

Supplemental Material

Supplementary Table 1 - Proportions of diabetes subgroups in different GDS analyses

Supplementary Table 2 - Blood cell counts in the diabetes subgroups

Supplementary Table 3 - Pairwise comparisons of blood cell counts among diabetes subgroups

Supplementary Table 4 - Flow cytometry data for the diabetes subgroups

Supplementary Table 5 - Pairwise comparisons of flow cytometry data among diabetes subgroups

Supplementary Figure 1 - Study population

Supplementary Figure 2 - Overview of gating strategies

Supplementary Figure 3 - Correlations of blood cell counts and immune cell frequencies with protein biomarkers measured in serum

Supplementary Table 1 - Proportions of diabetes subgroups in different GDS analyses.

Study population	SAID	SIDD	SIRD	MOD	MARD
Zaharia et al., 2019: First analysis of subgroups in the GDS (n=1105)	22%	3%	11%	29%	35%
This study: Participants with blood cell counts (n=669)	35%	3%	5%	28%	29%
This study: Participants with flow cytometry data (n=201)	29%	1%	6%	34%	29%

Supplementary Table 2 - Blood cell counts in the diabetes subgroups

	SAID (n = 232)	SIDD (n = 17)	SIRD (n = 36)	MOD (n = 190)	MARD (n = 194)
Leukocytes/ μ L	5700 (4800, 6900)	6300 (5100, 6700)	7100 (6425, 8300)	7200 (6225, 8400)	6500 (5500, 7675)
Lymphocytes [% leukocytes]	35.85 (31.00, 39.92)	36.00 (31.10, 38.80)	30.75 (24.18, 38.10)	32.90 (28.85, 38.40)	34.30 (28.30, 38.30)
Neutrophils [% leukocytes]	54.50 (49.35, 59.30)	52.80 (50.00, 59.10)	57.90 (52.85, 64.35)	58.35 (52.02, 62.48)	55.35 (51.18, 61.40)
NLR	1.51 (1.24, 1.90)	1.47 (1.29, 1.90)	1.95 (1.42, 2.53)	1.78 (1.34, 2.17)	1.62 (1.36, 2.14)

Data are presented as median (25th percentile, 75th percentile).

Supplementary Table 3 - Pairwise comparisons of blood cell counts among diabetes subgroups

