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Acronym	Protein	UniProt	LOD_Batch_20160383	LOD_Batch_20160977	Uniprt_Web	Wiki_Web
ADA	Adenosine Deaminase	P00813	0.436494	1.584419	http://www.uniprot.org/uniprot/P00813	https://en.wikipedia.org/wiki/Adenosine_deaminase
ARTN	Artemin	Q5T4W7	0.031349	0.031349	http://www.uniprot.org/uniprot/Q5T4W7	https://en.wikipedia.org/wiki/Artemin
AXIN1	Axin-1	O15169	0.845030	0.576816	http://www.uniprot.org/uniprot/O15169	https://en.wikipedia.org/wiki/AXIN1
BDNF	Brain-derived neurotrophic factor	P23560	-0.380273	-0.045445	http://www.uniprot.org/uniprot/P23560	https://en.wikipedia.org/wiki/Brain-derived_neurotrophic_factor
BNGF	Beta-nerve growth factor	P01138	0.755167	0.631771	http://www.uniprot.org/uniprot/P01138	
CASP8	Caspase-8	Q14790	0.507711	0.151261	http://www.uniprot.org/uniprot/Q14790	https://en.wikipedia.org/wiki/Caspase_8
CCL11	Eotaxin	P51671	1.427776	0.950032	http://www.uniprot.org/uniprot/P51671	https://en.wikipedia.org/wiki/CCL11
CCL19	C-C motif chemokine 19	Q99731	0.988040	-0.038600	http://www.uniprot.org/uniprot/Q99731	https://en.wikipedia.org/wiki/CCL19
CCL20	C-C motif chemokine 20	P78556	1.276281	1.290873	http://www.uniprot.org/uniprot/P78556	https://en.wikipedia.org/wiki/CCL20
CCL23	C-C motif chemokine 23	P55773	0.780150	0.047888	http://www.uniprot.org/uniprot/P55773	https://en.wikipedia.org/wiki/CCL23
CCL25	C-C motif chemokine 25	O15444	1.083723	0.634603	http://www.uniprot.org/uniprot/O15444	https://en.wikipedia.org/wiki/CCL25
CCL28	C-C motif chemokine 28	Q9NRJ3	0.069990	-0.046866	http://www.uniprot.org/uniprot/Q9NRJ3	https://en.wikipedia.org/wiki/CCL28
CCL3	C-C motif chemokine 3	P10147	-0.077074	-0.524618	http://www.uniprot.org/uniprot/P10147	https://en.wikipedia.org/wiki/CCL3
CCL4	C-C motif chemokine 4	P13236	0.392063	-0.121811	http://www.uniprot.org/uniprot/P13236	https://en.wikipedia.org/wiki/CCL4
CD244	Natural killer cell receptor 2B4	Q9BZW8	1.658169	1.062742	http://www.uniprot.org/uniprot/Q9BZW8	https://en.wikipedia.org/wiki/CD244
CD40	CD40L receptor	P25942	0.757131	-0.447591	http://www.uniprot.org/uniprot/P25942	https://en.wikipedia.org/wiki/CD40_(protein)
CD5	T-cell surface glycoprotein CD5	P06127	-0.487334	-0.578852	http://www.uniprot.org/uniprot/P06127	https://en.wikipedia.org/wiki/CD5_(protein)
CD6	T cell surface glycoprotein CD6 isoform	Q8WWJ7	-0.194972	-0.146330	http://www.uniprot.org/uniprot/Q8WWJ7	https://en.wikipedia.org/wiki/CD6
CDCP1	CUB domain-containing protein 1	Q9H5V8	0.367527	0.038621	http://www.uniprot.org/uniprot/Q9H5V8	https://en.wikipedia.org/wiki/CDCP1
CSF1	Macrophage colony-stimulating factor 1	P09603	-0.003590	0.396328	http://www.uniprot.org/uniprot/P09603	https://en.wikipedia.org/wiki/Macrophage_colony-stimulating_factor
CST5	Cystatin D	P28325	0.046105	5.808007	http://www.uniprot.org/uniprot/P28325	https://en.wikipedia.org/wiki/CST5
CX3CL1	Fractalkine	P78423	1.875148	1.166002	http://www.uniprot.org/uniprot/P78423	https://en.wikipedia.org/wiki/CX3CL1
CXCL1	C-X-C motif chemokine 1	P09341	1.387787	0.758507	http://www.uniprot.org/uniprot/P09341	https://en.wikipedia.org/wiki/CXCL10
CXCL10	C-X-C motif chemokine 10	P02778	1.534295	1.358654	http://www.uniprot.org/uniprot/P02778	https://en.wikipedia.org/wiki/CXCL10
CXCL11	C-X-C motif chemokine 11	O14625	1.471448	0.111323	http://www.uniprot.org/uniprot/O14625	https://en.wikipedia.org/wiki/CXCL11
CXCL5	C-X-C motif chemokine 5	P42830	1.184377	1.639521	http://www.uniprot.org/uniprot/P42830	https://en.wikipedia.org/wiki/CXCL5
CXCL6	C-X-C motif chemokine 6	P80162	0.843005	0.398682	http://www.uniprot.org/uniprot/P80162	https://en.wikipedia.org/wiki/CXCL6
CXCL9	C-X-C motif chemokine 9	Q07325	1.559012	1.430370	http://www.uniprot.org/uniprot/Q07325	https://en.wikipedia.org/wiki/CXCL9
DNER	Delta and Notch-like epidermal growth factor-related receptor	Q8NFT8	-0.127219	-0.730436	http://www.uniprot.org/uniprot/Q8NFT8	https://en.wikipedia.org/wiki/DNER
EIF4EBP1	Eukaryotic translation initiation factor 4E-binding protein 1	Q13541	0.893928	0.969980	http://www.uniprot.org/uniprot/Q13541	https://en.wikipedia.org/wiki/EIF4EBP1
ENRAGE	Protein S100-A12	P80511	0.313350	0.996331	http://www.uniprot.org/uniprot/P80511	https://en.wikipedia.org/wiki/S100A12
FGF19	Fibroblast growth factor 19	O95750	0.662450	0.255022	http://www.uniprot.org/uniprot/O95750	https://en.wikipedia.org/wiki/FGF19
FGF21	Fibroblast growth factor 21	Q9NSA1	0.844435	-0.310457	http://www.uniprot.org/uniprot/Q9NSA1	https://en.wikipedia.org/wiki/FGF21
FGF23	Fibroblast growth factor 23	Q9GZV9	1.039348	1.108382	http://www.uniprot.org/uniprot/Q9GZV9	https://en.wikipedia.org/wiki/FGF23
FGF5	Fibroblast growth factor 5	Q8NF90	1.142597	0.876939	http://www.uniprot.org/uniprot/Q8NF90	https://en.wikipedia.org/wiki/FGF5
FLT3L	Fms-related tyrosine kinase 3 ligand	P49771	1.866726	1.119030	http://www.uniprot.org/uniprot/P49771	https://en.wikipedia.org/wiki/FLT3LG
GDNF	Glial cell line-derived neurotrophic factor	P39905	1.331378	1.648532	http://www.uniprot.org/uniprot/P39905	https://en.wikipedia.org/wiki/Glial_cell_line-derived_neurotrophic_factor
HGF	Hepatocyte growth factor	P14210	1.146276	0.395915	http://www.uniprot.org/uniprot/P14210	https://en.wikipedia.org/wiki/Hepatocyte_growth_factor
IFNG	Interferon gamma	P01579	0.992133	0.992133	http://www.uniprot.org/uniprot/P01579	https://en.wikipedia.org/wiki/Interferon_gamma
IL10	Interleukin-10	P22301	1.839415	2.432488	http://www.uniprot.org/uniprot/P22301	https://en.wikipedia.org/wiki/Interleukin_10
IL10RA	Interleukin-10 receptor subunit alpha	Q13651	0.996689	0.662247	http://www.uniprot.org/uniprot/Q13651	https://en.wikipedia.org/wiki/Interleukin_10_receptor,_alpha_subunit
IL10RB	Interleukin-10 receptor subunit beta	Q08334	1.425411	1.405083	http://www.uniprot.org/uniprot/Q08334	https://en.wikipedia.org/wiki/Interleukin_10_receptor,_beta_subunit
IL12B	Interleukin-12 subunit beta	P29460	-0.338237	-0.143724	http://www.uniprot.org/uniprot/P29460	https://en.wikipedia.org/wiki/Interleukin_12_receptor,_beta_1_subunit
IL13	Interleukin-13	P35225	1.537823	1.537823	http://www.uniprot.org/uniprot/P35225	https://en.wikipedia.org/wiki/Interleukin_13
IL15RA	Interleukin-15 receptor subunit alpha	Q13261	0.783341	0.595480	http://www.uniprot.org/uniprot/Q13261	https://en.wikipedia.org/wiki/Interleukin_15_receptor,_alpha_subunit
