Neurosensory disturbance (NSD) is a common complication to surgical corrections of mandibular deformities particularly when the sagittal split technique is used. With this technique the inferior alveolar nerve can be directly injured during surgery or damaged when trapped between the two bone segments. The incidence of sensory disturbance after sagittal split osteotomy varies considerably between centres.

As an alternative to sagittal split osteotomy (SSO) the intra-oral vertical ramus osteotomy (IVRO) can be used to correct mandibular prognathism. The main advantage with this technique is the low incidence of nerve damage, which outweighs a period of postoperative intermaxillary fixation.

The clinical studies were carried out to evaluate neurosensory disturbance with regard to kind of surgical procedure, direction of mandibular movement during surgery, the additional procedure of genioplasty, age, gender and the perioperative use of steroids.

Whereas mandibular movement, additional genioplasty or gender did not affect the incidence, age and the perioperative use of steroids seemed to be factors to consider. As expected the incidence of NSD was lower with the use of IVRO than SSO. Also with the latter NSD was comparatively low, when steroids were given perioperatively.

The observation that the introduction of the use of perioperatively administered steroids coincided with the decrease in the incidence of impaired sensibility prompted experimental studies to elucidate the role of the steroids. These showed that steroids facilitated nerve healing as reflected in functional tests and in the nerve morphology [recruited macrophages and nerve growth factors (NGF-R p75)].