

Supplementary Figure 1A-E Memory B cells responses to inactivated vaccines in CRD at 1, 2, 3 month.

Supplementary Figure 1 A-E, the frequencies of RBD⁺ resting MBCs, RBD⁺ activated MBCs, RBD⁺ atypical MBCs, RBD⁺ intermediate MBCs, and RBD-specific memory B cells (MBCs) were determined. The Mann-Whitney U test was used to compare the frequencies of MBCs.

Supplementary Figure 2A-K. Humoral immune responses to inactivated SARS-CoV-2 vaccines in CRD subgroups.

The titers of anti-RBD IgG Abs and CoV-2 NAbs in the CB, OPTB and COPD patients and HCs after vaccination are shown in **supplementary Figure 2A, B**(Corona Vac) and **C, D**(BBIBP-CorV). **Supplementary Figure 2 E-I**(Corona Vac) shows, the frequencies of RBD⁺ resting MBCs, RBD⁺ activated MBCs, RBD⁺ atypical MBCs, RBD⁺ intermediate MBCs and RBD-specific MBCs in the CB, OPTB and COPD patients and HCs. **Supplementary Figure 2 J-K**(BBIBP-CorV) shows, the frequencies of RBD⁺ resting MBCs and RBD-specific MBCs in the CB, OPTB and COPD patients and HCs. The Kruskal–Wallis test and Dunn’s multiple comparisons test were employed to compare the Ab titers and the frequencies of MBCs.

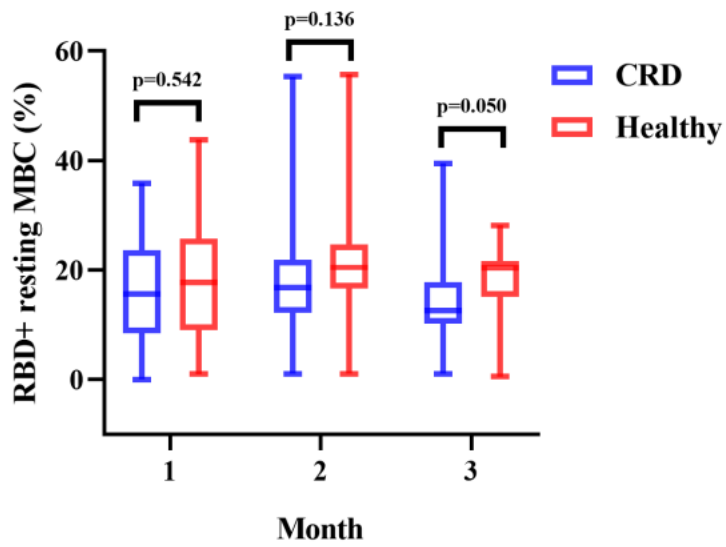
Supplementary Figure 3A-J. Humoral immune responses to inactivated vaccines aged ≥ 60 and < 60 years.

The titers of The titers of anti-RBD IgG Abs and CoV-2 NAbs in the CRD patients and HCs aged ≥ 60 and < 60 years after vaccination are shown in **supplementary**

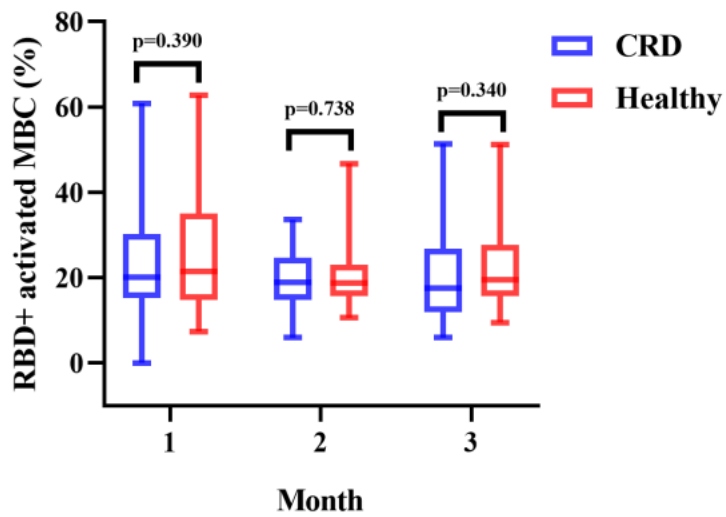
Figure 3A, B(Corona Vac) and **C, D**(BBIBP-CorV). **Supplementary Figure 3E-H**(BBIBP-CorV) shows, the frequencies of RBD⁺ resting MBCs, RBD⁺ activated MBCs, RBD⁺ atypical MBCs and RBD-specific memory B cells(MBCs) in CRD patients and HCs aged ≥ 60 and < 60 years. **Supplementary Figure 3I-J**(Corona Vac) shows, the frequencies of RBD⁺ resting MBCs and RBD-specific memory B cells(MBCs) in CRD patients and HCs aged ≥ 60 and < 60 years. The T test, Mann-Whitney U test were used to compare the Ab titers and the frequencies of MBCs.

