E.1 Weight management

Overview of the PICO structure

Definition of the intervention	
Weight management refers to nonsurgical interventions adopting unimodal or multimodal interventions that can be delivered in a primary care or community setting and are aimed at improving outcomes for adults with CPLBP. These interventions may include weight loss for adults who are overweight or obese, weight maintenance for adults of normal body weight or weight gain interventions for adults who are underweight or malnourished. The evidence synthesis for the guideline identified trials of weight loss interventions only.	
PICO question	
Population and subgroups	Community-dwelling adults (aged 20 years and over) experiencing chronic primary low back pain, with or without leg pain, including older people (aged 60 years and older). Subgroups: • Age (all adults and those aged 60 years and over) • Gender and/or sex • Presence of leg pain (radicular, non-radicular, mixed) • Race/ethnicity - studies of populations who were historically marginalized compared with studies of those who were not • Regional economic development - studies carried out in high-income countries compared with studies in low- to middle-income countries
Comparators	a) Placebo/sham b) No or minimal intervention, or where the effect of the intervention can be isolated c) Usual care (described as usual care in the trial)

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Outcomes	Critical outcomes constructs (all adults) Critical outcomes constructs (older adults, aged ≥ 60 years) • Pain • Back-specific function/disability • General function/disability • Health-related quality of life • Psychosocial function • Social participation • Self-efficacy • Adverse events (as reported in trials) • Body weight Pain • Back-specific function/disability • General function/disability • Health-related quality of life • Psychosocial function • Adverse events (as reported in trials) • Change in the use of medications • Falls • Body weight

Other Evidence-to-Decision (EtD) considerations for pharmacological and non-pharmacological weight loss interventions

Summary of *values and preferences*	
All adults	**Older people**
No evidence synthesis commissioned for all adults. Judgements made based on experience of GDG members	No evidence identified

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Summary of *resource considerations*	
All adults	**Older people**
No evidence synthesis commissioned for all adults. Judgements made based on experience of GDG members	No evidence identified

Summary of *equity and human rights considerations*	
All adults	**Older people**
No evidence synthesis commissioned for all adults. Judgements made based on experience of GDG members	No evidence identified

Summary of *acceptability considerations*	
All adults	**Older people**
No evidence synthesis commissioned for all adults. Judgements made based on experience of GDG members	No evidence identified

Summary of *feasibility considerations*	
All adults	**Older people**
No evidence synthesis commissioned for all adults. Judgements made based on experience of GDG members	No evidence identified

E.1.1 Summary of judgements: pharmacological weight loss

Domain	**All adults**	**Older people**
Benefits	Uncertain	Uncertain

Harms	Uncertain	Uncertain
Balance benefits to harms	Uncertain; probably does not favour pharmacological weight loss	Uncertain; probably does not favour pharmacological weight loss
Overall certainty	Very low	Very low
Values and preferences	Probably important uncertainty or variability	Probably important uncertainty or variability
Resource considerations	Moderate costs; varies (according to country and health system)	Moderate costs; varies (according to country and health system)
Equity and human rights	Possibly increased; uncertain; possibly reduced (especially related to stigma)	Possibly increased; uncertain; possibly reduced (especially related to stigma)
Acceptability	Yes, probably yes (among health workers); uncertain for people with CPLBP	Yes, probably yes (among health workers); uncertain for people with CPLBP
Feasibility	Probably yes, probably no, uncertain, varies	Probably yes, probably no, uncertain, varies

E.1.2 Summary of judgements: non-pharmacological weight loss

Domain	**All adults**	**Older people**
Benefits	Uncertain	Uncertain
Harms	Uncertain	Uncertain
Balance benefits to harms	Uncertain	Uncertain
Overall certainty	Very low	Very low
Values and preferences	Probably important uncertainty or variability	Probably important uncertainty or variability
Resource considerations	Moderate costs; varies (according to country and health system)	Moderate costs; varies (according to country and health system)

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Equity and human rights	Possibly increased; uncertain; possibly reduced (especially related to stigma)	Possibly increased; uncertain; possibly reduced (especially related to stigma)
Acceptability	Yes, probably yes (among health workers); uncertain for people with CPLBP	Yes, probably yes (among health workers); uncertain for people with CPLBP
Feasibility	Probably yes, probably no, uncertain, varies	Probably yes, probably no, uncertain, varies

