Many studies suggest there is a higher risk of cardiovascular disease (CVD) in individuals who are lonely, not married or living alone.1–4 But which is it: a feeling of loneliness, living by yourself or being married that counts? And is this association mediated by psychological factors; lifestyle behaviours such as diet, exercise and not smoking; or variation in healthcare use including CVD risk reduction treatments? Additionally, are biological factors important? For example, it has been hypothesised that telomere length, which is a marker of biological ageing and psychological distress, might explain the association between living alone and CVD risk.

In this issue of Heart, Chen and colleagues5 examined the relationship between marital status, leucocyte telomere length (LTL) and incidence CVD using data from over 10,000 participants in the Swedish Twin Registry. Compared with people who were married or cohabiting, people living singly (living alone, widowed, divorced or separated) had shorter LTL and an about 20% higher risk of CVD (HR 1.21, 95% CI: 1.08, 1.35). However, the association between marital status and CVD risk appeared to be independent of telomere length. Moreover, the risk of living singly was attenuated by adjustment for age, sex, educational attainment, body mass index, smoking, physical activity, diabetes, hypertension and dyslipidaemia (HR 1.12, 95% CI: 1.00 to 1.26).

In an editorial, O’Keefe et al.6 summarise previous studies on marital status and CVD risk, including a meta-analysis of 34 prospective cohort studies with a total of over two million participants which showed a 40% increased risk of CVD in unmarried, compared with married, men and women.7 In addition to lower psychosocial stress and higher resilience, they suggest that ‘an individual who is cohabitating is more likely to a) seek healthcare earlier and more often; b) be more adherent to prescribed treatment; and c) be encouraged by their partner to adopt healthier behaviours’. Interestingly, looking at results of different studies the benefit of marital status appear to be similar to the benefit of cohabitation or dog ownership7 for people living singly (figure 1). They conclude: ‘the advantages of cohabitation for one’s cardiovascular health and longevity might help inform a decision about the pros and cons of living with another person or a canine companion. Two may or may not live as cheaply as one, but two together will probably live longer than one alone.’

Another clinically relevant article in this issue of Heart addresses the discordance in physician perceptions of CVD risk versus
actual risk for patients who are overweight or obese. Litwin and colleagues used data from the Prospective Multicenter Imaging Study for Evaluation of Chest Pain trial including over 10,000 patients, approximately half of whom were obese, who had stable symptomatic coronary artery disease (CAD). In addition to stress and coronary imaging data, CVD outcome data were used to compare physicians’ clinical impression of risk versus actual event rates that are more pronounced as BMI rises. These data suggest that clinical risk prediction rules need to be recalibrated to reflect our current, increasingly overweight and obese, populations.

Atrial fibrillation (AF) is present in up to 35% of adults with aortic stenosis (AS) yet it has been unclear if this simply is due to the overlapping incidence of two common diseases in the elderly or whether AF is a marker of AS disease severity. In a cohort of 1847 patients with severe AS, of whom 16% were in AF, Zhang and colleagues found a lower survival rate at five years in those with AF compared with those in sinus rhythm (age-adjusted and sex-adjusted HR=1.66 (1.40 to 1.98), \( p<0.0001 \)). The authors conclude ‘Obesity is very common in contemporary populations undergoing CAD evaluation and higher degrees of obesity are associated with substantial differences in risk factor burden, symptoms and pretest risk assessment. Discordance exists between physician assessment of risk, pooled risk scores and actual event rates that are more pronounced as BMI rises.’ These data suggest that clinical risk prediction rules need to be recalibrated to reflect our current, increasingly overweight and obese, populations.

Figure 3 Forest plot of multivariable predictors of overall survival. HRs, 95% confidence limits and \( p \) values from the multivariable analysis are illustrated. AF, atrial fibrillation; AVR, aortic valve replacement; CHF, congestive heart failure; LAVI, left atrial volume index; MR, mitral regurgitation; RV, right ventricular.

Figure 4 Holistic assessment of patients with suspected myocardial injury. ACS, acute coronary syndrome; AMI, acute myocardial infarction.
REFERENCES