Supplementary Figure 1A-E

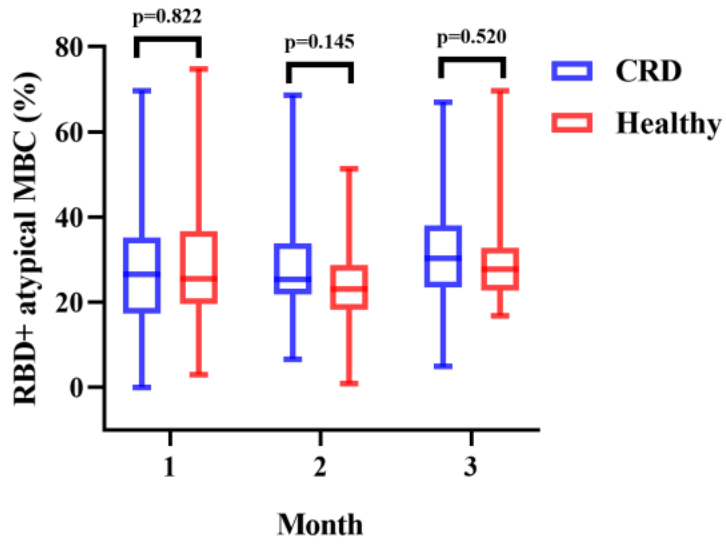
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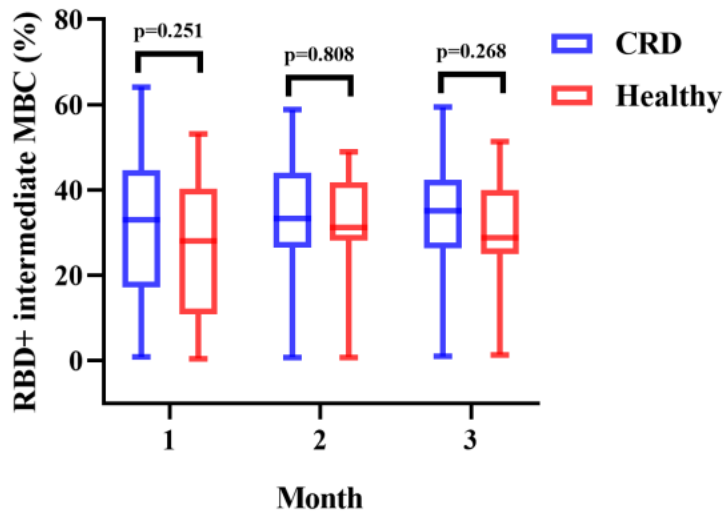
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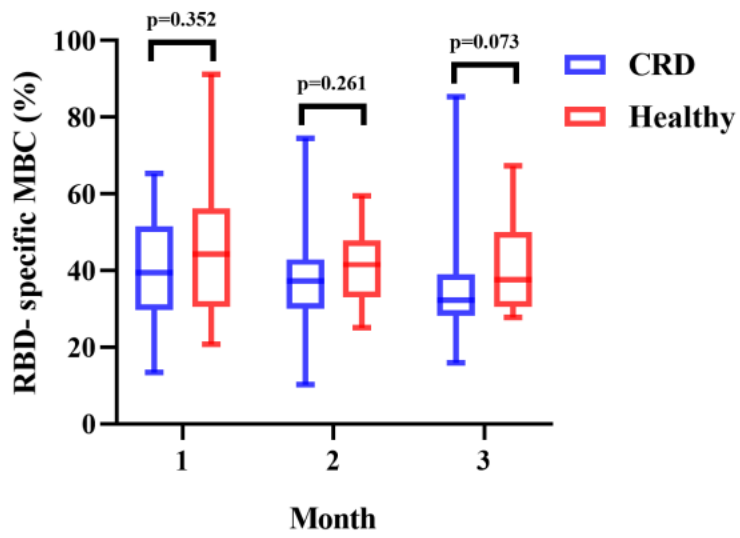
C



