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AUTOPHAGY, IMMUNE AGING, AND DISEASE

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With extension of the average lifespan, ageing has become a heavy burden in society. Immune senescence is a key risk factor for many age-related diseases such as cancer, neurodegeneration and increased infections in the elderly, and hence, has elicited much attention in recent years. As our body's guardian, the immune system maintains systemic health through removal of pathogens and damage. Autophagy is an important cellular "clearance" process by which a cell internally delivers damaged organelles and macromolecules to lysosomes for degradation. Here, we discuss the most current knowledge of how impaired autophagy can lead to cellular and immune senescence. We will provide an overview, with examples, of the clinical potential of exploiting autophagy to delay immune senescence and/or rejuvenate immunity to treat various age-related diseases.