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Evidence Check

Critical components of brief Healthy Eating and Active Living (HEAL) advice interventions in routine care as part of the *Growth Assessment in Children and Weight Assessment in Adults Guideline*

An Evidence Check rapid review brokered by the Sax Institute
for the NSW Ministry of Health— November 2024

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This report was prepared by: Dimity Dutch[1], Sarah C Hunter[1], Katie Wood[2], Delaney Randle[1], Georgia Middleton[1], Elizabeth Denney-Wilson[3], Gilly A Hendrie[2], and Rebecca K Golley[1].

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November 2024

The authors would like to acknowledge the work of Academic Librarian Josephine McGill, at the Flinders University Library Services, for their support with developing and executing the search strategy.

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Suggested Citation:

Dutch D, Hunter SC, Wood K, Randle D, Middleton G, Denney-Wilson E, Hendrie GA and Golley RK. Critical components of brief Healthy Eating and Active Living (HEAL) advice interventions in routine care as part of the Growth Assessment in Children and Weight Assessment in Adults Guideline: An Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Ministry of Health, 2024. DOI 10.57022/xydg8769

Critical components of brief Healthy Eating and Active Living (HEAL) advice interventions in routine care as part of the *Growth Assessment in Children and Weight Status Assessment in Adults Guideline*: An Evidence Check rapid review

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Executive summary

This rapid review was commissioned by the Centre for Population Health, NSW Ministry of Health to identify the critical components of brief Healthy Eating and Active Living (HEAL) advice interventions within routine care settings, focusing on child and adult populations. The review sought to determine the effectiveness, acceptability, and safety of these interventions as part of updating the 2017 NSW Health Guideline *Growth Assessment in Children and Weight Status Assessment in Adults* (the Guideline).

Background

The Centre for Population Health is revising the 2017 NSW Health Guideline *Growth Assessment in Children and Weight Status Assessment in Adults*, with a focus on embedding the Ask, Advise, Help (AAH) model in routine clinical care. This brief intervention model supports clinicians to identify patients above a healthy weight, offer brief lifestyle advice, and arrange referral to more intensive programs. The updated guideline also aims to use safe and culturally sensitive language to avoid weight stigma and enhance inclusivity.

Purpose

The review was conducted to identify brief HEAL interventions that can be implemented by clinicians in hospital or community-based care settings. Its findings will inform updates to the Guideline, ensuring that interventions align with best practices for weight management and health promotion in routine care.

Methods

A systematic review of literature published from January 2014 to August 2024 was conducted. The review focused on randomised controlled trials (RCTs).

Results

A total of 10 studies were included. One study focused on child populations, and 9 studies focused on adult populations.

Key findings

- **Child study**: A brief assessment (5min) and advice (3min) intervention focused on reducing sugary drink consumption was integrated into a routine dental visit. This intervention showed

feasibility, with 93% of children having their height and weight measured and 18.2% of children identified as being overweight accepting a referral to a healthy lifestyle program.

- **Adult studies**: Nine studies evaluated brief interventions ranging from 30 seconds to 10 minutes. Findings showed that brief advice interventions could lead to weight loss and improved health behaviours. For example, one 10-minute intervention resulted in a 1kg weight loss over three months. Interventions that included referrals to more intensive programs, such as weight management groups, showed stronger results.
- **AAH model**: The interventions generally aligned with the Ask, Advise, Help (AAH) model, with components such as measuring anthropometric data, providing advice, and making referrals to further support programs.

Strengths

The review's use of RCTs with balanced baseline characteristics ensured that follow-up results could be interpreted with minimal bias. The AAH model provided a consistent framework for assessing the interventions. The methodology was robust, including a comprehensive search strategy developed in collaboration with an academic librarian.

Limitations

The review was limited by the evidence base, as only a small number of studies met the inclusion criteria. The limited number of studies which compared the effectiveness of interventions across different weight groups further limited the scope of the conclusions.

Conclusions and recommendations

The review provides evidence that brief HEAL interventions which include referral to more intensive interventions or programs can be effective in supporting healthy weight management in both children and adults when incorporated into routine care. This review highlights the potential of brief interventions to make meaningful contributions to obesity prevention and health promotion efforts, aligning with NSW Health's strategic goals for population health.

