

Appendix 2 (as supplied by the authors): Key clinical and health outcomes that exercise has been shown to help and not help, by chronic condition

Condition	Intervention	Key outcomes for which exercise has been shown to help; effect size (95% CI)	Outcomes for which exercise has not been shown to help; effect size (95% CI)
Osteoarthritis (hip and knee)	Structured land-based exercise	<ul style="list-style-type: none"> Pain: <i>Knee</i>: SMD -0.49 (-0.39 to -0.59); absolute change 12 points (10-15) on 0-100 scale¹; <i>Hip</i>: SMD -0.38 (-0.55 to -0.2); absolute change 8 points (4-11) on 0-100 scale² Physical function: <i>Knee</i>: SMD -0.52 (-0.39 to -0.64); absolute change 10 points (8-13) on 0-100 scale¹; <i>Hip</i>: SMD -0.33 (-0.54 to -0.05); 7 points (1-12) on 0-100 scale, where 0 = no physical disability² QoL: <i>Knee</i>: SMD 0.28 (0.15 to 0.40); absolute change 4 points (2-5) on 0-100 scale¹ 	QoL for hip osteoarthritis: SMD 0.07 (-0.23 to 0.36); low evidence quality ²
Chronic nonspecific low-back pain	Structured exercise program (actual type does not seem to matter) (e.g., graded activity v. motor control exercises ³)	<ul style="list-style-type: none"> Pain: 18.1 (11.1 to 25.0) points improvement on 0-100 scale, when implemented optimally³ Function: 5.5 (0.5 to 10.5) points improvement on 0-100 scale, when implemented optimally³ 	Acute back pain: <ul style="list-style-type: none"> pain: 0.6 (-11.5 to 12.7)⁴ function: -2.8 (-15.4 to 9.7)⁴
Falls	Multiple component exercise (home or group). Components usually include balance, strength and fitness. ⁵ Larger effects from programs that target balance. ⁶	<ul style="list-style-type: none"> Rate of falls (number of falls experienced) and/or proportion of people falling once or more: <i>Multiple component group-based exercise</i>: Rate ratio 0.71 (0.63 to 0.82)⁵; <i>Multiple-component home-based exercise</i>: Rate ratio 0.68 (0.58 to 0.80)⁵; <i>Tai Chi</i>: RR 0.71 (0.57 to 0.87)⁵ 	Exercise as a single intervention appears to be less effective in high care residential settings and in those with major risk factors no amenable to change with exercise than in the general community ^{5,7}
Chronic obstructive pulmonary disease	Pulmonary rehabilitation (must include exercise training – endurance and strength)	<ul style="list-style-type: none"> Exercise capacity (six-minute walk test): 43.9 metres (32.6 to 55.2)⁸ [MID = 30 m (25-33)⁹] QoL - St George's Respiratory Questionnaire: Total score: -6.9 points (-9.3 to -4.5)⁸; [MID = -4 points; lower score equals improvement]³²; Symptoms: -5.1 points (-7.7 to -2.5); Impacts: -7.2 points (-9.9 to -4.6); Activity: -6.1 points (-9.3 to -2.9) QoL – Chronic Respiratory Disease Questionnaire: (0-7 scale, higher is better; MID = 0.5 for each domain) QoL - Domains: Dyspnoea: 0.79 points (0.56 to 1.03)⁸; Fatigue: 0.68 points (0.45 to 0.92)⁸; Emotional function 0.56 points (0.34 to 0.78)⁸; Mastery: 0.71 points (0.47 to 0.95)⁸ Incremental shuttle walk test: 39.8 metres (22.4 to 57.2)⁹ [MID = 47.5m] Peak exercises capacity (cycle): 6.8 watts (1.9 to 11.7)⁸ Mortality: If pulmonary rehabilitation commenced after hospitalisation for an acute exacerbation: OR=0.29 (0.10 to 0.84) during follow-up period of weighted mean duration of 107 weeks; NNT 6 (5 to 30)¹⁰ Reduction in hospital readmission: If pulmonary rehabilitation commenced after hospitalisation for acute exacerbation: OR 0.2 (0.08 to 0.6); NNT 4 (3 to 8)¹⁰ 	
Type 2 diabetes	Structured, supervised aerobic exercise Structured, supervised progressive resistance training Combined aerobic and resistance training Physical activity advice AND dietary advice	<ul style="list-style-type: none"> HbA_{1c} absolute change: -0.73% (-1.06 to -0.40)¹¹ HbA_{1c} absolute change: -0.57% (-1.14 to -0.01)¹¹ HbA_{1c} absolute change: -0.51% (-0.79 to -0.23)¹¹ HbA_{1c} absolute change: -0.58% (-0.74 to -0.43)¹¹ 	HbA _{1c} not affected by physical activity advice alone: -0.16 (-0.50 to 0.18) ¹¹ A combined intervention of physical activity and decreased calorie intake (with the aim of weight loss) did not reduce cardiovascular morbidity or mortality ¹²
Chronic fatigue syndrome	Aerobic exercise	<ul style="list-style-type: none"> Fatigue: -2.82 (-4.07 to -1.57) on 0-33 point scale; -6.80 (-10.31 to -3.28) on 0-42 point scale; -6.06 (-6.95 to -5.17) on 0-11 point scale (lower score indicates less fatigue)¹³ Physical functioning: 13.1 (1.98 to 24.2) points on SF-36 subscale (0-100 points)¹³ Sleep: -1.49 (-2.95 to -0.02) on Jenkins sleep scale (0-20 points; lower score indicates improved sleep quality)¹³ Self-perceived changes in overall health: RR 1.83 (1.39 to 2.40)¹³ 	
Coronary heart disease	Exercise therapy (alone or combined with educational and/or psychosocial interventions)	<ul style="list-style-type: none"> All-cause mortality after 1 yr: RR 0.87 (0.75 to 0.99)¹⁴ Cardiovascular death after 1 yr: RR 0.74 (0.63 to 0.87)¹⁴ All hospital admissions (6–12-mo follow-up): RR 0.69 (0.51 to 0.93)¹⁴ 	
Heart failure	Exercise therapy (alone or combined with educational and/or psychosocial interventions)	<ul style="list-style-type: none"> Health-related QoL: mean difference -0.46 (-0.66 to -0.26)¹⁵ All hospital admissions to 1 yr: RR 0.75 (0.62 to 0.92)¹⁵ Hospital admission for heart failure to 1 yr: RR 0.61 (0.46 to 0.80)¹⁵ 	All-cause mortality: RR 0.93 (0.69 to 1.27) ¹⁵

HADS = Hospital Anxiety and Depression Scale; HbA_{1c} = Haemoglobin A_{1c}; MID = Minimal clinically important difference; NNT = number needed to treat; OR = Odds Ratio; QoL = Quality of life; RR = risk ratio; SMD = Standardised mean difference;

Appendix to: Hoffmann TC, Maher CG, Briffa T, et al. Prescribing exercise interventions for patients with chronic conditions.

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