



OROFACIAL CLEFTS

Assessment of growth and treatment
outcome

Laurent A.M. THIERENS

Department of Oral Health Sciences - Orthodontics

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Thesis submitted to Ghent University and Catholic University Leuven in partial
fulfilment of the requirements for the Joint Degree of Doctor in Health Sciences and
Biomedical Sciences, respectively.

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This thesis handled 3 hypotheses in the research area of **cleft lip and palate**.

The **first hypothesis** focused on outcome assessment of the early surgical interventions of unilateral cleft patients in Flanders. No significant differences were detected between the two collaboration Flemish cleft centers using a plaster cast analysis despite significant differences in their surgical protocols.

The **second hypothesis** focused on the objective evaluation of facial surface data acquired with non-ionizing 3D imaging technologies. Different assessment methods were investigated. Unbiased, three-dimensional shape analysis with an automated mapping strategy showed potential in this research field and was subsequently applied on a cohort of 10-year-old children with unilateral cleft lip and palate undergoing an alveolar bone graft.

The **third hypothesis** focused on the onset and/or velocity of skeletal maturation in cleft lip and/or palate patients. After all, particular orthodontic or orthopaedic appliances are only effective during the appropriate stages of growth. A radiographic analysis showed a discrete delay in skeletal maturation before the pubertal growth

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spurt of (pre)adolescents with cleft lip and/or palate patients, especially girls.

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