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Chronodisruption and Post-Bariatric Weight Outcomes: A Scoping Review Protocol

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We use this protocol and it's working

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Abstract

This scoping review maps evidence on whether chronodisruption—defined as disturbances in sleep duration, sleep quality, sleep timing, chronotype, social jetlag (SJL), meal timing/chrononutrition, shift work, and light at night (LAN)—is associated with post-metabolic and bariatric surgery (MBS) weight outcomes (percent excess weight loss [%EWL], percent total weight loss [%TWL], body mass index [BMI] change, insufficient weight loss, and weight gain [recurrent weight gain (RWG), also termed weight regain (WR)]). Procedures include but are not limited to Roux-en-Y gastric bypass (RYGB), sleeve gastrectomy (SG), and one-anastomosis gastric bypass (OAGB).

Guidelines

Objectives / Review Questions

1. Which chronodisruption exposures have been studied in adults undergoing MBS?
2. How have these exposures been measured (e.g., PSQI, actigraphy, MEQ, social jetlag computation, meal-timing thresholds, shift-work status, LAN measures)?
3. What postoperative weight outcomes have been reported, and what is the direction/consistency of associations?

Population–Concept–Context (PCC)

- **Population:** Adults (≥18 years) undergoing MBS (e.g., RYGB, SG, OAGB).
- **Concept:** Chronodisruption exposures: sleep duration/quality/timing; chronotype; SJL; meal timing/chrononutrition; shift work; LAN.
- **Context:** Associations with postoperative weight outcomes (%EWL, %TWL, BMI change, insufficient weight loss, WR/RWG).

Eligibility Criteria

Inclusion

- Adult bariatric/metabolic surgery cohorts or comparative studies.
- At least one chronodisruption exposure measured (e.g., Pittsburgh Sleep Quality Index [PSQI], actigraphy, Morningness–Eveningness Questionnaire [MEQ], computed SJL, explicit meal-timing thresholds such as “main meal before vs after 15:00”, shift-work status, LAN by self-report or objective light).
- At least one postoperative weight outcome: %EWL, %TWL, BMI change, insufficient weight loss, or WR/RWG.
- Any country, setting, or surgery type.

Exclusion

- Pediatric cohorts; non-bariatric samples.
- Studies reporting only pre/post sleep or obstructive sleep apnoea (OSA) changes without relating a chronodisruption exposure to weight outcomes.
- Editorials, commentaries, and case reports.
- Genetics-only analyses (e.g., CLOCK variants) unless a behavioral chronodisruption exposure is also modeled.
- Non-human experiments (retained separately as mechanistic context; not synthesized with human outcomes).

Study Records and Workflow

Roles

- Search 6 screening: AGP, VT (independent).
- Data charting: AGP, ZP (independent).
- Adjudication: DPL (referee).

Screening workflow

4. Title/abstract screening against eligibility criteria.
5. Full-text assessment for potentially eligible records.

6. Cohort de-duplication: when multiple reports use the same cohort, retain the most comprehensive/longest-follow-up analysis; cite companions narratively.

Data Charting

We will chart data using a piloted form with the fields below. A short calibration exercise on 3–5 papers will harmonize coding before charting the full sample.

Category	Author	Year	Reference (journal; year; vol(issue):pages)	Design	n	Exposure	Outcome	Key findings
Sleep timing / Chronotype / SJL / Meal timing / Shift work / LAN	Surname Initials	Year	Journal; Year; Volume (Issue): Pages	Prospective cohort / Retrospective / Cross-sectional	n	Instrument/definition (e.g., PSQI, actigraphy, MEQ, SJL calc, meal-time threshold, shift-work, LAN)	Weight metric 6 timepoint (%EWL, %TWL, BMI; WRG)	≤2–3 lines; direction/consistency

Critical Appraisal

Formal risk-of-bias assessment is not required for scoping reviews. For clinical interpretability, we will provide a concise Newcastle–Ottawa Scale (NOS)–style summary for cohort/retrospective designs and an adapted read-across for cross-sectional studies. Quality appraisal will not be used as an exclusion criterion.

Synthesis of Results

We will provide a descriptive mapping by chronodisruption domain (sleep duration/quality/timing; chronotype; SJL; meal timing/chrononutrition; shift work; LAN), summarizing measurement approaches, surgery types, weight outcomes, and directions of association. No meta-analysis will be conducted. Results will include a PRISMA-ScR flow diagram, the evidence table (with the charted fields above), and a narrative summary of gaps and priorities (e.g., objective exposure assessment, standardized WRG definitions, longer follow-up).

Outcomes and Prioritization

Where multiple weight metrics are reported, we will preferentially chart percent excess weight loss (%EWL) or percent total weight loss (%TWL) near 12 months and the longest available follow-up thereafter. WR/RWG definitions will be recorded verbatim.

Amendments

Any protocol amendments (scope, sources, eligibility) will be time-stamped in Protocols.io and reflected in the final manuscript (Methods and Supplement).

