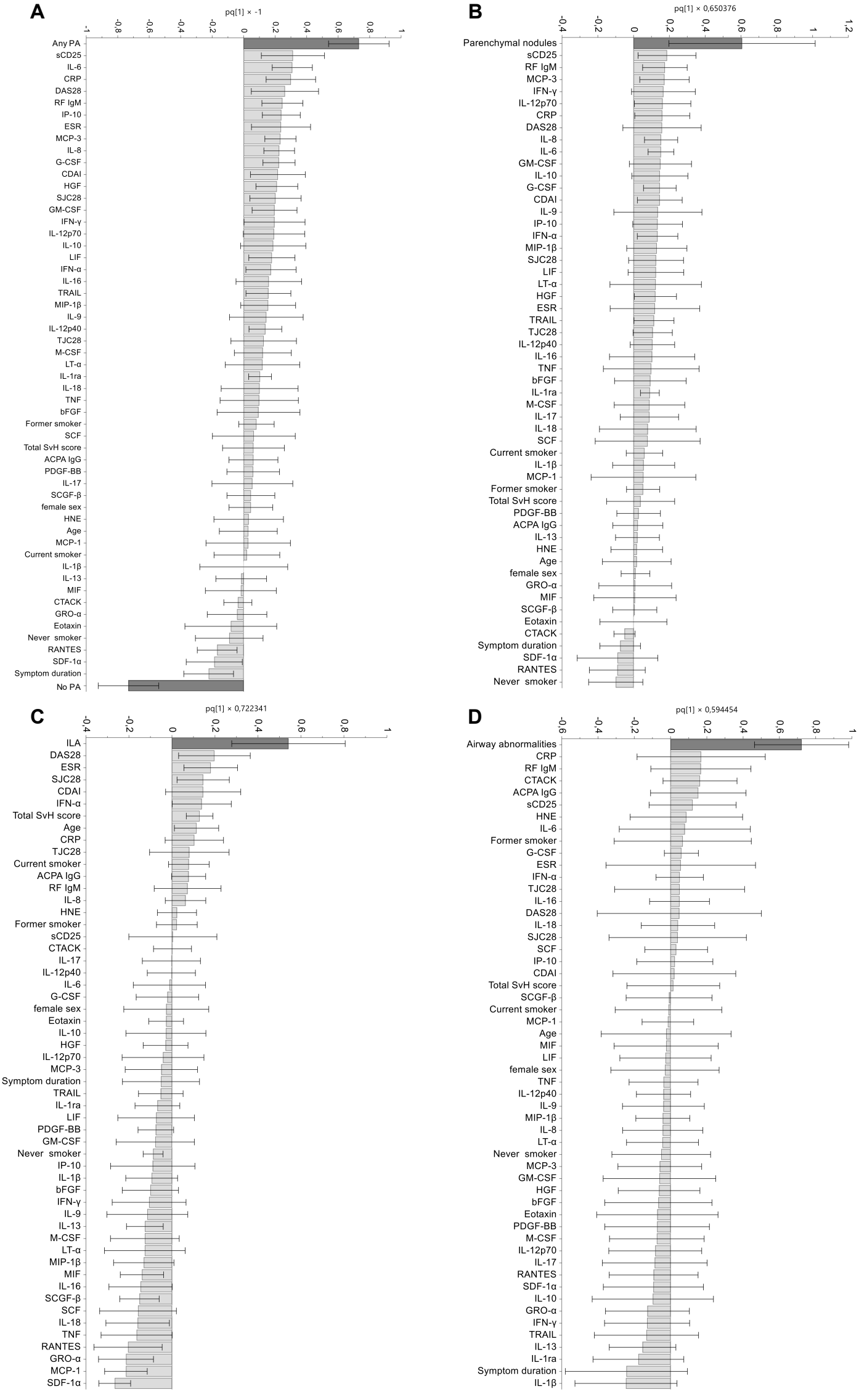
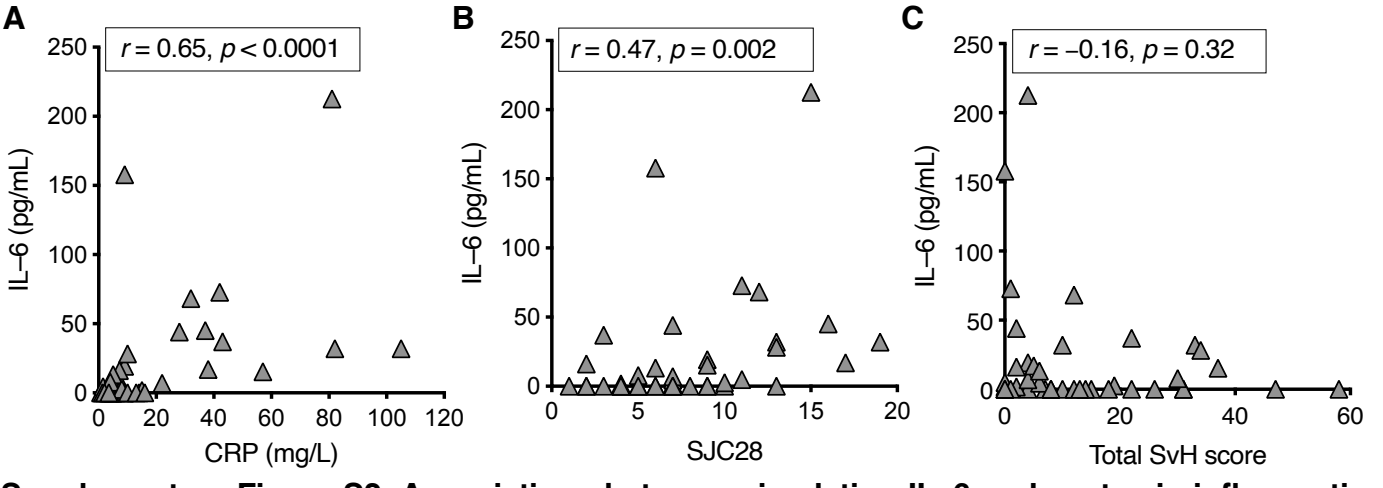
Supplementary Figure S1



