

Women's immune systems remain younger for longer

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Women's immune systems age more slowly than men's, suggests research in BioMed Central's open access journal *Immunity & Ageing*. The slower decline in a woman's immune system may contribute to women living longer than men.

Researchers looked at the blood of healthy volunteers in Japan, ranging in age between 20 and 90 years old; in both sexes the total number of white blood [cells](#) per person decreased with age. The number of neutrophils decreased for both sexes and lymphocytes decreased in men and increased in [women](#). Younger men generally have higher levels of lymphocytes than similarly aged women, so as aging happens, the number of lymphocytes becomes comparable.

Looking in more detail it became apparent that the rate in decline in T cells and B cells was slower for women than men. Both CD4+ T cells and NK cells increased with age, and the rate of increase was higher in women than men. Similarly an age-related decline in IL-6 and IL-10 was worse in men. There was also a age-dependent decrease in red blood cells for men but not women.

This difference in the aging of immune systems between men and women is one of many processes which alter as we grow older. Prof Katsuiku Hirokawa from the Tokyo Medical & Dental University Open Laboratory explained, "The process of aging is different for men and women for many reasons. Women have more oestrogen than [men](#) which seems to protect them from cardiovascular disease until menopause. Sex

hormones also affect the [immune system](#), especially certain types of lymphocytes. Because people age at different rates a person's immunological parameters could be used to provide an indication of their true biological age."

More information: Slower immune system aging in women versus men in the Japanese population, *Immunity & Ageing*.

Provided by BioMed Central

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