

## Supplementary Table 2

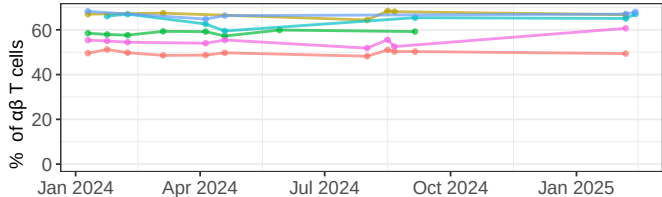
Average CV per population of six repeated PBMC samples run in five or more batches

| Population                              | Measurement               | n | CV (%) |
|-----------------------------------------|---------------------------|---|--------|
| αβ T cells                              | % of Lymphocytes          | 6 | 4.5    |
| Atypical B cells                        | % of Total B cells        | 6 | 25     |
| B cells Plasmablasts and Plasma Cells   | % of Lymphocytes          | 6 | 9      |
| CCR6- CXCR3-                            | % of CD4 T cells          | 6 | 6.7    |
| CD4 CD38+ (activated)                   | % of CD4 T cells          | 6 | 14     |
| CD4 Central Memory                      | % of CD4 T cells          | 6 | 10     |
| CD4 Early Effector Memory               | % of CD4 Effector Memory  | 6 | 9.6    |
| CD4 Early-like/Terminal Effector Memory | % of CD4 Effector Memory  | 6 | 16     |
| CD4 Effector Memory                     | % of CD4 T cells          | 6 | 20     |
| CD4 Exhausted                           | % of CD4 T cells          | 6 | 21     |
| CD4 Naive                               | % of CD4 T cells          | 6 | 10     |
| CD4 T cells                             | % of Lymphocytes          | 6 | 5.3    |
| CD4 T cells                             | % of αβ T cells           | 6 | 2.8    |
| CD4 TEMRA                               | % of CD4 T cells          | 6 | 35     |
| CD8 CD38+ (activated)                   | % of CD8 T cells          | 6 | 29     |
| CD8 Central Memory                      | % of CD8 T cells          | 6 | 24     |
| CD8 Early Effector Memory               | % of CD8 Effector Memory  | 6 | 16     |
| CD8 Early-like/Terminal Effector Memory | % of CD8 Effector Memory  | 6 | 30     |
| CD8 Effector Memory                     | % of CD8 T cells          | 6 | 17     |
| CD8 Exhausted                           | % of CD8 T cells          | 6 | 25     |
| CD8 Naive                               | % of CD8 T cells          | 6 | 7.5    |
| CD8 T cells                             | % of Lymphocytes          | 6 | 6.8    |
| CD8 T cells                             | % of αβ T cells           | 6 | 4.8    |
| CD8 TEMRA                               | % of CD8 T cells          | 6 | 25     |
| Classical Monocytes                     | % of Monocytes            | 6 | 5      |
| Double Negative 2                       | % of B cells              | 6 | 14     |
| Double Negative Memory                  | % of Memory B cells       | 6 | 25     |
| γδ CD4                                  | % of γδ T cells           | 6 | 31     |
| γδ CD8                                  | % of γδ T cells           | 6 | 18     |
| γδ Central Memory                       | % of γδ T cells           | 6 | 14     |
| γδ Effector                             | % of γδ T cells           | 6 | 36     |
| γδ Effector Memory                      | % of γδ T cells           | 6 | 31     |
| γδ Naive                                | % of γδ T cells           | 6 | 32     |
| γδ T cells                              | % of Lymphocytes          | 6 | 9.8    |
| Ig-κ light chain                        | % of Total B cells        | 6 | 2.9    |
| Ig-λ light chain                        | % of Total B cells        | 6 | 3.2    |
| IgA Memory                              | % of Memory B cells       | 6 | 7.2    |
| IgG Memory                              | % of Memory B cells       | 6 | 12     |
| Intermediate Monocytes                  | % of Monocytes            | 6 | 39     |
| Memory B cells                          | % of B cells              | 6 | 16     |
| Monocytes                               | % of Live CD45+           | 6 | 32     |
| Naive Resting                           | % of B cells              | 6 | 5.9    |
| Non-Classical Monocytes                 | % of Monocytes            | 6 | 46     |
| Plasmablasts and Plasma Cells           | % of Lymphocytes          | 6 | 15     |
| T2 and T3                               | % of Transitional B cells | 6 | 3.8    |
| Th1                                     | % of CD4 T cells          | 6 | 17     |
| Th1/Th17                                | % of CD4 T cells          | 6 | 38     |
| Th17                                    | % of CD4 T cells          | 6 | 31     |
| Total T cells                           | % of Lymphocytes          | 6 | 4.3    |
| Transitional                            | % of B cells              | 6 | 15     |
| Treg                                    | % of CD4 T cells          | 6 | 22     |
| Unswitched Memory                       | % of B cells              | 6 | 22     |
| cTfh                                    | % of CD4 T cells          | 6 | 14     |
| cTfh CCR6- CXCR3-                       | % of cTfh                 | 6 | 16     |
| cTfh Central Memory                     | % of cTfh                 | 6 | 10     |
| cTfh Effector Memory                    | % of cTfh                 | 6 | 23     |
| cTfh Th1                                | % of cTfh                 | 6 | 9      |
| cTfh Th1/Th17                           | % of cTfh                 | 6 | 40     |
| cTfh Th17                               | % of cTfh                 | 6 | 39     |
| cTfr                                    | % of Treg                 | 6 | 27     |

