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| --- |
| Supplemental Digital Content 2. Exercise effects on 92 different cytokines. |
|  |  | **Baseline to post-intervention** |
|  | **Baseline mean ± SD** | **Within-group change [95% CI]** | **Unadjusted between-group difference *(p-value)*** | **Adjusted between-group difference *(p-value)*** |
|  | **RT-HIIT**(*n*=30) | **AT-HIIT**(*n*=27) | **UC**(*n*=29) | **RT-HIIT** | **AT-HIIT** | **UC** | **RT-HIIT vs UC** | **AT-HIIT vs UC** | **RT-HIIT vs UC**  | **AT-HIIT vs UC** |
| Interleukins |
| IL-1 like cytokines are produced upon inflammation, injury and infection |
| IL-1ba | -1.65 ± 1.41 | -1.79 ± 1.08 | -1.42 ± 2.15 | -0.28 [-1.05;0.49] | -0.27 [-1.29;0.75] | -0.11 [-0.75;0.53] | -0.24 (0.69) | -0.09 (0.89) | -0.18 (0.77) | -0.04 (0.95) |
| IL-18 | 8.26 ± 0.74 | 8.26 ± 0.68 | 8.23 ± 0.69 | 0.03 [-0.19;0.26] | 0.22 [-0.06;0.49] | 0.15 [-0.09;0.39] | -0.09 (0.56) | 0.07 (0.67) | -0.07 (0.68) | 0.08 (0.64) |
| Common y-chain cytokines invoke lymphocyte activation and differentiation  |
| IL-4a | 1.45 ± 1.93 | 1.45 ± 1.20 | 1.98 ± 1.01 | 0.21 [-0.63;1.04] | 0.53 [-0.09;1.14] | -0.07 [-0.64;0.49] | -0.10 (0.81) | 0.23 (0.58) | -0.08 (0.86) | 0.25 (0.56) |
| IL-7 | 4.66 ± 0.97 | 4.72 ± 0.79 | 4.79 ± 0.78 | -0.67[-1.05;-0.29]\* | -0.59 [-0.90;-0.28]\* | -0.67 [-1.06;-0.29]\* | -0.07 (0.76) | 0.03 (0.88) | -0.05 (0.83) | 0.04 (0.87) |
| IL-6 like cytokines are mediators in various immune processes, including hematopoiesis and the APR |
| IL-6 | 2.51 ± 0.83 | 2.85 ± 0.96 | 2.59 ± 1.01 | 0.10 [-0.28;0.47] | 0.18 [-0.10;0.46] | 0.52 [0.14;0.90]\* | **-0.52 (0.01)** | **-0.16 (0.43)** | **-0.47(0.02)** | **-0.15** **(0.47)** |
| IL-12 | 4.56 ± 0.92 | 4.63 ± 0.95 | 4.41 ± 1.05 | 0.40 [0.04;0.76]\* | 0.34 [0.11;0.57]\* | 0.55 [0.23;0.88]\* | -0.08 (0.68) | -0.07 (0.69) | -0.07 (0.70) | -0.08 (0.69) |
| CSF-1 | 6.73 ± 0.36 | 6.83 ± 0.51 | 6.68 ± 0.49 | 0.02 [-0.12;0.15] | 0.09 [-0.03;0.21] | 0.18 [0.07;0.29]\* | **-0.15 (0.06)** | **-0.04 (0.65)** | **-0.13 (0.11)** | **-0.03 (0.70)** |
| IL-10 like cytokines play a major role in suppressing inflammatory responses |