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

GRADE Table 1. ***What are the benefits and harms of pharmacological weight loss interventions for adults with chronic primary low back pain compared with placebo?***

Population: People with lower back pain
Setting: Varied
Intervention: Weight loss interventions
Comparator: Placebo

Certainty Assessment								Number of participants		Effect: Absolute (95%CI)	Certainty	Comment
Outcomes	**No. studies**	**Study Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other**	**Weight loss**	**Placebo**			
Pain intensity – post-intervention												
Pharmacological weight loss intervention vs placebo assessed with: **McGill Pain Questionnaire** Follow-up: mean 10 weeks	1[a]	RCT	Very serious[b]	Serious[c]	Serious[d]	Serious[e]	-	48	48	MD -11.4 [–16.68 to – 6.12]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.1
Population subgroup 1 by intervention - not reported (no subgroup analysis was performed; only one included study for this outcome)												
Population subgroup 2 by 60 years and over - not reported (no subgroup analysis was performed; only one included study for this outcome)												
Population subgroup 3 by gender/sex - not reported (no subgroup analysis was performed; only one included study for this outcome)												
Population subgroup 4 by presence of leg pain or radicular symptoms (no subgroup analysis was performed; only one included study for this outcome)												
Population subgroup 5 by race/ethnicity (no subgroup analysis was performed; only one included study for this outcome)												
Population subgroup 6 by regional economic development (no subgroup analysis was performed; only one included study for this outcome)												
Pain intensity – long-term follow-up												
-	-	-	-	-	-	-	-	-	-	-	-	-

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Self-reported activity limitation (Disability/Function) – post-intervention												
Pharmacological weight loss intervention vs placebo assessed with: **Oswestry LBP Questionnaire** Follow-up: mean 10 weeks	1[a]	RCT	Very serious[b]	Serious[c]	Serious[d]	Serious[e]	-	48	48	MD -4.9 [–19.45 to 9.65]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.2
Population subgroups 1, 2, 3, 4 , 5 and 6 - not reported (no subgroup analysis was performed)												
Self-reported activity limitation (Disability/Function) – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Health related quality of life – post-intervention:												
Pharmacological weight loss intervention vs placebo assessed with: **Physical subscale of Short Form-36** Follow-up: 10 weeks	1[a]	RCT	Very serious[b]	Not serious	Serious[d]	Serious[e]	-	48	48	MD -8.00 [5.07 to 10.93]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.3
Pharmacological weight loss interventions vs placebo assessed with: **Psychological subscale of Short Form-36** Follow-up: 10 weeks	1[a]	RCT	Very serious[b]	Not serious	Serious[d]	Serious[e]	-	48	48	MD 5.4 [3.14 to 7.66]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.4
	-	-	-	-	-	-	-	-	-	-	-	-
Health related quality of life – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Weight – post-intervention												
Pharmacological weight loss interventions vs placebo assessed with: **Weight (kg)** Follow-up: range 10 weeks to 12 weeks	2[a,f]	RCT	Very serious[g]	Serious[h]	Not serious	Serious[i]	-	105	103	MD -1.61 [-8.53 to 5.31]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.5

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Weight/BMI – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Psychological functioning and wellbeing – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Social participation – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Self-efficacy – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Change in use of medications – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Falls – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Adverse events – post-intervention:												
Pharmacological weight loss interventions vs placebo, assessed with: **Frequency (n/N, %.)** Follow-up: 10 to 12 weeks	2[a,f]	RCT	Very serious[g]	Not serious	Not serious	Serious[e]	-	41/105 (40.35%)	28/103 (32.7%),	RR 1.41 [0.95 to 2.10]	⨁◯◯◯ Very low	Appendix 5 Analysis 2.6
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Adverse events – long-term follow-up: no studies were identified that reported for this outcome												

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

-	-	-	-	-	-	-	-	-	-	-	-	-

Explanation

a. Muehlbacher, 2006 - 10-weeks topiramate drug compared to placebo (blinded).
b. Risk of Bias: Downgrade two levels – overall high risk of bias in single study
c. Inconsistency: Downgrade one level for unexplained variability in result (SD reported likely to be SE) and unable to contact authors to confirm.
d. Indirectness: Single study
e. Imprecision: Downgraded one level for small sample size
f. Kwon, 2021- 12-weeks orlistat plus phentermine drugs compared to phentermine plus placebo.
g. Risk of Bias: Downgrade two level overall high risk of bias in all studies
h. Inconsistency: Downgrade one level due to substantial heterogeneity (I^2=74%)
i. Imprecision: Downgrade one levels – CIs show appreciable benefit and harm; not downgraded two levels due to downgrade for inconsistency would have contributed to severity of imprecision.

