# SPAN Stage One Report

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# Image quality
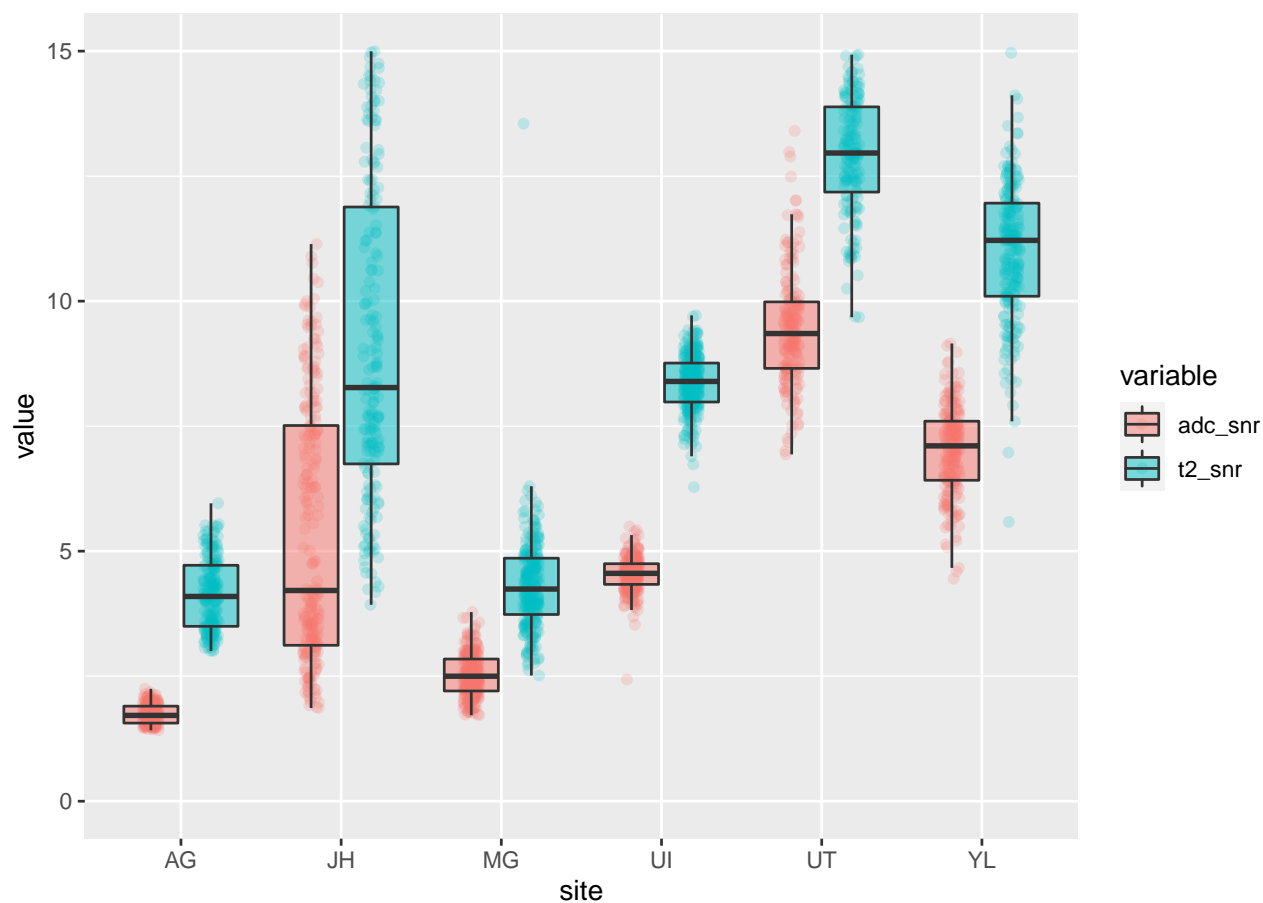


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | adc_snr | 188 | 1.74 | 0.20 | 1.42 | 2.25 | 0.11 |
| 2 | AG | t2_snr | 188 | 4.14 | 0.71 | 3.00 | 5.96 | 0.17 |
| 3 | JH | adc_snr | 226 | 5.35 | 2.56 | 1.86 | 11.14 | 0.48 |
| 4 | JH | t2_snr | 226 | 10.41 | 4.05 | 3.93 | 19.32 | 0.39 |
| 5 | MG | adc_snr | 244 | 2.64 | 1.75 | 1.72 | 28.97 | 0.66 |
| 6 | MG | t2_snr | 244 | 4.31 | 0.98 | 2.51 | 13.55 | 0.23 |
| 7 | UI | adc_snr | 259 | 4.54 | 0.34 | 2.43 | 5.49 | 0.07 |
| 8 | UI | t2_snr | 259 | 8.37 | 0.56 | 6.28 | 9.72 | 0.07 |
| 9 | UT | adc_snr | 176 | 9.45 | 1.16 | 6.94 | 13.41 | 0.12 |
| 10 | UT | t2_snr | 176 | 13.27 | 1.51 | 9.68 | 17.61 | 0.11 |
| 11 | YL | adc_snr | 203 | 7.02 | 0.88 | 4.45 | 9.15 | 0.13 |
| 12 | YL | t2_snr | 203 | 10.99 | 1.38 | 5.58 | 14.97 | 0.13 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | adc_snr | 1296 | 4.97 | 2.83 | 1.42 | 28.97 | 0.57 |
| 2 | t2_snr | 1296 | 8.42 | 3.81 | 2.51 | 19.32 | 0.45 |

