Purpose
The examination of the fetal ear is a promising but still challenging approach in prenatal diagnosis. This study investigated a novel ear length/width ratio based on anatomical landmarks. Additionally, we compared different 3D ultrasound surface rendering modes regarding their potential to depict detailed structures of the outer ear.

Material
We measured both ear length and width of 118 fetal ears from 20 to 40 weeks of gestation to establish a length/width ratio. Additionally, we rendered the volumes in three different surface display modes and one adapted light position. Each image was scored regarding the visibility of distinct structures of the ear relief and indicator scores were evaluated for each mode.

Results
The median of the length/width ratio was 1.9 with a slight decline over the gestational period. The overall visibility of the ear structures differed noticeably between the four surface display modes \((p<0.001)\). The post-hoc comparison showed that the display mode “TrueVue” resulted in the highest indicator scores.

Conclusion
The length/width ratio based on anatomical landmarks of the ear could prospectively be used as a marker in syndrome detection. The study showed a superiority of the surface display mode “TrueVue” for examination of the detailed ear structures.

Figure 1: 3D images of the same fetal ear in the display modes a “TrueVue with preset light position”, b “TrueVue with modified light position”, c “Dynamic Color”, and d “Surface 1”.

EP27.30 - 3D ultrasound evaluation of the fetal outer ear - Novel Biometry Ratio and comparison of different surface display modes