D

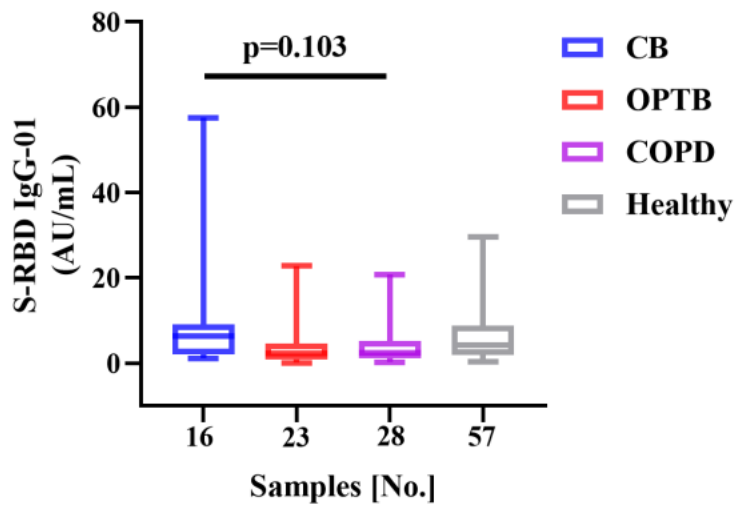


E

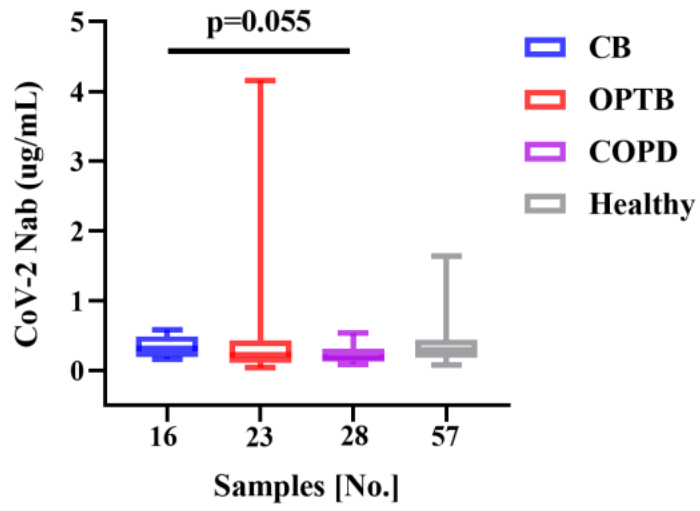


Supplementary Figure 2A-K.