IL17A	Interleukin-17A	Q16552	0.532945	0.371852	http://www.uniprot.org/uniprot/Q16552	https://en.wikipedia.org/wiki/IL17A
IL17C	Interleukin-17C	Q9P0M4	1.371362	1.358013	http://www.uniprot.org/uniprot/Q9P0M4	
IL18	Interleukin-18	Q14116	-0.188372	0.365590	http://www.uniprot.org/uniprot/Q14116	https://en.wikipedia.org/wiki/Interleukin_18
IL18R1	Interleukin-18 receptor 1	Q13478	0.933131	0.638867	http://www.uniprot.org/uniprot/Q13478	https://en.wikipedia.org/wiki/Interleukin-18_receptor
IL1A	Interleukin-1 alpha	P01583	0.336995	1.802489	http://www.uniprot.org/uniprot/P01583	https://en.wikipedia.org/wiki/IL1A
IL2	Interleukin-2	P60568	1.223237	1.223237	http://www.uniprot.org/uniprot/P60568	https://en.wikipedia.org/wiki/Interleukin_2
IL20	Interleukin-20	Q9NYY1	0.728374	0.813528	http://www.uniprot.org/uniprot/Q9NYY1	https://en.wikipedia.org/wiki/Interleukin_20
IL20RA	Interleukin-20 receptor subunit alpha	Q9UHF4	0.877718	0.881812	http://www.uniprot.org/uniprot/Q9UHF4	
IL22RA1	Interleukin-22 receptor subunit alpha-1	Q8N6P7	2.260242	2.260242	http://www.uniprot.org/uniprot/Q8N6P7	
IL24	Interleukin-24	Q13007	1.336190	1.336190	http://www.uniprot.org/uniprot/Q13007	https://en.wikipedia.org/wiki/Interleukin_24
IL2RB	Interleukin-2 receptor subunit beta	P14784	0.845790	0.845790	http://www.uniprot.org/uniprot/P14784	https://en.wikipedia.org/wiki/IL2RB
IL33	Interleukin-33	O95760	1.425509	1.425509	http://www.uniprot.org/uniprot/O95760	https://en.wikipedia.org/wiki/Interleukin_33
IL4	Interleukin-4	P05112	1.184842	0.958605	http://www.uniprot.org/uniprot/P05112	https://en.wikipedia.org/wiki/Interleukin_4
IL5	Interleukin-5	P05113	1.725314	1.647055	http://www.uniprot.org/uniprot/P05113	https://en.wikipedia.org/wiki/Interleukin_5
IL6	Interleukin-6	P05231	0.824445	2.415735	http://www.uniprot.org/uniprot/P05231	https://en.wikipedia.org/wiki/Interleukin_6
IL7	Interleukin-7	P13232	1.021735	1.336047	http://www.uniprot.org/uniprot/P13232	https://en.wikipedia.org/wiki/Interleukin_7
IL8	Interleukin-8	P10145	1.162271	2.227435	http://www.uniprot.org/uniprot/P10145	https://en.wikipedia.org/wiki/Interleukin_8
LIF	Leukemia inhibitory factor	P15018	0.800844	0.800844	http://www.uniprot.org/uniprot/P15018	https://en.wikipedia.org/wiki/Leukemia_inhibitory_factor
LIFR	Leukemia inhibitory factor receptor	P42702	1.665534	-0.265929	http://www.uniprot.org/uniprot/P42702	https://en.wikipedia.org/wiki/LIFR
MCP1	Monocyte chemotactic protein 1	P13500	0.358877	-0.161967	http://www.uniprot.org/uniprot/P13500	https://en.wikipedia.org/wiki/Monocyte_chemoattractant_protein_1
MCP2	Monocyte chemotactic protein 2	P80075	1.385177	1.823898	http://www.uniprot.org/uniprot/P80075	
MCP3	Monocyte chemotactic protein 3	P80098	1.493173	1.699734	http://www.uniprot.org/uniprot/P80098	
MCP4	Monocyte chemotactic protein 4	Q99616	-0.265469	-0.298464	http://www.uniprot.org/uniprot/Q99616	
MMP1	Matrix metalloproteinase-1	P03956	-0.024189	-6.622735	http://www.uniprot.org/uniprot/P03956	https://en.wikipedia.org/wiki/Matrix_metalloproteinase
MMP10	Matrix metalloproteinase-10	P09238	1.379258	3.725904	http://www.uniprot.org/uniprot/P09238	https://en.wikipedia.org/wiki/Matrix_metalloproteinase
NRTN	Neurturin	Q99748	1.124936	1.124936	http://www.uniprot.org/uniprot/Q99748	https://en.wikipedia.org/wiki/Neurturin
NT3	Neurotrophin-3	P20783	0.771270	0.918843	http://www.uniprot.org/uniprot/P20783	https://en.wikipedia.org/wiki/Neurotrophin-3
OPG	Osteoprotegerin	O00300	0.918419	0.590118	http://www.uniprot.org/uniprot/O00300	https://en.wikipedia.org/wiki/Osteoprotegerin
OSM	Oncostatin-M	P13725	-0.153103	-0.025163	http://www.uniprot.org/uniprot/P13725	https://en.wikipedia.org/wiki/Oncostatin_M
PDL1	Programmed cell death 1 ligand 1	Q9NZQ7	2.257393	2.092503	http://www.uniprot.org/uniprot/Q9NZQ7	https://en.wikipedia.org/wiki/PD-L1
SCF	Stem cell factor	P21583	0.922578	0.051798	http://www.uniprot.org/uniprot/P21583	https://en.wikipedia.org/wiki/Stem_cell_factor
SIRT2	SIR2-like protein 2	Q8IXJ6	1.402289	1.386472	http://www.uniprot.org/uniprot/Q8IXJ6	
SLAMF1	Signaling lymphocytic activation molecule	Q13291	1.849931	1.677337	http://www.uniprot.org/uniprot/Q13291	https://en.wikipedia.org/wiki/Signaling_lymphocytic_activation_molecule
ST1A1	Sulfotransferase 1A1	P50225	0.078597	0.568043	http://www.uniprot.org/uniprot/P50225	https://en.wikipedia.org/wiki/SULT1A1
STAMBP	STAM-binding protein	O95630	0.667136	0.627816	http://www.uniprot.org/uniprot/O95630	https://en.wikipedia.org/wiki/STAMBP
TGFA	Transforming growth factor alpha	P01135	-1.214780	-1.869967	http://www.uniprot.org/uniprot/P01135	https://en.wikipedia.org/wiki/TGF_alpha
TGFB1	Latency-associated peptide transforming growth factor beta-1	P01137	1.034369	0.482168	http://www.uniprot.org/uniprot/P01137	https://en.wikipedia.org/wiki/TGF_beta_1
TNF	Tumor necrosis factor	P01375	0.831819	0.837656	http://www.uniprot.org/uniprot/P01375	https://en.wikipedia.org/wiki/Tumor_necrosis_factor
TNFB	TNF-beta	P01374	0.605630	0.200990	http://www.uniprot.org/uniprot/P01374	https://en.wikipedia.org/wiki/Lymphotoxin_alpha
TNFRSF9	Tumor necrosis factor receptor superfamily member 9	Q07011	1.599546	1.466786	http://www.uniprot.org/uniprot/Q07011	https://en.wikipedia.org/wiki/4-1BB_ligand
TNFSF14	Tumor necrosis factor ligand superfamily member 14	O43557	0.210933	-0.170624	http://www.uniprot.org/uniprot/O43557	https://en.wikipedia.org/wiki/LIGHT_(protein)
TRAIL	TNF-related apoptosis-inducing ligand	P50591	0.651508	0.548601	http://www.uniprot.org/uniprot/P50591	https://en.wikipedia.org/wiki/TRAIL
TRANCE	TNF-related activation-induced cytokine	O14788	1.263670	1.118725	http://www.uniprot.org/uniprot/O14788	https://en.wikipedia.org/wiki/Receptor_activator_of_nuclear_factor_kappa-B_ligand
TSLP	Thymic stromal lymphopoietin	Q969D9	1.080835	1.080835	http://www.uniprot.org/uniprot/Q969D9	https://en.wikipedia.org/wiki/Thymic_stromal_lymphopoietin
TWEAK	Tumor necrosis factor	O43508	0.511139	0.439180	http://www.uniprot.org/uniprot/O43508	https://en.wikipedia.org/wiki/Tumor_necrosis_factor
UPA	Urokinase-type plasminogen activator	P00749	0.767444	0.691054	http://www.uniprot.org/uniprot/P00749	https://en.wikipedia.org/wiki/Urokinase
VEGFA	Vascular endothelial growth factor A	P15692	1.566666	1.233603	http://www.uniprot.org/uniprot/P15692	https://en.wikipedia.org/wiki/Vascular_endothelial_growth_factor