Supplementary Figure 13 - Frequency of leukocyte populations measured for six healthy controls over five or more batch repeats. Each coloured line represents one individual, with the cells coming from the same batch of PBMCs frozen in late 2023. Where a point is not shown either that individual's sample was not included in the run, or the quality requirements for inclusion were not met.

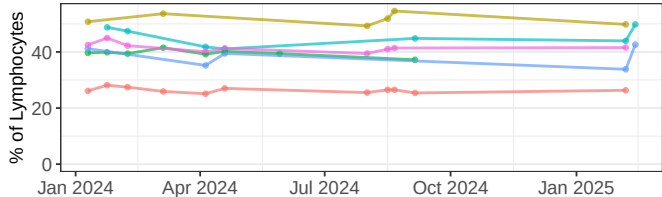
# CD4 T cells

Average CV: 2.8 %



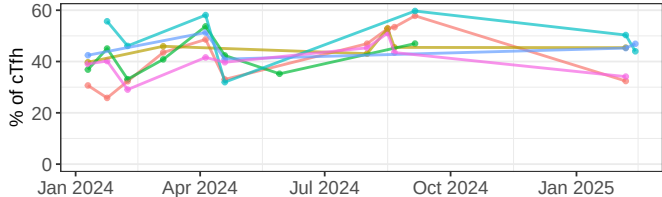
# CD4 T cells

Average CV: 5.3 %



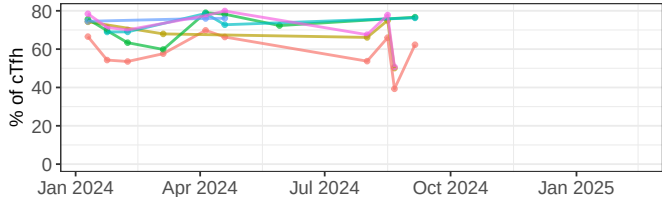
# cTfh CCR6- CXCR3-

Average CV: 16 %



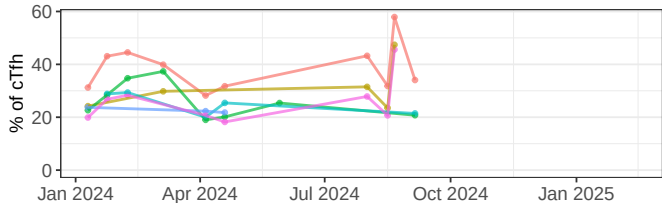
# cTfh Central Memory

Average CV: 10 %



# cTfh Effector Memory

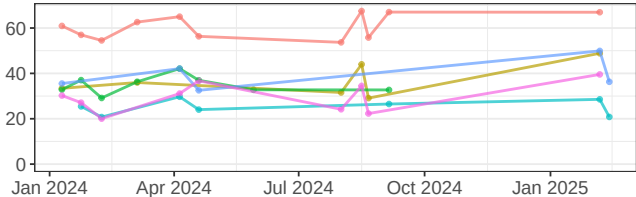