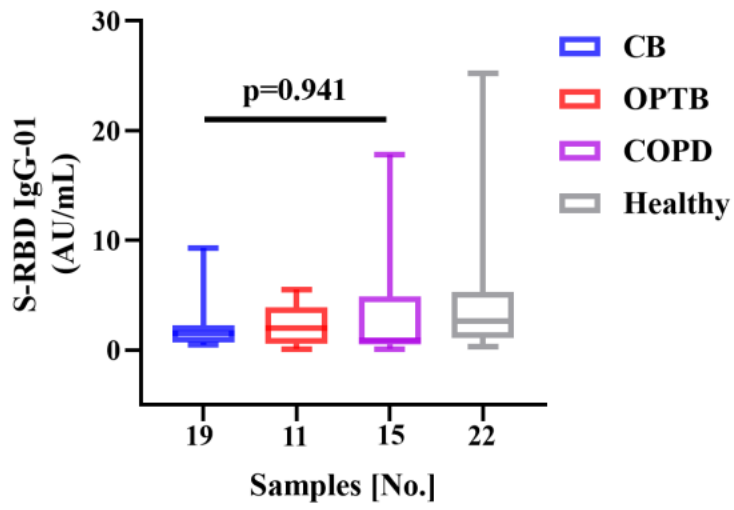
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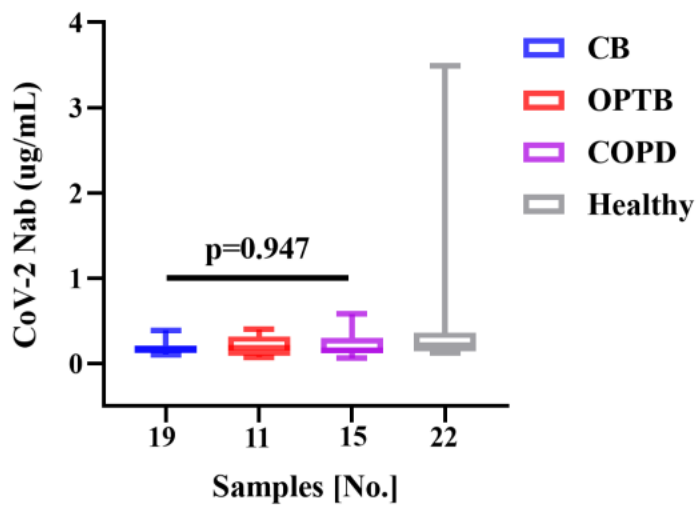
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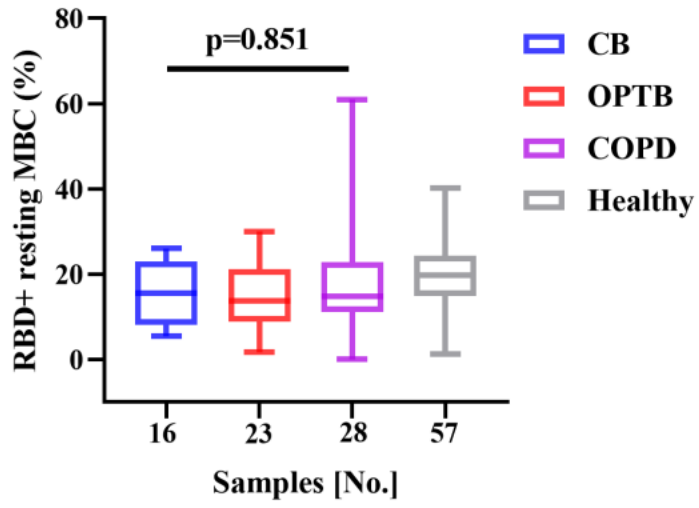
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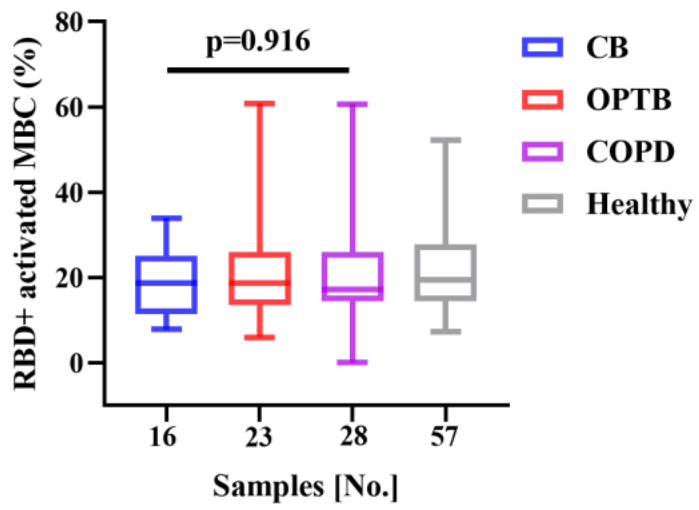
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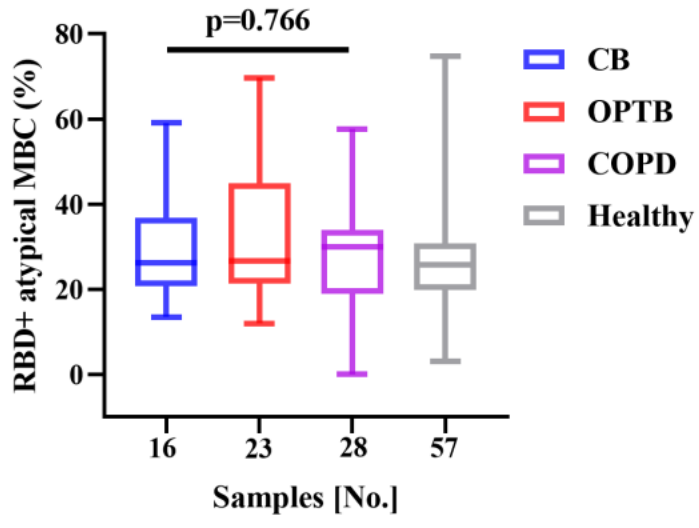