Table 1: *Summary of all biomarkers. From left to right, short acronym with the protein ID, protein name, UniProt ID, LOD value for each of the two run batches, UniProt web with the protein, Wikipedia link with the protein.*

Acronym	Protein	Significance	$\mathbb{T}_{men}$	$\mathbb{T}_{women}$
ADA	Adenosine Deaminase	****	5.16	4.75
ARTN	Artemin	ns	-0.21	-0.22
AXIN1	Axin-1	****	1.19	1.07
BDNF	Brain-derived neurotrophic factor	***	4.61	3.76
BNGF	Beta-nerve growth factor	ns	1.93	1.93
CASP8	Caspase-8	*	1.46	1.4
CCL11	Eotaxin	****	7.9	7.76
CCL19	C-C motif chemokine 19	ns	9.37	9.37
CCL20	C-C motif chemokine 20	ns	6.06	6.06
CCL23	C-C motif chemokine 23	ns	9.35	9.39
CCL25	C-C motif chemokine 25	**	6.17	6.05
CCL28	C-C motif chemokine 28	****	0.83	1.26
CCL3	C-C motif chemokine 3	ns	2.24	2.2
CCL4	C-C motif chemokine 4	****	6.58	6.44
CD244	Natural killer cell receptor 2B4	***	6.38	6.31
CD40	CD40L receptor	****	9.29	9.18
CD5	T-cell surface glycoprotein CD5	**	4.05	3.99
CD6	T cell surface glycoprotein CD6 isoform	ns	3.65	3.59
CDCP1	CUB domain-containing protein 1	ns	2.44	2.41
CSF1	Macrophage colony-stimulating factor 1	*	7.87	7.9
CST5	Cystatin D	****	6.87	6.75
CX3CL1	Fractalkine	ns	6.52	6.52
CXCL1	C-X-C motif chemokine 1	****	8.72	8.85
CXCL10	C-X-C motif chemokine 10	ns	9.51	9.6
CXCL11	C-X-C motif chemokine 11	**	7.1	7.24
CXCL5	C-X-C motif chemokine 5	****	12.1	12.53
CXCL6	C-X-C motif chemokine 6	ns	9.08	9.02
CXCL9	C-X-C motif chemokine 9	ns	7.29	7.28
DNER	Delta and Notch-like epidermal growth factor-related receptor	****	7.35	7.27
EIF4EBP1	Eukaryotic translation initiation factor 4E-binding protein 1	****	5.99	5.5
ENRAGE	Protein S100-A12	ns	5.16	5.11
FGF19	Fibroblast growth factor 19	ns	7.88	7.87
FGF21	Fibroblast growth factor 21	ns	3.16	3.13
FGF23	Fibroblast growth factor 23	ns	2.68	2.63
FGF5	Fibroblast growth factor 5	ns	1.42	1.43
FLT3L	Fms-related tyrosine kinase 3 ligand	*	8.78	8.83
GDNF	Glial cell line-derived neurotrophic factor	***	2.17	2.08
HGF	Hepatocyte growth factor	****	7.8	7.91
IFNG	Interferon gamma	ns	0.62	0.63
IL10	Interleukin-10	ns	4.14	4.11
IL10RA	Interleukin-10 receptor subunit alpha	ns	1.41	1.37
IL10RB	Interleukin-10 receptor subunit beta	****	7.61	7.47
IL12B	Interleukin-12 subunit beta	ns	4.81	4.85
IL13	Interleukin-13	ns	1.06	1.02
IL15RA	Interleukin-15 receptor subunit alpha	****	1.31	1.22
IL17A	Interleukin-17A	ns	0.83	0.8
IL17C	Interleukin-17C	****	1.72	1.58
IL18	Interleukin-18	ns	7.07	7.02
IL18R1	Interleukin-18 receptor 1	**	7.61	7.53
IL1A	Interleukin-1 alpha	***	1.04	1.18
IL2	Interleukin-2	ns	0.74	0.74
IL20	Interleukin-20	ns	0.54	0.52
IL20RA	Interleukin-20 receptor subunit alpha	ns	0.75	0.73
IL22RA1	Interleukin-22 receptor subunit alpha-1	ns	0.33	0.3
IL24	Interleukin-24	ns	0.73	0.72
IL2RB	Interleukin-2 receptor subunit beta	ns	0.52	0.51
IL33	Interleukin-33	ns	0.97	0.98
IL4	Interleukin-4	****	1.13	0.85
IL5	Interleukin-5	**	1.73	1.95
IL6	Interleukin-6	ns	2.85	2.84
IL7	Interleukin-7	ns	5.27	5.21
IL8	Interleukin-8	ns	7.56	7.52
LIF	Leukemia inhibitory factor	ns	0.46	0.46
LIFR	Leukemia inhibitory factor receptor	ns	3.4	3.38
MCP1	Monocyte chemotactic protein 1	****	10.01	9.79
MCP2	Monocyte chemotactic protein 2	ns	10.03	10.02
MCP3	Monocyte chemotactic protein 3	ns	2.23	2.25
MCP4	Monocyte chemotactic protein 4	ns	3.47	3.42
MMP1	Matrix metalloproteinase-1	ns	6.86	6.95
MMP10	Matrix metalloproteinase-10	**	8.83	8.95
NRTN	Neurturin	ns	0.91	0.94
NT3	Neurotrophin-3	**	2.19	2.09
OPG	Osteoprotegerin	ns	9.68	9.71
OSM	Oncostatin-M	****	4.42	4.79
PDL1	Programmed cell death 1 ligand 1	****	5.07	4.87
SCF	Stem cell factor	****	9.28	9.15
SIRT2	SIR2-like protein 2	**	3.01	2.9
SLAMF1	Signaling lymphocytic activation molecule	****	3.2	3.05
ST1A1	Sulfotransferase 1A1	ns	2.04	2
STAMBP	STAM-binding protein	****	2.74	2.58
TGFA	Transforming growth factor alpha	****	3.59	3.88
TGFB1	Latency-associated peptide transforming growth factor beta-1	****	8.1	7.99
TNF	Tumor necrosis factor	ns	0.47	0.45
TNFB	TNF-beta	ns	3.99	3.98
TNFRSF9	Tumor necrosis factor receptor superfamily member 9	****	7.19	6.68
TNFSF14	Tumor necrosis factor ligand superfamily member 14	**	4.62	4.71
TRAIL	TNF-related apoptosis-inducing ligand	****	8.39	8.18
TRANCE	TNF-related activation-induced cytokine	****	5.97	5.5
TSLP	Thymic stromal lymphopoietin	ns	0.42	0.46
TWEAK	Tumor necrosis factor	****	9.02	8.88
UPA	Urokinase-type plasminogen activator	****	10.07	9.87
VEGFA	Vascular endothelial growth factor A	ns	10.2	10.22