Recommendations for policy and practice are as follows:

1. **Policy recommendations**
    - Incorporate brief HEAL advice as part of clinical guidelines, ensuring consistency across settings, while integrating language which avoids stigmatization and is culturally appropriate.
    - Strengthen referral pathways and make government supported programs more accessible for those needing more intensive interventions.
2. **Practice recommendations**
    - Implement the Ask, Advise, Help (AAH) model in routine care, combining brief advice with referral when needed.
    - Train healthcare professionals to ensure consistent delivery of brief interventions and use of language that minimises weight stigma and is culturally appropriate.

3. **Recommendations for future research**

    - Conduct more RCTs to evaluate the long-term impacts of brief HEAL interventions, particularly in terms of safety, lifestyle behaviour changes and weight management across diverse populations.
    - Expand research on brief HEAL interventions for children to identify the most effective and acceptable approaches.

This review highlights the potential of brief interventions to make meaningful contributions to obesity prevention and health promotion efforts, aligning with NSW Health's strategic goals for population health.

Background and context

Purpose and audience

The purpose of this Evidence Check rapid review is to identify the critical components of brief Healthy Eating and Active Living (HEAL) advice interventions delivered as part of routine clinical care, to ensure interactions are effective and safe. In addition, the review aims to identify the critical components of implementation success. Included interventions are intended to be delivered by clinicians, both to patients measuring above a healthy weight, and with any Body Mass Index (BMI), in healthcare settings, excluding primary care.

Review questions

The review had two broad areas of focus, each with three guiding questions:

Child Population

Question 1: For children aged 2-16 years, what is the most effective brief lifestyle intervention of carer/child as part of routine clinical care in the healthcare setting that is acceptable and safe for children of any BMI?

Question 2: Does the effectiveness, acceptability, and safety of the intervention vary between children of healthy weight and children above a healthy weight?

Question 3: What critical components of success make the interventions effective/acceptable/safe?

Adult Population

Question 1: For patients over 16 years, what is the most effective brief lifestyle intervention as part of routine clinical care in the healthcare setting that is acceptable and safe for patients of any BMI?

Question 2: Does the intervention's effectiveness, acceptability and safety vary between adults of healthy weight and adults above healthy weight?

Question 3: What critical components of success make the interventions effective/acceptable/safe?

Methods

Search strategy

In consultation with the NSW Ministry of Health and an academic librarian at Flinders University, the review team developed a search strategy to identify primary research that could be synthesised to address the research questions. In executing the search strategy, a systematic database search of peer-reviewed literature was conducted. The search was limited to literature published in English from January 2014 to August 2024. The search was conducted in August 2024 and included five electronic databases (Medline, CINAHL, SCOPUS, Cochrane and Emcare). The search strategy and results are shown in Appendix 1.

Inclusion and exclusion criteria

In consultation with the NSW Ministry of Health, strict eligibility criteria were developed regarding study design, date range, English language and study country (Table 1). This limited the breadth of the search, while identifying key primary papers to address the research questions.

Table 1—Eligibility criteria

INCLUDED	EXCLUDED
Study design	
Randomised Controlled Trials (RCT)	Review articles Non-randomised study designs* Grey literature Qualitative evaluations Protocols
Population	
Children aged 2-16 years Primary caregivers of children aged 2-16 years Adults aged 16 years and over Any BMI Studies recruiting participants with a chronic disease (i.e. diabetes, heart disease) where there	Infants and babies <2 years of age Studies recruiting only participants from specific populations (e.g. eating disorders, severe mental illness) or with diagnosed conditions where the disease context would be inappropriate to provide general health behaviour advice (e.g. malnutrition, cancer,