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

GRADE Table 2. ***What are the benefits and harms of non-pharmacological weight loss interventions for adults with chronic primary low back pain compared with minimal or no intervention?***

Population: People with lower back pain
Setting: Varied
Intervention: Weight loss interventions
Comparator: No or minimal care

Certainty Assessment								Number of participants		Effect: (95%CI)	Certainty	Comment
Outcomes	**No. studies**	**Study Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other**	**Weight loss**	**No or minimal intervention**			
Pain – post-intervention												
Diet (A) or Diet and extra virgin olive oil (B) vs olive oil only (C) assessed with: **Presence of severe pain n/%** Follow-up: mean 12 weeks	1[a]	RCT	Very serious[b]	Not serious	Serious[c]	Very serious[d]	-	90	43	RR 0.94 [0.68 to 1.28]	⨁◯◯◯ Very low	Effect estimate calculated by pooling A+B vs C Appendix 5 Analysis 3.1
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed; only one included study for this outcome)												
Pain– long-term follow-up												
-	-	-	-	-	-	-	-	-	-	-	-	-
Self-reported activity limitation (Disability/Function) – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Health related quality of life – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Weight and BMI – post-intervention												

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Diet (intv A) or Diet and extra virgin olive oil (intv B) vs olive oil only (control) assessed with: **BMI change** follow-up: 12 weeks	1[a]	RCT	Very serious[b]	not serious	Serious[c]	Serious[e]	-	A: 43 B:47	43	A: −2.65±5.54 kg/m2 B: −1.64±3.47 kg/m2 C: +1.66±2.94 kg/m2	⨁◯◯◯ Very low	Estimate from single study, data otherwise not usable.
Aerobic exercise and diet (A) vs no intervention control (B) Assessed with: **Weight change from baseline (kg)** Follow-up: 4 months	1[f]	RCT	Very serious[b]	not serious	Serious[c]	Very serious[e]	-	18	18	A: - 4.3 kg B: -1.4 kg [p=0.0001]	⨁◯◯◯ Very low	Estimate from single study, data otherwise not usable.
Population subgroup 1 - not reported (no subgroup analysis was performed; single study result provided above as meta-analysis not possible due to insufficient data)												
Population subgroup analysis 2 by 60 years and over												
Aerobic exercise and diet (A) vs no intervention control (B) Assessed with: **Weight change from baseline (kg)** Follow-up: 4 months Mean age: 63 years (SD2.4)	1[f]	RCT	Very serious[b]	not serious	Serious[c]	Very serious[g]	-	18	18	A: - 4.3 kg B: -1.4 kg [p=0.0001]	⨁◯◯◯ Very low	Estimate from single study, data otherwise not usable.
Population subgroup analysis 3 by gender/sex												
Aerobic exercise and diet (A) vs no intervention control (B) Assessed with: **Weight change from baseline (kg)** Follow-up: 4 months Gender: Males	1[f]	RCT	Very serious[b]	not serious	Serious[c]	Serious[g]	-	18	18	A: - 4.3 kg B: -1.4 kg [p=0.0001]	⨁◯◯◯ Very low	Estimate from single study, data otherwise not usable.
Population subgroups 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Weight/BMI – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Psychological functioning and wellbeing – post-intervention or long-term follow-up : no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Social participation – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Self-efficacy – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Change in use of medications – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Falls – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Adverse events – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-

Explanation

a. Mendonca 2021- 12 weeks individualised meal plan (5-10% energy deficit) with or without 52mls/day of olive oil compared to 52mls of daily olive oil.
b. Risk of Bias: Downgrade two levels for overall high risk of bias in single study
c. Indirectness: Single Study
d. Imprecision: Downgraded two levels as CIs show appreciable benefit and harm and small numbers of participants
e. Imprecision: Downgraded one level for small sample size
f. Irondoust 2021- 30 days; simple dietitian prescribed 30-day weight loss meal plan containing less than 1200kcal per day. Telephone call and text message follow-up every 3 days to monitor adherence, plus NSAID celecoxib 200mg/day.
g. Imprecision: Downgraded two levels for very small sample size.

