

Supplementary Table S1: Studies used in the meta-analysis.

First author, year	Study design	Population	Exposure	Outcome	Covariates	Results
Chen-Edinboro, 2017	Cross-sectional study*	Baltimore Longitudinal Study of Aging: 1,053 adults 71.4±10.6 years	Classified as nonanemic, non-iron deficient anemic, or iron-deficient anemic based on hemoglobin, ferritin, transferrin, saturation, and mean cell volume	Insomnia symptoms were evaluated by the Women's Health Initiative Insomnia Rating scale	Age, sex, race, ethnicity, number of chronic diseases, depression, restless leg syndrome	Significant association between non-iron deficient anemia and insomnia: (OR: 2.39; 95% CI: 1.40–4.07) <i>P</i> <0.001 compared to non-anemic participants
Kim, 2013	Cross-sectional study	South Korea, 2,002 adults, >65 years	Information about the lifetime history of physical illness was assessed using binary questions for ten disease categories including anemia.	The presence of insomnia was defined as having at least one of four sleep complaints that included difficulty in initiating sleep, difficulty in maintaining sleep, early morning awakening, and non-restorative sleep more than three times per week in the last month using a questionnaire from the Korean Epidemiologic Catchment Area Study Replication	Age, gender, education, marital status, smoking, alcohol consumption	Significant association between anemia and insomnia: (OR: 1.28; 95% CI: 1.07–1.52) <i>P</i> < 0.01

Jackowska, 2013	Cross-sectional study	English Longitudinal Study of Ageing: England, 6465 adults, 50–99 years	Anemia status (no/yes) was defined based on WHO guidelines (<13 g/dL for men and <12 g/dL for women)	Sleep disturbance was assessed with three questions that are the most common symptoms of insomnia. Specifically, participants were requested to indicate whether in the past month they had difficulties falling sleep, staying asleep, and whether they felt tired upon waking up in the morning. These items were rated on a 4-point scale (ranging from 1 = “not during the last month” to 4 = “three or more times a week”). The scores were averaged, with higher scores corresponding to greater sleep disturbances (range 1–4).	age, wealth, body mass index, smoking, physical activity, limiting long-standing illness and depressive symptoms	In men disturbed sleep was associated with a greater likelihood of anemia (OR: 1.73; 95% CI: 1.13–2.65). In women more disturbed sleep was associated with greater likelihood of anemia
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*Iron-deficient anemia not tested.

Supplementary Figure S1. Flow chart for identifying eligible studies for the meta-analysis.

