Supplementary Figures

**FIGURE S1.** Record selection for use in modelling treatment response and amblyopia recurrence
FIGURE S2. A flowchart of the treatment response and recurrence prediction models.
FIGURE S3. SHAP feature importance and feature analysis using SHAP summary plot for the response models at 3 months (A) and 6 months (B). SHAP = SHapley Additive Explanations; AE = amblyopic eye; SHAP feature importance plot (left): the values on the x-axis indicate the mean impact on model output magnitude based on SHAP, and the input features on the y-axis are ordered by descending importance.
summary plot (right): Representing feature value for each patient, each dot is colored according to the magnitude of the feature value, with red representing higher feature values and blue representing lower feature values, and dots accumulate vertically to depict density. The higher the SHAP value of a feature is, which indicated the likelihood of the higher the probability of treatment response.

LogMAR-AE = the logMAR visual acuity in the AE; LogMAR-IODabs = the absolute value of the interocular difference of the logMAR visual acuity; 1.57cpd, 2.61cpd, 3.31cpd, 3.75cpd, 13.31cpd, 22.9cpd, 27.44cpd-IODabs = the absolute value of the interocular difference of contrast sensitivity at 1.57cpd, 2.61cpd, 3.31cpd, 3.75cpd, 13.31cpd, 22.9cpd, 27.44cpd, respectively; Sphere cylinder-AE = the spherical equivalent in the AE; Cylinder-AE = the astigmatic degree in the AE; Cutoff-AE = the spatial frequency cut-off in the AE; Cutoff-IODabs = the absolute value of the interocular difference of spatial frequency cut-off; 9.27cpd-AE = the contrast sensitivity at the 9.27cpd of the AE. Cylinder-IODabs = the absolute value of the interocular difference of the astigmatic degree; Sphere-AE = the spherical degree in the AE; Sphere-IODabs = the absolute value of the interocular difference of the spherical degree.