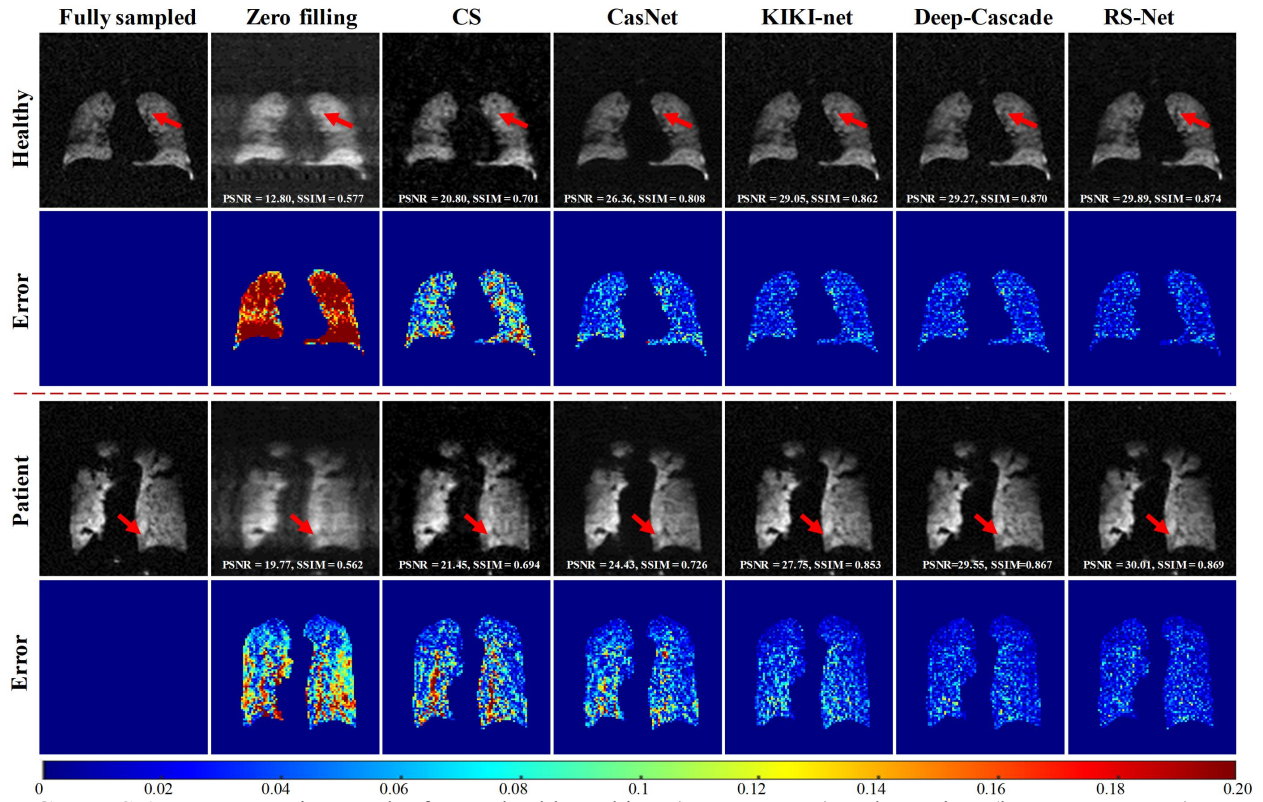# Supporting Information

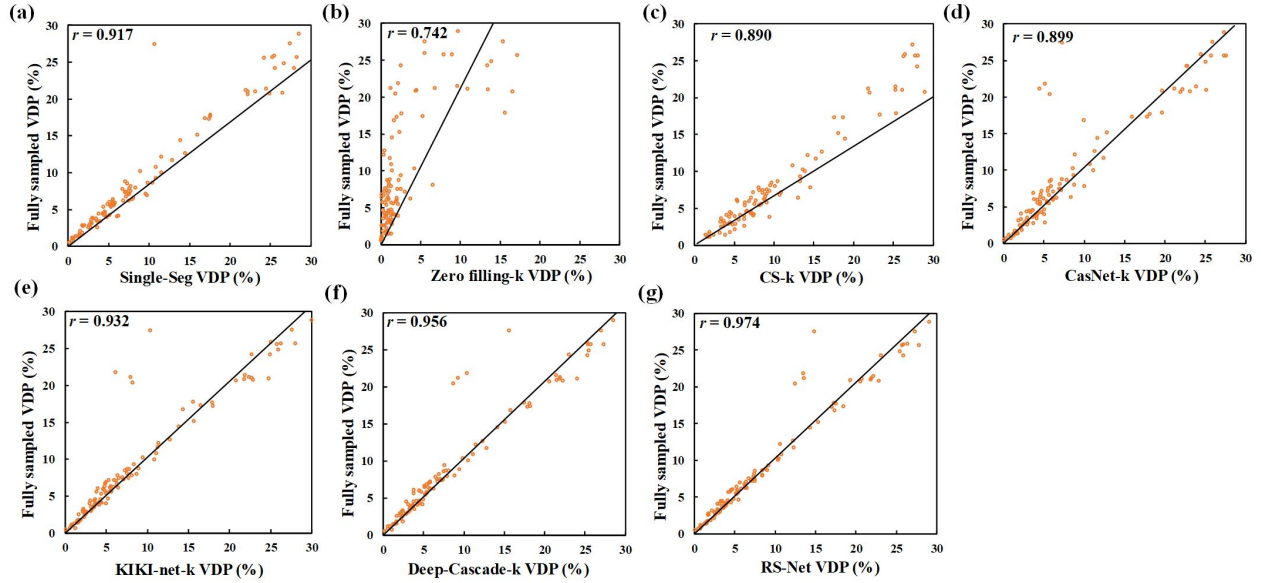**TABLE S-1** *p*-value between the quantitative metrics of healthy subjects and patients at various AFs.