is motivation and clinical ability to action advice as part of primary or secondary prevention. Specific subpopulations (for example CALD, Aboriginal populations) are eligible.	palliative conditions, end-stage liver, kidney and heart disease).
Intervention	
Studies must implement and evaluate a 'brief lifestyle intervention' 'Brief lifestyle intervention' is defined as: providing brief verbal in-person advice on healthy eating and active living (or other behaviours that impact energy balance) in a single episode of care/during the course of routine care by clinicians in specified healthcare settings. Provision of general advice by a non-weight management clinician/expert. Lifestyle drinking interventions Intervention setting: Hospital settings and services, including inpatient, outpatient and community-based settings and services (including services provided by Local Health Districts and specialty networks and community paediatric services). ****Evidence from primary care studies only included if there is a lack of evidence from aforementioned settings and evidence from primary care could be feasibly adapted to and implemented in the health care settings in scope.	Interventions or advice provided by a specifically trained health practitioner or by a primary care practitioner who may see the patient on a regular/frequent/repeat basis. Brief interventions that don't include verbal provision of advice. Hazardous or severe alcohol/drug misuse interventions m-Health/e-Health/Online only interventions Group-based interventions Intervention setting: University/college, workplace/office or school/education settings
Outcomes of interest	
Studies including baseline and post-intervention outcome measures are preferred. To be included in the review, studies must include an outcome of effectiveness as listed below. Outcomes of effectiveness: • Evidence of achieving a healthy weight range and/or weight loss, readiness or intention to change. • In children, rates of growth i.e. change in BMI percentiles. • Patient/carer acceptance/implementation of advice, adoption of healthy behaviours. • Successful referral to relevant program • Other intermediate outcomes relevant to the final outcome of weight loss.	Studies that include process evaluation outcomes ONLY. Public health impact or longer-term outcomes ONLY. Staff or deliverer outcomes Knowledge ONLY Cost effectiveness of RCT

Components of success: • Setting, staff, patient and/or the advice that contributes to its effectiveness/ safety/ acceptability. • Safe: not stigmatising of patients/carers receiving the advice. The intervention does not cause harm. • Acceptable: How well the intervention is received and meets the needs of patient/carers.	
Study language	
Studies published in English	Studies published in languages other than English
Study Country	
Studies published in: • Australia • UK • New Zealand • US • Canada • Southeast Asia (i.e. Singapore, Australasia) • OR countries/jurisdictions with comparable health systems to Australia.	
Study year	
Studies published since 2014	Studies published prior to 2014
Comparison	
Comparators/controls considered for inclusion will be a no intervention control group or another brief lifestyle intervention (i.e. longer intervention). If a comparator group is included, details of what the comparator group received will be documented.	
*Footnote: *=non-randomised study designs were eligible for studies of child populations*	

Screening and data extraction

Covidence systematic review software was used to manage the stages of the review process. All relevant citations generated from the search were exported from the databases into Covidence. Title and abstract screening was conducted by two independent reviewers using the defined inclusion and exclusion criteria. Full-text review was also completed by two independent reviewers. Any conflicts were resolved by an independent third reviewer.

Data extraction was completed by two team members focusing on key information:

1) Article characteristics: study author/s, year of publication, country and study design.
2) Intervention summary: intervention aim, age of participants, setting, description of intervention allocations and if groups were similar at baseline, brief intervention duration and intervention components according to Ask, Advise, Help (AAH) model.
3) Intervention effectiveness: synthesis of results according to weight outcomes, health behaviour outcomes (diet, physical activity, general health) and other outcomes (mental health, feasibility, acceptability, number of referrals).

The completeness and accuracy of the extraction was checked by a third review team member.

Data synthesis

Due to the heterogeneous nature of the included studies, results have been synthesised narratively. Only results that reported between-group differences were extracted and synthesised.

Search results

Figure 1 (PRISMA flow chart) summarises the number of records identified, included and excluded, and the reasons for exclusions. Seven articles met the review criteria, with an additional 3 articles identified from reference list screening. This resulted in a final 10 studies (n = 1 in child population, n = 9 in adult populations) being included in the analysis.

Given the limited number of eligible studies in child populations, the eligibility criteria were relaxed to allow inclusion of non-RCT study designs. Three-hundred-and-ninety-four articles were rescreened, however, none met the expanded eligibility criteria. The search strategy was re-run in three databases (Medline, CINAHL, SCOPUS) without the RCT study design search terms. An additional 633 articles were screened, but no additional studies were identified for inclusion.