Table 2: *Sex differences for each biomarker*

Description	Short	Unit	Men Lower Limit	Men Upper Limit	Women Lower Limit	Women Upper Limit	π_{men}	π_{women}	Significance	Men_{out}	$Women_{out}$
Mean corposcular hemoglobin (pg). EDTA whole blood	MCH	pg	26.08	32.3	26.08	32.3	29.25	29.12	ns	2.2%	5%
Mean corposcular hemoglobin concentration (g/dL). EDTA whole blood	MCHC	g/dL	32.23	34.85	32.23	34.85	33.68	33.39	****	4.2%	5.3%
Mean corposcular volume (fl). EDTA whole blood	MCV	fl	78.03	95.53	78.03	95.53	87.09	86.43	*	2.1%	5.8%
Fe (µmol/L). Serum	Fe	umol/L	2.09	31.69	2.09	31.69	18.47	15.18	****	3.8%	0.5%
Ferritin (ug/L). Serum	Ferritin	ug/L	-21.95	112.37	-21.95	112.37	57.6	31.42	****	6.3%	0%
Transferrin (g/L). Serum	Transferritin	g/L	2.04	3.79	2.04	3.79	2.83	3.02	****	2.9%	0.7%
Total cholesterol (mmol/L). Serum	Total cholesterol	mmol/L	2.54	5.61	2.54	5.61	3.91	4.25	****	3.4%	0.2%
Triglycerides (mmol/L). Serum	Tryglicerides	mmol/L	0.05	2.13	0.05	2.13	1.13	1.05	*	5.9%	0%
Low density lipoprotein cholesterol (mmol/L). Serum	LDL	mmol/L	1.01	3.75	1.01	3.75	2.3	2.46	***	4%	0.5%
High density lipoprotein cholesterol (mmol/L). Serum	HDL	mmol/L	0.7	1.98	0.7	1.98	1.24	1.45	****	1.9%	0.2%
Calcium (mmol/L). Serum	Calcium	mmol/L	2.15	2.48	2.15	2.48	2.34	2.29	****	5.1%	4.5%
High-sensitive CRP. Serum	hs-CRP		-5.11	8.15	-5.11	8.15	1.49	1.55	ns	3.6%	0%
Apolipoprotein A1 (g/L). Serum	APO A	g/L	0.88	1.71	0.88	1.71	1.22	1.37	****	3.8%	0.7%
Apolipoprotein B (g/L). Serum	APO B	g/L	0.3	0.97	0.3	0.97	0.61	0.66	****	3.8%	0.2%
Serum estradiol, E2 (nmol/L)	Estradiol	nmol/L	-0.54	0.93	-0.54	0.93	0.11	0.29	****	0%	0%
Serum progesterone (nmol/L)	Progesterone	nmol/L	-9.19	15.18	-9.19	15.18	1.81	4.32	****	0%	0%
Serum testosterone (nmol/L)	Testosterone	nmol/L	-7.41	24.23	-7.41	24.23	15.12	0.9	****	3.4%	0%
Serum dehydroepiandrostenedione sulphate (µmol/L)	DHEA	umol/L	1.29	11.83	1.29	11.83	7.24	5.8	****	6.5%	0%
Serum sex hormone binding globuline (SHBG) (nmol/L)	SHBG	nmol/L	0	200	0	200	28.69	66.61	****	0%	0%
Serum luteinizing hormone (LH) (IU/L)	LH	IU/L	-4.88	15.17	-4.88	15.17	4.22	6.18	****	0.2%	0%
Serum follicle-stimulating hormone (FSH) (IU/L)	Follicle-stimulating hormone	IU/L	-1.03	8.7	-1.03	8.7	3.62	4.07	**	2.2%	0%
Glucose (mmol/L). Non-fasting serum	Glucose non fasting	mmol/L	4	8	4	8	5.16	4.95	***	4.6%	5.7%
Glycated haemoglobin (%). EDTA whole blood	HBA1C	%	4.65	5.93	4.65	5.93	5.29	5.29	ns	1.9%	1.5%
Haemoglobin (g/dL). EDTA whole blood	HBA	g/dL	10.98	16.36	10.98	16.36	14.59	12.65	****	1.9%	3.9%
Albumin (g/L). Serum	Albumin	g/L	40.62	50.83	40.62	50.83	46.85	44.51	****	4.2%	6.4%
25(OH)D (nmol/L). Serum	25(OH)D	nmol/L	0.42	92.88	0.42	92.88	40.13	53.89	****	2.2%	0%
Retinol (µmol/L). Serum	Retinol	umol/L	0.62	4.32	0.62	4.32	2.46	2.49	ns	3.2%	0.5%
Plasma Parathyroid hormone (pmol/L)	PTH	pmol/L	1.25	7.19	1.25	7.19	4.43	3.99	****	5.1%	0%
FA C12:0 (mcg/ml). Serum	FA C12:0	mcg/ml	-21.76	32.95	-21.76	32.95	5.71	5.47	ns	1.6%	0%
FA C14:0 (mcg/ml). Serum	FA C14:0	mcg/ml	-10.61	72.5	-10.61	72.5	30.9	30.99	ns	4.1%	0%
FA C15:0 (mcg/ml). Serum	FA C15:0	mcg/ml	1.07	9.86	1.07	9.86	5.45	5.48	ns	3.2%	0%
FA C16:0 (mcg/ml). Serum	FA C16:0	mcg/ml	191.56	960.72	191.56	960.72	564.26	589.33	*	4.9%	0.7%
FA C16:1 n-7 (mcg/ml). Serum	FA C16:1 n-7	mcg/ml	-7.29	106.81	-7.29	106.81	46.61	53.26	***	3%	0%
FA C18:0 (mcg/ml). Serum	FA C18:0	mcg/ml	76.01	322.85	76.01	322.85	195.89	203.35	ns	4.3%	1.6%
FA C18:1 t6-11 (mcg/ml). Serum	FA C18:1 t6-11	mcg/ml	-6.12	47.68	-6.12	47.68	20.95	20.59	ns	4.5%	0%
FA C18:1 c-9 (mcg/ml). Serum	FA C18:1 c-9	mcg/ml	132.36	926.21	132.36	926.21	537.94	519.67	ns	5.1%	0.2%
FA C18:1 c-11(mcg/ml). Serum	FA C18:1 c-11	mcg/ml	11.53	63.91	11.53	63.91	36.78	38.76	*	4.1%	0.2%
FA C18:2 n-6 (mcg/ml). Serum	FA C18:2 n-6	mcg/ml	310.87	1022.44	310.87	1022.44	645.65	689.97	***	3.2%	1.8%
FA C20:0 (mcg/ml). Serum	FA C20:0	mcg/ml	2.39	14.16	2.39	14.16	7.56	9.07	****	2.6%	0.9%
FA C18:3 n-6 (mcg/ml). Serum	FA C18:3 n-6	mcg/ml	-1.41	17.68	-1.41	17.68	8.23	8.04	ns	4.1%	0%
FA C18:3 n-3 (mcg/ml). Serum	FA C18:3 n-3	mcg/ml	-3.45	38.63	-3.45	38.63	17.98	17.16	ns	4.7%	0%
FA C20:1 n-9 (mcg/ml). Serum	FA C20:1 n-9	mcg/ml	0.03	7.2	0.03	7.2	3.63	3.6	ns	4.1%	0%
FA C20:2 n-6 (mcg/ml). Serum	FA C20:2 n-6	mcg/ml	1.06	8.46	1.06	8.46	4.51	5.03	****	2.2%	0.2%
FA C22:0 (mcg/ml). Serum	FA C22:0	mcg/ml	7.73	26.89	7.73	26.89	16.29	18.44	****	2%	2.5%
FA C20:3 n-6 (mcg/ml). Serum	FA C20:3 n-6	mcg/ml	9.08	65.8	9.08	65.8	36.59	38.38	ns	2.4%	0.5%
FA C20:4 n-6 (mcg/ml). Serum	FA C20:4 n-6	mcg/ml	53.09	199.38	53.09	199.38	122.54	130.34	**	3.7%	1.6%
FA C23:0 (mcg/ml). Serum	FA C23:0	mcg/ml	2.97	11.23	2.97	11.23	6.6	7.65	****	1.8%	1.4%
FA C20:5 n-3 (mcg/ml). Serum	FA C20:5 n-3	mcg/ml	-8.06	46.77	-8.06	46.77	18.51	20.3	*	3.9%	0%
FA C24:0 (mcg/ml). Serum	FA C24:0	mcg/ml	6.8	24.82	6.8	24.82	15.25	16.43	****	2.2%	2.3%
FA C24:1 (mcg/ml). Serum	FA C24:1	mcg/ml	13.93	44.18	13.93	44.18	27.34	30.95	****	2.4%	2%
FA C22:5 n-3 (mcg/ml). Serum	FA C22:5 n-3	mcg/ml	4.25	21.44	4.25	21.44	13.26	12.39	**	4.9%	1.4%
FA C22:6 n-3 (mcg/ml). Serum	FA C22:6 n-3	mcg/ml	11.93	94.5	11.93	94.5	49.07	57.82	****	3%	0.2%
FA C12:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C12:0	w%	-0.5	0.89	-0.5	0.89	0.2	0.19	ns	1.6%	0%
FA C14:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C14:0	w%	0.12	2.13	0.12	2.13	1.15	1.1	ns	5.3%	0%
FA C15:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C15:0	w%	0.12	0.3	0.12	0.3	0.21	0.2	**	6.1%	0.2%
FA C16:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C16:0	w%	18.57	25.28	18.57	25.28	21.88	21.97	ns	4.7%	0.9%
FA C16:1 n-7 (weight% of Fatty Acid Methyl Esters). Serum	wFA C16:1 n-7	w%	0.59	3.1	0.59	3.1	1.77	1.93	****	3.2%	0%
FA C18:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:0	w%	5.93	9.37	5.93	9.37	7.66	7.64	ns	3.7%	2%
FA C18:1 t6-11 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:1 t6-11	w%	0.03	1.5	0.03	1.5	0.79	0.74	*	6.9%	0%
FA C18:1 c-9 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:1 c-9	w%	14.3	25.8	14.3	25.8	20.68	19.34	****	5.5%	1.6%
FA C18:1 c-11(weight% of Fatty Acid Methyl Esters). Serum	wFA C18:1 c-11	w%	0.96	1.93	0.96	1.93	1.44	1.46	ns	3.2%	0.9%
FA C18:2 n-6 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:2 n-6	w%	19.15	32.66	19.15	32.66	25.58	26.26	**	5.5%	2%
FA C20:0 (weight% of Fatty Acid Methyl Esters). Serum	wFA C20:0	w%	0.17	0.47	0.17	0.47	0.3	0.34	****	2.6%	0%
FA C18:3 n-6 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:3 n-6	w%	0.03	0.58	0.03	0.58	0.32	0.3	*	5.1%	0.5%
FA C18:3 n-3 (weight% of Fatty Acid Methyl Esters). Serum	wFA C18:3 n-3	w%	0.14	1.17	0.14	1.17	0.68	0.63	**	5.9%	0%
FA C20:1 n-9 (weight% of Fatty Acid Methyl Esters) Serum	wFA C20:1 n-9	w%	0.04	0.23	0.04	0.23	0.14	0.13	*	3%	0%
FA C20:2 n-6 (weight% of Fatty Acid Methyl Esters) Serum	wFA C20:2 n-6	w%	0.11	0.26	0.11	0.26	0.18	0.19	****	2%	0%
FA C22:0 (weight% of Fatty Acid Methyl Esters) Serum	wFA C22:0	w%	0.41	0.94	0.41	0.94	0.65	0.7	****	5.5%	0.2%
FA C20:3 n-6 (weight% of Fatty Acid Methyl Esters) Serum	wFA C20:3 n-6	w%	0.81	2.06	0.81	2.06	1.44	1.43	ns	5.5%	2%
FA C20:4 n-6 (weight% of Fatty Acid Methyl Esters) Serum	wFA C20:4 n-6	w%	2.93	6.95	2.93	6.95	4.9	4.98	ns	4.7%	0.2%
FA C23:0 (weight% of Fatty Acid Methyl Esters) Serum	wFA C23:0	w%	0.16	0.39	0.16	0.39	0.26	0.29	****	3.4%	0.5%
FA C20:5 n-3 (weight% of Fatty Acid Methyl Esters) Serum	wFA C20:5 n-3	w%	-0.32	1.84	-0.32	1.84	0.74	0.78	ns	3.7%	0%
FA C24:0 (weight% of Fatty Acid Methyl Esters) Serum	wFA C24:0	w%	0.35	0.88	0.35	0.88	0.61	0.63	ns	3.7%	0.5%
FA C24:1 (weight% of Fatty Acid Methyl Esters) Serum	wFA C24:1	w%	0.64	1.65	0.64	1.65	1.11	1.19	****	4.7%	0.5%
FA C22:5 n-3 (weight% of Fatty Acid Methyl Esters) Serum	wFA C22:5 n-3	w%	0.26	0.74	0.26	0.74	0.52	0.47	****	4.3%	2.7%
FA C22:6 n-3 (weight% of Fatty Acid Methyl Esters) Serum	wFA C22:6 n-3	w%	0.68	3.49	0.68	3.49	1.97	2.21	****	3%	0%