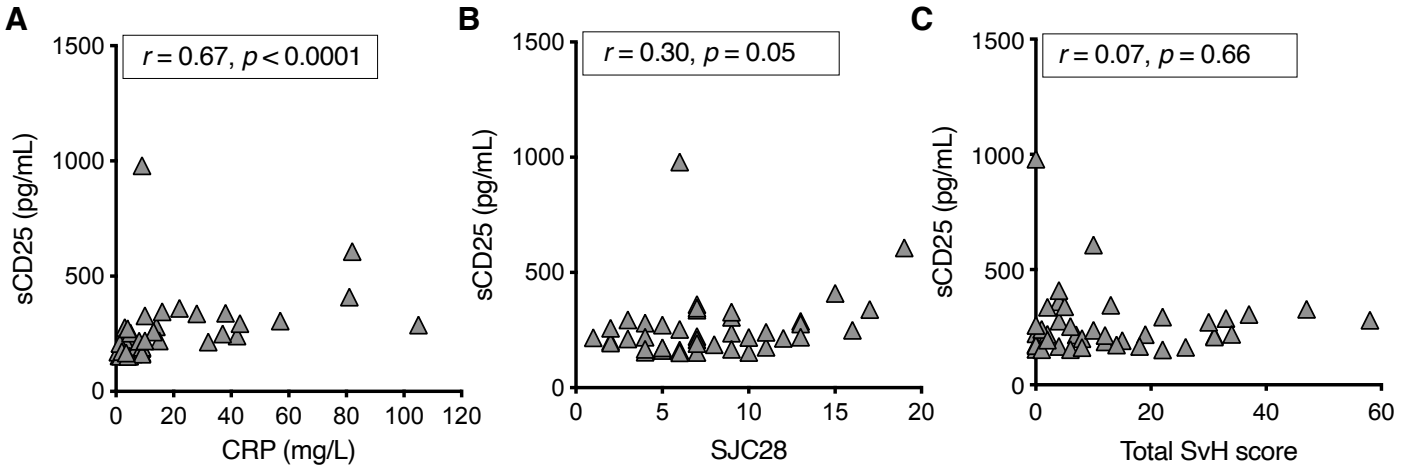
Supplementary Figure S1. Complete loading plots from the multivariate models. (**A**) Orthogonal partial least squares discriminant analysis (OPLS-DA) comparing patients with any pulmonary abnormality and no pulmonary abnormality. (**B–D**) Orthogonal partial least squares (OPLS) models for parenchymal nodules, interstitial lung abnormalities, and airway abnormalities, respectively. Complete loading plots are shown for each model.