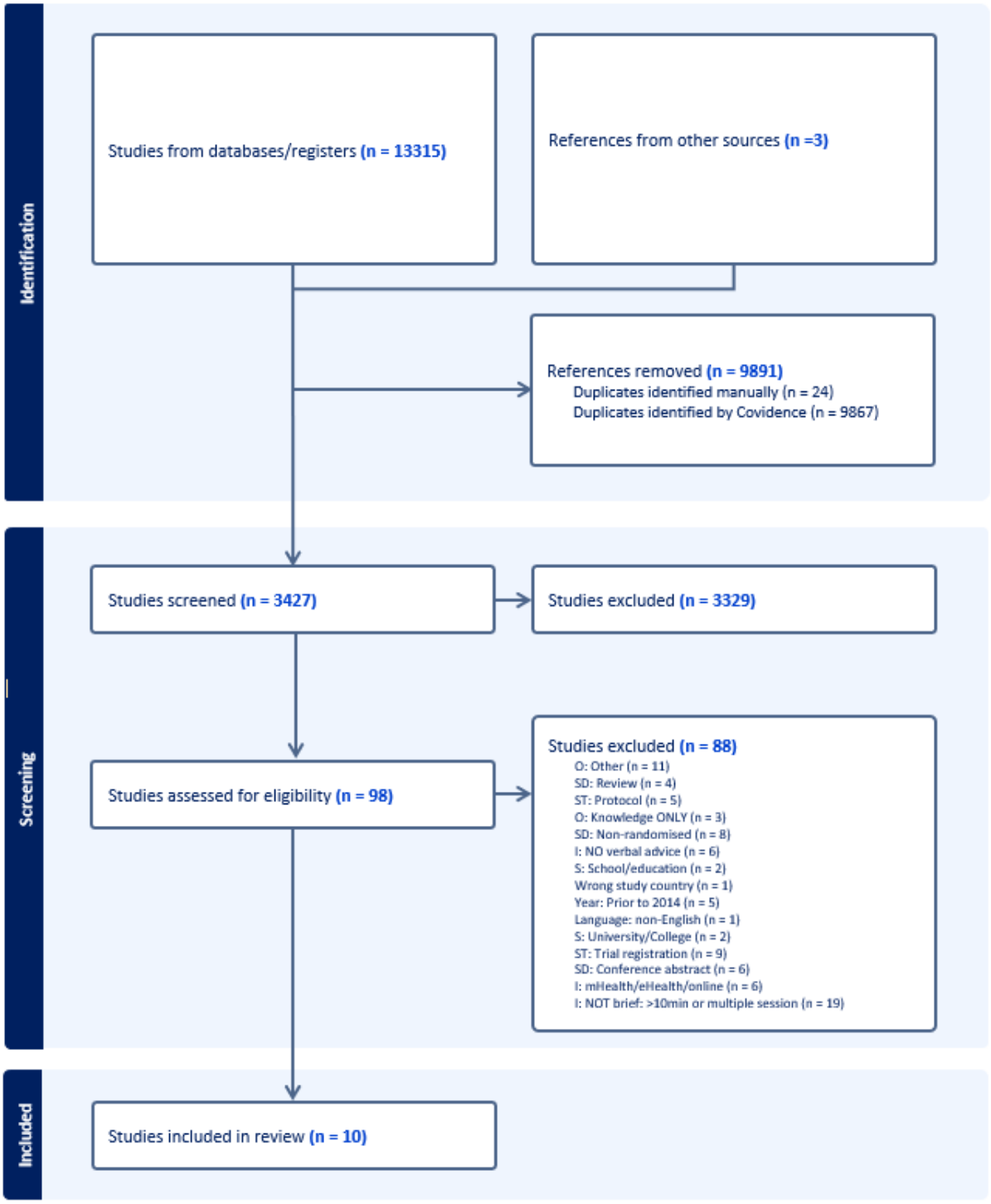

Figure 1—PRISMA flow chart

Findings

Study characteristics

Table 2 summarises the included child study, a two-arm RCT conducted in an Australian outpatient clinic with children 0-18 years.[1]

Table 3 summarises the nine included adult studies published between 2016-2020. [2-10] Five studies were two-arm RCTs [3, 4, 6, 9, 10], three were three-arm RCTs [2, 5, 8], and one was a four-arm RCT.[7] Seven studies were conducted in England [2-4, 6-8, 10], with one study conducted in Germany [5] and one in Korea.[9] Reported participant ages ranged from 16-75 years. Studies were mostly conducted in primary care [2, 3, 6-10], with one study in an inpatient hospital ward [5] and one in an outpatient urgent treatment centre.[4]

Table 2—Summary of evidence of brief interventions in child population (n = 1)