# Intra-cranial volume
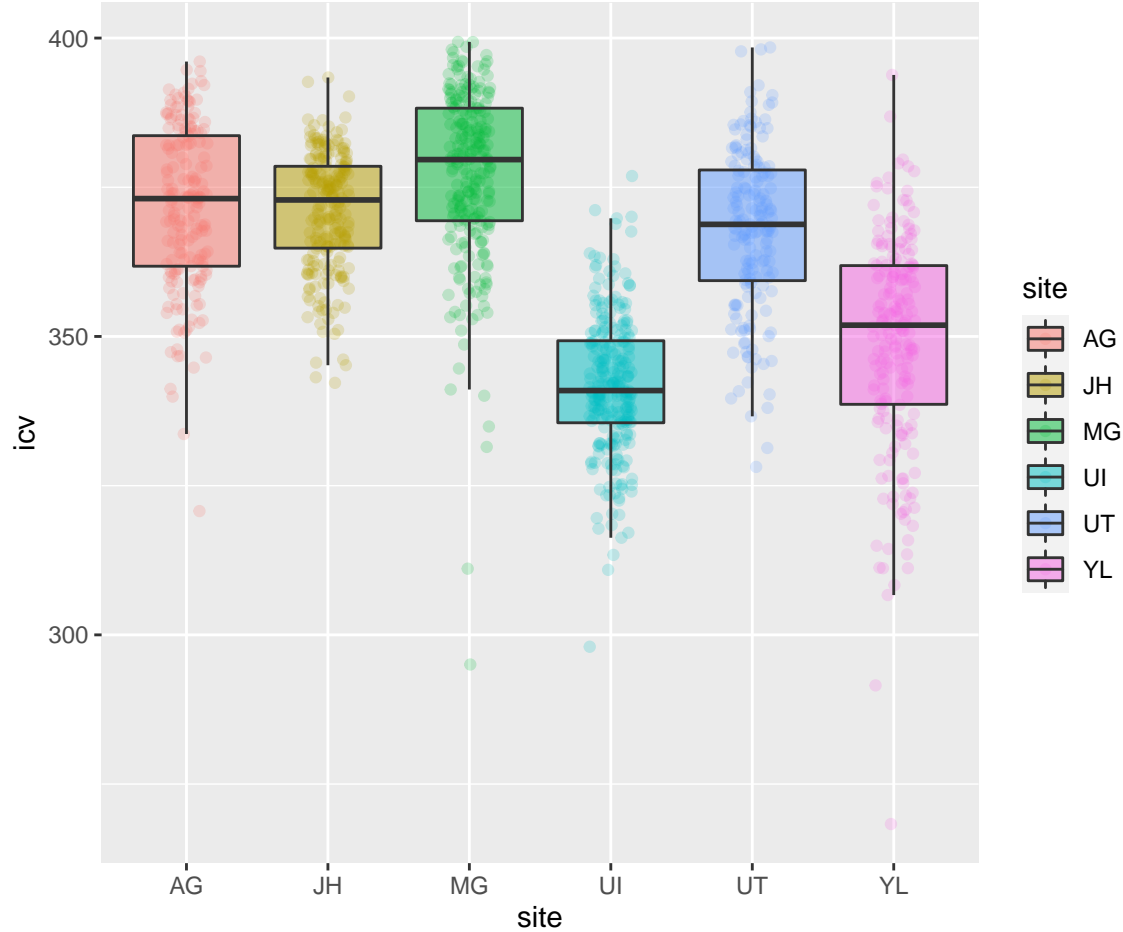


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | icv | 188 | 371.65 | 13.61 | 320.74 | 396.06 | 0.04 |
| 2 | JH | icv | 226 | 370.99 | 9.93 | 342.23 | 393.40 | 0.03 |
| 3 | MG | icv | 244 | 377.05 | 14.65 | 295.03 | 399.36 | 0.04 |
| 4 | UI | icv | 259 | 341.79 | 11.63 | 298.01 | 376.89 | 0.03 |
| 5 | UT | icv | 176 | 367.91 | 13.68 | 328.14 | 398.43 | 0.04 |
| 6 | YL | icv | 203 | 348.99 | 18.18 | 268.30 | 393.82 | 0.05 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | icv | 1296 | 362.53 | 19.26 | 268.30 | 399.36 | 0.05 |