Supplementary Figure S2



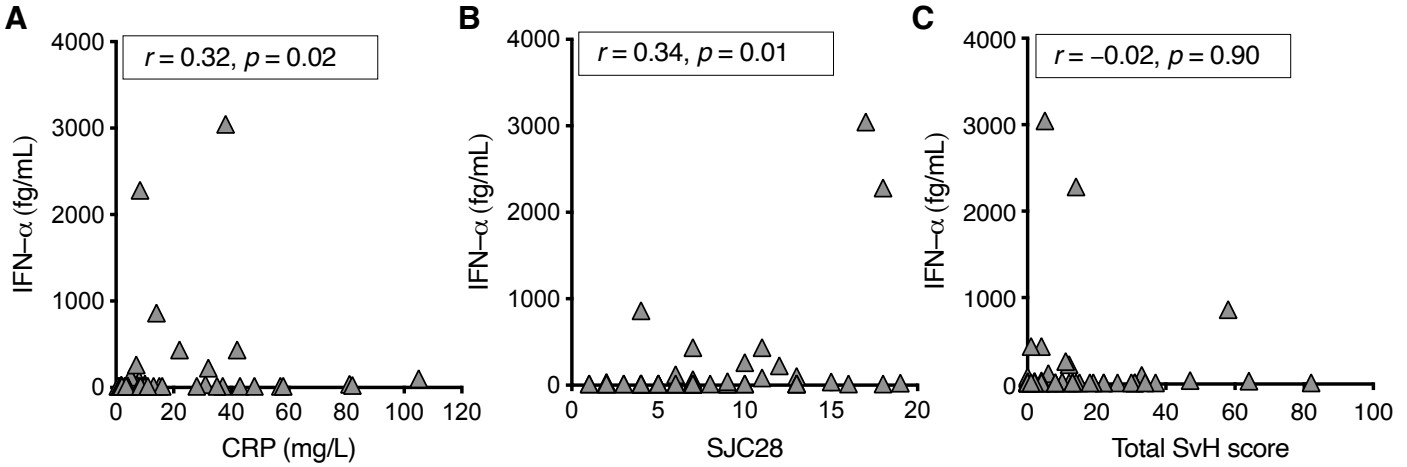
Supplementary Figure S2. Associations between circulating IL–6 and systemic inflammation, joint disease activity, and structural joint damage. (A–C) Correlations between circulating IL–6 levels and CRP (A; n = 42), SJC28 (B; n = 42), and total SvH score (C; n = 41) in patients with untreated early RA. Statistical analysis was performed using Spearman's rank correlation (*r* and *p* values are shown in each panel).

Supplementary Figure S3



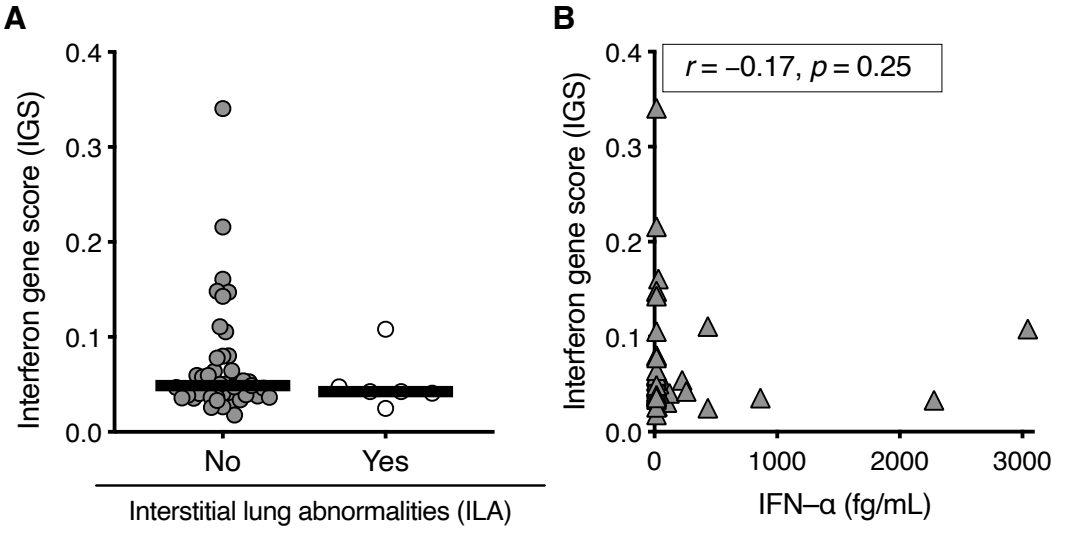
Supplementary Figure S3. Associations between circulating sCD25 and systemic inflammation, joint disease activity, and structural joint damage. (**A**–**C**) Correlations between circulating sCD25 levels and CRP (A; n = 42), SJC28 (B; n = 42), and total SvH score (C; n = 41) in patients with untreated early RA. Statistical analysis was performed using Spearman's rank correlation (*r* and *p* values are shown in each panel).