Article summary	Intervention summary	Intervention effectiveness
Collins, 2020[1] Australia Two-arm RCT	Aim: Brief intervention to reduce consumption of sugar sweetened drinks and collect anthropometric data within child oral health appointments. Age: 0-18 years Setting: Outpatient clinic Brief intervention *(measure anthropometry, advice and goal setting + referral to government program if identified as above a healthy weight range)* vs usual practice *(advice only)* Groups similar at baseline: N/R Brief intervention duration: ~9 minutes Intervention components (AAH Model) Ask: Height, weight and BMI measured prior to intervention (intervention) Advice: Brief Action Planning (BAP) structured step-by-step process to set goals and plans underpinned by principles of Motivational Interviewing (intervention) Help: Referral to healthy lifestyle program (Go4Fun) if eligible/above healthy weight range (intervention)	18.2% of children identified as above healthy weight range during dental appointment accepted a referral to government healthy lifestyle program. Feasibility of collecting anthropometric data Added 5.2 mins to routine practice. 93% of children had height and weight measured. Feasibility of integrating BAP Added 3.3 mins to usual routine practice Parent/Carer perspectives Intervention felt like standard practice, was appropriate and was consistent with communication they had received in other settings about children's health. Practitioner perspectives Initially time consuming compared to usual practice. All practitioners reported still using aspects of the intervention in routine practice.

Table 3—Summary of evidence of brief interventions in adult populations (n = 9)

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	**Health behaviour outcomes**	**Other outcomes**
Ahern, 2017[2] England Three-arm RCT* **non-blinded*	Aim: Impact of brief self-help resource compared to 12- and 52-week behavioural weight-loss program for individuals with BMI >28kg/m^2 Age: >18 years Setting: Primary Care Brief intervention *(measure anthropometry, advice and booklet)* vs 12-week program comparison vs 52-week program comparison Groups similar at baseline: N/R Brief intervention duration: ~5 minutes Intervention components (AAH Model) Ask: Height, weight, fat mass and waist circumference, timing of measurement N/R (intervention) Advice: Scripted, non-tailored advice describing educational booklet (intervention) Help: 32-page booklet by British Heart Foundation (intervention), vouchers to attend weight loss program at no cost and access to digital tools (12-week + 52-week comparison)	Weight change (kg) 12-week program vs brief intervention Adjusted difference (95% CI) 3 months: -2.79kg (–3·44, –2·13) P value: <0.0001 12 months: -1.61kg (-2.84, 0.38) P value: 0.0105 24 months: –0.74kg (-2.45, –0.77) P value: 0.338 Combined 12- and 52-week program) vs brief intervention Adjusted difference (95% CI) 3 months: -2·67kg (–3·28, –2·07) P value: <0.0001	LDL cholesterol (mmol/L) 12-week program vs brief intervention Adjusted difference (95% CI) 12 months: 0.00 (-0.19, 0.19) P value: 0.976 HDL cholesterol (mmol/L) 12-week program vs brief intervention Adjusted difference (95% CI) 12 months: 0.03 (-0.10, 0.15) P value: 0.668	N/A

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	**Health behaviour outcomes**	**Other outcomes**
		12 months: -2·71kg (–3·86, –1·55) P value: <0.0001 24 months: -1·44kg (–2·87, 0·00) P value: 0.0247		
Aveyard, 2016[3] England Two-arm RCT	Aim: Impact of brief advice compared to referral to a weight management group for individuals with BMI >30kg/m^2 Age: >18 years Setting: Primary Care Brief intervention *(Arm 1: measure anthropometry, referral to government funded 12-week (1hr/week) program + GP follow up appointment)* vs Brief intervention (*Arm 2: measure anthropometry + advice)* Groups similar at baseline: Yes Brief intervention duration: 30 seconds Intervention components (AAH Model) Ask: Height, weight, BMI measured prior to intervention (Arm 1 + 2)	Self-reported weight loss (kg) Brief intervention vs advice only Mean difference (95% CI) 3 months: 1.76kg (1·35, 2·17) P value: <0.0001 12 months: 1.43kg (0·89, 1·97) P value: <0.0001	N/A	Appropriateness of brief intervention Adjusted Odds Ratio: 0.89 95% CI: (0·75, 1·07) P value: 0.21 Helpfulness of brief intervention Adjusted Odds Ratio: 1.05 95% CI: (0·89, 1·26) P value: 0.54