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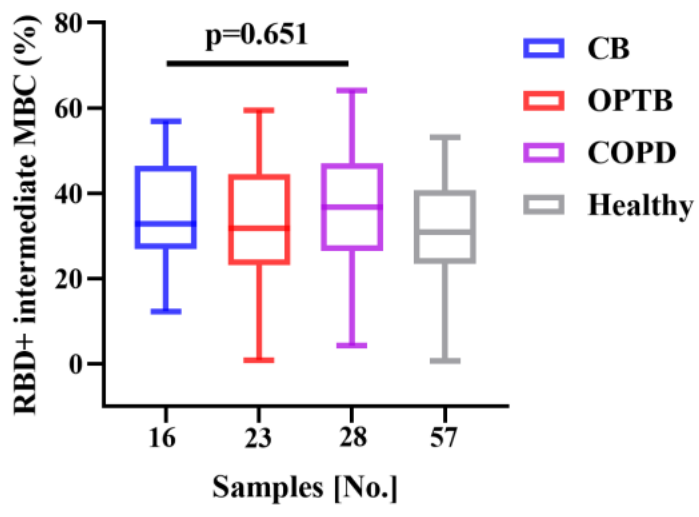
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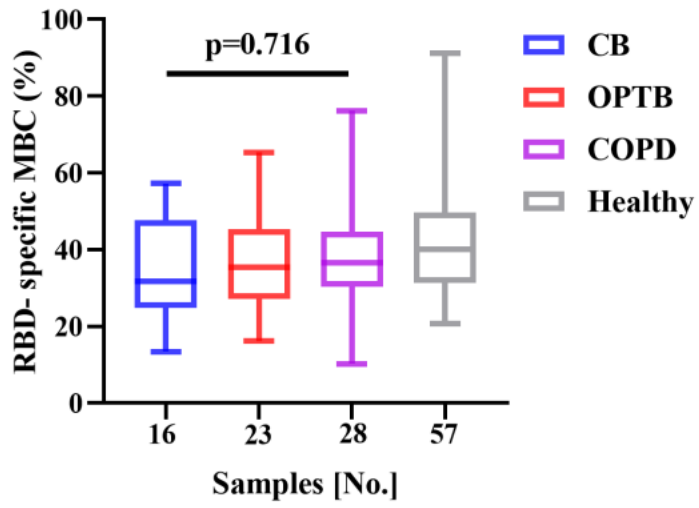
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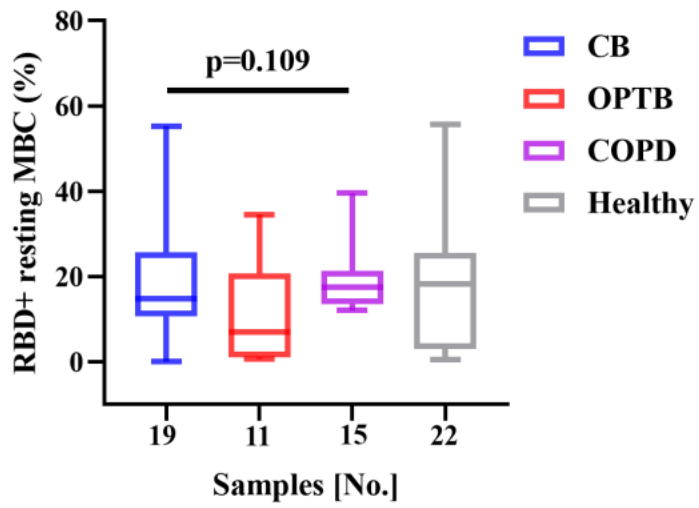
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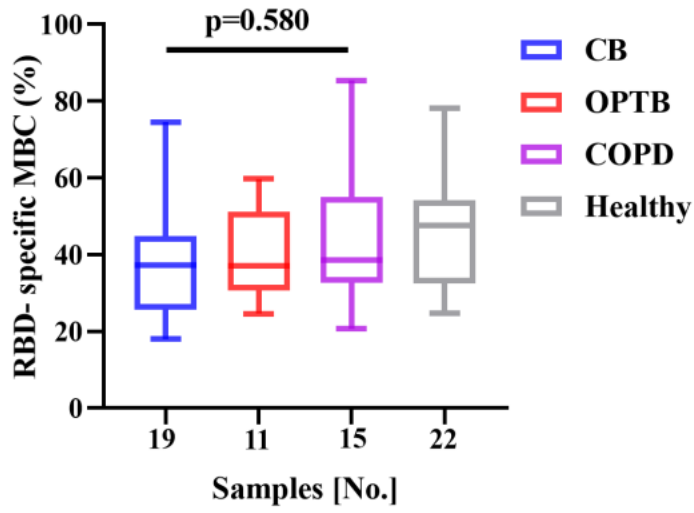
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J

