

Systematic scoping review of evidence on dietary, nutritional and physical activity determinants of adiposity in adults

Morgan Kane O'Brien¹, Amy Byrnes¹, Vanessa Gordon Dseagu², Nicole Musuwo², Annie Anderson³, Edward L Giovannucci⁴, Michael F Leitzmann⁵, Tobias Pischon⁶, Kate Allen², Panagiota Mitrou², Martin J Wiseman², Teresa Norat², Helen Croker²

¹School of Agriculture and Food Science, University College Dublin, Dublin, Ireland ²World Cancer Research Fund International, London, UK

³School of Medicine, University of Dundee, Dundee, UK ⁴Department of Nutrition, Harvard TH Chan School of Public Health, Boston, US

⁵Department of Epidemiology and Preventive Medicine, University of Regensburg, Regensburg, Germany ⁶Max Delbrück Center for Molecular Medicine, Berlin, Germany



Background

- Obesity is a risk factor for at least 12 cancers, including oesophageal, colorectal, endometrial, postmenopausal breast cancer (1).
- For cancer prevention, it is important to identify and characterise risk factors of adiposity.
- World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) previously reviewed evidence on determinants of adiposity related to diet, nutrition and physical activity in the Global Cancer Update Programme (formally known as the Continuous Update Project) (2). Evidence was judged by an independent expert panel, leading to evidence conclusions being made which contributed to WCRF's cancer prevention recommendations (1).
- Evidence was strongest for the following adulthood exposures:
 - Reduced adiposity risk- walking, aerobic physical activity, foods containing dietary fibre
 - Increased adiposity risk- sugar sweetened drinks, screen time, 'fast foods', 'Western type' diet

Aims

In order to determine the extent of new evidence, the current study was a systematic scoping review aiming to identify and map systematic reviews of observational and experimental studies examining determinants of adiposity related to diet, nutrition and physical activity published since the previous Global Cancer Update Programme review.

Methods

- Searches were undertaken using Medline (Pubmed) in May 2021, supplemented by searching for updates to two major reviews included in the 2018 report (2).
- Systematic reviews published after August 2016 (previous search date), with no limits by language, were included. Eligibility criteria were broad, as shown in Figure 1.
- Articles were reviewed on title/abstract, then full text, independently by two reviewers from the review team (HC, MKOB, NM, VGD). Rayyan Systems Inc. software was used to manage the search.
- Descriptive data were extracted from included reviews (incl number of included studies and the study populations, study designs, exposures and outcome measures examined in the reviews)

Results

- A total of 141 reviews were included (see Figure 2 for the flowchart showing review selection).
- A map of the included reviews by their study design (experimental/ observational/ mixed) and exposure (dietary/ non-dietary) is shown in Figure 3.
- Reviews covered observational and experimental designs (observational, n=43; experimental, n=71; mixed, n=27).
- More reviews reported dietary compared to non-dietary exposures (diet, n=111; physical activity, n=24; sedentary behaviour, n=8; sleep, n=3) with a broad range of dietary exposures reported.
- Reviews included those reporting exposures with only limited evidence in the 2018 report (including alcohol, sleep, breakfast, nuts, dairy, meal timing).
- More reviews reported a measure of adiposity compared to adiposity change outcomes (weight, n=71; central adiposity, n=84; body composition, n=44; weight change, n=21).

Conclusions

- Many reviews have been published since the 2018 report, mostly on diet and non-dietary related factors traditionally discussed as adiposity risk factors.
- There were some promising areas of study, although fewer reviews focused on these emerging risk factors.
- This scoping review will inform WCRF's future work in relation to adiposity by guiding the focus of future reviews on determinants of adiposity.

