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

Morgan Kane O’Brien1, Amy Byrnes2, Vanessa Gordon Dseagu2, Nicole Musuwo2, Annie Anderson3, Edward L Giovannucci4, Michael F Leitzmann5, Tobias Pischon6, Kate Allen5, Panagioti Mitrou2, Martin J Wiseman7, Teresa Norat5, Helen Croker2

1 School of Agriculture and Food Science, University College Dublin, Dublin, Ireland 2 World Cancer Research Fund International, London, UK 3 School of Medicine, University of Dundee, Dundee, UK 4 Department of Nutrition, Harvard TH Chan School of Public Health, Boston, US 5 Department of Epidemiology and Preventive Medicine, University of Regensburg, Regensburg, Germany 6 Max 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 childhood 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

Alms

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, MMo, NK, MGo). 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.

References


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Conflicts of interest

None declared

Figure 1 - Eligibility criteria of included systematic reviews

Figure 2 - Flow chart showing review selection

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

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