| IL-10a | 0.92 ± 0.27 | 0.95 ± 0.23 | 0.92 ± 0.26 | -0.10[-0.30;0.09] | -0.27 [-0.38;-0.16]\* | -0.26 [-0.40;-0.13]\* | **0.12 (0.14)** | **0.006 (0.94)** | **0.13 (0.09)** | **-0.0004 (1.00)** |
| Interferons play a role in pathogen resistance |
| IFN-ya | 0.88 ± 1.59 | 1.20 ± 0.98 | 0.88 ± 1.65 | 0.19 [-0.50;0.88] | 0.28 [-0.14;0.69] | 0.56 [-0.04;1.15] | **-0.48 (0.17)** | **-0.11 (0.75)** | **-0.51 (0.14)** | **-0.14 (0.69)** |
| Tumor necrosis factors are involved in cell death |
| CD27 | 6.77 ± 0.51 | 6.65 ± 0.62 | 6.55 ± 0.52 | -0.15 [-0.30;0.002] | -0.01 [-0.20;0.18] | 0.04 [-0.13;0.21] | -0.10 (0.40) | -0.001 (1.00) | -0.07 (0.57) | 0.007 (0.95) |
| CD40\_L | 5.86 ± 1.87 | 6.07 ± 1.60 | 6.52 ± 1.33 | -1.05 [-1.73;-0.38]\* | -0.55 [-1.33;0.24] | -1.70 [-2.46;-0.94]\* | **0.18 (0.64)** | **0.74 (0.07)** | **0.19 (0.63)** | **0.74 (0.07)** |
| CD40 | 10.49 ± 0.80 | 10.71 ± 0.68 | 10.79 ± 0.70 | -0.22 [-0.57;0.13] | -0.18 [-0.50;0.13] | -0.37 [-0.68;-0.06]\* | -0.08 (0.66) | 0.12 (0.47) | -0.04 (0.80) | 0.13 (0.45) |
| CD70 | 2.69 ± 0.36 | 2.86 ± 0.54 | 2.66 ± 0.52 | -0.16 [-0.31;-0.01]\* | -0.08 [-0.24;0.08] | -0.0001[-0.16;0.16] | -0.13 (0.24) | -0.006 (0.96) | -0.10 (0.34) | 0.003 (0.98)(1.00) |
| FasL | 5.18 ± 0.49 | 5.06 ± 0.64 | 5.06 ± 0.60 | 0.17 [0.01;0.33]\* | 0.32 [0.13;0.50]\* | 0.36 [0.17;0.55]\* | **-0.17 (0.15)** | **-0.02 (0.87)** | **-0.15 (0.19)** | **-0.02 (0.89)** |
| TNF-aa | 2.42 ± 0.53 | 2.43 ± 0.47 | 2.31 ± 1.00 | 0.34 [0.10;0.57]\* | 0.26 [0.09;0.44]\* | 0.33 [0.17;0.50]\* | -0.07 (0.57) | -0.08 (0.52) | -0.04 (0.75) | -0.07 (0.58) |
| TNFRSF-4 | 2.45 ± 0.53 | 2.35 ± 0.29 | 2.21 ± 0.43 | 0.74 [0.35;1.13]\* | 0.79 [0.53;1.04]\* | 0.98 [0.74;1.21]\* | -0.16 (0.46) | -0.11 (0.62) | -0.19 (0.36) | -0.12 (0.56) |
| TNFRSF9 | 4.19 ± 0.55 | 4.08 ± 0.67 | 4.08 ± 0.59 | 0.02 [-0.19;0.23] | 0.12[-0.08;0.31] | 0.20[-0.01;0.41] | -0.13 (0.33) | -0.07 (0.63) | -0.09 (0.51) | -0.06 (0.67) |
| TNFRSF-12 | 5.04 ± 0.62 | 4.89 ± 0.62 | 4.71 ± 0.66 | 0.02 [-0.24;0.29] | 0.22 [-0.007;0.44] | 0.32 [0.08;0.57]\* | -0.11 (0.51) | -0.02 (0.92) | -0.07 (0.69) | -0.004 (0.98) |
| TNFRSF14 | 2.91 ± 0.92 | 2.94 ± 0.84 | 3.28 ± 0.79 | -0.64 [-0.93;-0.36]\* | -0.41 [-0.79;-0.03]\* | -0.74 [-1.07;-0.40]\* | -0.18 (0.29) | 0.06 (0.74) | -0.13 (0.42) | 0.07 (0.69) |