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

GRADE Table 3. ***What are the benefits and harms of non-pharmacological weight loss interventions for adults with chronic primary low back pain compared with usual care?***

Population: People with lower back pain
Setting: varied secondary care
Intervention: Weight loss interventions
Comparator: Usual care

Certainty Assessment								Number of participants		Effect: Absolute (95%CI)	Certainty	Comment
Outcomes	**No. studies**	**Study Design**	**Risk of bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other**	**Weight loss**	**Usual Care**			
Pain intensity – post-intervention												
Weight loss interventions vs usual care assessed with: **MPQ, VAS, NRS** Follow-up: range 60 days to 26 weeks.	4[a,b,c]	RCT	Serious[d]	Very serious[e]	not serious	Serious[f]	-	167	148	SMD 0.18 [-0.46, 0.81]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.1
Population subgroup analysis 1 by intervention type												
Diet only weight loss vs usual care assessed with: **MPQ, VAS** Follow-up: range 60 days to 5 weeks	3[a,b]	RCT	Very serious[g]	Very serious[e]	Not serious	Serious[f]	-	88	68	SMD 0.39 [-0.74, 1.52]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.2
Education and weight loss coaching (diet and exercise) vs usual care assessed with **NRS** Follow-up: 26 weeks	1[c]	RCT	Not serious	Not serious	Serious[h]	Very serious[i]	-	79	80	SMD -0.19 [-0.51, 0.12]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.2
Population subgroups 2 and 3 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 4 by presence of leg pain or radicular symptoms												

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Weight loss interventions in patients with leg pain vs usual care assessed with: MPQ, follow-up: 60 days	1[a]	RCT	Very serious[g]	Not serious	Not serious	Serious[i]	-	48	48	SMD -0.57 [-0.97to -0.16]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.3
Weight loss interventions in patients leg pain not reported vs usual care assessed with: **VAS, NPS** Follow-up: 5 weeks to 26 weeks	3[b,c]	RCT	Serious[d]	Very serious[e]	Not serious	Serious[f]	-	119	100	SMD 0.49 [-0.38 to 1.37]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.3
Population subgroup 5 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 6 by regional economic development												
Low-/middle-income countries: Diet only weight loss vs usual care assessed with: **MPQ, VAS** Follow-up: range 60 days to 5 weeks	3[a,b]	RCT	Very serious[g]	Very serious[e]	Not serious	Serious[f]	-	88	68	SMD 0.39 [-0.74, 1.52]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.4
High income country: Education and weight loss coaching (diet and exercise) vs usual care assessed with **NRS** Follow-up: 26 weeks	1[c]	RCT	Not serious	Not serious	Serious[h]	Very serious[i]	-	79	80	SMD -0.19 [-0.51, 0.12]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.4
Pain intensity – long-term follow-up												
-	-	-	-	-	-	-	-	-	-	-	-	-
Self-reported activity limitation (Disability/Function) – post-intervention												
Weight loss interventions vs usual care assessed with: **RMDQ, Barthel Index** Follow-up: range 60 days to 26 weeks	4[a,b,c]	RCT	Very serious[g]	Serious[k]	Not serious	Serious[j]	-	126	123	SMD -0.65 [-1.12 to -0.19]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.5

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Population subgroup analysis 1 by intervention type												
Diet only weight loss interventions vs usual care assessed with: **RMDQ, Barthel Index** Follow-up: range 60 days to 5 weeks	3[a,b]	RCT	very serious[g]	Not serious	Not serious	Serious[j]	-	88	68	SMD -0.88 [-1.22 to -0.54]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.6
Education and weight loss coaching (diet and exercise) vs usual care assessed with **RMDQ** Follow-up: 26 weeks	1[c]	RCT	Serious[l]	Serious[h]	Not serious	Very serious[i]	-	38	55	SMD -0.13 [-0.54, 0.28]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.6
Population subgroups 2 and 3 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 4 by presence of leg pain or radicular symptoms												
Diet only weight loss interventions vs usual care assessed with: **RMDQ** Follow-up: 60 days	1[a]	RCT	Serious[g]	not serious	Serious[h]	Serious[j]	-	48	48	SMD-0.86, [-1.28 to -0.44]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.7
Diet, or weight loss coaching (diet and exercise) vs usual care assessed with: **RMDQ, Barthel Index** Follow-up: 5 weeks to 26 weeks	3[b,c]	RCT	Serious[d]	Serious[k]	not serious	Serious[j]	-	78	75	SMD -0.57 [-1.18 to 0.04]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.7
Population subgroup 5 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 6 by regional economic development												
Low-/middle-income countries: Diet only weight loss interventions vs usual care assessed with: **RMDQ, Barthel Index** Follow-up: range 60 days to 5 weeks	2[a,b]	RCT	Very serious[g]	Not serious	Not serious	Serious[j]	-	88	68	SMD -0.88 [-1.22 to -0.54]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.8

