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Harmonizing measures of depressive symptoms: the IGEMS consortium

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The interplay of genes and environment across multiple studies (IGEMS) consortium is comprised of nine longitudinal twin studies established to explore the nature of social context effects and gene-environment interplay in mid- to late-life functioning: the Longitudinal Study of Aging Danish Twins and Middle-Age Danish Twin study in Denmark; the Swedish Adoption/Twin Study of Aging, Origins of Variance in the Old–Old (OCTO-Twin), Aging in Women and Men: A Longitudinal Study of Gender Differences in Health Behaviour and Health among Elderly (Gender), and Twin and Offspring Study in Sweden; and the Minnesota Twin Study of Adult Development and Aging, Vietnam Era Twin Study of Aging, and the National Survey of Midlife in the United States. In all, there are data from nearly 20,000 participants. To enable combined data analysis, we have devoted attention to harmonization of relevant phenotypes. Where a common metric was not available across the studies, we collected a new harmonization sample who completed questionnaires corresponding to all of the ways that the different studies assessed a particular phenotype; for example, depressive symptoms. We applied rational, empirical (IRT), and configural methods to the newly collected data to create a crosswalk between measures of depressive symptoms used in the different studies. Having established the cross- walk, we can create comparable depressive symptom scores across the twin studies and move forward with combined analyses of social context effects and G-E interplay. For others facing similar measurement harmonization dilemmas, we compare the effectiveness of these different methods of harmonization.