| TNFRSF-21 | 6.74 ± 0.36 | 6.66 ± 0.45 | 6.58 ± 0.38 | 0.04 [-0.07;0.16] | 0.17 [0.04;0.29]\* | 0.18 [0.08;0.28]\* | -0.06 (0.43) | 0.03 (0.71) | -0.05 (0.53) | 0.03 (0.68) |
| TRAIL | 6.98 ± 0.29 | 7.18 ± 0.55 | 7.02 ± 0.51 | 0.02[-0.16;0.20] | 0.15 [-0.002;0.30] | 0.19 [0.02;0.36]\* | **-0.18 (0.09)** | **0.05 (0.60)** | **-0.17 (0.10)** | **0.05 (0.62)** |
| TWEAK | 7.95 ± 0.47 | 7.87 ± 0.58 | 8.02 ± 0.52 | -0.20 [-0.36;-0.04]\* | -0.02[-0.24;0.20] | -0.12[-0.29;0.05] | -0.10 (0.40) | 0.04 (0.73) | -0.09 (0.45) | 0.05 (0.72) |
| Transforming growth factor B family is involved in development, immune regulation, immune tolerance, carcinogenesis |
| LAP TGF-beta-1 | 0.90 ± 0.42 | 0.98 ± 0.40 | 1.02 ± 0.37 | -0.24 [-0.41;-0.07]\* | -0.21 [-0.42;-0.01]\* | -0.28 [-0.46;-0.10]\* | -0.05 (0.63) | 0.03 (0.78) | -0.03 (0.80) | 0.03 (0.74) |
| CC Chemokines target monocytes, T cells, dendritic cells, eosinophils and NK cells |
| CCL2 | 8.89 ± 0.67 | 8.95 ± 0.64 | 9.05 ± 0.87 | 0.44 [0.07;0.81]\* | 0.42 [0.23;0.60]\* | 0.38 [0.12;0.65]\* | -0.06 (0.74) | -0.02 (0.93) | -0.07 (0.67) | -0.02 (0.90) |
| CCL3 | 4.10 ± 0.58 | 4.23 ± 0.53 | 4.20 ± 0.55 | 0.17 [-0.04;0.39] | 0.16 [0.0001;0.31]\* | 0.26 [0.06;0.45]\* | -0.11 (0.38) | -0.09 (0.51) | -0.06 (0.62) | -0.07 (0.56) |
| CCL4 | 6.18 ± 0.63 | 6.36 ± 0.57 | 6.44 ± 0.49 | -0.03 [-0.25;0.19] | -0.06[-0.27;0.16] | -0.14 [-0.35;0.07] | 0.04 (0.81) | 0.05 (0.72) | 0.08 (0.61) | 0.06 (0.67) |
| CCL8 | 6.43 ± 0.74 | 6.72 ± 0.74 | 6.50 ± 1.02 | -0.30[-0.60;-0.004]\* | -0.30[-0.52;-0.08]\* | -0.35 [-0.63;-0.08] | 0.01 (0.95) | 0.13 (0.50) | 0.05 (0.77) | 0.14 (0.46) |
| CCL13 | 7.35 ± 0.79 | 7.38 ± 0.59 | 7.70 ± 0.90 | -0.52 [-0.92;-0.12]\* | -0.33 [-0.61;-0.05]\* | -0.64 [-0.97;-0.32]\* | -0.07 (0.76) | 0.11 (0.61) | -0.05 (0.81) | 0.12 (0.60) |
| CCL17 | 7.23 ± 1.28 | 7.28 ± 0.96 | 7.56 ± 1.07 | -0.43 [-0.88;0.03] | -0.15 [-0.63;0.34] | -0.72 [-1.20;-0.24]\* | **0.11 (0.72)** | **0.39 (0.19)** | **0.15 (0.62)** | **0.40 (0.18)** |
| CCL19 | 8.25 ± 1.02 | 8.43 ± 1.25 | 8.17 ± 1.01 | -0.23 [-0.69;0.23]  | -0.20 [-0.57;0.17] | 0.06[-0.26;0.38] | -0.24 (0.22) | -0.06 (0.76) | -0.20 (0.30) | -0.05 (0.78) |