Variable	Contrast	Unadjusted			Adjusted		
		Beta	SE	P	Beta	SE	P
Leukocytes	SAID - SIDD	-0.0896	0.0561	0.5004	0.0354	0.0654	0.9830
Leukocytes	SAID - SIRD	-0.2389	0.0359	<0.0001	0.0030	0.0590	1.0000
Leukocytes	SAID - MOD	-0.2242	0.0242	<0.0001	-0.0719	0.0363	0.2752
Leukocytes	SAID - MARD	-0.1247	0.0245	<0.0001	-0.0827	0.0358	0.1427
Leukocytes	SIDD - SIRD	-0.1493	0.0620	0.1140	-0.0323	0.0763	0.9933
Leukocytes	SIDD - MOD	-0.1346	0.0560	0.1153	-0.1073	0.0652	0.4686
Leukocytes	SIDD - MARD	-0.0352	0.0561	0.9708	-0.1181	0.0646	0.3572
Leukocytes	SIRD - MOD	0.0147	0.0357	0.9940	-0.0750	0.0456	0.4691
Leukocytes	SIRD - MARD	0.1141	0.0359	0.0135	-0.0858	0.0482	0.3872
Leukocytes	MOD - MARD	0.0994	0.0242	0.0004	-0.0108	0.0317	0.9971
Lymphocytes	SAID - SIDD	-0.0132	0.0495	0.9989	-0.0926	0.0533	0.4122
Lymphocytes	SAID - SIRD	0.1581	0.0511	0.0175	0.0494	0.0673	0.9484
Lymphocytes	SAID - MOD	0.0657	0.0218	0.0226	0.0037	0.0339	1.0000
Lymphocytes	SAID - MARD	0.0738	0.0236	0.0160	0.0251	0.0341	0.9479
Lymphocytes	SIDD - SIRD	0.1712	0.0678	0.0862	0.1420	0.0753	0.3258
Lymphocytes	SIDD - MOD	0.0788	0.0496	0.5047	0.0963	0.0536	0.3761
Lymphocytes	SIDD - MARD	0.0869	0.0504	0.4197	0.1177	0.0535	0.1809
Lymphocytes	SIRD - MOD	-0.0924	0.0512	0.3717	-0.0457	0.0572	0.9312
Lymphocytes	SIRD - MARD	-0.0843	0.0520	0.4843	-0.0243	0.0602	0.9944
Lymphocytes	MOD - MARD	0.0081	0.0238	0.9971	0.0214	0.0315	0.9612
Neutrophils	SAID - SIDD	0.0114	0.0386	0.9983	0.0465	0.0408	0.7857
Neutrophils	SAID - SIRD	-0.0730	0.0269	0.0521	-0.0151	0.0388	0.9951
Neutrophils	SAID - MOD	-0.0564	0.0141	0.0007	-0.0136	0.0218	0.9717
Neutrophils	SAID - MARD	-0.0362	0.0141	0.0774	-0.0127	0.0213	0.9754
Neutrophils	SIDD - SIRD	-0.0845	0.0449	0.3279	-0.0616	0.0497	0.7279
Neutrophils	SIDD - MOD	-0.0678	0.0386	0.4009	-0.0600	0.0408	0.5811
Neutrophils	SIDD - MARD	-0.0477	0.0386	0.7314	-0.0592	0.0403	0.5837
Neutrophils	SIRD - MOD	0.0167	0.0269	0.9719	0.0016	0.0316	1.0000
Neutrophils	SIRD - MARD	0.0368	0.0269	0.6470	0.0024	0.0330	1.0000
Neutrophils	MOD - MARD	0.0201	0.0141	0.6116	0.0008	0.0192	1.0000
NLR	SAID - SIDD	0.0246	0.0857	0.9985	0.1388	0.0912	0.5483
NLR	SAID - SIRD	-0.2311	0.0763	0.0214	-0.0660	0.1035	0.9690
NLR	SAID - MOD	-0.1220	0.0350	0.0048	-0.0171	0.0543	0.9979
NLR	SAID - MARD	-0.1100	0.0366	0.0228	-0.0384	0.0538	0.9532
NLR	SIDD - SIRD	-0.2557	0.1093	0.1342	-0.2047	0.1211	0.4408
NLR	SIDD - MOD	-0.1466	0.0858	0.4291	-0.1559	0.0914	0.4316
NLR	SIDD - MARD	-0.1346	0.0864	0.5256	-0.1772	0.0907	0.2906
NLR	SIRD - MOD	0.1091	0.0764	0.6107	0.0489	0.0868	0.9803
NLR	SIRD - MARD	0.1211	0.0772	0.5176	0.0275	0.0910	0.9982
NLR	MOD - MARD	0.0120	0.0369	0.9975	-0.0213	0.0493	0.9927

Effect estimates (ln-scale) and corresponding *P* values of pairwise comparisons (unadjusted or adjusted for clinical variables as described in the Methods section) of blood cell counts (leukocytes=leukocytes/ μ L, lymphocytes=lymphocytes [% of leukocytes], neutrophils=neutrophils [%

of leukocytes]) or neutrophil-lymphocyte-ratio (NLR). Positive/negative effect estimates result from higher/lower cell numbers and frequencies in the diabetes subgroups named first in the respective comparison.