Average CV: 23 %



# CD4 Early-like/Terminal Effector Memory

Average CV: 16 %

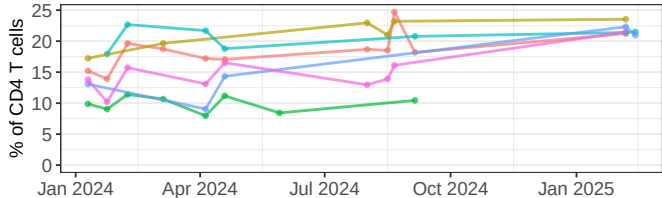
% of CD4 Effector Memory





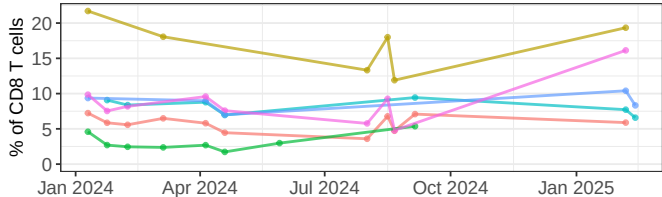
Th1

Average CV: 17 %



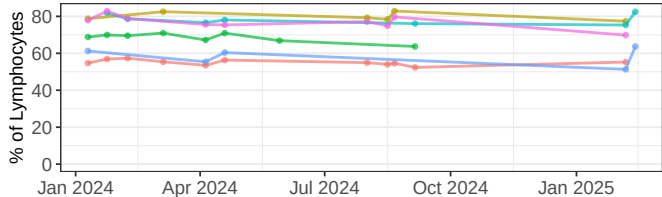
# CD8 Central Memory

Average CV: 24 %



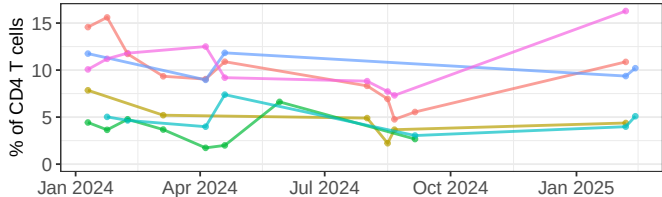
# Total T cells

Average CV: 4.3 %



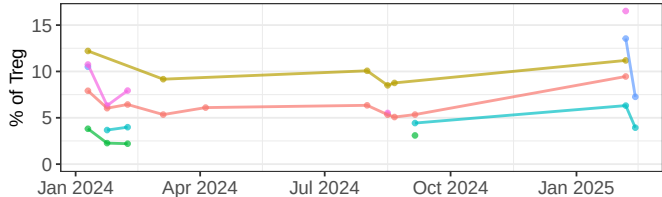
Th17

Average CV: 31 %



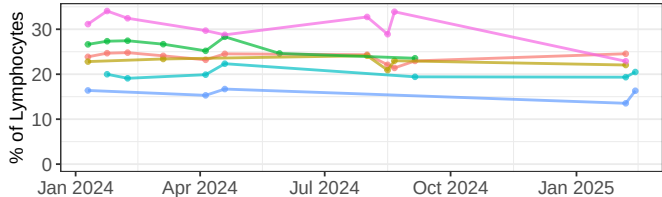
cTfr

Average CV: 27 %



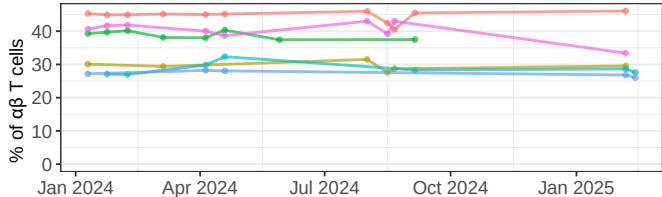
# CD8 T cells

Average CV: 6.8 %



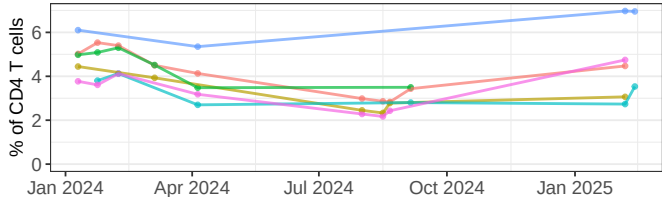
# CD8 T cells

Average CV: 4.8 %



# Treg

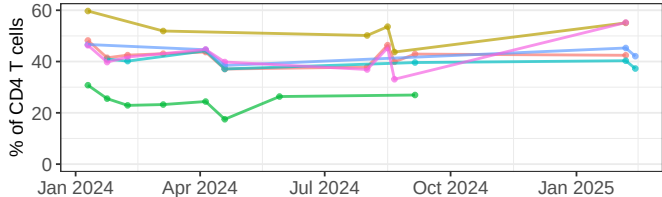
Average CV: 22 %





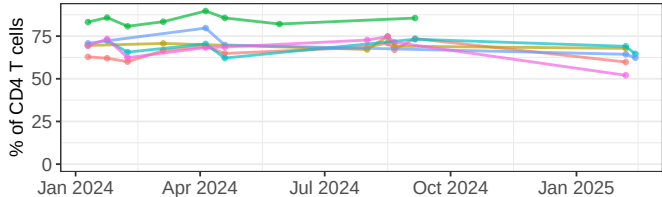