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Advice: Tailored advice to individuals medical or family history (Arm 2) Help: Referral to government funded weight management group (Arm 1)			
Chacha-Mannie, 2020[4] England Two-arm RCT	Aim: To determine the efficacy and effectiveness of using an opportunistic brief health promotion intervention targeting smoking, alcohol and weight for individuals with BMI >25kg/m^2 Age: 16-75 years Setting: Outpatient urgent treatment centres Brief intervention *(Arm 1: assess readiness for change, measure anthropometry, advice, referral + resources during initial consult i.e. within 20 mins of arrival)* vs brief intervention *(Arm 2: assess readiness for change, measure anthropometry, advice, referral + resources during full consult i.e. within 20 mins to 4 hours of arrival)* Groups similar at baseline: N/R Brief intervention duration: 4 minutes Intervention components (AAH Model)	N/A	N/A	Acceptance of support 59% (n = 60) accepted support during initial consult 69% (n = 70) accepted support during full consult Number of referrals to local well-being service No difference in number of referrals between groups. Only 11% (n = 11 in each

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Ask: Self-reported height and weight collected prior to intervention (Arm 1 + 2) Advice: Tailored advice as appropriate (Arm 1 + 2) Help: Referral to a local well-being service and information leaflet explaining effects of risk behaviours and free services available (Arm 1 + 2)			group) of participants were referred.
Freyer-Adam, 2018[5] Germany Three-arm RCT	Aim: To understand impacts of brief alcohol interventions on self-reported mental and general health among at-risk drinking general hospital inpatients 2 years after hospitalization, and whether intervention effects are dependent on how the intervention is delivered Age: 18-64 years Setting: Inpatient hospital Brief intervention *(Arm 1: advice/counselling only)* vs Brief intervention *(Arm 2: computer-generated feedback letter and manual)* vs usual practice *(assessment of alcohol use and state of change only)* Groups similar at baseline: Yes Brief intervention duration: ~20 minutes	N/A	General health scores Change in mean difference (95%CI) Brief intervention vs usual practice 6 months: +0.05 units (0.02, 0.08) 12 months: +0.10 units (0.04, 0.16) 18 months: +0.15 units (0.06, 0.24) 24 months: +0.20 units (0.08, 0.32)	Mental health scores Change in mean difference (95%CI) Brief intervention vs usual practice 6 months: +1.98 units (0.38, 3.57) 12 months: +3.49 units (1.09, 5.90) 18 months: +4.54 units (1.94, 7.15)

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Intervention components (AAH Model) Ask: N/A Advice: Motivational interviewing tailored to assessment feedback (Arm 1) Help: 3–4-page computer-generated individualised feedback letter and behaviour change manual (Arm 2)		P value: 0.005, Cohen's d = 0.71 Computer generated vs usual practice 6 months: +0.06 units (0.03, 0.09) 12 months: +0.12 units (0.06, 0.18) 18 months: +0.18 units (0.09, 0.27) 24 months: +0.24 units (0.13, 0.36) P value: 0.001, Cohen's d = 0.86 Brief intervention vs computer generated 6 months: -0.01 units (-0.04, 0.02) 12 months: -0.02 units (-0.07, 0.03) 18 months: -0.03 units (-0.11, 0.04)	24 months: +5.13 units (2.43, 7.83) P value: 0.002, Cohen's d = 0.51 Computer generated vs usual practice 6 months: +2.01 units (0.52, 3.50) 12 months: +3.85 units (1.62, 6.08) 18 months: +5.50 units, (3.09, 7.92) 24 months: +6.98 units (4.38, 9.58) P value: <0.001, Cohen's d = 0.69

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
			24 months: -0.04 units (-0.15, 0.06) P value: 0.482, Cohen's d = 0.16	Brief intervention vs computer generated 6 months: -0.03 units (-1.36, 1.29) 12 months: -0.35 units (-2.33, 1.62) 18 months: -0.96 units (-3.08, 1.15) 24 months: -1.85 units (-4.11, 0.41) P value: 0.177, Cohen's d = 0.18
Hardeman, 2020[6] England Two-arm RCT	Aim: Effectiveness of the 'Step it Up' intervention delivered as part of the National Health Service Health Check Age: 40-74 years Setting: Primary Care	N/A	Brief Intervention vs usual practice Comparison of means* at 3 months	N/A

