Is ageing a disease?

In this issue, we publish a Comment by Kiran Rabheru and colleagues detailing how an international group of clinicians came together to successfully challenge a new disease classification in the 11th revision of the WHO International Classification of Diseases (ICD-11). In ICD-11, WHO had proposed including the term “old age” under the MG2A diagnostic category of symptoms, signs, or clinical findings not elsewhere classified. Rabheru and colleagues were concerned that inclusion of “old age” could potentially lead to real-world harm. Based on this and other concerns raised during a formal consultation, WHO agreed to retract the term “old age” and replaced it with the more nuanced “ageing associated decline in intrinsic capacity”.

For the ICD-11, at least, this issue is now resolved. But what, on the face of it, looks like an academic dispute around linguistic precision masks a much greater inherent ideological conflict between longevity science and geriatric medicine, which are uneasy bedfellows in the emerging discipline of so-called longevity medicine. The conflict is centred around one crucial question: can ageing be regarded as a disease?

What are the advantages of classifying ageing as a pathogenic process? Advanced age increases the risk of developing multiple non-communicable diseases. It is also often accompanied by a loss of intrinsic physiological reserve and decreased resilience to external stressors. If ageing can be viewed as a pathological process, then it allows researchers to look at the pathophysiological mechanisms of ageing itself with a view to finding targetable mechanisms of action that slow the rate of ageing. This is based on preclinical data showing that ageing is, at least in part, a genetically encoded process conserved across species. Strikingly, many of the identified pathways of interest or note in preclinical ageing research have also been implicated in age-related disease pathogenesis—eg, cancers and diabetes.

Consequently, there is a strong argument that by targeting ageing pathways we could potentially strike at the source of multiple seemingly unrelated diseases. Advocates of this position believe that such a focus would improve people’s healthspans (the interval of life which is largely unaffected by disease) and, in addition, is likely to prolong lifespan as a consequence of removing or delaying the commencement of potentially fatal endogenous diseases. Moreover, because of possible cross-talk between ageing and disease pathways, there is the possibility of repurposing existing drugs that are already licenced for one disease indication to see if they improve healthspan in healthy individuals; for example, the TAME trial (Targeting Aging with Metformin) aims to assess whether metformin—a drug already found to be safe and licensed for use in diabetes—has any effect on age-related diseases. Furthermore, to characterise ageing as a disease opens the possibility of clinical trials explicitly targeting ageing as an endpoint, rather than proxies (although the question of how to measure endogenous ageing rate is still unanswered).

Why then, if the potential benefits are so large, is viewing ageing as a disease proving so controversial among clinicians? First, because ageing is a normal process experienced by all, as opposed to a disease state experienced only by some. Second, because to age is not automatically to deteriorate: chronological ageing is a heterogeneous and potentially plastic process with strong beneficial evidence of lifestyle interventions. Chronological age alone is a poor marker for disease risk. Third, to characterize ageing as a disease is to risk exacerbating already globally endemic ageism and age-related discrimination. And finally, because despite positive preclinical outcomes and huge sums of money being invested into anti-ageing technology start-ups, there is yet to be any clinically substantiated intervention that slows rate of ageing or disease progression in humans.

This is not to dismiss longevity science. If the research can deliver on its promise, it might change the face of medicine as we know it. Clinicians could potentially deliver better care by viewing age-related changes holistically instead of rigidly segregated by specialism. To deliver the longevity medicine that our ageing populations need and deserve, both disciplines need to acknowledge the other and actively engage in discussion. Collaboration, not dispute, is key if longevity medicine is to grow into its potential.