

## Abstract for oral presentation at NOK

### **Purpose**

Insight on orthokeratology lenses (OKL) in terms of description of the modality, efficacy, and adverse effects.

### **Method**

Review of the literature and presentation of data from a Nordic population.

### **Results**

OKL are custom fitted, rigid, gas permeable, reverse geometry lenses, worn during sleep. They induce a vacuum on the cornea, that alters the corneal shape so that the central refraction can be decreased equivalent to up to 5.50 diopters of spherical component and up to 2.50 diopters of astigmatism. During OKL use the axial growth of the eye is reduced significantly. The exact mechanism by which the growth of the eye is altered is not fully understood. Studies have shown, that the relative peripheral refraction becomes hyperopic, higher-order aberrations are induced, and that the choroidal thickness increases during OKL use. These changes are thought to be key factors of the altered eye growth. The most severe adverse event in contact lens use is microbial keratitis. An American study has estimated the risk of microbial keratitis in children using OKL to be 13.9 per 10.000 patient years.

### **Conclusion**

OKL effectively reduce the axial elongation in myopic children, however the treatment is associated with a small but potentially sight-threatening risk of microbial keratitis.