Supplementary Table 4 - Flow cytometry data for the diabetes subgroups

	SAID (n = 59)	n_m	SIDD (n = 3)	n_m	SIRD (n = 13)	n_m	MOD (n = 68)	n_m	MARD (n = 58)	n_m
Leukocytes/ μ L	6000 (5050, 6750)	-	5700 (5100, 6200)	-	7200 (6900, 9600)	-	7200 (6275, 8400)	-	6350 (5525, 7750)	-
Lymphocytes [% leukocytes]	38.30 (32.00, 41.40)	10	37.60 (36.30, 38.90)	1	27.20 (24.58, 35.77)	5	32.45 (28.90, 37.75)	10	35.00 (27.77, 38.68)	8
Neutrophils [% leukocytes]	53.10 (49.35, 57.42)	11	55.00 (53.50, 56.50)	1	57.25 (53.90, 60.62)	5	58.40 (51.60, 62.70)	11	54.80 (51.50, 60.15)	11
NLR	1.39 (1.24, 1.81)	11	1.48 (1.38, 1.57)	1	2.16 (1.47, 2.53)	5	1.85 (1.37, 2.17)	11	1.57 (1.34, 2.02)	11
CD4 ⁺ T cells [% of CD3 ⁺ lymphocytes]	58.00 (52.65, 66.15)	-	59.30 (56.95, 65.70)	-	68.40 (64.00, 76.00)	-	60.00 (55.45, 68.17)	-	63.80 (54.80, 72.10)	1
CD8 ⁺ T cells [% of CD3 ⁺ lymphocytes]	35.70 (29.00, 41.80)	-	35.40 (29.75, 36.20)	-	22.20 (19.80, 31.30)	-	33.40 (27.00, 38.97)	-	31.30 (24.00, 39.10)	1
CD4 ⁺ CD8 ⁺ T cells [% of CD3 ⁺ lymphocytes]	0.88 (0.63, 1.42)	-	1.16 (1.09, 1.25)	-	1.13 (0.72, 1.72)	-	1.10 (0.77, 2.04)	-	1.14 (0.62, 2.14)	1
CD4 ⁺ /CD8 ⁺ T cell ratio	1.65 (1.28, 2.28)	-	1.68 (1.58, 2.33)	-	3.08 (2.06, 3.82)	-	1.84 (1.38, 2.58)	-	2.04 (1.42, 2.89)	1
T _{reg} [% of CD4 ⁺ lymphocytes]	5.55 (4.68, 6.91)	2	4.21 (3.96, 6.47)	-	5.27 (4.33, 6.28)	1	5.87 (4.63, 7.26)	-	6.37 (4.85, 7.84)	-
CCR4 ⁺ T _{reg} [% of T _{reg}]	63.90 (55.00, 74.50)	2	69.10 (48.40, 75.05)	-	74.80 (72.15, 78.55)	2	67.20 (62.80, 77.30)	3	77.10 (68.70, 83.00)	1
CD161 ⁺ T _{reg} [% of T _{reg}]	12.10 (9.23, 15.20)	2	17.20 (15.90, 23.80)	-	11.00 (9.81, 12.95)	1	13.20 (10.20, 16.70)	1	14.00 (10.93, 16.50)	-
B cells [% of lymphocytes]	12.50 (10.16, 15.05)	-	13.70 (13.60, 14.55)	-	15.20 (11.50, 17.20)	-	12.95 (10.67, 16.20)	-	11.50 (9.19, 14.43)	-
NK cells [% of lymphocytes]	9.67 (6.09, 16.25)	-	7.05 (4.91, 8.46)	-	11.10 (7.76, 12.30)	-	8.71 (5.56, 12.77)	-	11.35 (7.68, 15.52)	-
NK T cells [% of lymphocytes]	4.30 (2.42, 6.14)	-	6.35 (3.99, 6.54)	-	3.04 (1.42, 4.82)	-	4.06 (2.15, 8.02)	-	4.47 (2.55, 7.84)	-

Data are presented as median (25th percentile, 75th percentile), n_m= number of missings.

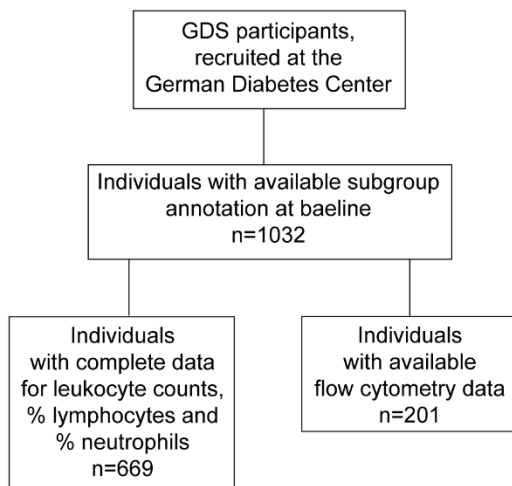
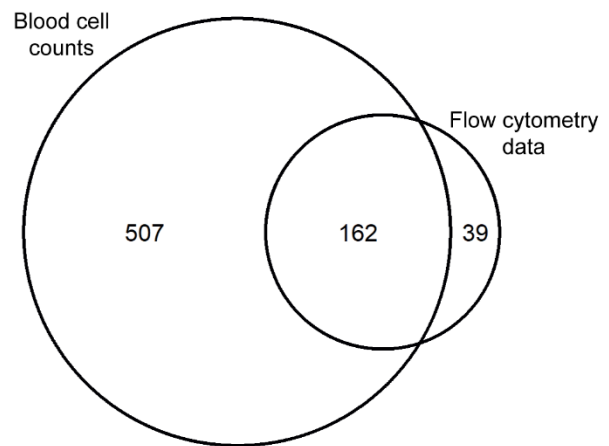
Supplementary Table 5 - Pairwise comparisons of flow cytometry data among diabetes subgroups