# Lesion volume at the early timepoint
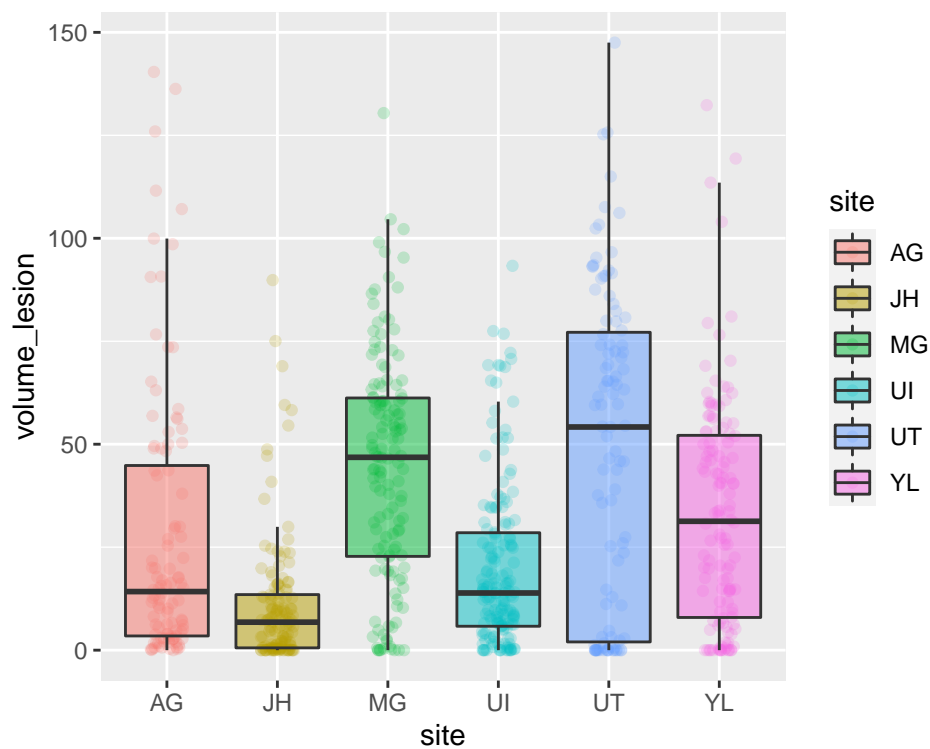


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | volume_lesion | 104 | 27.45 | 33.14 | 0.00 | 140.39 | 1.21 |
| 2 | JH | volume_lesion | 137 | 10.86 | 15.66 | 0.00 | 89.85 | 1.44 |
| 3 | MG | volume_lesion | 138 | 44.21 | 27.68 | 0.00 | 130.40 | 0.63 |
| 4 | UI | volume_lesion | 162 | 20.05 | 20.15 | 0.00 | 93.31 | 1.00 |
| 5 | UT | volume_lesion | 103 | 47.58 | 39.10 | 0.00 | 147.51 | 0.82 |
| 6 | YL | volume_lesion | 128 | 32.92 | 27.34 | 0.00 | 132.32 | 0.83 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | volume_lesion | 772 | 29.54 | 30.03 | 0.00 | 147.51 | 1.02 |