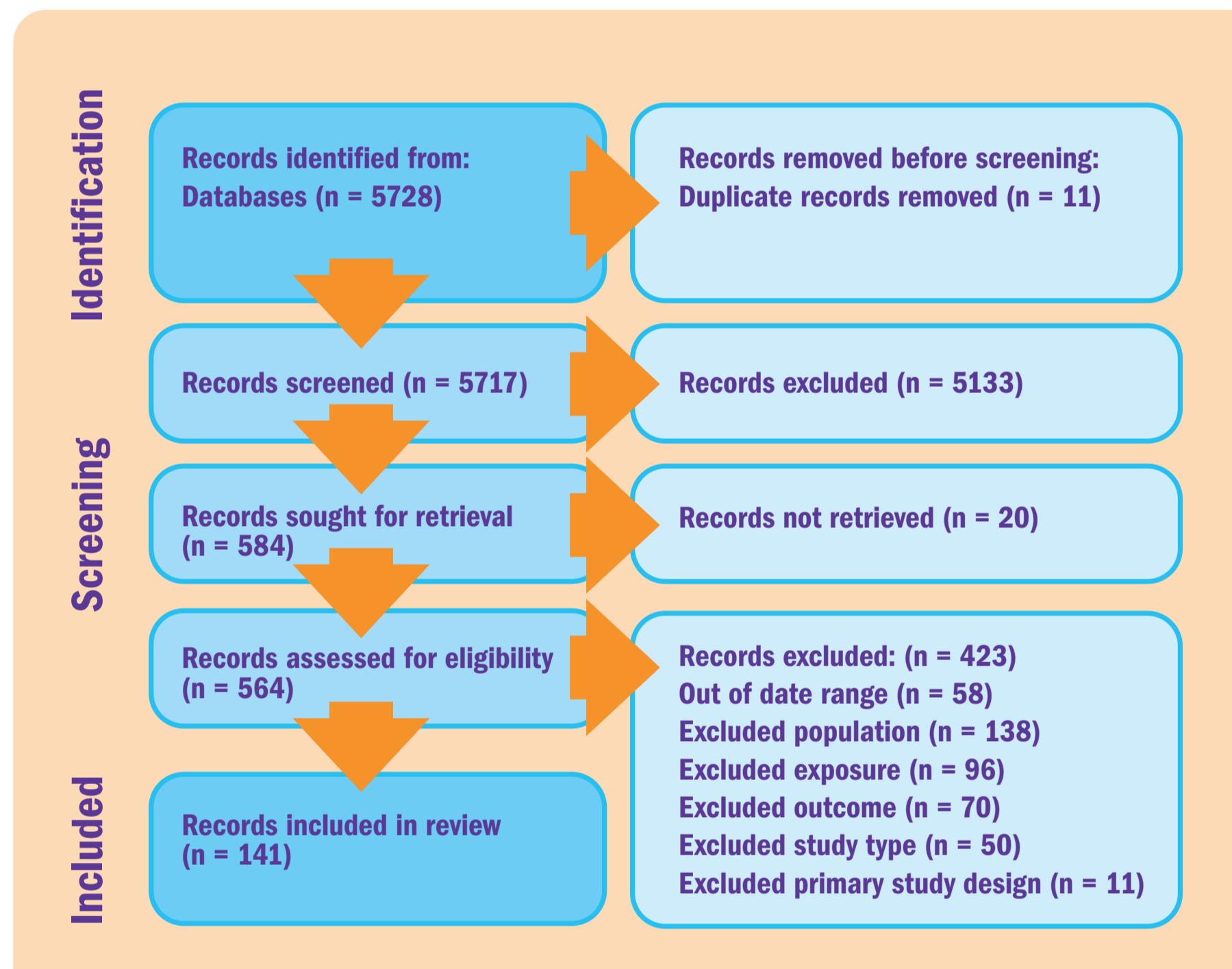
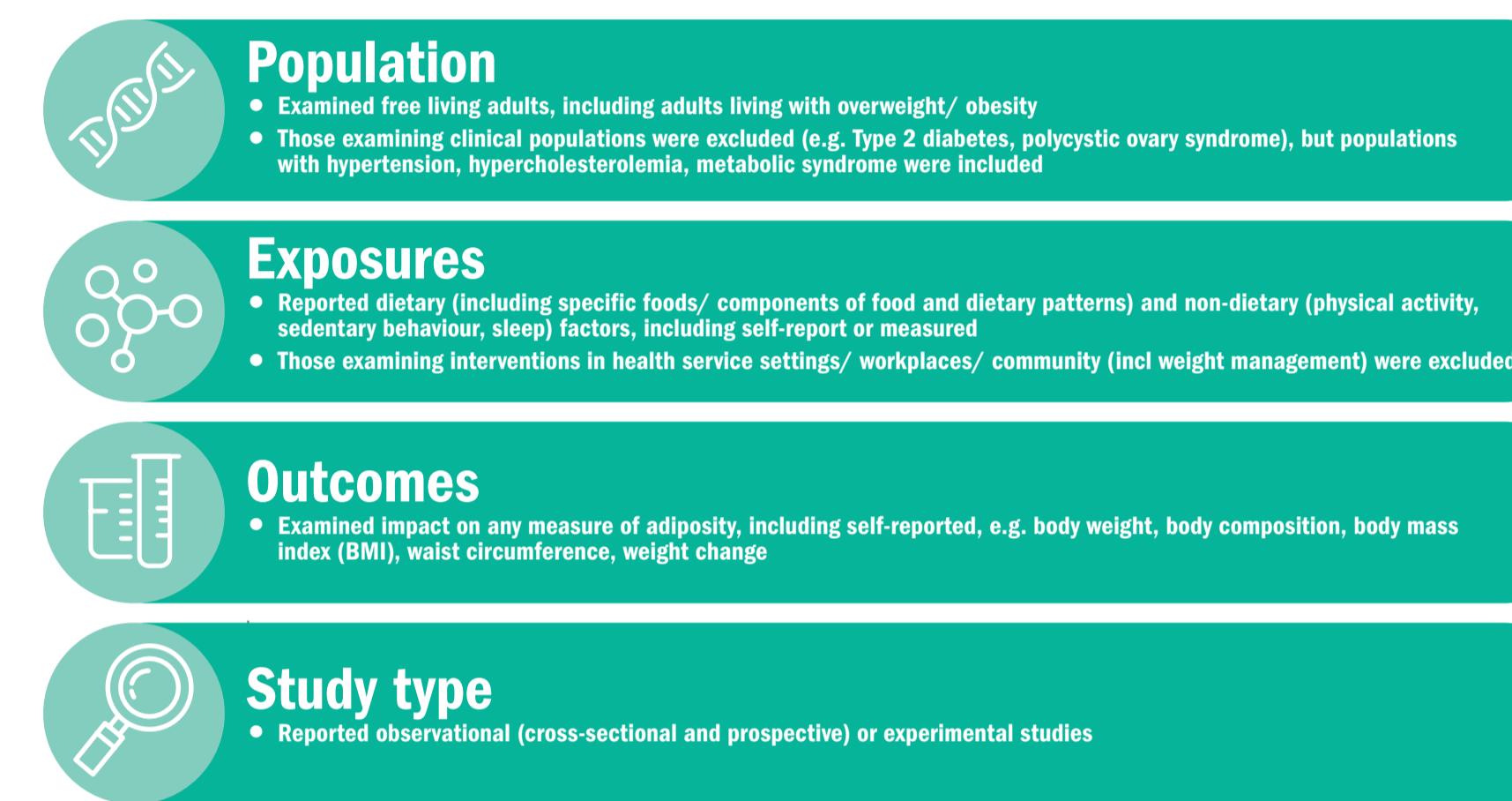
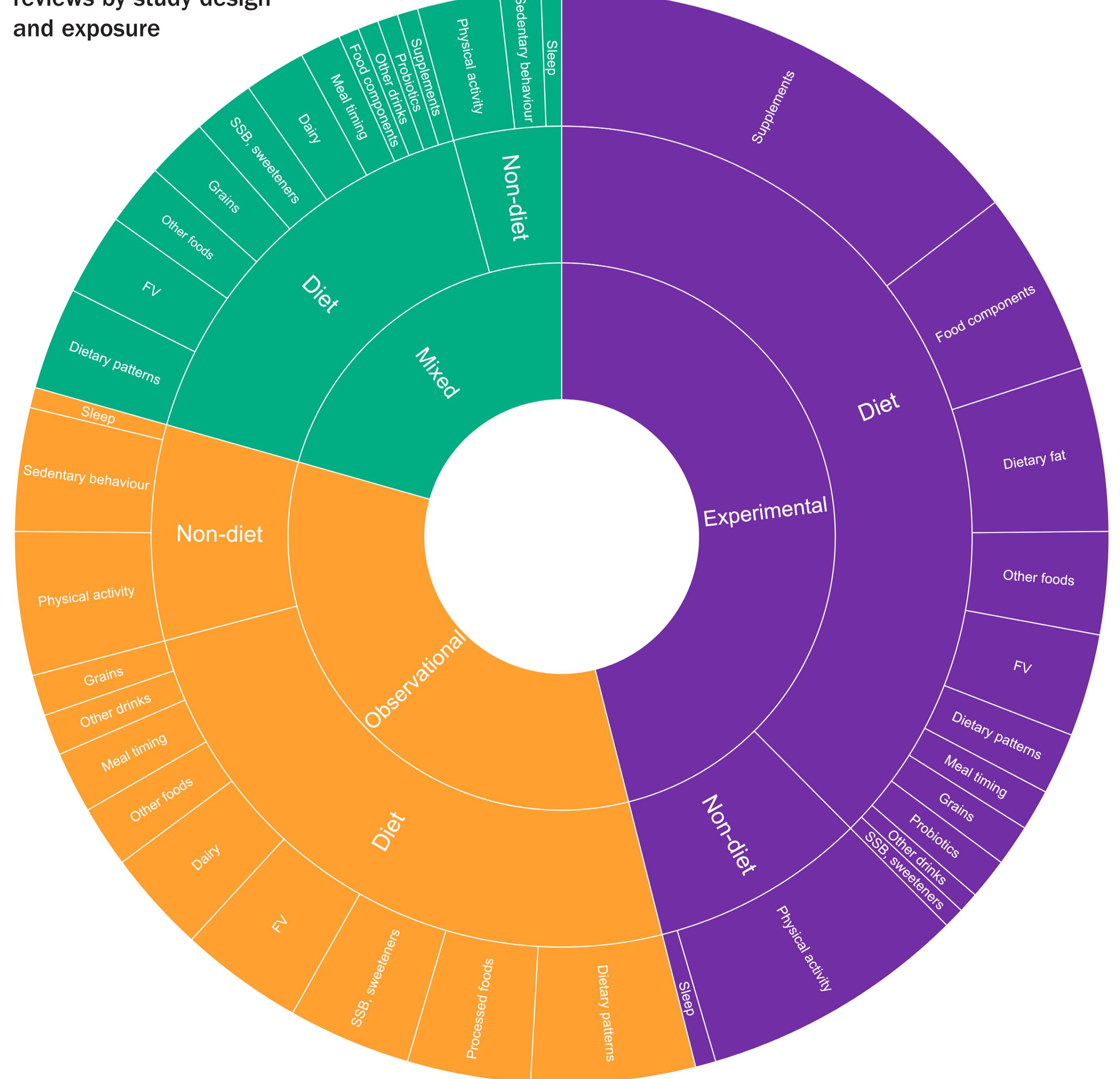


Figure 2 - Flow chart showing review selection

Figure 3 - Mapping of included reviews by study design and exposure



Total number of reviews, n=141: reviews comprised: observational studies, n=43, experimental studies, n=71, both observational and experimental studies (mixed), n=27; FV= fruit and vegetables; SSB= sugar-sweetened beverages; 'Other foods' includes: meat and fish, organic foods, liquorice, potatoes, soya products; 'Other drinks' includes: coffee, tea, alcohol; 'Food components' includes: isoflavones, resistant starch, polyphenols; 'Dietary patterns' includes: Mediterranean diet, vegetarian diet; 'Timing' includes: meal frequency, breakfast skipping

References

- (1) WCRF/AICR, 2018. Diet Nutrition, Physical Activity and Cancer: a Global Perspective. Continuous Update Project Expert Report. www.dietandcancerreport.org
(2) WCRF/AICR, 2018. Continuous Update Project Expert Report. Diet, nutrition and physical activity: Energy balance and body fatness. www.wcrf.org/dietandcancer-energy-balance-and-body-fatness

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Conflicts of interest

None declared

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