Table 3: *Summary of all blood variables*

Concept	$\overline{x}_{men}$	$\overline{x}_{women}$	SD_{men}	SD_{women}	Significance
Waist	82.4	77.8	11.7	10.8	****
Hip	97.8	98.1	8.8	8.3	ns
Height	176.9	164.7	6.6	6.6	****
Weight	70.6	61.4	14.6	12.2	****
BMI	22.5	22.6	4.2	4.2	ns
HR	76.2	74.9	13.3	12.4	ns
SYSBP	117.4	118.1	12.8	12.9	ns
DIABP	63.5	63.5	8.1	7.4	ns

Table 4: *Sex differences for antropometry variables*

Protein	Waist	Hip	Height	Weight	BMI	HR	SYSBP	DIABP
C-C motif chemokine 3	****	**	ns	***	***	ns	ns	ns
C-C motif chemokine 4	**	ns	ns	ns	ns	ns	ns	ns
CUB domain-containing protein 1	****	****	ns	****	****	ns	ns	ns
Macrophage colony-stimulating factor 1	**	****	ns	***	***	ns	ns	ns
Delta and Notch-like epidermal growth factor-related receptor	*	*	ns	**	*	ns	ns	ns
Fibroblast growth factor 19	ns	ns	ns	ns	*	ns	ns	ns
Fibroblast growth factor 21	****	**	ns	*	**	ns	ns	ns
Glial cell line-derived neurotrophic factor	**	ns	ns	*	**	ns	ns	ns
Hepatocyte growth factor	****	***	ns	****	****	ns	ns	ns
Interleukin-18	***	****	ns	***	***	ns	ns	ns
Interleukin-18 receptor 1	****	****	ns	****	****	ns	ns	ns
Interleukin-20	ns	****	ns	**	ns	ns	ns	ns
Interleukin-6	****	***	ns	****	****	ns	ns	ns
Monocyte chemotactic protein 3	****	****	ns	****	****	ns	ns	ns
Stem cell factor	****	****	ns	****	****	ns	ns	ns
Signaling lymphocytic activation molecule	ns	ns	*	ns	ns	ns	ns	ns
Tumor necrosis factor receptor superfamily member 9	***	ns	ns	*	**	ns	ns	ns

Table 5: *Biomarkers that are statistically significant with respect the antropometry variables in men, after applying Bonferroni correction*