		Unadjusted			Adjusted		
Variable	Contrast	Beta	SE	P	Beta	SE	P
B cells	SAID - SIDD	-0.1447	0.0561	0.0782	-0.2273	0.0795	0.0377
B cells	SAID - SIRD	-0.1721	0.1104	0.5260	-0.1405	0.1666	0.9167
B cells	SAID - MOD	-0.0387	0.0569	0.9606	-0.0475	0.0859	0.9815
B cells	SAID - MARD	0.0434	0.0597	0.9500	-0.0408	0.0993	0.9940
B cells	SIDD - SIRD	-0.0273	0.1119	0.9992	0.0868	0.1659	0.9849
B cells	SIDD - MOD	0.1061	0.0597	0.3899	0.1798	0.0888	0.2583
B cells	SIDD - MARD	0.1881	0.0624	0.0240	0.1865	0.0932	0.2690
B cells	SIRD - MOD	0.1334	0.1123	0.7583	0.0929	0.1374	0.9613
B cells	SIRD - MARD	0.2155	0.1137	0.3237	0.0997	0.1359	0.9484
B cells	MOD - MARD	0.0821	0.0631	0.6908	0.0067	0.0865	1.0000
NK cells	SAID - SIDD	0.4941	0.3868	0.7053	0.5502	0.4261	0.6970
NK cells	SAID - SIRD	-0.0577	0.1039	0.9811	0.3440	0.2199	0.5223
NK cells	SAID - MOD	0.0979	0.0962	0.8469	0.2166	0.1443	0.5627
NK cells	SAID - MARD	-0.1451	0.0978	0.5749	0.2160	0.1642	0.6822
NK cells	SIDD - SIRD	-0.5518	0.3879	0.6140	-0.2062	0.4519	0.9910
NK cells	SIDD - MOD	-0.3962	0.3860	0.8429	-0.3336	0.4242	0.9343
NK cells	SIDD - MARD	-0.6392	0.3864	0.4648	-0.3343	0.4262	0.9349
NK cells	SIRD - MOD	0.1557	0.1008	0.5354	-0.1274	0.1558	0.9249
NK cells	SIRD - MARD	-0.0874	0.1024	0.9133	-0.1280	0.1425	0.8970
NK cells	MOD - MARD	-0.2430	0.0946	0.0802	-0.0007	0.1276	1.0000
NKT cells	SAID - SIDD	-0.0671	0.4716	0.9999	-0.1242	0.5024	0.9992
NKT cells	SAID - SIRD	0.4384	0.2445	0.3804	0.3876	0.4144	0.8828
NKT cells	SAID - MOD	-0.0385	0.1406	0.9988	-0.1738	0.2193	0.9325
NKT cells	SAID - MARD	-0.1821	0.1534	0.7588	-0.1279	0.2636	0.9886
NKT cells	SIDD - SIRD	0.5055	0.5122	0.8610	0.5118	0.6099	0.9180
NKT cells	SIDD - MOD	0.0286	0.4716	1.0000	-0.0496	0.5065	1.0000
NKT cells	SIDD - MARD	-0.1150	0.4755	0.9992	-0.0037	0.5138	1.0000
NKT cells	SIRD - MOD	-0.4769	0.2444	0.2942	-0.5614	0.3288	0.4320
NKT cells	SIRD - MARD	-0.6205	0.2520	0.1037	-0.5155	0.3237	0.5042
NKT cells	MOD - MARD	-0.1436	0.1533	0.8824	0.0459	0.2159	0.9995
CD4 ⁺ CD8 ⁺ T cells	SAID - SIDD	-0.2141	0.1090	0.2877	-0.1489	0.1649	0.8956
CD4 ⁺ CD8 ⁺ T cells	SAID - SIRD	-0.2626	0.2530	0.8374	0.3974	0.3813	0.8354
CD4 ⁺ CD8 ⁺ T cells	SAID - MOD	-0.3471	0.1294	0.0604	-0.0415	0.1897	0.9995
CD4 ⁺ CD8 ⁺ T cells	SAID - MARD	-0.2938	0.1521	0.3040	0.1061	0.2322	0.9910
CD4 ⁺ CD8 ⁺ T cells	SIDD - SIRD	-0.0485	0.2537	0.9997	0.5463	0.3800	0.6043
CD4 ⁺ CD8 ⁺ T cells	SIDD - MOD	-0.1330	0.1309	0.8476	0.1074	0.1971	0.9825
CD4 ⁺ CD8 ⁺ T cells	SIDD - MARD	-0.0797	0.1533	0.9853	0.2550	0.2213	0.7786
CD4 ⁺ CD8 ⁺ T cells	SIRD - MOD	-0.0845	0.2631	0.9977	-0.4389	0.3211	0.6497
CD4 ⁺ CD8 ⁺ T cells	SIRD - MARD	-0.0313	0.2750	1.0000	-0.2913	0.3233	0.8961
CD4 ⁺ CD8 ⁺ T cells	MOD - MARD	0.0533	0.1684	0.9978	0.1476	0.2126	0.9576
CD8 ⁺ T cells	SAID - SIDD	0.0876	0.1402	0.9710	0.0649	0.1334	0.9885
CD8 ⁺ T cells	SAID - SIRD	0.3601	0.0834	0.0002	0.2728	0.1467	0.3430
CD8 ⁺ T cells	SAID - MOD	0.0896	0.0491	0.3617	0.0298	0.0770	0.9952