| CCL20 | 5.19 ± 0.96 | 5.30 ± 0.81 | 5.32 ± 0.98 | -0.26 [-0.63;0.11] | -0.05[-0.36;0.26] | -0.12[-0.48;0.24] | -0.16 (0.46) | 0.09 (0.70) | -0.17 (0.46) | 0.08 (0.71) |
| CCL23 | 9.47 ± 0.62 | 9.44 ± 0.81 | 9.58 ± 0.63 | -0.02 [-0.25;0.21] | 0.10 [-0.14;0.33] | 0.03 [-0.20;0.27] | -0.10 (0.51) | -0.01 (0.95) | -0.05 (0.73) | 0.0003 (1.00) |
| CXC chemokines mediate neutrophil chemotaxis |
| CXCL1 | 8.97 ± 1.04 | 9.23 ± 0.86 | 9.19 ± 0.73 | -0.16 [-0.59;0.28] | -0.39[-0.80;0.01] | -0.44 [-0.85;-0.03]\* | 0.11 (0.63) | 0.09 (0.71) | 0.14 (0.56) | 0.09 (0.70) |
| CXCL5 | 10.94 ± 1.60 | 11.37 ± 1.16 | 11.17 ± 1.23 | -0.33 [-0.89;0.23] | -0.56 [-1.10;-0.02]\* | -0.65 [-1.18;-0.13]\* | 0.16 (0.61) | 0.22 (0.48) | 0.20 (0.51) | 0.23 (0.46) |
| CXCL9 | 6.21 ± 0.73 | 6.50 ± 1.03 | 6.29 ± 0.95 | 0.51 [0.18;0.84]\* | 0.63[0.31;0.94]\* | 0.54 [0.11;0.96]\* | **-0.06 (0.78)** | **0.24 (0.27)** | **0.04 (0.83)** | **0.28 (0.18)** |
| CXCL8 (IL-8) | 4.74 ± 0.71 | 4.98 ± 0.54 | 4.95 ±0.69 | 0.09 [-0.28;0.45] | -0.17 [-0.35;0.02] | -0.19[-0.41;0.04] | 0.19 (0.31) | 0.02 (0.92) | 0.18 (0.34) | 0.02 (0.93) |
| CXCL10 | 6.89 ± 1.03 | 7.20 ± 1.12 | 7.25 ± 1.38 | 1.17 [0.68;1.65]\* | 1.11[0.74;1.49]\* | 1.24 [0.80;1.68]\* | -0.27 (0.33) | -0.13 (0.65) | -0.23 (0.40) | -0.12 (0.66) |
| CXCL11 | 6.76 ± 1.18 | 6.97 ± 0.99 | 6.90 ± 0.97 | -0.30 [-0.83;0.23] | -0.19 [-0.53;0.14] | -0.32 [-0.77;0.13] | -0.03 (0.91) | 0.20 (0.47) | 0.01 (0.97) | 0.21 (0.45) |
| CXCL13 | 8.29 ± 0.93 | 8.43 ± 0.71 | 8.41 ± 0.85 | -0.71 [-0.96;-0.45]\* | -0.83 [-1.07;-0.59]\* | -0.67 [-0.99;-0.36]\* | -0.05 (0.77) | -0.16 (0.36) | -0.06 (0.74) | -0.16 (0.36) |
| CX3C chemokines attract T cells and monocytes |
| CX3CL1 | 5.21 ± 0.48 | 5.17 ± 0.52 | 5.01 ± 0.53 | 0.33 [0.10;0.56]\* | 0.41 [0.20;0.62]\* | 0.50 [0.34;0.67]\* | -0.05 (0.71) | -0.008 (0.95) | -0.05 (0.70) | -0.01 (0.94) |
| Angiopoietins play a role in angiogenesis |
| TIE2 | 6.41 ± 0.46 | 6.36 ± 0.51 | 6.32 ± 0.47 | 0.02[-0.09;0.13] | 0.11 [-0.03;0.25] | 0.14 [0.01; 0.27]\* | -0.09 (0.30) | -0.02 (0.87) | -0.09 (0.33) | -0.01 (0.88) |
| ANG-1 | 7.92 ± 1.00 | 8.11 ± 0.72 | 8.18 ± 0.77 | -0.63 [-0.96;-0.29]\* | -0.66 [-0.94;-0.38]\* | -0.76 [-1.11;-0.41]\* | -0.03 (0.88) | 0.06 (0.77) | 0.002 (0.99) | 0.07 (0.74) |