Protein	Waist	Hip	Height	Weight	BMI	HR	SYSBP	DIABP
Caspase-8	*	***	ns	***	***	ns	ns	ns
C-C motif chemokine 3	*	ns	ns	*	ns	ns	ns	ns
CUB domain-containing protein 1	****	****	ns	****	****	ns	ns	ns
Macrophage colony-stimulating factor 1	****	***	ns	**	**	ns	ns	ns
Delta and Notch-like epidermal growth factor-related receptor	ns	ns	ns	*	*	ns	ns	ns
Fibroblast growth factor 21	*	*	ns	ns	*	ns	ns	ns
Hepatocyte growth factor	****	***	ns	**	****	ns	ns	ns
Interleukin-10 receptor subunit beta	****	*	ns	**	**	ns	ns	ns
Interleukin-18	**	*	ns	*	**	ns	ns	ns
Interleukin-18 receptor 1	****	***	ns	***	****	ns	ns	ns
Interleukin-2	*	ns	ns	ns	ns	ns	ns	ns
Interleukin-6	****	****	ns	****	****	ns	ns	ns
Interleukin-7	**	**	ns	**	*	ns	ns	ns
Monocyte chemotactic protein 3	****	****	ns	****	****	ns	ns	ns
Monocyte chemotactic protein 4	*	ns	ns	ns	*	ns	ns	ns
Latency-associated peptide transforming growth factor beta-1	*	*	ns	ns	ns	ns	ns	ns
TNF-related apoptosis-inducing ligand	**	*	ns	ns	*	ns	ns	ns
TNF-related activation-induced cytokine	*	**	ns	*	ns	ns	ns	ns
Vascular endothelial growth factor A	**	*	ns	*	****	ns	ns	ns

Table 6: *Biomarkers that are statistically significant with respect the antropometry variables in women, after applying Bonferroni correction*

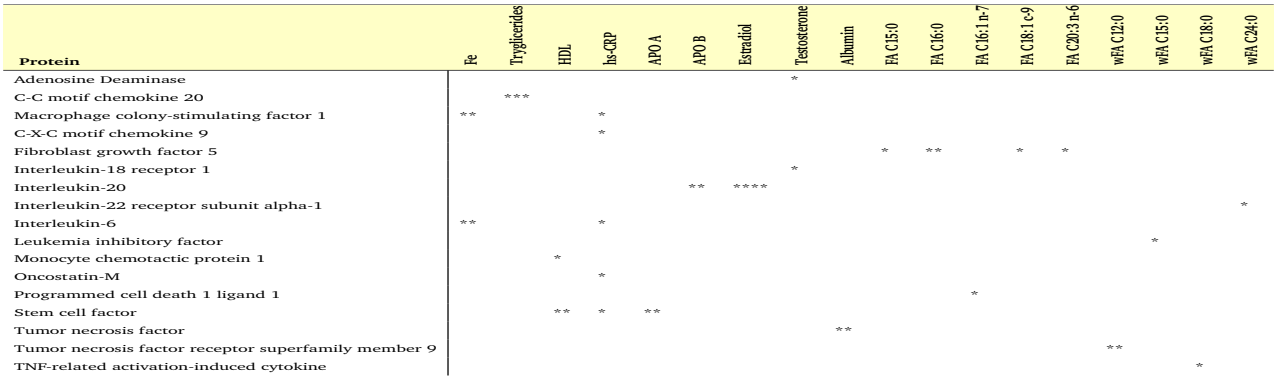


Table 7: *Biomarkers that are statistically significant with respect the blood variables in men, after applying Bonferroni correction. Non-significant values appears as a white space for easy reading.*

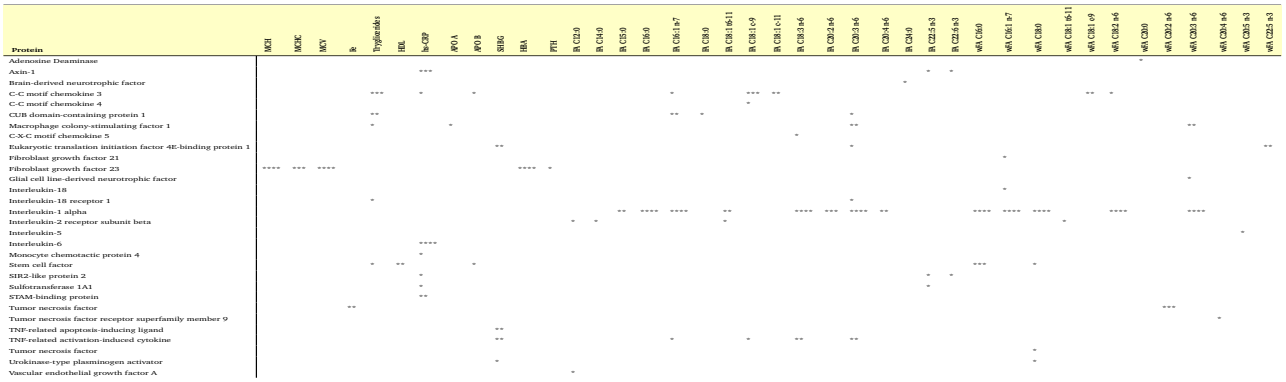


Table 8: *Biomarkers that are statistically significant with respect the blood variables in women, after applying Bonferroni correction. Non-significant values appears as a white space for easy reading.*

2 Images

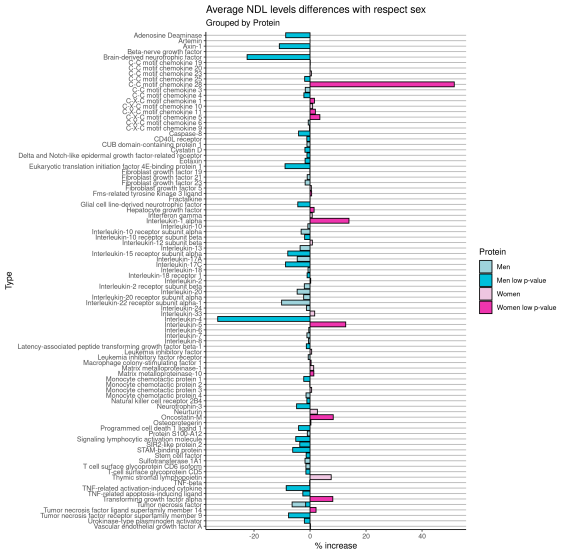


Figure 1: *Overview of all biomarkers diferences with respect sex. In many cases there is a significant difference between men and women ($p<0.05$). Due biological reasons.*

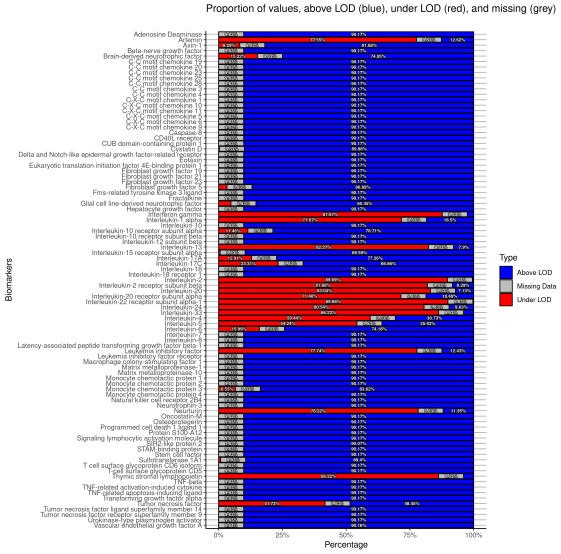


Figure 2: *Overview of all subject (n=1038) biomarkers values with respect LOD levels. Most of the collected values are well above the LOD (blue).*

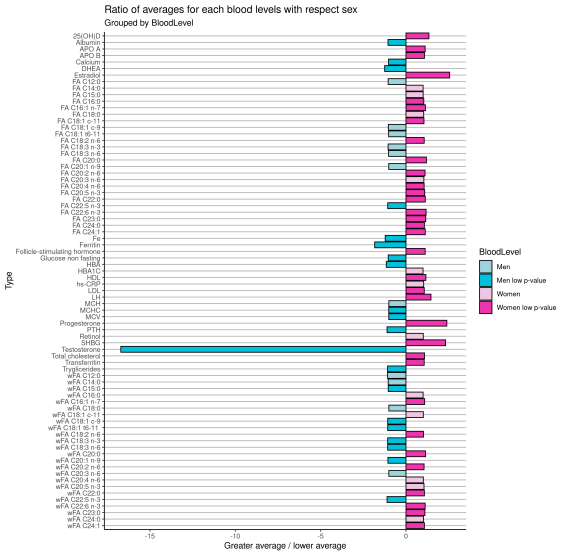


Figure 3: *Overview of all blood diferences with respect sex. In many cases there is a significant difference between men and women ($p<0.05$), due biological reasons. Ratio is calculated by dividing the greater average between the lowest average. Negative and positive values are arbitrary and merelly to separate men to the left and women to the right.*

3 Change History

This section helps keeping track of all the changes done in the document. Here is where all the TODO notes go when they are resolved. And you would find something like this so it is not repeated again. Currently this is just a placeholder text, so just ignore it until feedback start rolling.