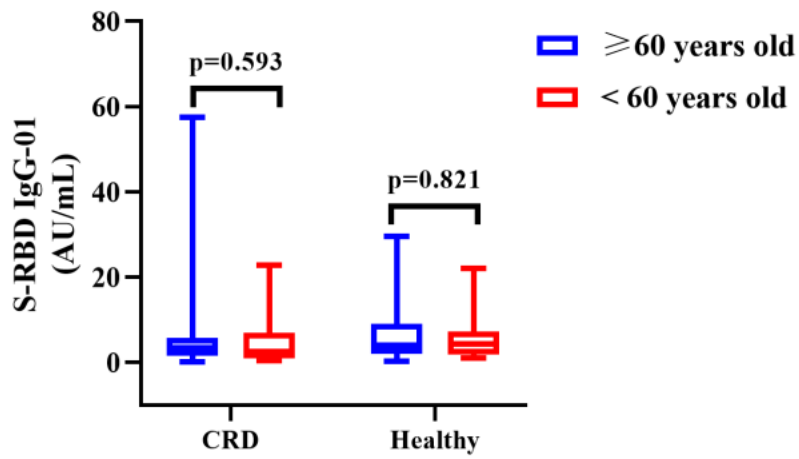


K

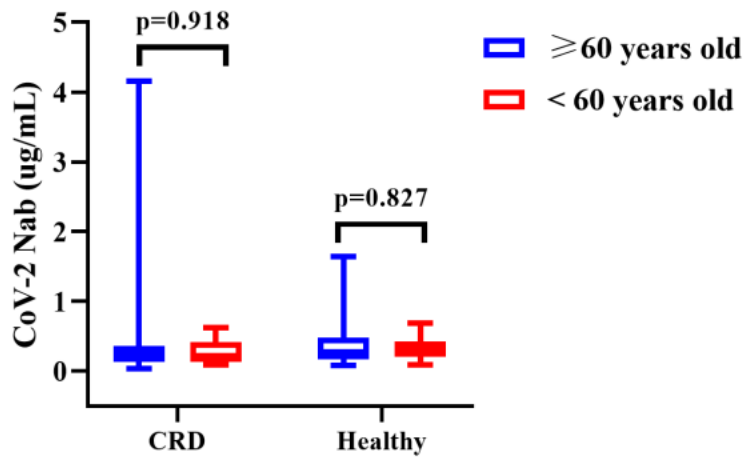


Supplementary Figure 3A-J.