# CD4 Central Memory

Average CV: 10 %



CCR6- CXCR3-

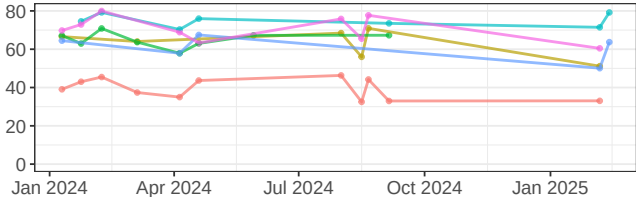
Average CV: 6.7 %



# CD4 Early Effector Memory

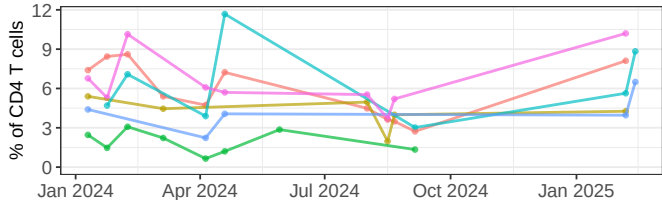
Average CV: 9.6 %

% of CD4 Effector Memory



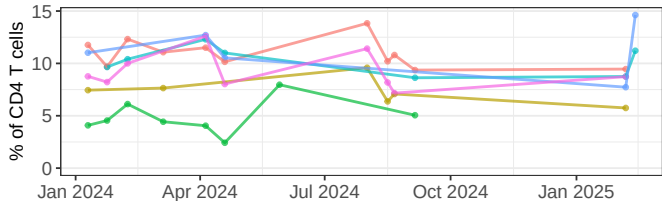
Th1/Th17

Average CV: 38 %



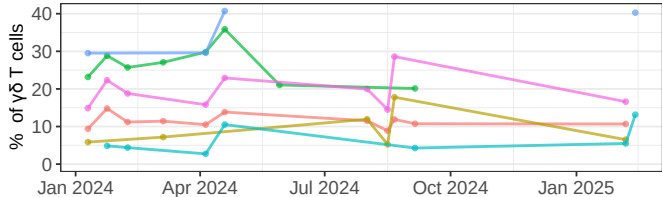
# CD4 Effector Memory

Average CV: 20 %



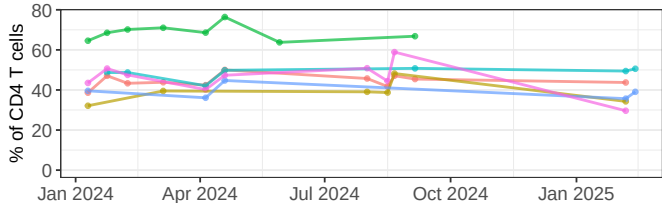
$\gamma\delta$  Naive

Average CV: 32 %



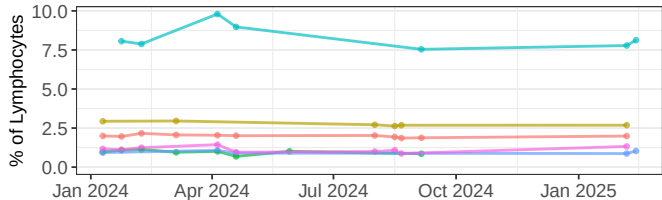
# CD4 Naive

Average CV: 10 %



$\gamma\delta$  T cells

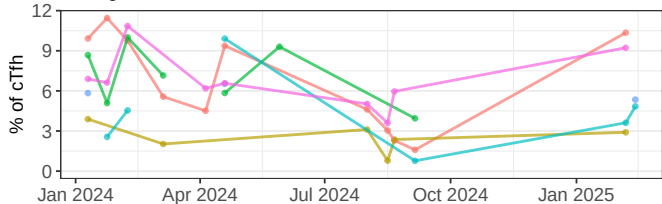
Average CV: 9.8 %





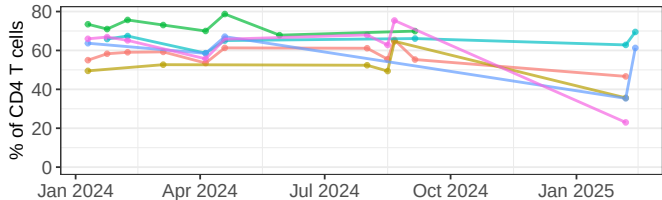
# cTfh Th1/Th17

Average CV: 40 %



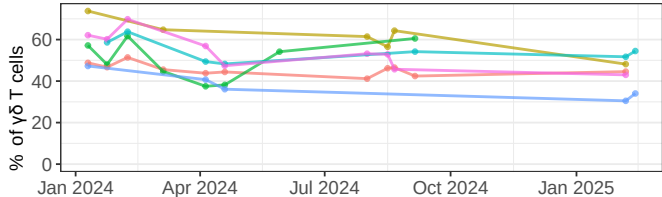
# CD4 CD38+ (activated)

