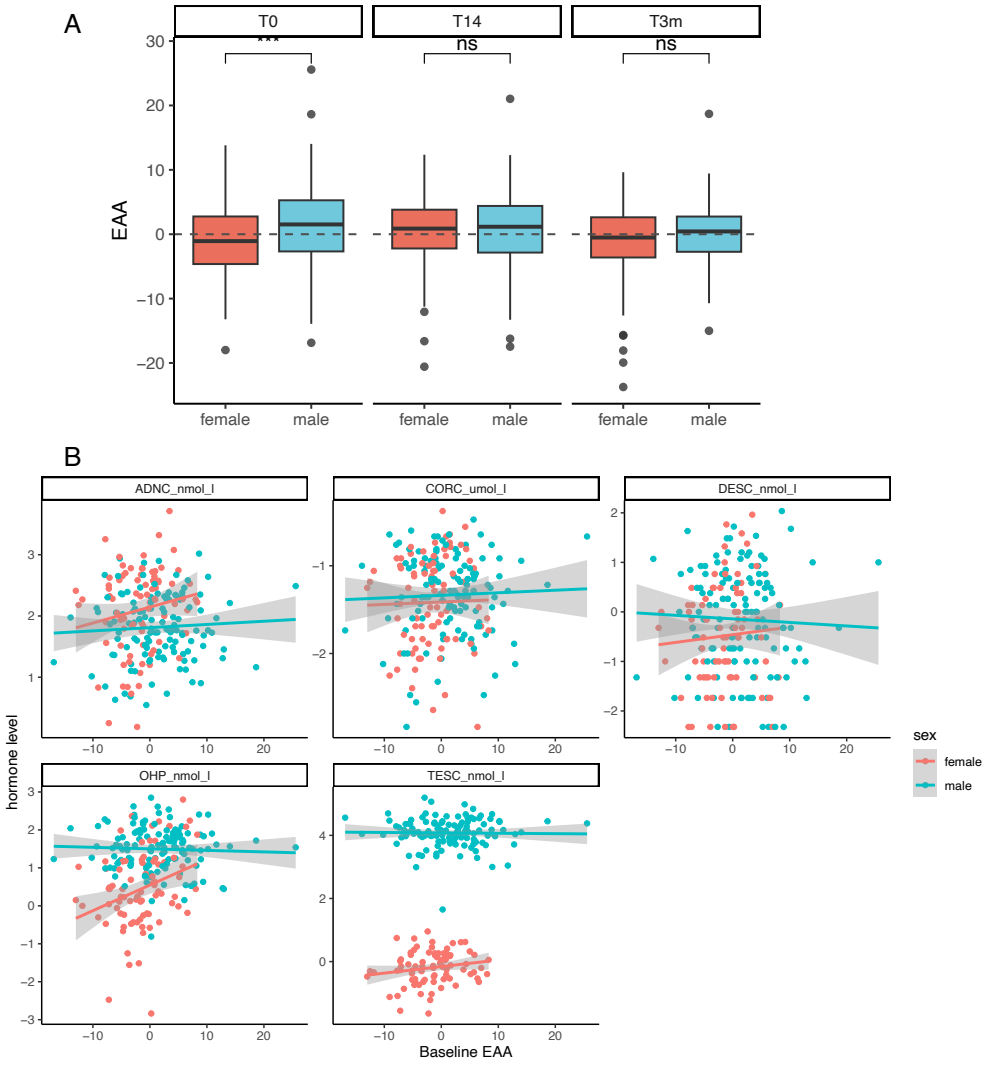
Supplementary figures to

Age-dependent effect of BCG vaccination on the kinetics of biological aging

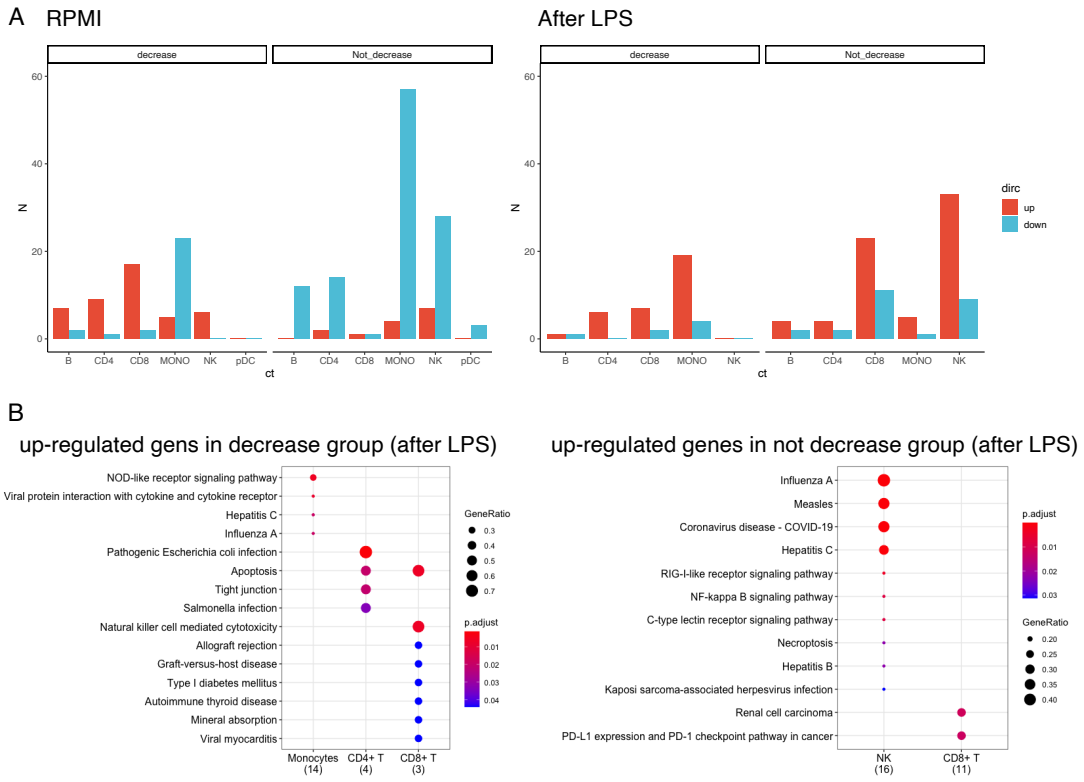
Cancan Qi[1,2,3], Yihan Zhang[1,2], Simone Moorlag[4], Sarah Sun[5], Mohamad Ballan[1,2], Charlotte de Bree[4], Valerie Koeken[1,2,4], Vera P. Mourits[4], Zhaoli Liu[1,2], Wenchao Li[1,2] Akshayata Naidu[1,2], Martin Jaeger[4], Frederik Schaltz-Buchholzer[6], Anne Marie Rosendahl Madsen[6,7], Leo A.B. Joosten[4,8], Lennart M. Roesner[9,10], Jochen Huehn[10,11], Thomas Werfel[9,10], Luis B. Barreiro[5], Christine Stabell Benn[6,12] Yang Li[1,2,10,13], Mihai G. Netea[4,14,15,+], Cheng-Jian Xu[1,2,+,#]

Figure S1. Sex difference in epigenetic age acceleration and its association with sex hormones.