0.1

Something changed for the first time, and here is why it happens

0.2

The change was bad. Somebody suggested that we undo the change and just clarify the second paragraph.

0.22

We decided that dogs should not also be included in the results part, the article will talk only about humans from now on.

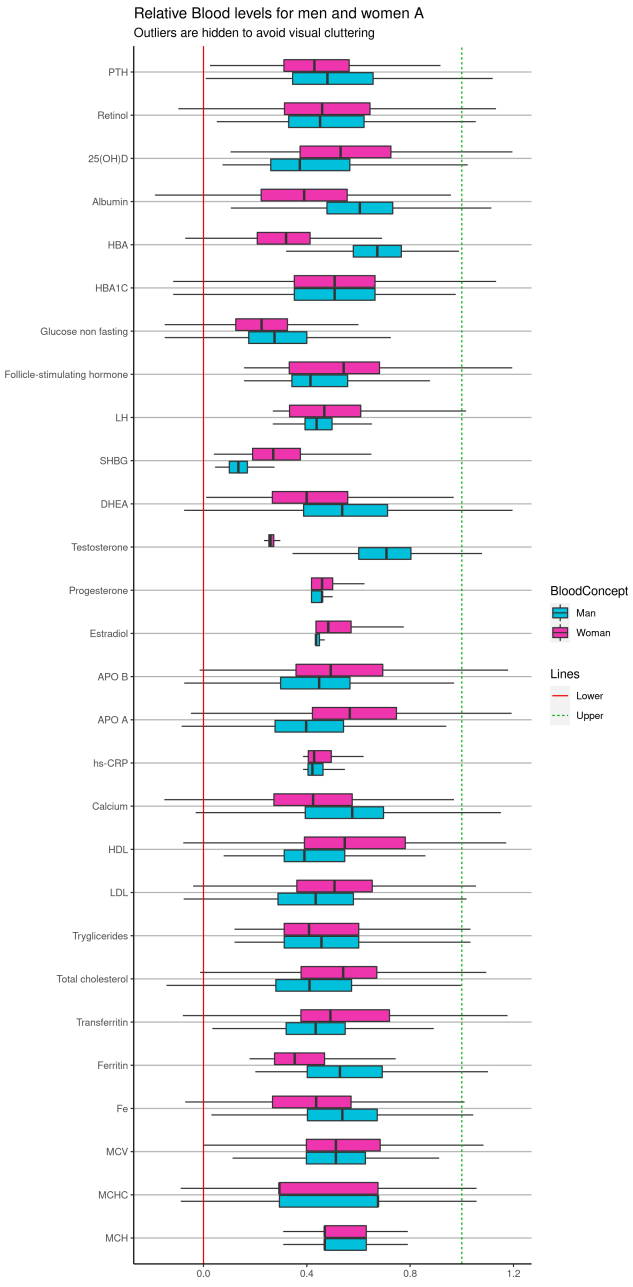


Figure 4: *Relative Blood levels with respect healthy upper and lower bounds, for men and women; including variables that are not Fatty Acids.*

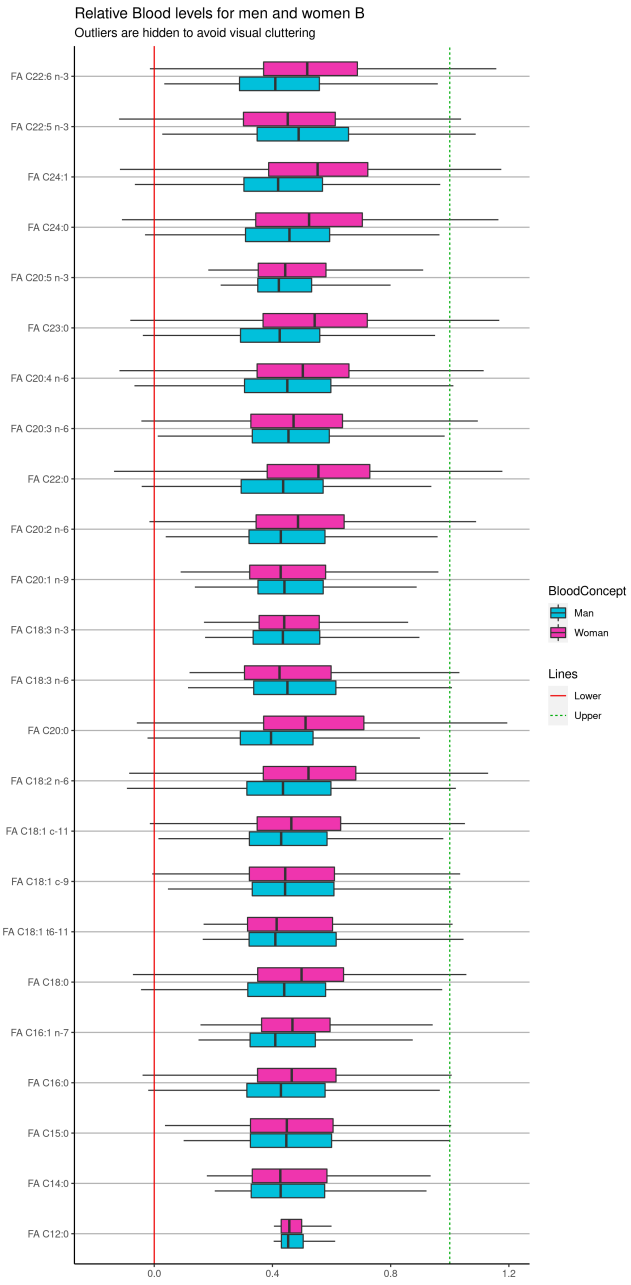


Figure 5: *Relative Blood levels with respect healthy upper and lower bounds, for men and women; including absolute levels of Fatty Acids.*