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

High income country: Education and weight loss coaching (diet and exercise) vs usual care assessed with **RMDQ** Follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[i]	-	38	55	SMD -0.13 [-0.54, 0.28]	⊕◯◯◯ Very low	Appendix 5 Analysis 1.8
Self-reported activity limitation (Disability/Function) – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Health related quality of life – post-intervention												
Education and weight loss coaching (diet and exercise) vs usual care assessed with: **SF12-v2 Physical function subscale score (PCS) and Mental subscale score (MCS)** follow-up: mean 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[i]	-	43	61	MD (PCS) 1.6 [-2.53 to 5.73] MD (MCS) 2.20 [-3.11 to 7.51]	⊕◯◯◯ Very low	Appendix 5 Analysis 1.9 and 1.10
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed; only one included study for this outcome)												
Health related quality of life – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Weight and BMI – post-intervention												
Weight loss interventions vs usual care assessed with: **Weight (kg)** follow-up: range 30 days to 26 weeks	4[a,b,c]	RCT	Very serious[g]	Not serious	Not serious	Very serious[i]	-	142	131	MD 0.84 [-2.29 to 3.98]	⊕◯◯◯ Very low	Appendix 5 Analysis 1.11
Weight loss interventions vs usual care assessed with: **BMI (kg/m²)** follow-up: range 5 weeks to 26 weeks	3 [b,c]	RCT	Serious[d]	Not serious	Not serious	Very serious[i]	-	94	83	MD 0.71 [-0.54 to 1.96]	⊕◯◯◯ Very low	Appendix 5 Analysis 1.15

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Population subgroup analysis 1 by intervention type												
Diet only weight loss interventions vs usual care assessed with: **Weight (kg)** follow-up: range 30 days to 5 weeks	3[a,b]	RCT	Very serious[g]	Not serious	Not serious	Very serious[i]	-	88	68	MD 1.06 [-2.57 to 4.69]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.12
Education and weight loss coaching (diet and exercise) vs usual care assessed with: **Weight (kg)** follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Serious[j]	-	54	63	MD 0.6 [0.0 to 1.2]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.12
Weight loss interventions vs usual care assessed with: **BMI (kg/m^2)** follow-up: range 5 weeks	2[b]	RCT	Very serious[g]	not serious	Serious[h]	Very serious[i]	-	40	20	MD 1.48 [-0.51 to 3.46]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.16
Weight loss interventions vs usual care assessed with: **BMI (kg/m^2)** follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[i]	-	54	63	MD 0.20 [-1.41 to 1.81]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.16
Population subgroups 2 and 3 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 4 by presence of leg pain or radicular symptoms												
Diet only weight loss interventions vs usual care assessed with: **Weight (kg)** follow-up: 30 days	1[a]	RCT	Serious[g]	not serious	Serious[h]	Very serious[i]	-	48	48	SMD 0.39 [-4.47 to 5.25	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.13
Diet, or weight loss coaching (diet and exercise) vs usual care assessed with: **Weight (kg)** follow-up: 5 weeks to 26 weeks	3[b,c]	RCT	Serious[d]	Not serious	Not serious	Very serious[i]	-	94	83	SMD 1.17 [-2.94 to 5.27]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.13