| ANG-2 | 4.07 ± 0.54 | 4.00 ± 0.51 | 3.98 ± 0.45 | 0.19 [-0.003;0.38] | 0.26 [0.10;0.42]\* | 0.21 [0.07;0.36]\* | 0.0002 (1.00) | 0.06 (0.61) | 0.0001 (1.00) | 0.06 (0.61) |
| Matrix metalloproteinases are involved in chemokine/cytokine inactivation and the release of apoptotic ligands |
| MMP-7 | 8.89 ± 0.70 | 8.88 ± 0.50 | 8.89 ± 0.60 | 0.21[-0.08;0.50] | 0.26 [0.09;0.42]\* | 0.21 [-0.03;0.46]\* | 0.004 (0.98) | 0.03 (0.87) | 0.05 (0.75) | 0.03 (0.83) |
| MMP-12 | 5.96 ± 0.70 | 6.17 ± 0.67 | 5.97 ± 0.88 | -0.17 [-0.41;0.07] | -0.02 [-0.23;0.19] | -0.03[-0.23;0.17] | -0.13 (0.36) | 0.09 (0.52) | -0.14 (0.33) | 0.09 (0.54) |
|  |  |  |  |  |  |  |  |  |  |  |
| CD244 | 5.42 ± 0.61 | 5.57 ± 0.54 | 5.45 ± 0.60 | -0.20 [-0.40;-0.002]\* | -0.20[-0.43;0.03] | -0.20 [-0.44; 0.03] | 0.01 (0.95) | 0.08 (0.54) | 0.03 (0.81) | 0.09 (0.52) |
| EGF | 7.60 ± 1.54 | 7.76 ± 1.50 | 8.16 ± 1.46 | -1.00 [-1.65;-0.35]\* | -0.63 [-1.45;0.20] | -1.77 [-2.58;-0.96]\* | **0.28 (0.47)** | **0.74 (0.06)** | **0.29 (0.46)** | **0.75 (0.06)** |
| PlGF | 7.38 ± 0.40 | 7.36 ± 0.52 | 7.33 ± 0.48 | 0.23 [0.005;0.46]\* | 0.32 [0.14;0.50]\* | 0.38 [0.21;0.56]\* | -0.15(0.27) | -0.04 (0.77) | -0.14 (0.31) | -0.04 (0.78) |
| CRTAM | 3.32 ± 0.61 | 3.34 ± 0.79 | 3.06 ± 0.48 | -0.01 [-0.22;0.20] | 0.01[-0.19;0.21] | 0.19 [0.01;0.37]\* | -0.11 (0.41) | -0.09 (0.53) | -0.06 (0.64) | -0.08 (0.57) |
| CD4 | -0.28 ± 0.33 | -0.15 ± 0.45 | -0.21 ± 0.45 | -0.009 [-0.14;0.12] | 0.002[-0.12;0.13] | 0.14 [0.002;0.28]\* | **-0.17 (0.06)** | **-0.11 (0.23)** | **-0.15 (0.11)** | **-0.10 (0.26)** |
| CD8A | 8.19 ± 0.86 | 8.07 ± 0.70 | 7.99 ± 0.72 | -0.24 [-0.43;-0.04]\* | -0.12 [-0.29;0.05] | 0.10 [-0.09;0.29] | **-0.31 (0.02)** | **-0.17 (0.17)** | **-0.30 (0.02)** | **-0.17 (0.16)** |
| CA9 | 2.82 ± 0.48 | 2.81 ± 0.55 | 2.83 ± 0.63 | -0.03 [-0.19;0.13] | 0.20 [0.03;0.37]\* | 0.06 [-0.16;0.27] | -0.06 (0.58) | 0.14 (0.22) | -0.06 (0.63) | 0.15 (0.22) |
| Gal-9 | 6.72 ± 0.33 | 6.80 ± 0.48 | 6.70 ± 0.38 | 0.31 [0.15;0.47]\* | 0.31[0.20;0.42]\* | 0.33 [0.23;0.43]\* | -0.03 (0.72) | 0.01 (0.89) | -0.01 (0.91) | 0.02 (0.82) |
| VEGFR-2 | 6.16 ± 0.35 | 6.15 ± 0.49 | 6.03 ± 0.45 | -0.11 [-0.22;-0.01]\* | 0.03 [-0.11;0.16] | 0.04 [-0.08;0.15] | -0.09 (0.22) | 0.04 (0.62) | -0.07 (0.33) | 0.04 (0.58) |