# Lesion fraction at the early timepoint
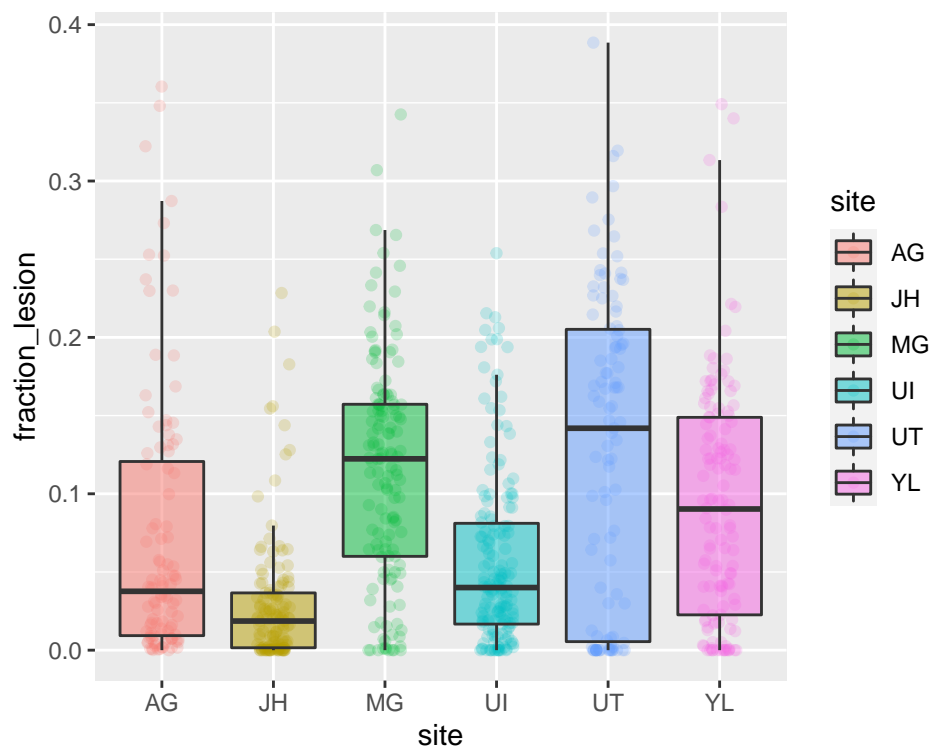


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | fraction_lesion | 104 | 0.07 | 0.09 | 0.00 | 0.36 | 1.19 |
| 2 | JH | fraction_lesion | 137 | 0.03 | 0.04 | 0.00 | 0.23 | 1.42 |
| 3 | MG | fraction_lesion | 138 | 0.11 | 0.07 | 0.00 | 0.34 | 0.63 |
| 4 | UI | fraction_lesion | 162 | 0.06 | 0.06 | 0.00 | 0.25 | 0.99 |
| 5 | UT | fraction_lesion | 103 | 0.13 | 0.10 | 0.00 | 0.39 | 0.81 |
| 6 | YL | fraction_lesion | 128 | 0.09 | 0.08 | 0.00 | 0.35 | 0.82 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | fraction_lesion | 772 | 0.08 | 0.08 | 0.00 | 0.39 | 1.00 |

# CSF volume
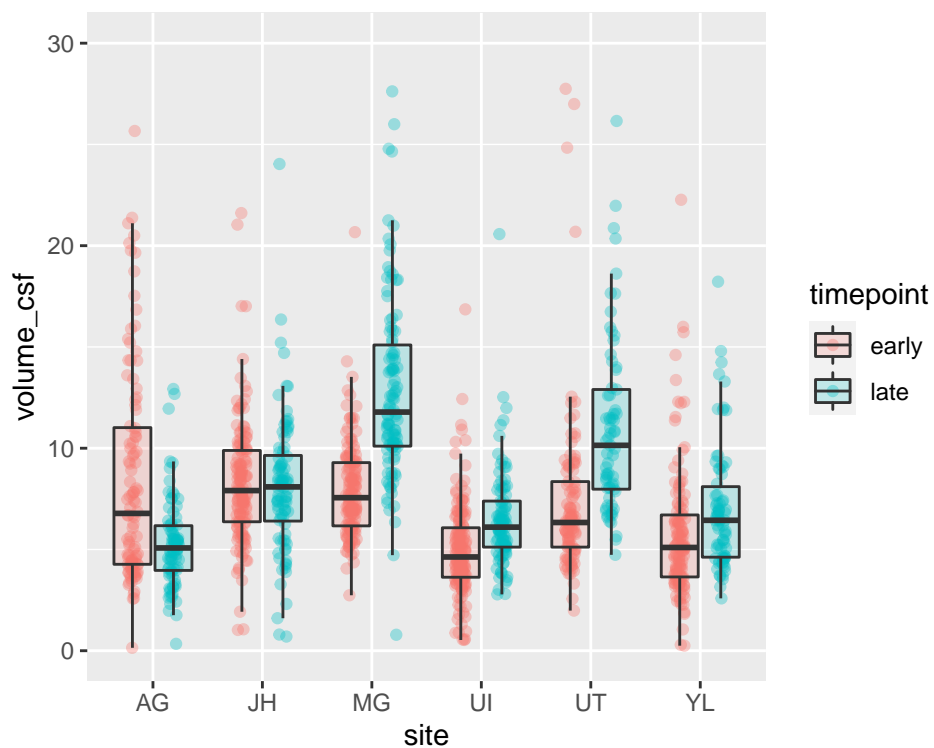


| | site | timepoint | variable | num | mean | sd | min | max | cv |
|---|------|-----------|----------|-----|------|----|-----|-----|-----|
| 1 | AG | early | volume_csf | 104 | 8.45 | 5.30 | 0.15 | 25.66 | 0.63 |
| 2 | AG | late | volume_csf | 84 | 5.28 | 2.24 | 0.34 | 12.92 | 0.42 |
| 3 | JH | early | volume_csf | 137 | 8.29 | 3.10 | 1.03 | 21.61 | 0.37 |
| 4 | JH | late | volume_csf | 89 | 8.38 | 4.18 | 0.70 | 30.93 | 0.50 |
| 5 | MG | early | volume_csf | 138 | 7.90 | 2.37 | 2.74 | 20.67 | 0.30 |
| 6 | MG | late | volume_csf | 106 | 12.86 | 4.53 | 0.79 | 27.62 | 0.35 |
| 7 | UI | early | volume_csf | 162 | 4.98 | 2.28 | 0.53 | 16.86 | 0.46 |
| 8 | UI | late | volume_csf | 97 | 6.50 | 2.45 | 2.78 | 20.57 | 0.38 |
| 9 | UT | early | volume_csf | 103 | 7.65 | 4.92 | 1.98 | 32.85 | 0.64 |
| 10 | UT | late | volume_csf | 73 | 12.22 | 6.69 | 4.74 | 37.73 | 0.55 |
| 11 | YL | early | volume_csf | 128 | 6.15 | 5.86 | 0.25 | 61.05 | 0.95 |
| 12 | YL | late | volume_csf | 75 | 7.92 | 8.76 | 2.59 | 78.15 | 1.11 |

