related peptide was significantly increased in the arthritic trigeminal ganglia. Substance P, calcitonin gene-related peptide, and neuropeptide Y in the arthritic temporomandibular joint were significantly increased as compared to controls. The results of this study show that sensory and sympathetic neuropeptides may possibly be associated with the development of arthritis in the temporomandibular joint of rats.

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