Supplementary Figure S4



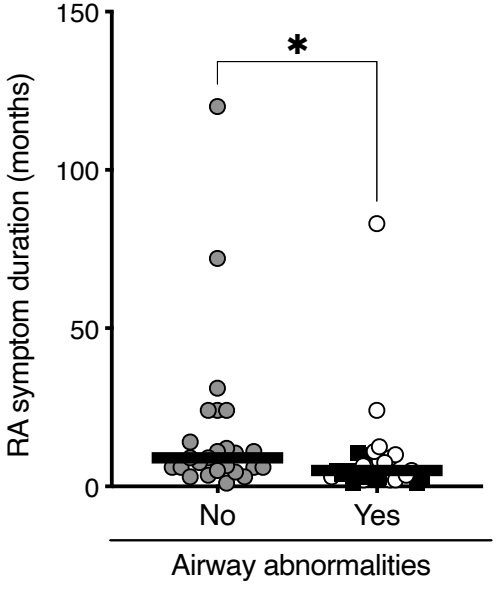
Supplementary Figure S4. Associations between circulating IFN–α and systemic inflammation, joint disease activity, and structural joint damage. (**A**–**C**) Correlations between circulating IFN–α levels and CRP (A; n = 55), SJC28 (B; n = 55), and total SvH score (C; n = 53) in patients with untreated early RA. Statistical analysis was performed using Spearman's rank correlation (*r* and *p* values are shown in each panel).

Supplementary Figure S5



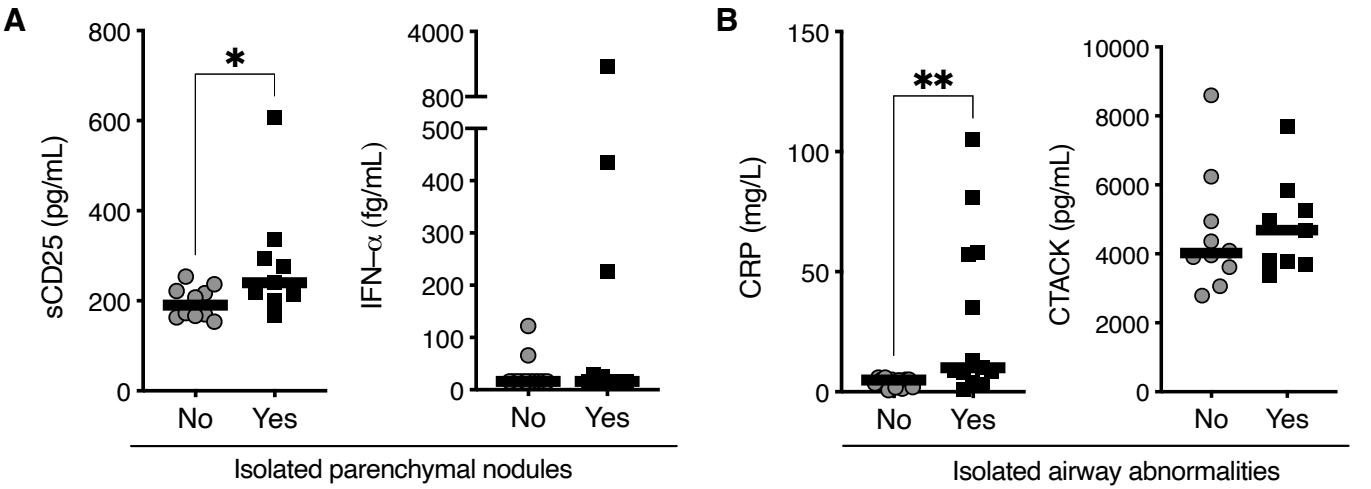
Supplementary Figure S5. Interferon gene expression in relation to interstitial lung abnormalities (ILA) and circulating IFN–α. (**A**) Interferon gene score (IGS) in patients with and without ILA. (**B**) Correlation between IGS and serum IFN–α. Data are shown as individual data points; horizontal lines in (A) represent the median. Statistical analysis was performed using two-tailed Mann–Whitney U tests in (A) and Spearman's rank correlation in (B) (*r* and *p* values are shown in the panel). IGS data were available for 49 of the 55 patients.

Supplementary Figure S6



Supplementary Figure S6. Association between rheumatoid arthritis (RA) symptom duration and airway abnormalities. RA symptom duration in patients with and without airway abnormalities. Patients with isolated airway abnormalities (without concomitant parenchymal nodules or interstitial lung abnormalities) are indicated by filled squares. Data are shown as individual data points with horizontal lines representing the median. Statistical analysis was performed using two-tailed Mann–Whitney U tests. $p < 0.05$.

Supplementary Figure S7



Supplementary Figure S7. Sensitivity analyses supporting the main findings. (A–B) Levels of sCD25 and IFN–α (A), and CRP and CTACK (B), were compared between patients with no pulmonary abnormalities and patients with isolated parenchymal nodules (without concomitant airway abnormalities or interstitial lung abnormalities [ILA]; A) or isolated airway abnormalities (without concomitant parenchymal nodules or ILA; B). Data are shown as individual data points with horizontal lines representing the median. For panel A (right), the y-axis is broken between 500 and 800 fg/mL to improve visualization. Statistical analysis was performed using two-tailed Mann–Whitney U tests. *$p < 0.05$ and **$p < 0.01$.