| PDGF subunit B | 9.64 ± 0.64 | 9.72 ± 0.63 | 9.78 ± 0.62 | -0.78 [-1.03;-0.52]\* | -0.67 [-0.99;-0.34]\* | -0.81 [-1.17;-0.46]\* | -0.03 (0.91) | 0.11 (0.62) | 0.02 (0.93) | 0.12 (0.59) |
| PDCD1 | 2.00 ± 0.59 | 2.00 ± 0.62 | 1.92 ± 0.49 | -0.05 [-0.24;0.14] | 0.02 [-0.19;0.23] | 0.11 [-0.13;0.35] | -0.11 (0.43) | -0.02 (0.89) | -0.08 (0.56) | -0.01 (0.91) |
| Gal-1 | 5.64 ± 0.27 | 5.61 ± 0.43 | 5.62 ± 0.47 | 0.04 [-0.13;0.21] | 0.16 [0.03;0.29]\* | 0.11 [-0.01;0.24] | -0.07 (0.49) | 0.05 (0.64) | -0.05 (0.65) | 0.05 (0.60) |
| PD\_L1 | 3.90 ± 0.80 | 3.80 ± 0.59 | 3.74 ± 0.44 | -0.16 [-0.36;0.03] | -0.03[-0.23;0.18] | 0.03 [-0.15;0.20] | -0.10 (0.41) | -0.02 (0.86) | -0.07 (0.59) | -0.01 (0.91) |
| HGF | 6.82 ± 0.53 | 6.81 ± 0.66 | 6.87 ± 0.61 | -0.25 [-0.41;-0.08]\* | 0.05 [-0.24;0.35] | -0.17 [-0.37;0.04] | -0.11 (0.46) | 0.18 (0.22) | -0.09 (0.53) | 0.18 (0.22) |
| GZMA | 4.49 ± 0.70 | 4.37 ± 0.60 | 4.28 ± 0.54 | 0.005 [-0.24;0.25] | 0.18 [-0.01;0.36] | 0.31 [0.07;0.55]\* | -0.19 (0.17) | -0.05 (0.72) | -0.14 (0.28) | -0.04 (0.77) |
| HO-1 | 11.58 ± 0.50 | 11.58 ± 0.59 | 11.57 ± 0.45 | 0.12 [-0.09;0.33] | 0.27 [0.05;0.50]\* | 0.16 [-0.02;0.35] | -0.04 (0.76) | 0.11 (0.40) | -0.03 (0.79) | 0.11 (0.40) |
| CD5 | 3.50 ± 0.50 | 3.47 ± 0.41 | 3.46 ± 0.37 | 0.007 [-0.16;0.17] | 0.09[-0.04;0.21] | 0.13 [-0.03;0.29] | -0.11 (0.30) | -0.03 (0.78) | -0.07 (0.48) | -0.02 (0.83) |
| NCR1 | 2.91 ± 0.55 | 2.87 ± 0.41 | 2.91 ± 0.38 | 0.27 [0.09;0.45]\* | 0.37 [0.22;0.51]\* | 0.40 [0.25;0.54]\* | -0.13 (0.22) | -0.04 (0.73) | -0.11 (0.31) | -0.03 (0.77) |
| DCN | 3.55 ± 0.33 | 3.64 ± 0.50 | 3.44 ± 0.54 | -0.02 [-0.12;0.09] | 0.11 [-0.01;0.23] | 0.17 [0.02;0.33]\* | **-0.15 (0.09)** | **0.003 (0.97)** | **-0.14 (0.10)** | **0.005 (0.95)** |
| MICA/B | 3.11 ± 1.07 | 2.84 ± 1.16 | 2.97 ± 1.17 | -0.04 [-0.15;0.07] | 0.03 [-0.08;0.14] | 0.09 [-0.02;0.20] | **-0.14 (0.08)** | **-0.06 (0.49)** | **-0.14 (0.10)** | **-0.06 (0.50)** |
| LAMP-3 | 2.83 ± 0.70 | 3.01 ± 0.78 | 2.85 ± 0.68 | 0.95[0.57;1.33]\* | 0.82 [0.56;1.08]\* | 0.95 [0.67;1.23]\* | -0.01 (0.95) | -0.07 (0.75) | 0.02 (0.94) | -0.06 (0.79) |
| CASP-8 | 3.79 ± 1.25 | 3.70 ± 1.13 | 3.95 ± 1.01 | -0.68 [-1.21;-0.15]\* | -0.28 [-0.87;0.31] | -0.91 [-1.38;-0.45]\* | **0.16 (0.48)** | **0.39 (0.09)** | **0.20 (0.37)** | **0.40 (0.08)** |