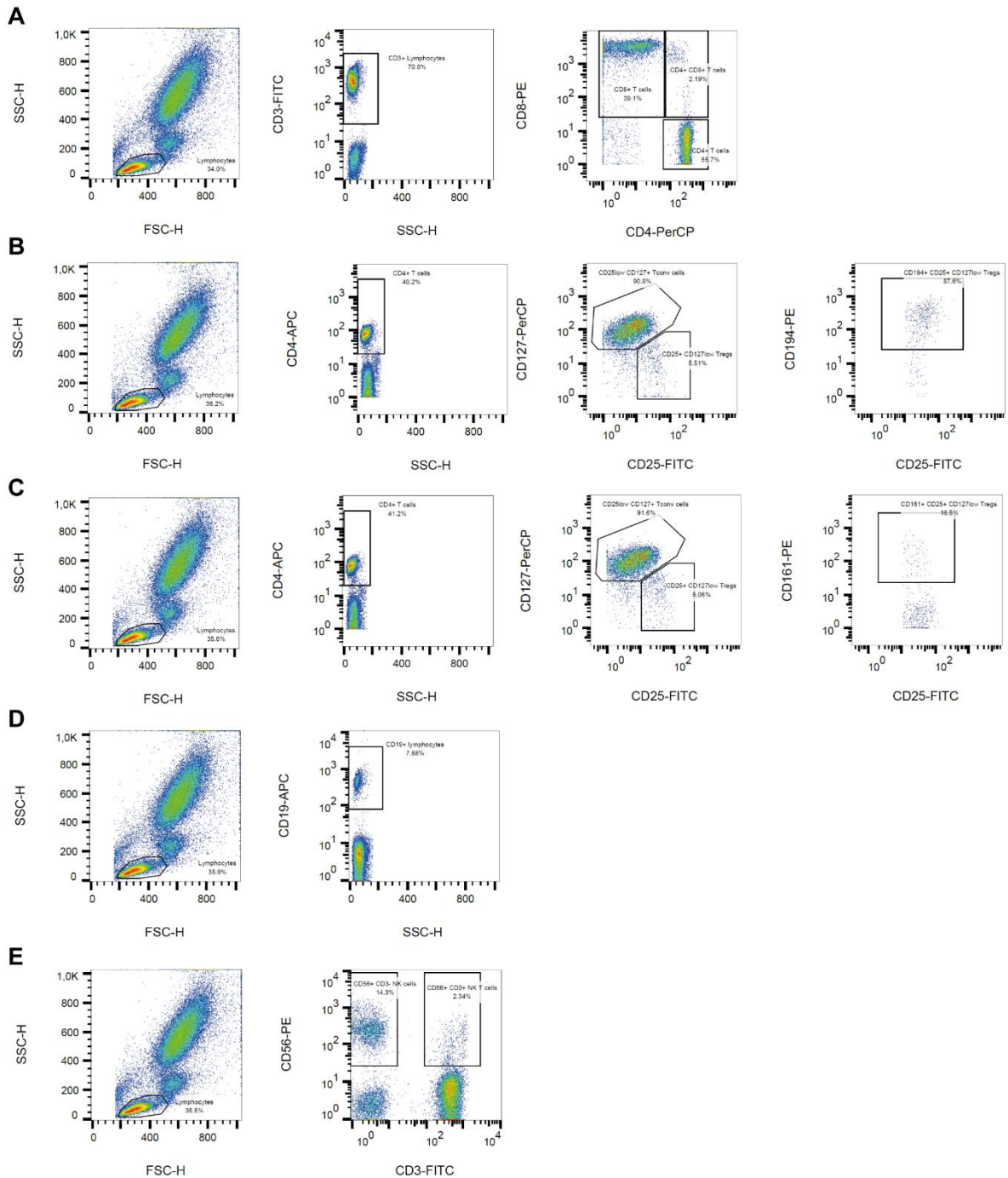
CD8 ⁺ T cells	SAID - MARD	0.1289	0.0576	0.1704	0.0594	0.0967	0.9726
CD8 ⁺ T cells	SIDD - SIRD	0.2726	0.1561	0.4084	0.2079	0.1814	0.7818
CD8 ⁺ T cells	SIDD - MOD	0.0021	0.1408	1.0000	-0.0351	0.1357	0.9990
CD8 ⁺ T cells	SIDD - MARD	0.0413	0.1440	0.9985	-0.0054	0.1417	1.0000
CD8 ⁺ T cells	SIRD - MOD	-0.2705	0.0845	0.0137	-0.2430	0.1157	0.2245
CD8 ⁺ T cells	SIRD - MARD	-0.2313	0.0897	0.0784	-0.2134	0.1157	0.3512
CD8 ⁺ T cells	MOD - MARD	0.0392	0.0592	0.9639	0.0297	0.0801	0.9960
CD4 ⁺ T cells	SAID - SIDD	-0.0530	0.0851	0.9713	-0.0532	0.0828	0.9678
CD4 ⁺ T cells	SAID - SIRD	-0.1760	0.0371	<0.0001	-0.1589	0.0803	0.2798
CD4 ⁺ T cells	SAID - MOD	-0.0449	0.0293	0.5416	-0.0318	0.0461	0.9587
CD4 ⁺ T cells	SAID - MARD	-0.0421	0.0381	0.8036	-0.0221	0.0600	0.9960
CD4 ⁺ T cells	SIDD - SIRD	-0.1230	0.0880	0.6295	-0.1057	0.1041	0.8478
CD4 ⁺ T cells	SIDD - MOD	0.0081	0.0849	1.0000	0.0214	0.0833	0.9990
CD4 ⁺ T cells	SIDD - MARD	0.0109	0.0884	0.9999	0.0311	0.0884	0.9967
CD4 ⁺ T cells	SIRD - MOD	0.1311	0.0368	0.0043	0.1272	0.0592	0.2039
CD4 ⁺ T cells	SIRD - MARD	0.1338	0.0442	0.0232	0.1368	0.0606	0.1633
CD4 ⁺ T cells	MOD - MARD	0.0028	0.0378	1.0000	0.0097	0.0494	0.9997
CD4 ⁺ /CD8 ⁺ T cell ratio	SAID - SIDD	-0.1405	0.2241	0.9706	-0.1193	0.2167	0.9818
CD4 ⁺ /CD8 ⁺ T cell ratio	SAID - SIRD	-0.5361	0.1190	0.0001	-0.4552	0.2249	0.2586
CD4 ⁺ /CD8 ⁺ T cell ratio	SAID - MOD	-0.1244	0.0782	0.5054	-0.0589	0.1227	0.9891
CD4 ⁺ /CD8 ⁺ T cell ratio	SAID - MARD	-0.1710	0.0913	0.3357	-0.1050	0.1534	0.9597
CD4 ⁺ /CD8 ⁺ T cell ratio	SIDD - SIRD	-0.3956	0.2420	0.4775	-0.3360	0.2848	0.7630
CD4 ⁺ /CD8 ⁺ T cell ratio	SIDD - MOD	0.0161	0.2248	1.0000	0.0603	0.2200	0.9988