| | timepoint | variable | num | mean | sd | min | max | cv |
|---|-----------|----------|-----|------|----|-----|-----|-----|
| 1 | early | volume_csf | 772 | 7.11 | 4.26 | 0.15 | 61.05 | 0.60 |
| 2 | late | volume_csf | 524 | 8.91 | 5.83 | 0.34 | 78.15 | 0.65 |

# CSF fraction
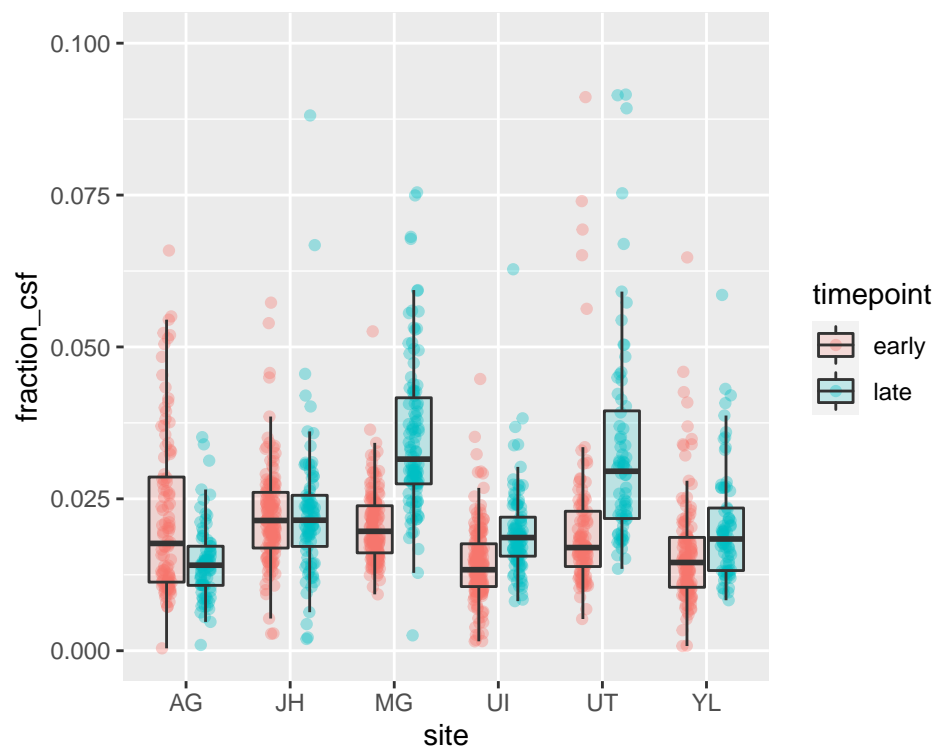


| | site | timepoint | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|---|
| 1 | AG | early | fraction_csf | 104 | 0.02 | 0.01 | 0.00 | 0.07 | 0.61 |
| 2 | AG | late | fraction_csf | 84 | 0.01 | 0.01 | 0.00 | 0.04 | 0.42 |
| 3 | JH | early | fraction_csf | 137 | 0.02 | 0.01 | 0.00 | 0.06 | 0.37 |
| 4 | JH | late | fraction_csf | 89 | 0.02 | 0.01 | 0.00 | 0.09 | 0.51 |
| 5 | MG | early | fraction_csf | 138 | 0.02 | 0.01 | 0.01 | 0.05 | 0.29 |
| 6 | MG | late | fraction_csf | 106 | 0.04 | 0.01 | 0.00 | 0.08 | 0.36 |
| 7 | UI | early | fraction_csf | 162 | 0.01 | 0.01 | 0.00 | 0.04 | 0.44 |
| 8 | UI | late | fraction_csf | 97 | 0.02 | 0.01 | 0.01 | 0.06 | 0.38 |
| 9 | UT | early | fraction_csf | 103 | 0.02 | 0.01 | 0.01 | 0.09 | 0.64 |
| 10 | UT | late | fraction_csf | 73 | 0.03 | 0.02 | 0.01 | 0.10 | 0.56 |
| 11 | YL | early | fraction_csf | 128 | 0.02 | 0.02 | 0.00 | 0.16 | 0.88 |
| 12 | YL | late | fraction_csf | 75 | 0.02 | 0.02 | 0.01 | 0.20 | 1.00 |

| | timepoint | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | early | fraction_csf | 772 | 0.02 | 0.01 | 0.00 | 0.16 | 0.57 |
| 2 | late | fraction_csf | 524 | 0.02 | 0.02 | 0.00 | 0.20 | 0.64 |