Average CV: 14 %



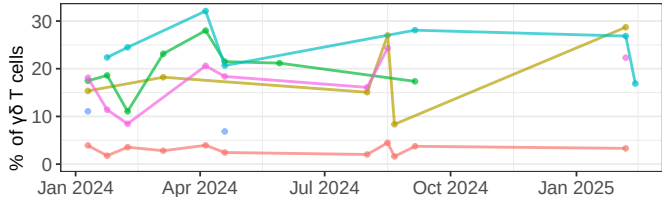
# $\gamma\delta$ Central Memory

Average CV: 14 %



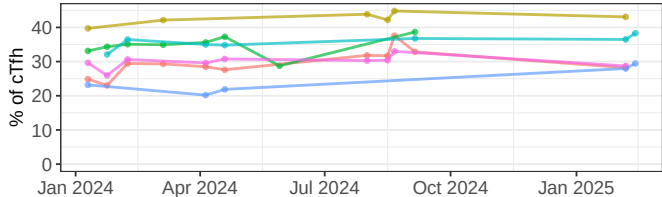
# $\gamma\delta$ Effector Memory

Average CV: 31 %



# cTfh Th1

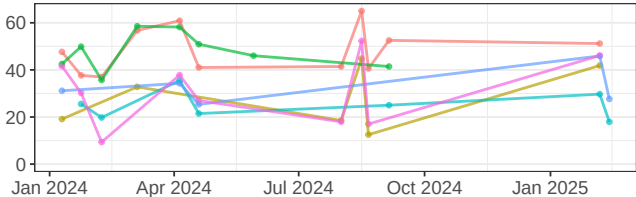
Average CV: 9 %



# CD8 Early-like/Terminal Effector Memory

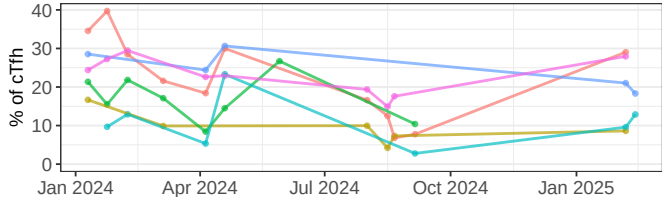
Average CV: 30 %

% of CD8 Effector Memory



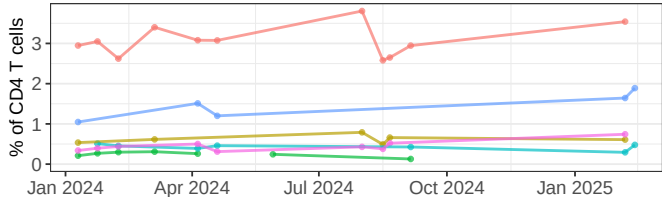
# cTfh Th17

Average CV: 39 %



# CD4 Exhausted

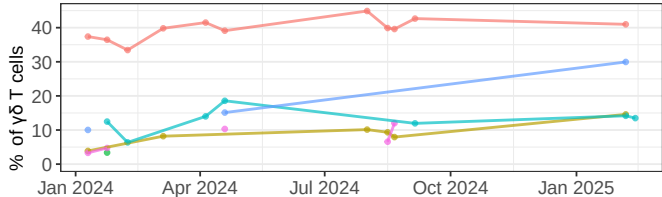
Average CV: 21 %





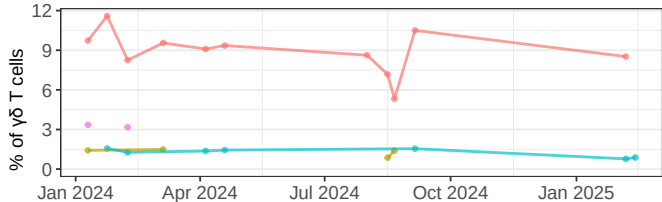
# $\gamma\delta$ Effector

Average CV: 36 %



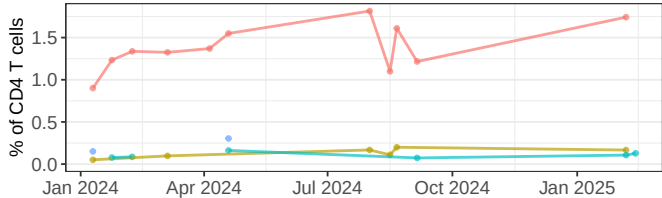
$\gamma\delta$  CD8

Average CV: 18 %