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Brief intervention *(Health Check + advice + pedometer + resources)* vs usual practice *(Health Check only: measuring blood pressure, height, weight, BMI and blood sample collection)* Groups similar at baseline: Yes Brief intervention duration: 5 minutes Intervention components (AAH Model) Ask: Height and weight measured during Health Check prior to intervention (intervention + usual practice) Advice: Non-tailored advice standardised using a brief procedure, case report form and Step it Up intervention booklet. Step it Up utilises key behaviour change techniques including goal setting, action planning, feedback and self-monitoring of behaviour (intervention) Help: Pedometer, step chart, Step it Up booklet (intervention)		Total Physical Activity volume (accelerometer counts/minute) +8.8 (-18.7 to 36.3), P value: 0.53 Step count (steps/day) +242 (-172 to 656), P value: 0.25 Time (min/d) in moderate activity +0.3 (-5.4 to 6.5), P value: 0.91 Time (min/d) in vigorous activity +11.9 (-2.9 to 28.8), P value: 0.12 Time (min/d) in moderate or vigorous activity +0.9 (-4.9 to 7.2), P value: 0.76 Self-reported screen time (hrs/day)	

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
			+0.005 (-0.2 to 0.2), P value: 0.96 *adjusted for sex, 5-year age group, and practice	
Pears, 2016[7] England Four-arm RCT	Aim: Assess the potential efficacy, feasibility, acceptability, and cost of three very brief interventions, to inform selection of the most promising intervention for evaluation in a subsequent larger scale RCT Age: 40-74 years Setting: Primary Care Brief intervention (*Arm 1: Health Check* + motivational *advice, 7 minutes)* vs Brief intervention *(Arm 2: Health Check + pedometer, 5 minutes)* vs Brief intervention *(Arm 3: Health Check + advice + pedometer, 9.5 minutes)* vs usual practice *(Health Check only: assess family history, alcohol consumption, physical activity, BMI, blood pressure and cholesterol)* Groups similar at baseline: Yes Brief intervention duration: <10 minutes Intervention components (AAH Model)	N/A	Brief interventions vs usual practice Comparison of means (95%CI) 4-weeks post intervention Total Physical Activity volume (accelerometer counts/minute) Motivational: +20.3 (−45.0, +85.7) Pedometer: +23.5 (−51.3, +98.3) Combined: −3.1 (−69.3, +63.1) Step count (steps/day) Motivational: +27 (-894, +949)	Brief interventions vs usual practice Difference in means (95% CI) Behavioural Intention to be more physically active Motivational: +0.36 (0.08, 0.64) Pedometer: +0.22 (−0.09, 0.54) Combined: +0.40 (0.12, 0.68)

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Ask: Height, weight and BMI measured during Health Check prior to intervention (Arm 1 + 2 + 3 + usual practice) Advice: Tailored advice providing feedback on their current activity levels based on Health Check assessment. All interventions utilised key behaviour change techniques including goal setting, action planning, feedback and self-monitoring of behaviour. (Arm 1 + 3) Help: booklet and 4-week physical activity diary (Arm 1), pedometer, step chart and booklet (Arm 2), all intervention materials (Arm 3)		Pedometer: -101 (-1155, +954) Combined: +218 (-716, +1151) Time in sedentary/light activity (% change compared to usual practice) Motivational: -1.1% (-3.9, +1.7) Pedometer: -0.7% (-3.9, +2.6) Combined: -0.1% (-2.9, +2.9) Time in moderate activity (% change compared to usual practice) Motivational: -0.4 (-13.6, +14.8) Pedometer: +1.5% (-13.7, +19.5) Combined: +5.0% (-9.1, +21.2)	Acceptability + feasibility Practitioners (n = 12) Pedometer intervention was easiest and quickest to deliver (6 practitioners favoured). Combined intervention was most difficult and time consuming (5 practitioners favoured). One practitioner favoured motivational advice intervention. Practitioners were most confident delivering

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
			Time in vigorous activity (% change compared to usual practice) Motivational: +40.1% (-1.0, +51.6) Pedometer: +1.9% (-31.5, +51.6) Combined: +5.3% (-25.9, +49.6) Time in moderate or vigorous activity (% change compared to usual practice) Motivational: +2.6% (-10.7, +17.9) Pedometer: +2.2% (-12.8, +19.8) Combined: +3.8% (-9.8, +19.5) Self-reported screen time (hrs/day) Motivational: -0.32 (-0.77, +0.12)	Pedometer and combined intervention, and believed these were the most acceptable interventions to participants and most likely to be effective. Participants (n = 37) Health check is a good time to discuss physical activity. Brief interventions are a good reminder of the importance of physical activity. Participants in motivational or pedometer intervention