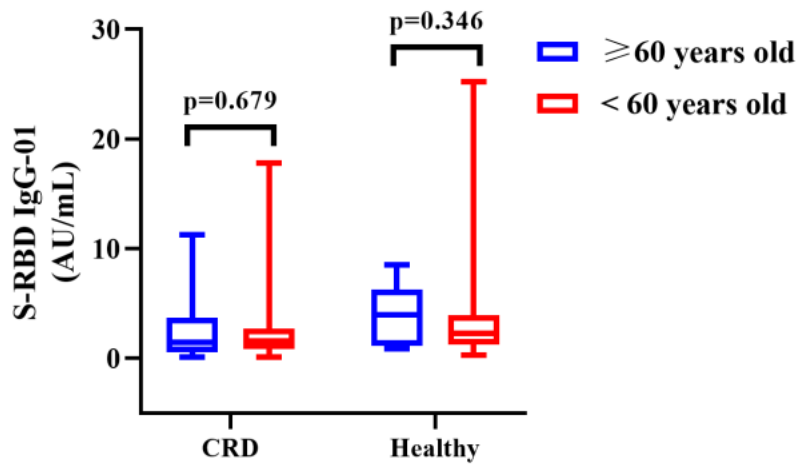
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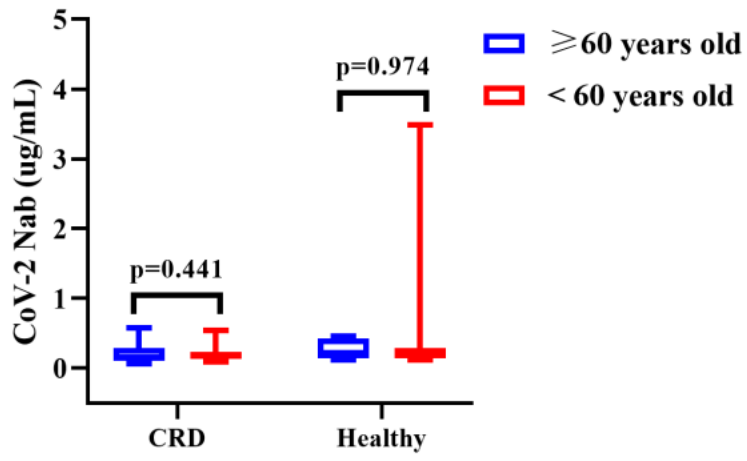
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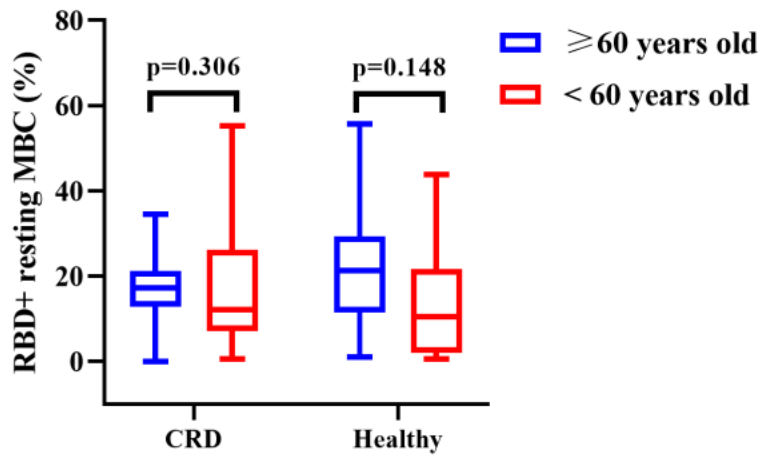
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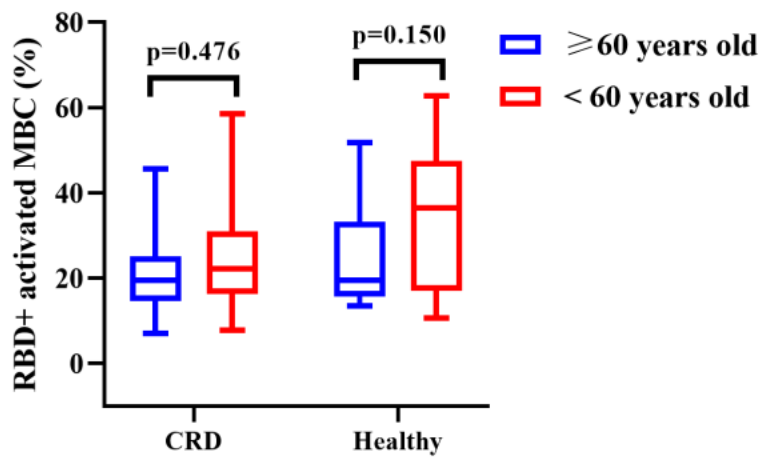