Eligibility Criteria

1 Screen studies for inclusion based on the following criteria: (a) Adult bariatric/metabolic surgery cohorts or comparative studies; (b) At least one chronodisruption exposure measured (e.g., Pittsburgh Sleep Quality Index [PSQI], actigraphy, Morningness–Eveningness Questionnaire [MEQ], computed SJL, explicit meal-timing thresholds such as “main meal before vs after 15:00”, shift-work status, LAN by self-report or objective light); (c) At least one postoperative weight outcome: %EWL, %TWL, BMI change, insufficient weight loss, or WR/RWG; (d) Any country, setting, or surgery type.

2 Exclude studies based on the following criteria: (a) Pediatric cohorts; non-bariatric samples; (b) Studies reporting only pre/post sleep or obstructive sleep apnoea (OSA) changes without relating a chronodisruption exposure to weight outcomes; (c) Editorials, commentaries, and case reports; (d) Genetics-only analyses (e.g., CLOCK variants) unless a behavioral chronodisruption exposure is also modeled; (e) Non-human experiments (retained separately as mechanistic context; not synthesized with human outcomes).

Information Sources

3 Identify studies using the following information sources: (a) MEDLINE (via PubMed); (b) Embase (Elsevier); (c) Backward/forward citation chasing of included studies and key reviews.

Search Strategy

4 Conduct the literature search in PubMed/MEDLINE (run 19 Aug 2025; no date/language limits at search stage) and Embase (Elsevier). Use the following search strategies:

4.1 For PubMed, use the following query: ("bariatric surgery"[tiab] OR "metabolic surgery"[tiab] OR "Roux-en-Y"[tiab] OR "sleeve gastrectomy"[tiab] OR "gastric bypass"[tiab]) AND (chronotype OR circadian OR "social jetlag" OR "shift work" OR "meal timing" OR chrononutrition OR "sleep duration" OR insomnia OR "sleep quality" OR "light at night") AND (weight regain OR "insufficient weight loss" OR "weight loss maintenance" OR BMI OR "excess weight loss" OR "recurrent weight gain")

4.2 For Embase, use the following free-text block (adapt to your interface; consider adding Emtree terms): (ti,ab,kw:("bariatric surgery" OR "metabolic surgery" OR "Roux-en-y" OR "sleeve gastrectomy" OR "gastric bypass")) AND (ti,ab,kw:(chronotype OR circadian OR "social jetlag" OR "shift work" OR "meal timing" OR chrononutrition OR "sleep duration" OR insomnia OR "sleep quality" OR "light at night")) AND (ti,ab,kw:("weight regain" OR "insufficient weight loss" OR "weight loss maintenance" OR BMI OR "excess weight loss" OR "recurrent weight gain"))

5 Export records to a reference manager and deduplicate prior to screening.

Study Records and Workflow

6 Assign roles for the review process as follows: (a) Search 6 screening: AGP, VT (independent); (b) Data charting: AGP, ZP (independent); (c) Adjudication: DPL (referee).

7 Screen studies using the following workflow: 4. Title/abstract screening against eligibility criteria. 5. Full-text assessment for potentially eligible records. 6. Cohort de-duplication: when multiple reports use the same cohort, retain the most comprehensive/longest-follow-up analysis; cite companions narratively.

Data Charting

8 Chart data using a piloted form with the following fields: Category, Author, Year, Reference (journal; year; vol(issue):pages), Design, n, Exposure, Outcome, Key findings. Conduct a short calibration exercise on 3–5 papers to harmonize coding before charting the full sample.

Critical Appraisal

9 Do not conduct formal risk-of-bias assessment for scoping reviews. For clinical interpretability, provide a concise Newcastle–Ottawa Scale (NOS)–style summary for cohort/retrospective designs and an adapted read-across for cross-sectional studies. Do not use quality appraisal as an exclusion criterion.

Synthesis of Results

10 Provide a descriptive mapping by chronodisruption domain (sleep duration/quality/timing; chronotype; SJL; meal timing/chrononutrition; shift work; LAN), summarizing measurement approaches, surgery types, weight outcomes, and directions of association. Do not conduct meta-analysis. Include a PRISMA-ScR flow diagram, the

evidence table (with the charted fields), and a narrative summary of gaps and priorities (e.g., objective exposure assessment, standardized WRG definitions, longer follow-up).

Outcomes and Prioritization

11 When multiple weight metrics are reported, preferentially chart percent excess weight loss (%EWL) or percent total weight loss (%TWL) near 12 months and the longest available follow-up thereafter. Record WR/RWG definitions verbatim.

Amendments

12 Time-stamp any protocol amendments (scope, sources, eligibility) in Protocols.io and reflect them in the final manuscript (Methods and Supplement).

Ethics & Dissemination

13 Note that no human subjects are involved. Submit findings to a peer-reviewed journal and present at relevant meetings.

Conflicts of Interest & Funding

14 Disclose conflicts and funding in the final manuscript.

Acknowledgements

Authors will disclose conflicts and funding in the final manuscript.

Abbreviations

TWL, percent total weight loss; EWL, percent excess weight loss; BMI, body mass index; MBS, metabolic and bariatric surgery; RYGB, Roux-en-Y gastric bypass; SG, sleeve gastrectomy; OAGB, one-anastomosis gastric bypass; PSQI, Pittsburgh Sleep Quality Index; MEQ, Morningness–Eveningness Questionnaire; SJL, social jetlag; LAN, light at night; OSA, obstructive sleep apnoea; RWG, recurrent weight gain; WR, weight regain.