CD4 ⁺ /CD8 ⁺ T cell ratio	SIDD - MARD	-0.0305	0.2297	0.9999	0.0143	0.2291	1.0000
CD4 ⁺ /CD8 ⁺ T cell ratio	SIRD - MOD	0.4117	0.1203	0.0068	0.3963	0.1736	0.1550
CD4 ⁺ /CD8 ⁺ T cell ratio	SIRD - MARD	0.3651	0.1292	0.0413	0.3503	0.1727	0.2569
CD4 ⁺ /CD8 ⁺ T cell ratio	MOD - MARD	-0.0466	0.0931	0.9872	-0.0460	0.1267	0.9963
T _{regs}	SAID - SIDD	0.1024	0.2700	0.9956	0.2448	0.2489	0.8625
T _{regs}	SAID - SIRD	0.0919	0.0767	0.7526	0.2911	0.1427	0.2517
T _{regs}	SAID - MOD	-0.0078	0.0577	0.9999	0.1545	0.0857	0.3757
T _{regs}	SAID - MARD	-0.0636	0.0597	0.8240	0.0917	0.1020	0.8970
T _{regs}	SIDD - SIRD	-0.0105	0.2754	1.0000	0.0463	0.2726	0.9998
T _{regs}	SIDD - MOD	-0.1102	0.2707	0.9942	-0.0903	0.2503	0.9964
T _{regs}	SIDD - MARD	-0.1660	0.2711	0.9730	-0.1530	0.2527	0.9741
T _{regs}	SIRD - MOD	-0.0997	0.0791	0.7156	-0.1366	0.1062	0.7006
T _{regs}	SIRD - MARD	-0.1555	0.0805	0.3049	-0.1994	0.1008	0.2812
T _{regs}	MOD - MARD	-0.0558	0.0627	0.9003	-0.0628	0.0847	0.9466
CCR4 ⁺ T _{regs}	SAID - SIDD	0.1430	0.3363	0.9931	0.1150	0.3507	0.9975
CCR4 ⁺ T _{regs}	SAID - SIRD	-0.1941	0.0414	<0.0001	-0.0652	0.0814	0.9299
CCR4 ⁺ T _{regs}	SAID - MOD	-0.0881	0.0410	0.2038	-0.0918	0.0556	0.4669
CCR4 ⁺ T _{regs}	SAID - MARD	-0.1654	0.0487	0.0074	-0.0855	0.0673	0.7098
CCR4 ⁺ T _{regs}	SIDD - SIRD	-0.3370	0.3350	0.8523	-0.1802	0.3536	0.9863
CCR4 ⁺ T _{regs}	SIDD - MOD	-0.2310	0.3349	0.9585	-0.2068	0.3491	0.9761
CCR4 ⁺ T _{regs}	SIDD - MARD	-0.3083	0.3360	0.8898	-0.2005	0.3504	0.9790
CCR4 ⁺ T _{regs}	SIRD - MOD	0.1060	0.0283	0.0022	-0.0265	0.0521	0.9863
CCR4 ⁺ T _{regs}	SIRD - MARD	0.0287	0.0386	0.9462	-0.0203	0.0528	0.9954
CCR4 ⁺ T _{regs}	MOD - MARD	-0.0773	0.0381	0.2574	0.0063	0.0470	0.9999