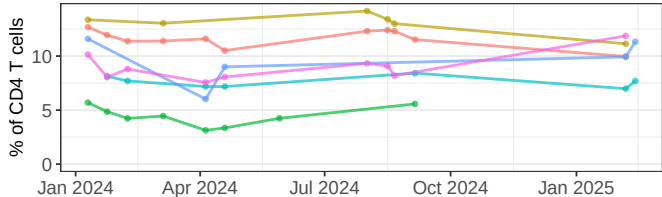
# CD4 TEMRA

Average CV: 35 %



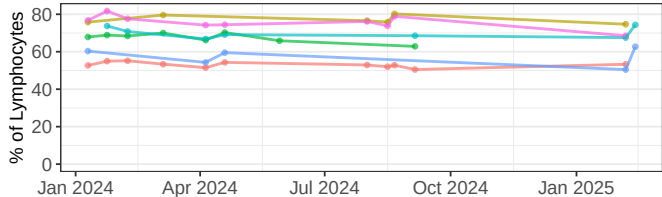
cTfh

Average CV: 14 %



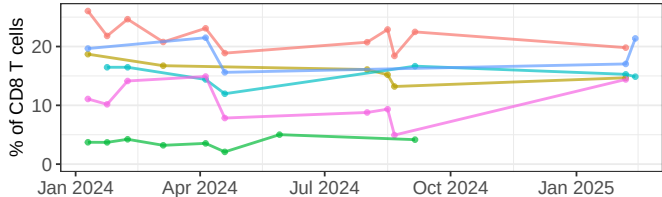
# Alpha beta T cells

Average CV: 4.5 %



# CD8 Effector Memory

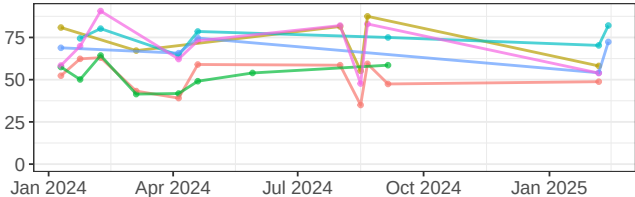
Average CV: 17 %



# CD8 Early Effector Memory

Average CV: 16 %

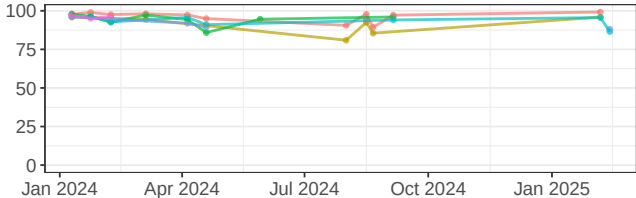
% of CD8 Effector Memory



## T2 and T3

Average CV: 3.8 %

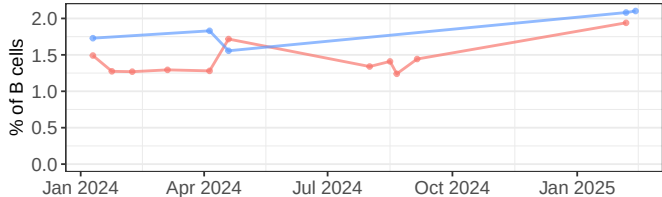
% of Transitional B cells





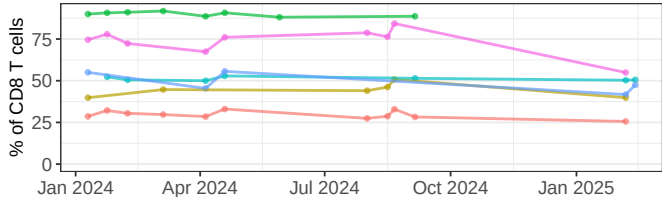
# Double Negative 2

Average CV: 14 %



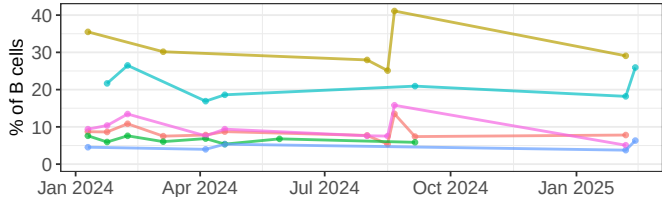
# CD8 Naive

Average CV: 7.5 %



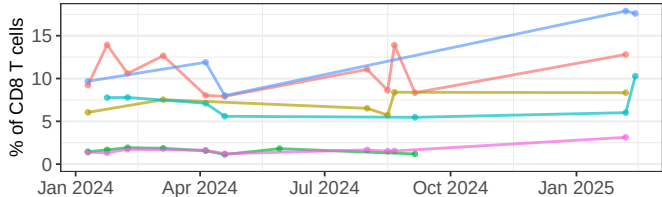