# Midline shift
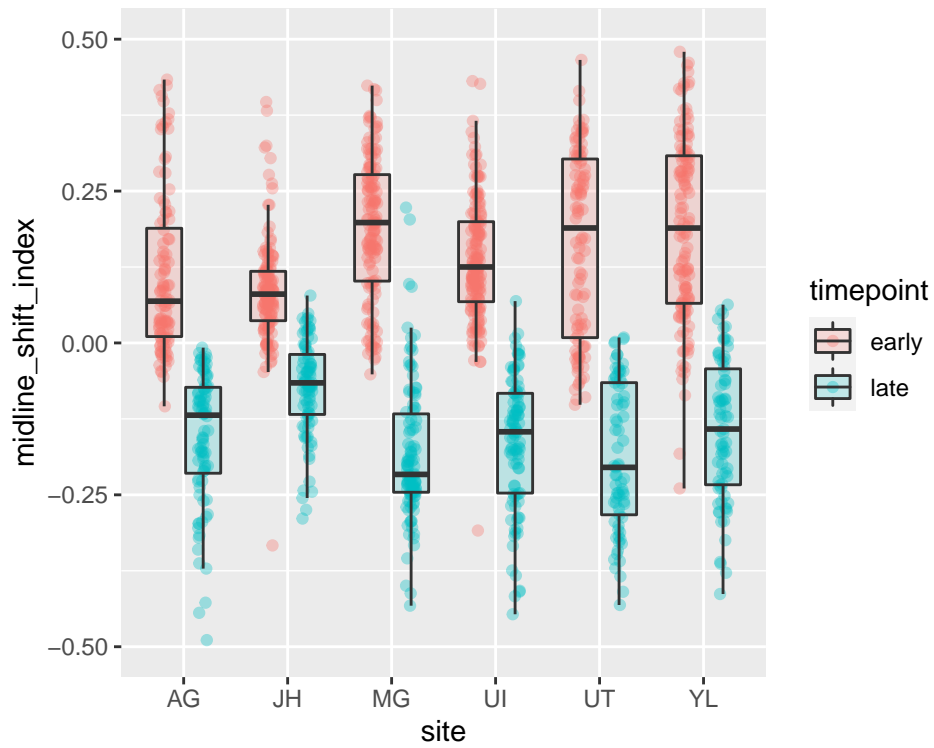


| | site | timepoint | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|---|
| 1 | AG | early | midline_shift_index | 104 | 0.11 | 0.13 | -0.10 | 0.43 | 1.21 |
| 2 | AG | late | midline_shift_index | 84 | -0.16 | 0.11 | -0.49 | -0.01 | -0.71 |
| 3 | JH | early | midline_shift_index | 137 | 0.09 | 0.09 | -0.33 | 0.40 | 1.01 |
| 4 | JH | late | midline_shift_index | 89 | -0.07 | 0.08 | -0.29 | 0.08 | -1.07 |
| 5 | MG | early | midline_shift_index | 138 | 0.19 | 0.12 | -0.05 | 0.42 | 0.61 |
| 6 | MG | late | midline_shift_index | 106 | -0.18 | 0.11 | -0.43 | 0.22 | -0.63 |
| 7 | UI | early | midline_shift_index | 162 | 0.14 | 0.11 | -0.31 | 0.68 | 0.80 |
| 8 | UI | late | midline_shift_index | 97 | -0.16 | 0.11 | -0.45 | 0.07 | -0.67 |
| 9 | UT | early | midline_shift_index | 103 | 0.17 | 0.16 | -0.10 | 0.50 | 0.94 |
| 10 | UT | late | midline_shift_index | 73 | -0.19 | 0.12 | -0.43 | 0.01 | -0.65 |
| 11 | YL | early | midline_shift_index | 128 | 0.19 | 0.15 | -0.24 | 0.48 | 0.80 |
| 12 | YL | late | midline_shift_index | 75 | -0.14 | 0.12 | -0.41 | 0.06 | -0.82 |

| | timepoint | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | early | midline_shift_index | 772 | 0.15 | 0.13 | -0.33 | 0.68 | 0.89 |
| 2 | late | midline_shift_index | 524 | -0.15 | 0.11 | -0.49 | 0.22 | -0.76 |