CD161 ⁺ T _{regs}	SAID - SIDD	-0.5472	0.2327	0.1337	-0.5674	0.2247	0.0895
CD161 ⁺ T _{regs}	SAID - SIRD	-0.0159	0.1080	0.9999	0.3790	0.1905	0.2752
CD161 ⁺ T _{regs}	SAID - MOD	-0.1141	0.0839	0.6543	-0.0232	0.1243	0.9997
CD161 ⁺ T _{regs}	SAID - MARD	-0.1460	0.0811	0.3761	0.0561	0.1369	0.9940
CD161 ⁺ T _{regs}	SIDD - SIRD	0.5313	0.2373	0.1699	0.9464	0.2557	0.0026
CD161 ⁺ T _{regs}	SIDD - MOD	0.4331	0.2273	0.3181	0.5442	0.2145	0.0870
CD161 ⁺ T _{regs}	SIDD - MARD	0.4012	0.2263	0.3925	0.6236	0.2149	0.0336
CD161 ⁺ T _{regs}	SIRD - MOD	-0.0982	0.0958	0.8434	-0.4022	0.1346	0.0262
CD161 ⁺ T _{regs}	SIRD - MARD	-0.1302	0.0933	0.6317	-0.3229	0.1298	0.0979
CD161 ⁺ T _{regs}	MOD - MARD	-0.0320	0.0639	0.9873	0.0793	0.0941	0.9167