# Unswitched Memory

Average CV: 22 %



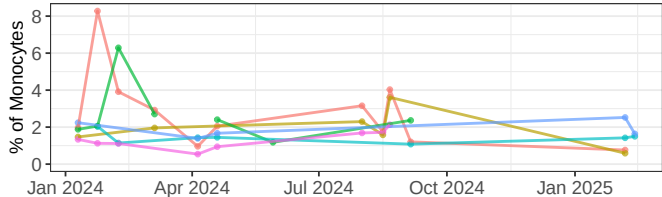
# CD8 Exhausted

Average CV: 25 %



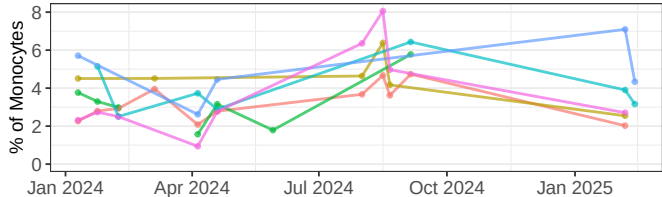
# Non-Classical Monocytes

Average CV: 46 %



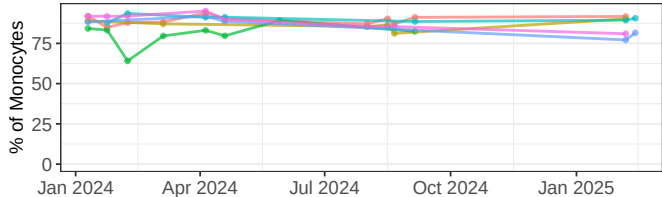
# Intermediate Monocytes

Average CV: 39 %



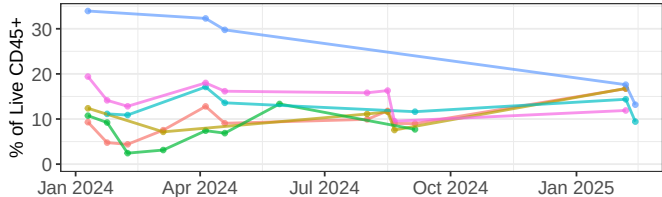
# Classical Monocytes

Average CV: 5 %



# Monocytes

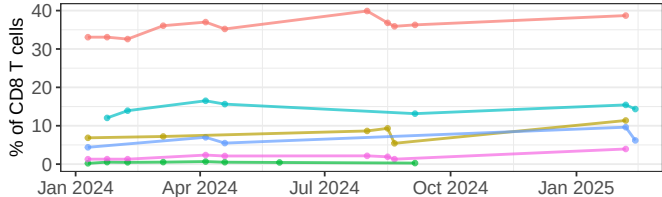
Average CV: 32 %





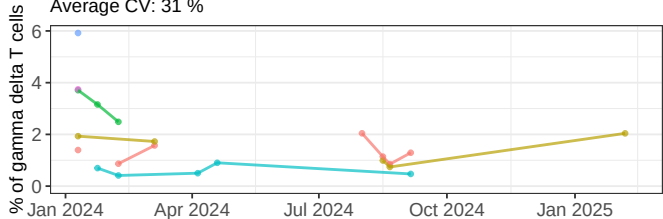
# CD8 TEMRA

Average CV: 25 %



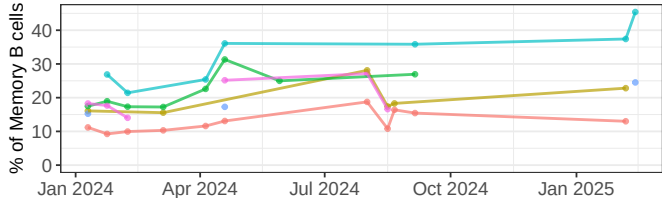
$\gamma\delta$  CD4

Average CV: 31 %



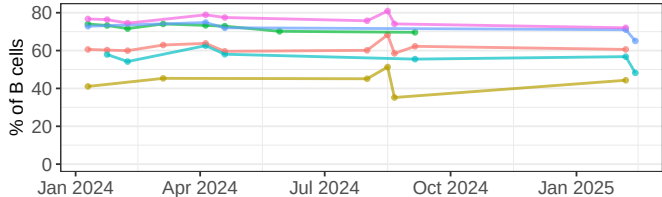
# Double Negative Memory

Average CV: 25 %



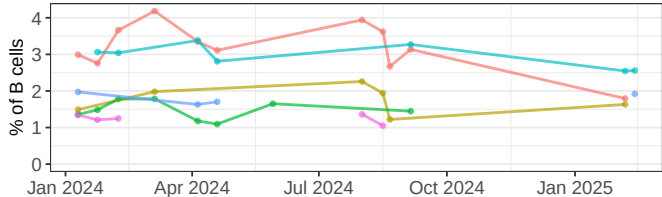