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Not possible to perform for **BMI**												
Population subgroup 5 - not reported (no subgroup analysis was performed)												
Population subgroup analysis 6 by regional economic development												
Low-/middle-income countries: Diet only weight loss interventions vs usual care assessed with: **Weight (kg)** Barthel Index follow-up: range 30 days to 5 weeks	3[a,b]	RCT	Very serious[g]	Not serious	Not serious	Very serious[i]	-	88	68	MD 1.06, [-2.57, 4.69]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.14
High income country: Education and weight loss coaching (diet and exercise) vs usual care assessed with: **Weight (kg)** follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Serious[j]	-	54	63	MD 0.6 [0.0 to 1.2]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.14
Weight loss interventions vs usual care assessed with: **BMI (kg/m²)** follow-up: range 5 weeks	2[b]	RCT	Very serious[g]	Not serious	Serious[h]	Very serious[i]	-	40	20	MD 1.48 [-0.51 to 3.46]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.17
Weight loss interventions vs usual care assessed with: **BMI (kg/m²)** follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[j]	-	94	83	MD 0.20 [-1.41 to 1.81]	⨁◯◯ ◯ Very low	Appendix 5 Analysis 1.17
Psychological functioning and wellbeing – post-intervention:												

Web Annex D.E1: ETD summary for WHO Guideline on non-surgical management of chronic primary low back pain in adults

Education and weight loss coaching (diet and exercise) vs usual care with: **Depression anxiety stress scale (DASS)** Depression Anxiety Stress Follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[i]	-	43	61	Depression MD 1.20 [-3.15 to 5.55] Anxiety MD 0.4 [-2.95 to 3.75] Stress MD 0.5 [-3.74 to 4.74]	⨁◯◯◯ Very low	Appendix 5 Analysis 1.18 to 1.20
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Psychological functioning and wellbeing – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Social participation – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Self-efficacy – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Change in use of medications – post-intervention												
Education and weight loss coaching (diet and exercise) vs usual care assessed with: **Frequency n/N** Follow-up: 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Very serious[i]	-	27/38	45/56	RR 0.88 (0.7 to 1.12)	⨁◯◯◯ Very low	Appendix 5 Analysis 1.21
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Change in use of medications – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-
Falls – post-intervention or long-term follow-up: no studies were identified that reported for this outcome												

-	-	-	-	-	-	-	-	-	-	-	-	-
Adverse events – post-intervention:												
Education and weight loss coaching (diet and exercise) vs usual care assessed with: **Frequency n/N** Follow-up: range 26 weeks	1[c]	RCT	Serious[l]	Not serious	Serious[h]	Serious[j]	-	32/79	45/80	RR 0.72 (0.52 to 1.00)	⨁◯◯◯ Very low	Appendix 5 Analysis 1.22
Population subgroups 1, 2, 3, 4, 5 and 6 - not reported (no subgroup analysis was performed)												
Adverse events – long-term follow-up: no studies were identified that reported for this outcome												
-	-	-	-	-	-	-	-	-	-	-	-	-

Explanation

a. Safari 2020, 30 day Low calorie prescribed diet intervention (1200kcal/day) plus 200mg celecoxib per day vs 200mg celecoxib/day only.
b. Torlak 2022 contributes as 2 studies in the analyses as it had two weight loss intervention arms and one shared comparator group. Weight intervention consisted of a 5 week 5:2 intermittent diet consisting of two days consuming 600-700kcal/day and 5 days 1500-1700kcal per day Mediterranean diet with or without physiotherapy care (TENS and hotpack) compared to physiotherapy care only.
c. Williams 2018 One face to face pain and lifestyle education session plus 6-month telephone weight loss health coaching for diet and physical activity compared to usual care.
d. Risk of Bias: Downgrade one level for overall risk of bias in two studies (>25% of participants)
e. Inconsistency: Downgrade two levels for high, unexplained heterogeneity > 75%
f. Imprecision: Downgrade one level - CIs and point estimates show appreciable benefit and harm; not downgraded two levels due to downgrade for inconsistency would have contributed to severity of imprecision.
g. Risk of bias: Downgrade two levels for overall high risk of bias in most studies (>50% of participants)
h. Indirectness: Single study
i. Imprecision: Downgrade two levels CIs show appreciable benefit and harm and small numbers of participants
j. Imprecision: Downgrade one level for small number of participants – fewer than 400.
k. Inconsistency: Downgrade one level for inconsistency, heterogeneity > 50%
l. Risk of bias: Downgrade one level - risk of bias due to loss to follow-up for that outcome.