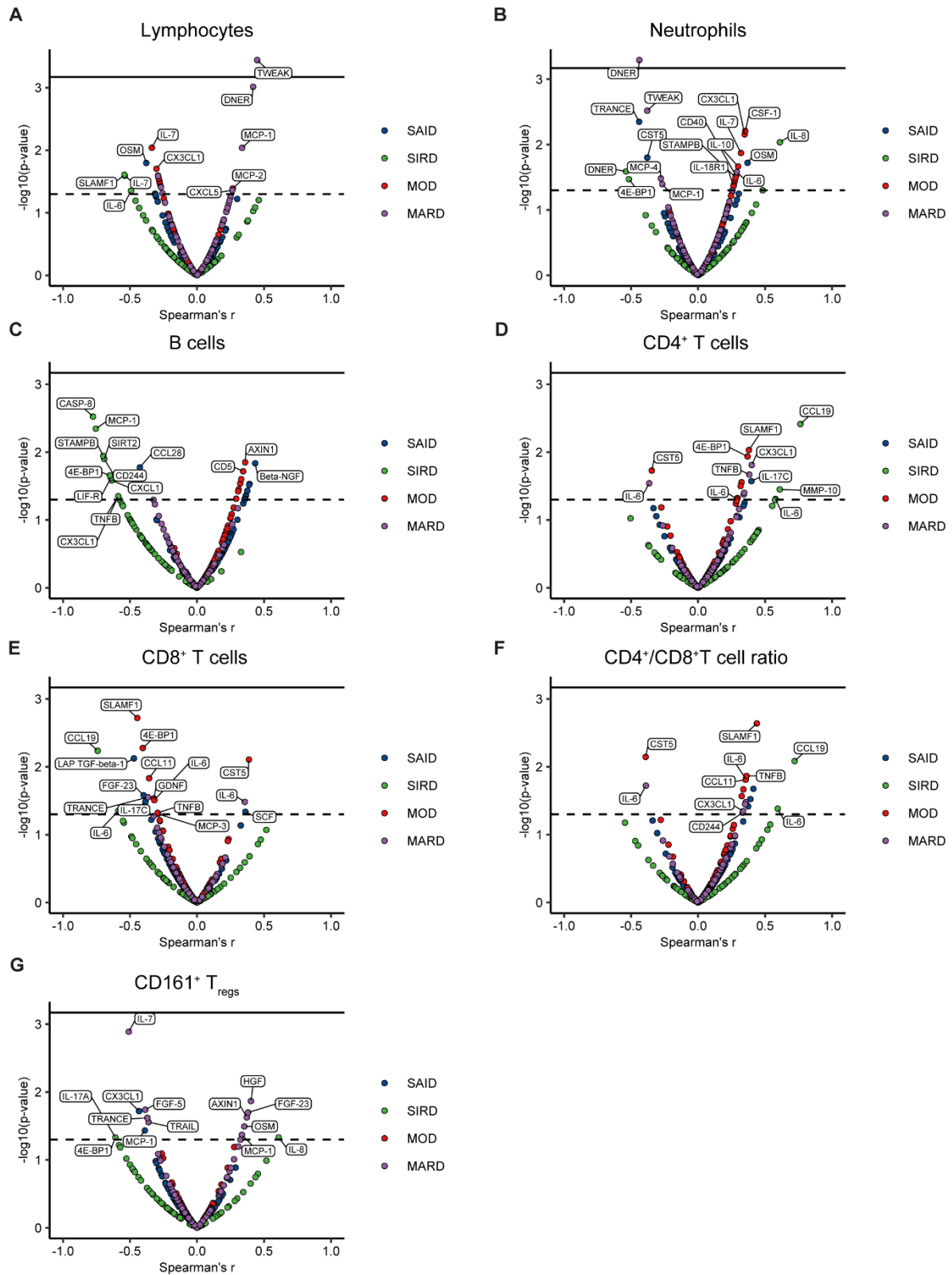
Effect estimates (ln-scale) and corresponding *P* values of pairwise (unadjusted or adjusted for clustering variables as described in the Methods section) comparisons of B cells, NKT cells, NK cells (all [% of lymphocytes]), CD4⁺CD8⁺ T cells, CD8⁺ T cells, CD4⁺ T cells (all [% of CD3⁺ lymphocytes]), CD4⁺/CD8⁺ T cell ratio, T_{regs} [% of CD4⁺ T cells], CCR4⁺ T_{regs} and CD161⁺ T_{regs} [% of total T_{regs}]. Positive/negative effect estimates result from higher/lower cell numbers and frequencies in the diabetes subgroups named first in the respective comparison.

A**B**

Supplementary Figure 1 - Study population. (A) Overview of all included GDS participants. (B) Overlap of subpopulation with complete data for blood cell counts with population with available flow cytometry data.



Supplementary Figure 2 - Overview of gating strategies. A-E: Gating strategies for T cells (A), CD194 (=CCR4)⁺ regulatory T cells (B), CD161⁺ regulatory T cells (C), B cells (D), NK and NK T cells (E).



Supplementary Figure 3 - Correlations of blood cell counts and immune cell frequencies with protein biomarkers measured in serum. A-G: Correlations between lymphocytes (A), neutrophils (B), B cells (C), CD4⁺ T cells (D), CD8⁺ T cells (E), CD4⁺/CD8⁺ T cell ratio (F) and CD161⁺ regulatory T cells (G) with 74 proteins measured in serum are displayed as volcano plots, where each dot represents Spearman's r and corresponding P value for the correlation of one protein with the indicated celltype frequency in the corresponding graph. Horizontal lines represent P value thresholds (dotted line $P=0.05$; solid line: $P=0.0007$, Bonferroni correction for multiple testing of 74 proteins). Proteins with $P>0.05$ are labeled by name; the number of labels was limited to enable readability.