| ICOSLG | 3.77 ± 0.42 | 3.73 ± 0.55 | 3.65 ± 0.49 | -0.005 [-0.13;0.12] | 0.11[-0.03;0.25] | 0.20 [0.06;0.33]\* | **-0.15 (0.10)** | **-0.05 (0.55)** | **-0.14 (0.13)** | **-0.05 (0.56)** |
| PD-L2 | 1.48 ± 0.45 | 1.42 ± 0.44 | 1.37 ± 0.47 | -0.06 [-0.18;0.06] | 0.04 [-0.09;0.17] | 0.08 [-0.06;0.22] | -0.11 (0.22) | -0.01 (0.88) | -0.10 (0.29) | -0.01 (0.91) |
| VEGF-A | 7.46 ± 0.49 | 7.53 ± 0.52 | 7.50 ± 0.58 | -0.21 [-0.42;-0.01]\* | -0.12 [-0.28;0.05] | -0.13 [-0.29;0.03] | -0.11 (0.34) | 0.02 (0.84) | -0.08 (0.50) | 0.03 (0.79) |
| KLRD1 | 4.52 ± 0.66 | 4.51 ± 0.72 | 4.42 ± 0.65 | 0.09 [-0.09;0.26] | 0.23[0.05;0.42]\* | 0.28 [0.10;0.46]\* | -0.18 (0.15) | -0.01 (0.92) | -0.14 (0.26) | -0.002 (0.99) |
| CD83 | 1.37 ± 0.44 | 1.33 ± 0.46 | 1.30 ± 0.38 | 0.15 [-0.02;0.32] | 0.28 [0.14;0.42]\* | 0.30 [0.16;0.43]\* | -0.14 (0.18) | 0.004 (0.97) | -0.13 (0.23) | 0.007 (0.94) |
| GZMB | 3.22 ± 1.49 | 3.24 ± 1.19 | 3.11 ± 1.04 | -0.05 [-0.68;0.58] | -0.03 [-0.48;0.42] | 0.02 [-0.32;0.36] | 0.06 (0.78) | 0.08 (0.74) | 0.10 (0.69) | 0.08 (0.72) |
| PTN | 1.31 ± 1.44 | 1.54 ± 1.25 | 1.11 ± 0.87 | -0.11 [-0.60;0.37] | 0.17 [-0.17;0.52] | 0.17 [-0.07;0.41] | -0.20 (0.41) | 0.17 (0.49) | -0.21 (0.41) | 0.17 (0.50) |
| ARG-1 | 2.74 ± 1.05 | 2.39 ± 0.92 | 2.66 ± 0.78 | -0.47 [-0.98;0.05] | 0.04 [-0.45;0.54] | -0.45 [-0.88;-0.02]\* | 0.10 (0.70) | 0.23 (0.38) | 0.08 (0.77) | 0.22 (0.40) |
| VEGF-C | 0.84 ± 0.66 | 0.65 ± 0.55 | 0.88 ± 0.80 | -0.47 [-0.68;-0.26]\* | -0.33 [-0.56;-0.10]\* | -0.45 [-0.70;-0.20]\* | -0.05 (0.66) | -0.03 (0.78) | -0.02 (0.83) | -0.03 (0.83) |
| GZMH | 3.77 ± 1.57 | 3.74 ± 1.34 | 3.61 ± 1.15 | -0.15[-0.73;0.43] | 0.03 [-0.44;0.50] | 0.03 [-0.38;0.44] | -0.06 (0.82) | 0.12 (0.67) | 0.02 (0.94) | 0.13 (0.62) |
| ADA | 2.59 ± 0.64 | 2.42 ± 0.50 | 2.60 ± 0.54 | -0.04 [-0.33;0.26] | 0.06[-0.16;0.28] | -0.10 [-0.29;0.10] | 0.05 (0.68) | 0.02 (0.89) | 0.05 (0.68) | 0.02 (0.89) |
| *CI* confidence interval, *SD* standard deviation aLog-transformed\* Significant at level p<0.05\*\* Significant at level p<0.20. It will be assessed whether the cytokine mediates the effect of exercise on cancer-related fatigue.  |