# Naïve Resting

Average CV: 5.9 %



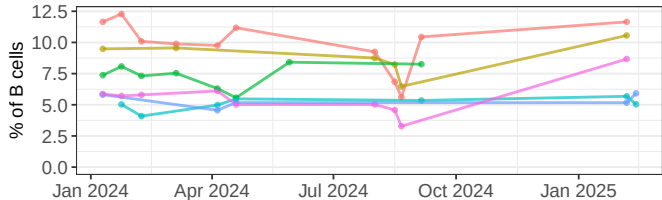
# Transitional

Average CV: 15 %



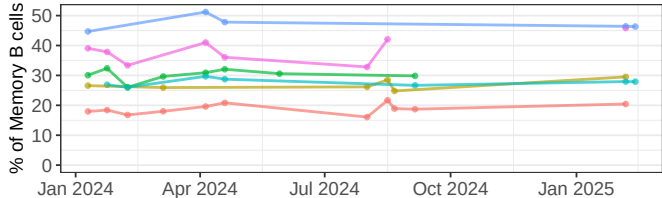
# Memory B cells

Average CV: 16 %



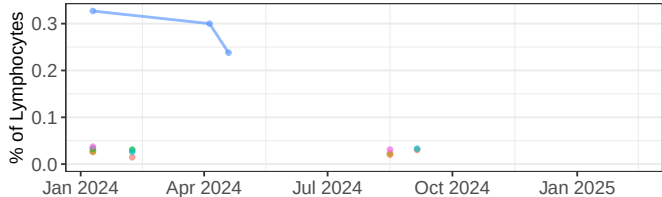
# IgA Memory

Average CV: 7.2 %



# Plasmablasts and Plasma Cells

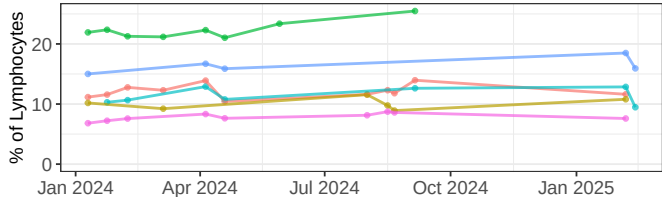
Average CV: 15 %





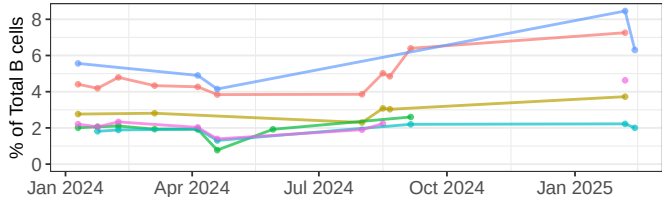
# B cells Plasmablasts and Plasma Cells

Average CV: 9 %



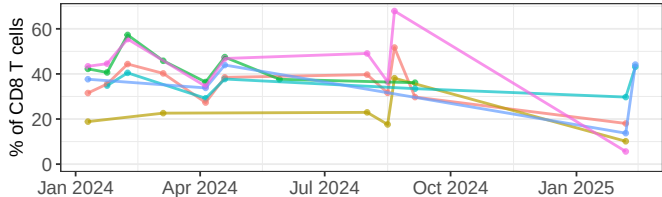
# Atypical B cells

Average CV: 25 %



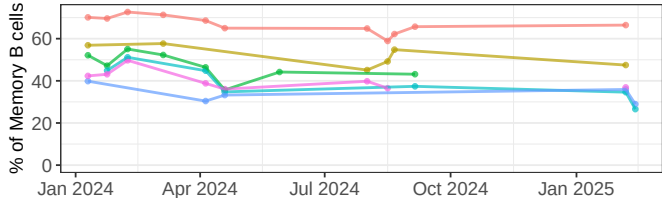
# CD8 CD38+ (activated)

Average CV: 29 %



# IgG Memory

Average CV: 12 %





# Ig-lambda light chain

Average CV: 3.2 %