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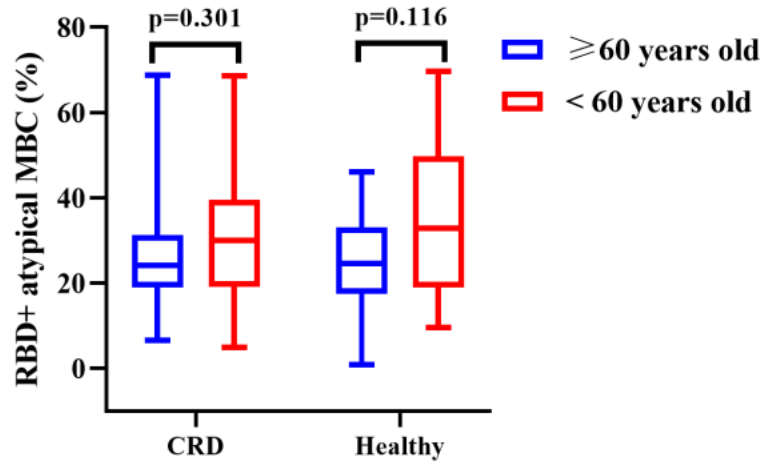
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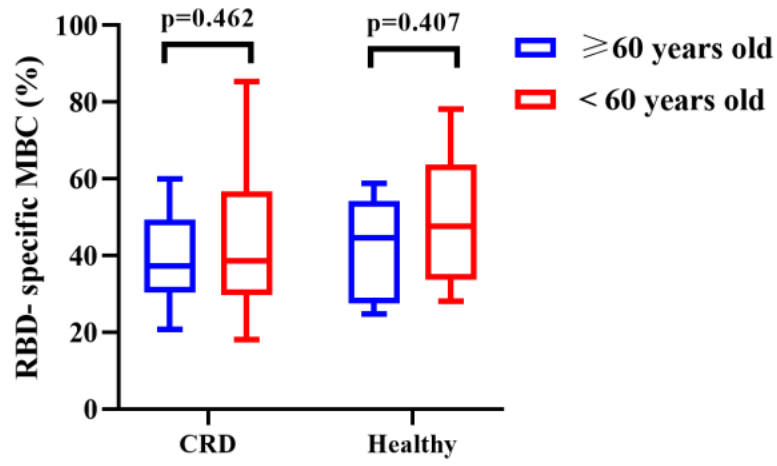
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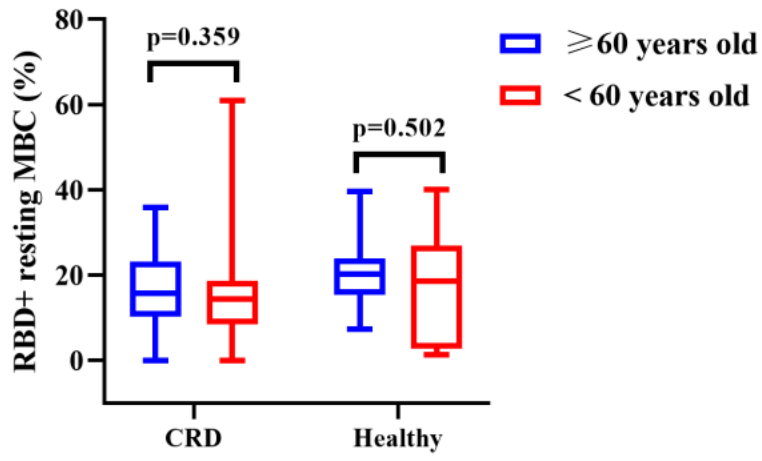
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