# Per-hemisphere tissue fraction at the early timepoint
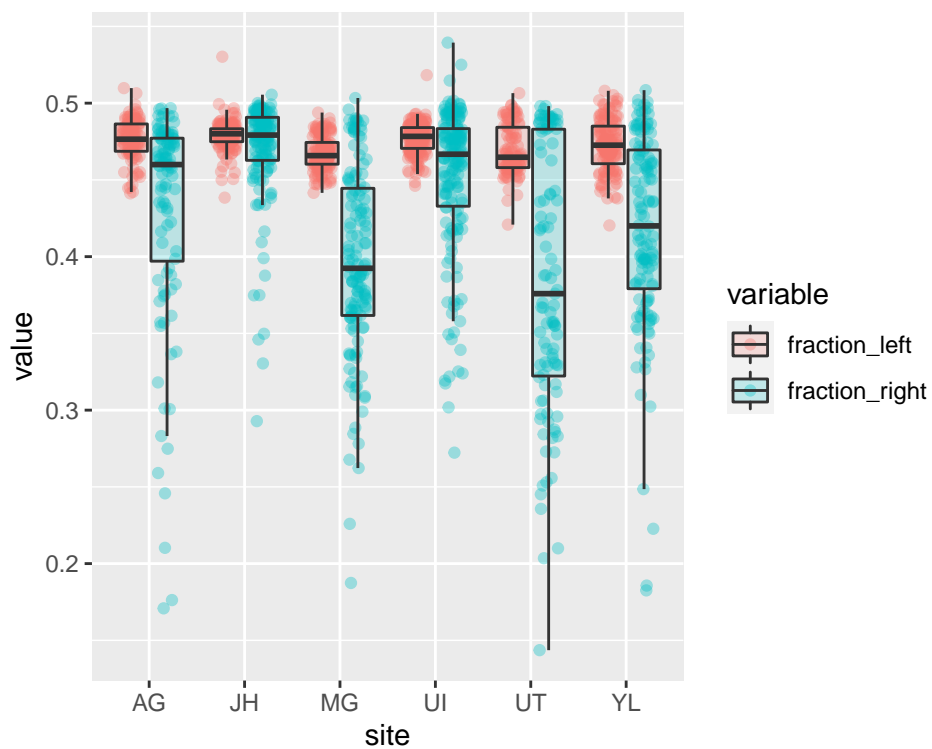


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | fraction_left | 104 | 0.48 | 0.01 | 0.44 | 0.51 | 0.03 |
| 2 | AG | fraction_right | 104 | 0.43 | 0.07 | 0.17 | 0.50 | 0.17 |
| 3 | JH | fraction_left | 137 | 0.48 | 0.01 | 0.44 | 0.53 | 0.02 |
| 4 | JH | fraction_right | 137 | 0.47 | 0.03 | 0.29 | 0.51 | 0.07 |
| 5 | MG | fraction_left | 138 | 0.47 | 0.01 | 0.44 | 0.49 | 0.02 |
| 6 | MG | fraction_right | 138 | 0.40 | 0.06 | 0.19 | 0.50 | 0.15 |
| 7 | UI | fraction_left | 162 | 0.48 | 0.01 | 0.45 | 0.52 | 0.02 |
| 8 | UI | fraction_right | 162 | 0.45 | 0.05 | 0.27 | 0.54 | 0.11 |
| 9 | UT | fraction_left | 103 | 0.47 | 0.02 | 0.42 | 0.51 | 0.03 |
| 10 | UT | fraction_right | 103 | 0.38 | 0.09 | 0.14 | 0.50 | 0.22 |
| 11 | YL | fraction_left | 128 | 0.47 | 0.02 | 0.42 | 0.51 | 0.04 |
| 12 | YL | fraction_right | 128 | 0.42 | 0.06 | 0.18 | 0.51 | 0.15 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | fraction_left | 772 | 0.47 | 0.01 | 0.42 | 0.53 | 0.03 |
| 2 | fraction_right | 772 | 0.43 | 0.07 | 0.14 | 0.54 | 0.16 |

