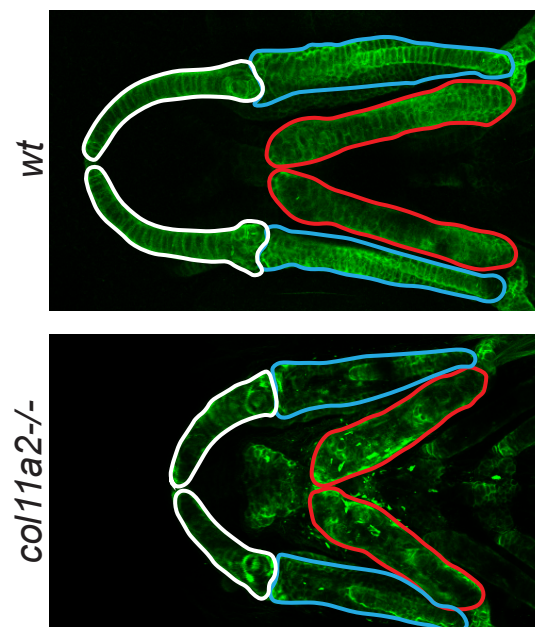


A



B

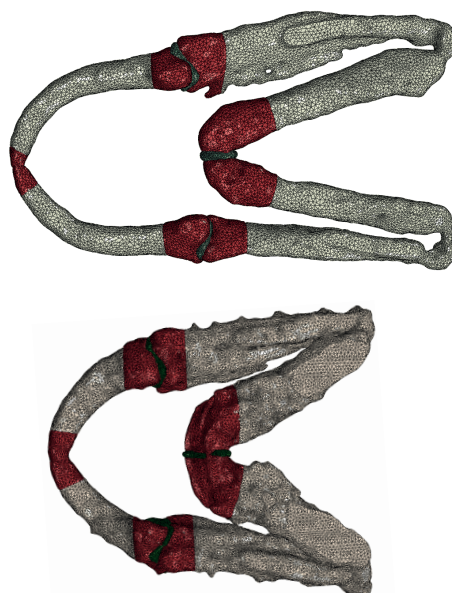


Table 1	Values	
	Wild type	Mutant
Hypertrophic chondrocytes	7.55 MPa	30.53 MPa
Immature chondrocytes	4.29 MPa	5.48 MPa
Joint	0.25 MPa	0.25 MPa
Poissons ratio	0.25	0.25

Supplementary Figure 4: Segmentation of lower jaw elements and assignment of material property values. A) The Meckel's cartilage (white), palatoquadrate (blue) and ceratohyal (red) were segmented from confocal images of 7 dpf wt and *col11a2*^{-/-} zebrafish. B) Material properties from Atomic Force Microscopy were applied to the corresponding regions of the lower jaw. Dark red = Immature chondrocytes in the joint regions, grey = hypertrophic chondrocytes towards the middle of the cartilage element and green = joint. Table 1) values used for Finite Element model generation.