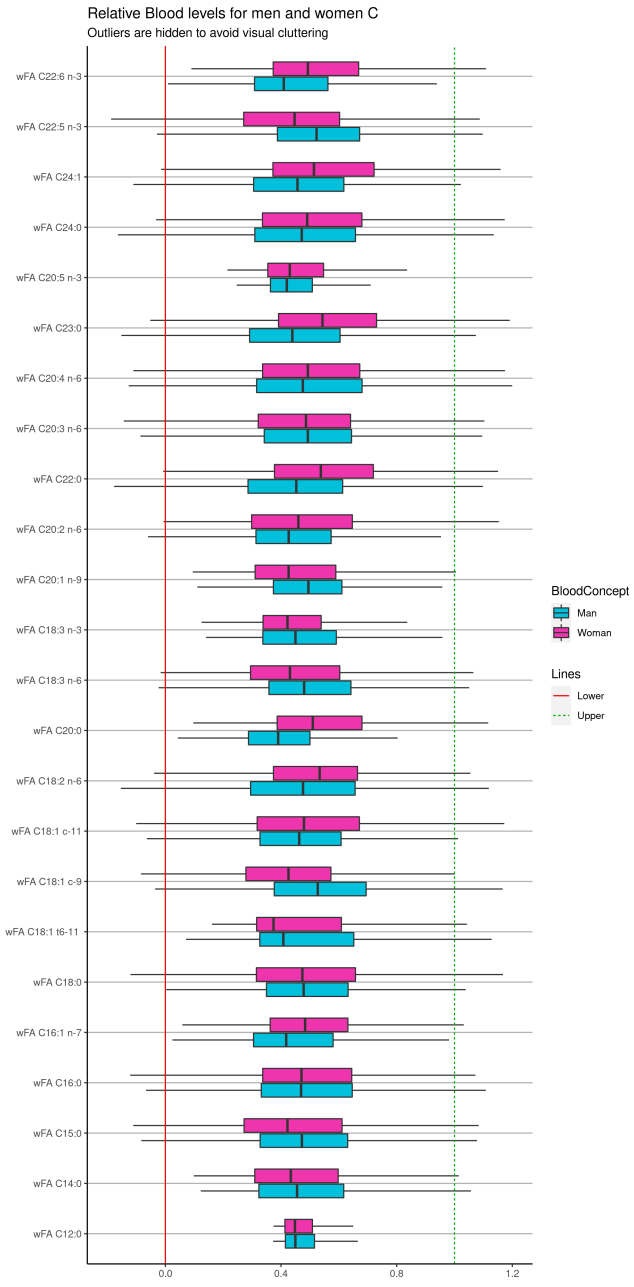
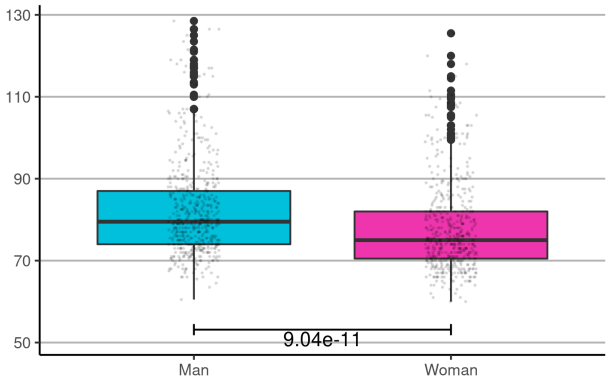
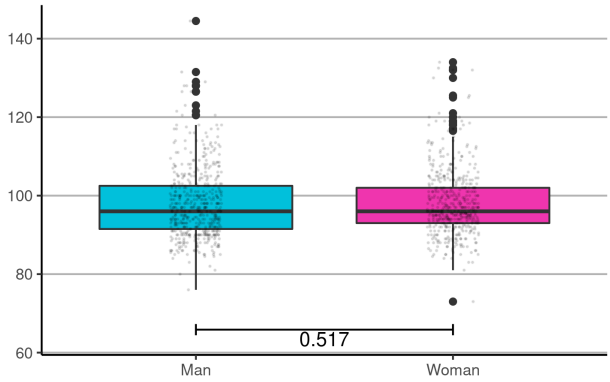


Figure 6: *Relative Blood levels with respect healthy upper and lower bounds, for men and women; including relative levels of Fatty Acids.*

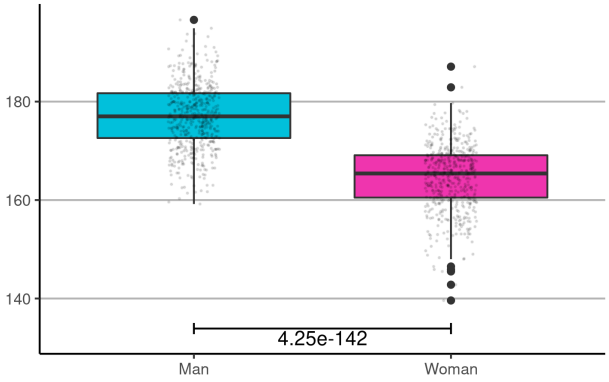
Waist circurference (cm)



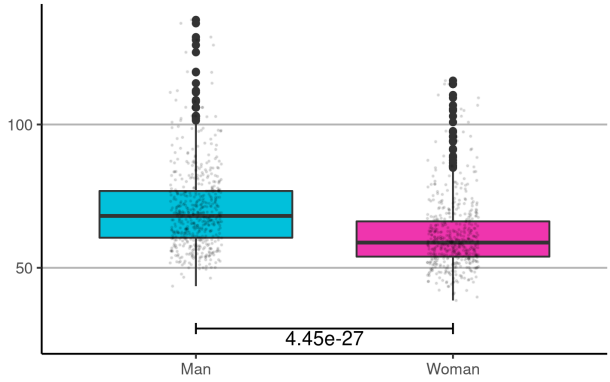
Hip circurference (cm)



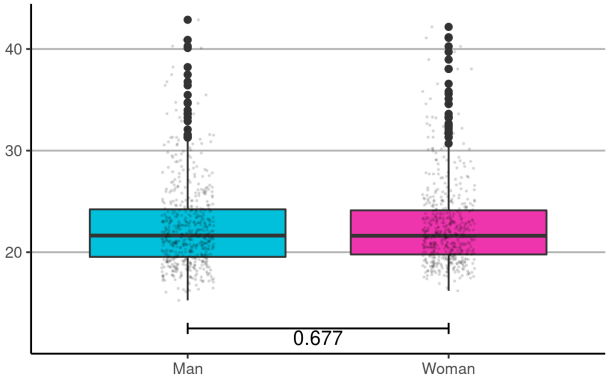
Height (cm)



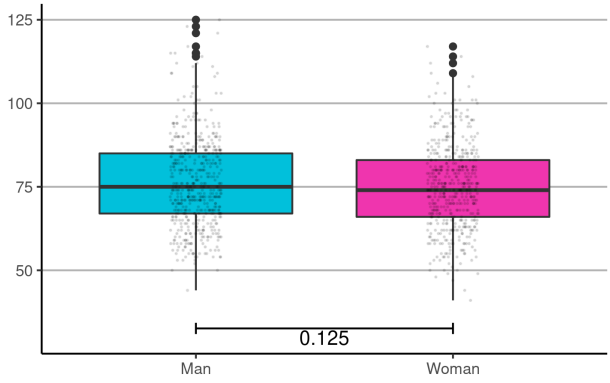
Weight (kg)



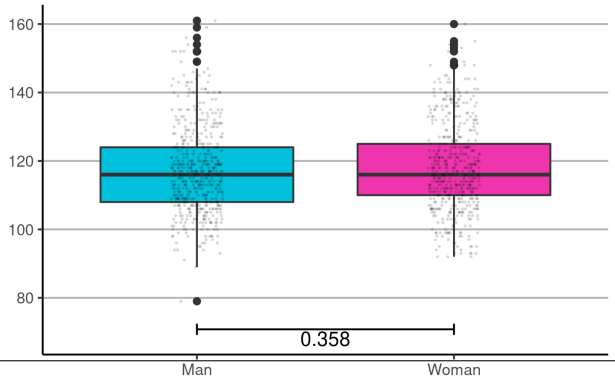
BMI (kg/m²)



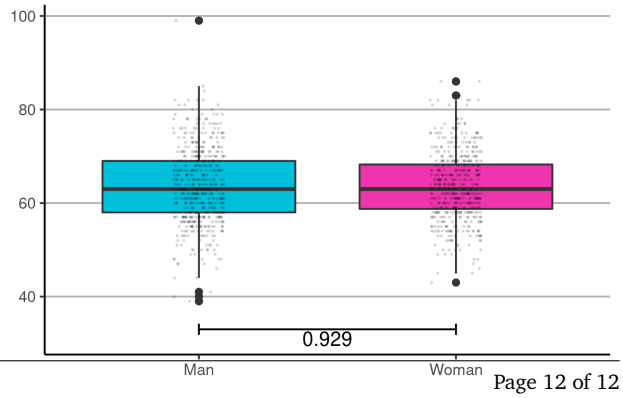
Heart Rate (bpm)



Systolic BP (mmHg)



Diastolic BP (mmHg)



Sex Man Woman