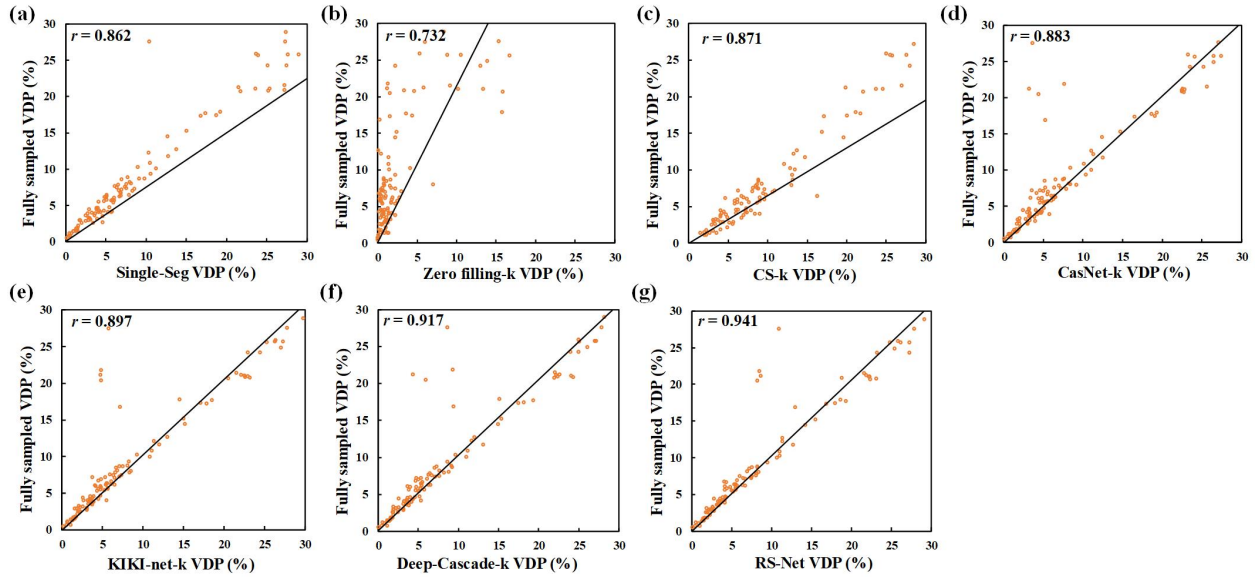| Method | AF = 4 | | | AF = 5 | | | AF = 6 | | |
|---|---|---|---|---|---|---|---|---|---|
| | PSNR | SSIM | Dice | PSNR | SSIM | Dice | PSNR | SSIM | Dice |
| CS | 1.57e-5 | 0.690 | 0.002 | 2.56e-5 | 0.610 | 0.002 | 2.64e-4 | 0.693 | 0.001 |
| CasNet | 3.07e-5 | 0.431 | 0.004 | 4.87e-5 | 0.551 | 0.003 | 2.17e-4 | 0.391 | 0.003 |
| KIKI-net | 4.92e-5 | 0.464 | 0.003 | 3.20e-5 | 0.526 | 0.003 | 2.50e-4 | 0.516 | 0.003 |
| Deep-cascade | 1.65e-4 | 0.576 | 0.002 | 6.72e-6 | 0.736 | 0.002 | 1.73e-5 | 0.739 | 0.001 |
| RS-Net | 2.83e-5 | 0.461 | 0.003 | 3.07e-5 | 0.431 | 0.002 | 1.65e-4 | 0.475 | 0.002 |

[a]Statistical analysis between healthy subjects and patients using a two-tailed Student's t-test.



**FIGURE S-1**. Reconstruction results from a healthy subject (top two rows) and a patient (bottom two rows) at an AF of 5. Corresponding error maps are listed below the reconstructed images, which show the differences in the lung regions between the reconstructed images and fully sampled images.

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**FIGURE S-2**. VDP comparisons of fully sampled images and different methods at an AF of 5. (a) Scatter plots of VDP calculated from Single-Seg and fully sampled images. (b) Scatter plots of VDP calculated from zero filling-k and fully sampled images. (c) Scatter plots of VDP calculated from CS-k and fully sampled images. (d) Scatter plots of VDP calculated from CasNet-k and fully sampled images. (e) Scatter plots of VDP calculated from KIKI-net-k and fully sampled images. (f) Scatter plots of VDP calculated from Deep-Cascade-k and fully sampled images. (g) Scatter plots of VDP calculated from RS-Net and fully sampled images. Pearson correlation coefficients (*r* values) are listed in the scatter plots.

**FIGURE S-3**. VDP comparisons of fully sampled images and different methods at an AF of 6. (a) Scatter plots of VDP calculated from Single-Seg and fully sampled images. (b) Scatter plots of VDP calculated from zero filling-k and fully sampled images. (c) Scatter plots of VDP calculated from CS-k and fully sampled images. (d) Scatter plots of VDP calculated from CasNet-k and fully sampled images. (e) Scatter plots of VDP calculated from KIKI-net-k and fully sampled images. (f) Scatter plots of VDP calculated from Deep-Cascade-k and fully sampled images. (g) Scatter plots of VDP calculated from RS-Net and fully sampled images. Pearson correlation coefficients ($r$ values) are listed in the scatter plots.