

## Supplementary data

# Elevation of circulating HLA DR<sup>+</sup> CD8<sup>+</sup> T-cells and correlation with chromium and cobalt concentrations 6 years after metal-on-metal hip arthroplasty

## A randomized trial

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Table 2. Correlation analysis of cellular immunological parameters and metal ion concentrations. Correlation analysis was performed using Pearson's *r*. There was a significant positive correlation of the percentage of HLA DR<sup>+</sup> CD8<sup>+</sup> T-cells with logarithmically transformed chromium and cobalt concentrations, and a highly significant positive correlation of logarithmically transformed chromium and cobalt concentrations with each other. Significant *p*-values highlighted in bold

		Ln Chromium	Ln Cobalt
Ln Chromium	<i>r</i>	1.00	0.85
	<i>p</i>		<b>&lt;0.001</b>
Ln Cobalt	<i>r</i>	0.85	1.00
	<i>p</i>	<b>&lt;0.001</b>	
Leukocytes	<i>r</i>	-0.01	0.04
	<i>p</i>	0.94	0.82
Lymphocytes	<i>r</i>	-0.04	0.01
	<i>p</i>	0.84	0.94
Tcells CD3	<i>r</i>	-0.05	0.01
	<i>p</i>	0.79	0.96
Tcells CD3 (%)	<i>r</i>	-0.01	0.01
	<i>p</i>	0.98	0.95
Tcells CD4+	<i>r</i>	-0.06	-0.06
	<i>p</i>	0.72	0.74
Tcells CD4+ (%)	<i>r</i>	-0.04	-0.15
	<i>p</i>	0.80	0.37
Tcells CD4 HLA DR+	<i>r</i>	0.05	0.10
	<i>p</i>	0.78	0.55
Tcells CD8+	<i>r</i>	0.05	0.12
	<i>p</i>	0.79	0.50
Tcells CD8+ (%)	<i>r</i>	0.12	0.21
	<i>p</i>	0.49	0.22
Tcells CD8 HLA DR+	<i>r</i>	0.39	0.36
	<i>p</i>	<b>0.02</b>	<b>0.03</b>
CD4 / CD8 -quota	<i>r</i>	-0.19	-0.36
	<i>p</i>	0.27	<b>0.03</b>
Bcells CD19+	<i>r</i>	-0.11	-0.21
	<i>p</i>	0.54	0.23
Bcells CD19+ (%)	<i>r</i>	-0.16	-0.29
	<i>p</i>	0.34	0.09
NK CD16 CD56	<i>r</i>	0.09	0.13
	<i>p</i>	0.62	0.44
NK CD16 CD56 (%)	<i>r</i>	0.05	0.11
	<i>p</i>	0.75	0.51

Table 3. Humoral immunological parameters. Mean differences in concentrations of immunoglobulins and immunoglobulin G subgroups in g/L between the two bearing groups (with 95% confidence intervals (CI), *p*-values derived from independent *t*-test). Positive differences indicate higher values in the metal-on-metal group, negative differences indicate lower values in the metal-on-metal group. No significant differences were detected

	Metal-on-metal compared with metal-on-polyethylene		
	<i>p</i> -value	Mean difference	95% CI
IgG	0.84	0.2	-1.7-2.1
IgA	0.79	0.1	-0.9-1.1
IgM	0.39	-0.1	-0.5-0.2
IgG1	0.55	0.3	-0.7-1.3
IgG2	0.99	0	-1.2-1.2
IgG3	0.31	-0.2	-0.5-0.2
IgG4	0.56	0.1	-0.2-0.3

Table 4. Correlation analysis of humoral immunological parameters and metal ion concentrations. Correlation analysis was performed using Pearson's *r*. There were no significant correlations of immunoglobulin or IgG subgroup concentrations with either ion concentration

		Ln Chromium	Ln Cobalt
IgG	<i>r</i>	-0.22	-0.09
	<i>p</i>	0.20	0.61
IgA	<i>r</i>	0.02	0.09
	<i>p</i>	0.92	0.60
IgM	<i>r</i>	-0.17	-0.16
	<i>p</i>	0.31	0.34
IgG1	<i>r</i>	-0.26	-0.05
	<i>p</i>	0.12	0.76
IgG2	<i>r</i>	-0.10	-0.06
	<i>p</i>	0.57	0.74
IgG3	<i>r</i>	-0.11	-0.09
	<i>p</i>	0.51	0.60
IgG4	<i>r</i>	-0.02	0.07
	<i>p</i>	0.89	0.70