# Per-hemisphere tissue fraction at the late timepoint
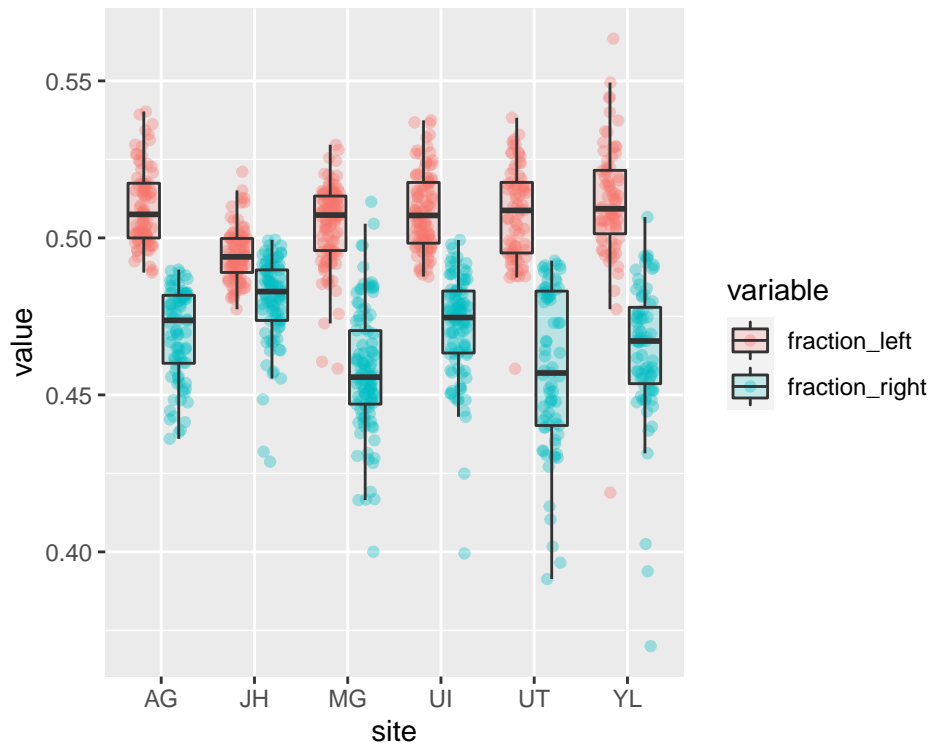


| | site | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|---|
| 1 | AG | fraction_left | 84 | 0.51 | 0.01 | 0.49 | 0.54 | 0.02 |
| 2 | AG | fraction_right | 84 | 0.47 | 0.01 | 0.44 | 0.49 | 0.03 |
| 3 | JH | fraction_left | 89 | 0.49 | 0.01 | 0.48 | 0.52 | 0.02 |
| 4 | JH | fraction_right | 89 | 0.48 | 0.01 | 0.43 | 0.50 | 0.03 |
| 5 | MG | fraction_left | 106 | 0.50 | 0.01 | 0.46 | 0.53 | 0.02 |
| 6 | MG | fraction_right | 106 | 0.46 | 0.02 | 0.40 | 0.51 | 0.04 |
| 7 | UI | fraction_left | 97 | 0.51 | 0.01 | 0.49 | 0.54 | 0.02 |
| 8 | UI | fraction_right | 97 | 0.47 | 0.02 | 0.40 | 0.50 | 0.03 |
| 9 | UT | fraction_left | 73 | 0.51 | 0.02 | 0.46 | 0.54 | 0.03 |
| 10 | UT | fraction_right | 73 | 0.46 | 0.03 | 0.39 | 0.49 | 0.06 |
| 11 | YL | fraction_left | 75 | 0.51 | 0.02 | 0.42 | 0.56 | 0.04 |
| 12 | YL | fraction_right | 75 | 0.46 | 0.02 | 0.37 | 0.51 | 0.05 |

| | variable | num | mean | sd | min | max | cv |
|---|---|---|---|---|---|---|---|
| 1 | fraction_left | 524 | 0.51 | 0.01 | 0.42 | 0.56 | 0.03 |
| 2 | fraction_right | 524 | 0.47 | 0.02 | 0.37 | 0.51 | 0.04 |

# Lesion fraction vs midline shift in the early timepoint
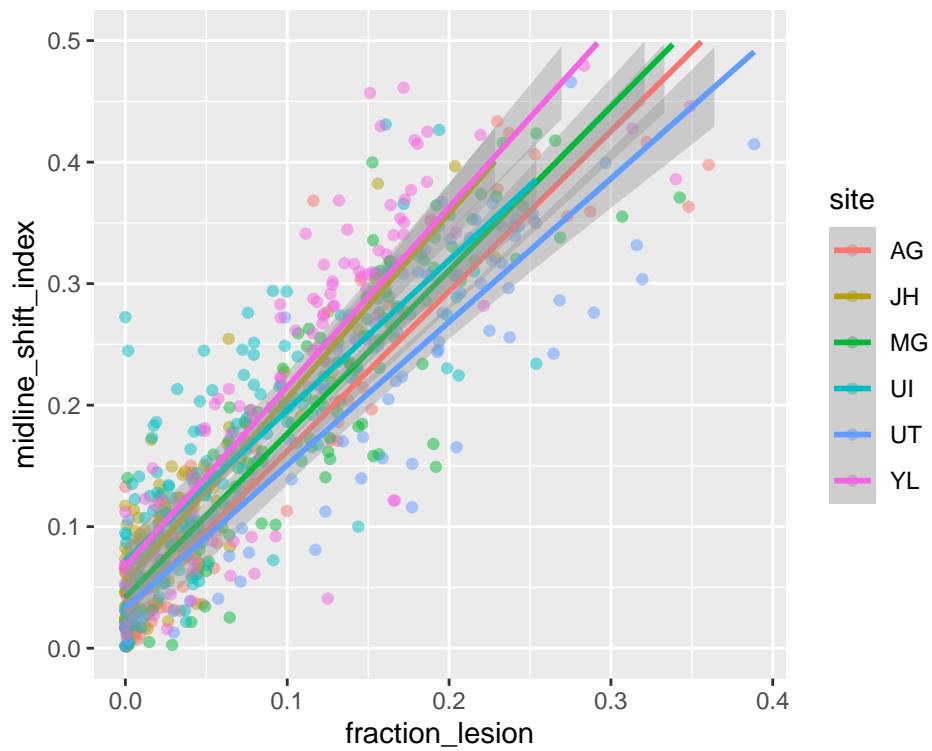


# Early timepoint lesion fraction vs late timepoint midline shift