

Immunodeficiency (T&B Lymphocyte Subsets)

Contact on 0161 276 6440 to discuss extended panels for investigation of Primary Immunodeficiency

General information

These tests are most frequently done in patients who are suspected of having an underlying immunodeficiency or are receiving immunosuppressive drugs. For example, cyclosporine reduces T cell numbers, whilst Rituximab reduces B cell numbers.

The relevant tests required will be specified for each individual case.

Specimen transport: Samples should be received by the lab within 24 hours of venepuncture. Maintain samples at room temp.

Repeat frequency: At significant change of clinical symptoms

Special precautions: None

Laboratory information

Normal reference range: (95% confidence interval)

| CD marker | Age | Minimum % | Maximum % | Minimum cells/mm3 | Maximum cells/mm3 |
|-----------|-----------|-----------|-----------|-------------------|-------------------|
| CD3+ | Neonates | 28 | 76 | 600 | 5000 |
| " | 1wk - 2mo | 60 | 85 | 2300 | 7000 |
| " | 2-5 mo | 48 | 75 | 2300 | 6500 |
| " | 5-9 mo | 50 | 77 | 2400 | 6900 |
| " | 9-15 mo | 54 | 76 | 1600 | 6700 |
| " | 15-24 mo | 39 | 73 | 1400 | 8000 |
| " | 2-5 y | 43 | 76 | 900 | 4500 |
| " | 5-10 y | 55 | 78 | 700 | 4200 |
| " | 10-16 y | 52 | 78 | 800 | 3500 |
| " | Adults | 58 | 86 | 700 | 2100 |
| CD3+CD4+ | Neonates | 17 | 52 | 400 | 3500 |
| " | 1wk - 2mo | 41 | 68 | 1700 | 5300 |
| " | 2-5 mo | 33 | 58 | 1500 | 5000 |
| " | 5-9 mo | 33 | 58 | 1400 | 5100 |

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|-------------|-----------|------|------|--------|--------|
| " | 9-15 mo | 31 | 54 | 100 | 4600 |
| " | 15-24 mo | 25 | 50 | 900 | 5500 |
| " | 2-5 y | 23 | 48 | 500 | 2400 |
| " | 5-10 y | 27 | 53 | 300 | 2000 |
| " | 10-16 y | 25 | 48 | 400 | 2100 |
| " | Adults | 31 | 59 | 300 | 1400 |
| CD3+CD8+ | Neonates | 10 | 41 | 200 | 1900 |
| " | 1wk - 2mo | 9 | 23 | 400 | 1700 |
| " | 2-5 mo | 11 | 25 | 500 | 1600 |
| " | 5-9 mo | 13 | 26 | 600 | 2200 |
| " | 9-15 mo | 12 | 28 | 400 | 2100 |
| " | 15-24 mo | 11 | 32 | 400 | 2300 |
| " | 2-5 y | 14 | 33 | 300 | 1600 |
| " | 5-10 y | 19 | 34 | 300 | 1800 |
| " | 10-16 y | 9 | 35 | 200 | 1200 |
| " | Adults | 12 | 36 | 200 | 900 |
| T4:T8 Ratio | Adults | 0.92 | 3.72 | Ignore | Ignore |
| CD19+ | Neonates | 5 | 22 | 40 | 1100 |
| " | 1wk - 2mo | 4 | 26 | 600 | 1900 |
| " | 2-5 mo | 14 | 39 | 600 | 3000 |
| " | 5-9 mo | 13 | 35 | 700 | 2500 |
| " | 9-15 mo | 15 | 39 | 600 | 2700 |
| " | 15-24 mo | 17 | 41 | 600 | 3100 |
| " | 2-5 y | 14 | 44 | 200 | 2100 |
| " | 5-10 y | 10 | 31 | 200 | 1600 |
| " | 10-16 y | 8 | 24 | 200 | 600 |
| " | Adults | 3 | 25 | 100 | 500 |
| CD3-CD56+ | Neonates | 6 | 58 | 100 | 1900 |
| " | 1wk - 2mo | 3 | 23 | 200 | 1400 |
| " | 2-5 mo | 2 | 14 | 100 | 1300 |
| " | 5-9 mo | 2 | 13 | 100 | 1000 |
| " | 9-15 mo | 3 | 17 | 200 | 1200 |

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|---|----------|---|----|-----|------|
| " | 15-24 mo | 3 | 16 | 100 | 1400 |
| " | 2-5 y | 4 | 23 | 100 | 1000 |
| " | 5-10 y | 4 | 26 | 90 | 900 |
| " | 10-16 y | 6 | 27 | 70 | 1200 |
| " | Adults | 1 | 19 | 90 | 600 |

Paediatric

reference ranges are from Comans-Bitter WM, et al, "Immunophenotyping of Blood Lymphocytes in Childhood," J Paediatrics, 1997, 130:388-393

Volume and sample type: EDTA (7mls) blood

Method: Flow Cytometry

Participation in EQA scheme: UK NEQAS LI Immune Monitoring

Turnaround time (calendar days from sample receipt to authorised result): Median - 2

Clinical information

Indications for the test: Suspected cellular immunodeficiency

Factors affecting the test: Age (see normal ranges in tables). Acute infection and immunosuppressive drugs will alter T and B lymphocyte numbers.

ICE reference: ID panel

(Last updated July 2020)