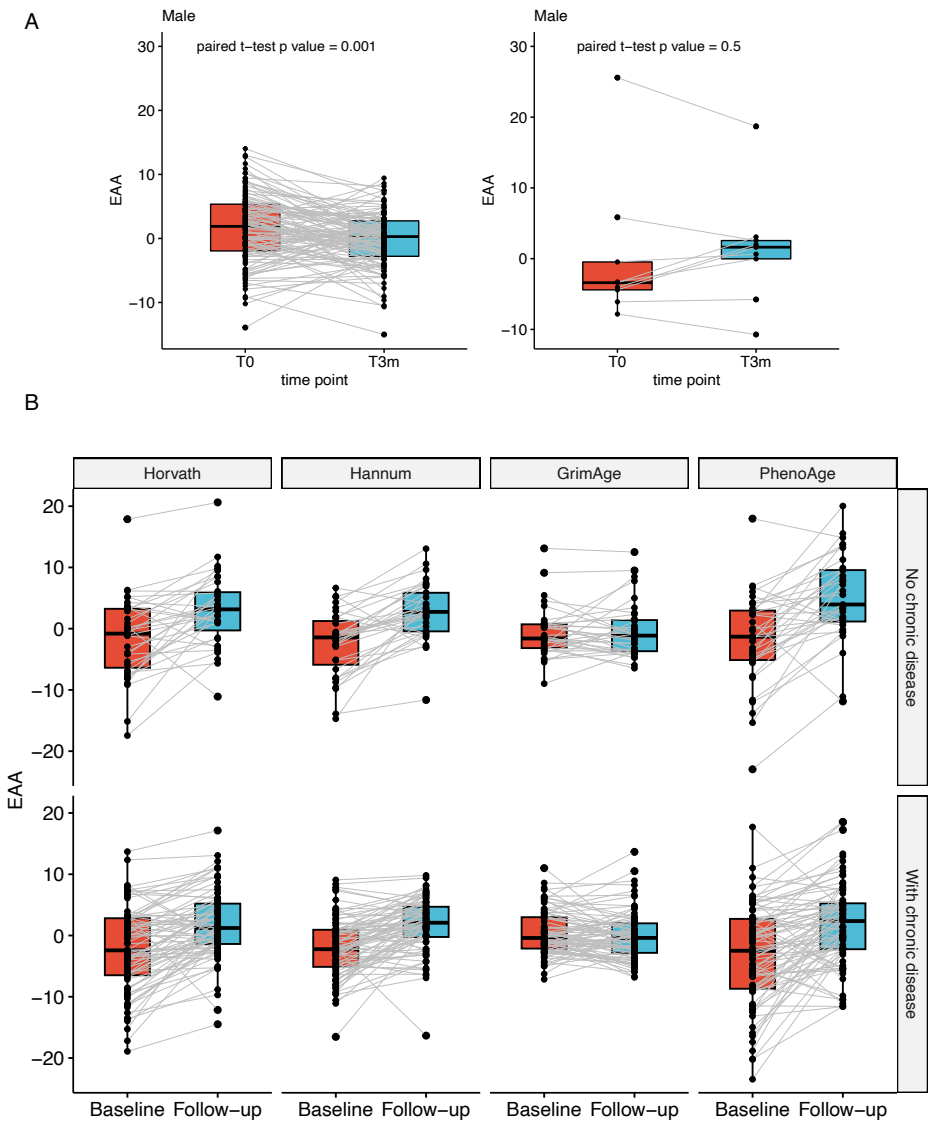
A. Difference of epigenetic age acceleration (EAA) between males and females at different time points. Asterisks indicate the significance of the correlation by t-test (NS, non-significant, *** P<0.001). B. Scatter plots indicating correlations between baseline EAA and baseline hormone level in male and female samples. ADNC: Androstenedione, CORC: Cortisol, DESC: Deoxycorticosterone, OHP: hydroxyprogesterone , TESC: Testosterone.

Figure S2. Single-cell transcriptomic differences associated with EAA reduction in males.



A. Number of differentially expressed genes (DEGs) in male participants whose EAA decreased at T3m (group decrease) versus those without a decrease (group Not_decrease) compared to baseline. The color indicates DEGs that were up-regulated (red) or down-regulated (blue). Samples received ex vivo stimulation with RPMI (left) and LPS (right) were plotted. B. Pathway enrichment analysis for up-regulated DEGs in both decrease group (left) and not decrease group (right).

Figure S3. Differences in EAA among age groups and disease status



A. Difference in EAA changes in different age groups (<50 years old, left panel, and >50 years old, right panel) in the 300 BCG cohort. B. Difference in EAA changes in males with different disease status (without chronic disease, upper panel; with chronic disease, lower panel) in the BCG-DENMARK-SENIOR cohort.