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	**Health behaviour outcomes**	**Other outcomes**
			Pedometer: -0.31 (-0.81, +0.19) Combined: +0.07 (-0.37, +0.52)	were more likely to rate advice as 'generic' compared to combined intervention.
Piernas, 2020[8] England Three-arm RCT* **non-blinded*	Aim: Effectiveness and feasibility of brief interventions to reduce SFA intake and lower CVD risk in individuals with raised LDL cholesterol levels Age: ≥18 years Setting: Primary Care Brief intervention *(Arm 1: measure anthropometry, advice/support + resources)* vs brief intervention *(Arm 2: measure anthropometry, advice + resources + shopping feedback report)* vs control *(no intervention, measure height, weight, blood pressure and blood sample only)* Groups similar at baseline: N/R Brief intervention duration: 10 minutes (range 3-30mins)	Weight (kg) change at 3 months** Mean (95%CI) Support intervention vs control -1.00 (-2.52, 0.53), P value: 0.197 Feedback intervention vs control -0.57 (-2.11, 0.98), P value: 0.468 Feedback intervention vs support intervention -0.43 (-0.69, 1.55), P value: 0.449	SFA Intake (%EI) change at 3 months, Mean (95%CI) Support intervention vs control -0.33% (−2.11, 1.44), P value: 0.709 Feedback intervention vs control −0.11% (−1.92, 1.69), P value: 0.901 LDL cholesterol (mmol/L) change at 3 months**, Mean (95%CI) Support intervention vs control	Feasibility 4,766 participants invited, only 2.4% responded, were eligible to participate and were randomised to the interventions (n=113). Of which, 94% (n=106) completed follow up. Acceptability Participants rated the advice

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Intervention components (AAH Model) Ask: Height and weight measured prior to intervention (Arm 1 + 2 + control) Advice: Non-tailored advice informed by theoretical framework (details N/R), and guided by British Heart Foundation and National Health System resources (Arm 1 + 2) Help: printed resources (Arm 1), printed resources + monthly personalised shopping feedback report indicating SFA in food purchases (Arm 2), blood test results (control)	**between group differences adjusted for baseline values and GP practice	−0.15 (−0.47, 0.16), P value: 0.338 Feedback intervention vs control 0.04 (−0.28, 0.36), P value: 0.790 Feedback intervention vs support intervention 0.2 (−0.3, 0.43), P value: 0.095 **between group differences adjusted for baseline values and GP practice	and resources as helpful, mean scores of 3.9/5 for support intervention and 3.7/5 for feedback intervention. Shopping report rated as moderately helpful, mean score of 3.5/5, with 43% reporting using the report “almost always” or “most of the time” when shopping. Higher proportion of participants in intervention groups being confident to know major

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
				sources of SFA in their diet and intention to reduce SFA intake at follow up.
Son, 2018[9] Korea Two-arm RCT	Aim: Effect of one-time brief additional counselling in periodic health examinations through the National Screening Program for the Translational Ages in Korea Age: 40 years & 66 years Setting: Primary Care Brief intervention *(health assessment + advice)* vs usual practice *(health assessment only: past medical history, anthropometric measures, blood test, radiological exam)* Groups similar at baseline: N/R Intervention duration: 10 minutes Intervention components (AAH Model) Ask: Height, weight, waist circumference measured prior to intervention (intervention + usual practice)	N/A	Intervention vs usual practice Change from non-exercise to regular exerciser (%) at 2 years 40yo: 10.5 vs 10.1, P value: 0.075 66yo: 14.3 vs 14.3, P value: 0.582 Change in at-risk drinkers to low-risk drinker (%) at 2 years 40yo: 4.9 vs 4.9, P value: 0.724 66yo: 7.0 vs 7.3, P value: 0.437	N/A

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Advice: Physicians gave advice to change participants' unhealthy behaviour – N/R if tailored (intervention) Help: Formal report of their health assessment results (intervention + usual practice)			
Tudor, 2020[10] England Two-arm RCT	Aim: Effectiveness of opportunistic referral interventions for funded weight loss program (Brief Intervention for Weight Loss Trial, BWeL) compared to referral to a self-paid weight loss program (BWeL-B) stating true cost or relative cost for individuals >30kg/m^2 Age: ≥18 years Setting: Primary Care Brief intervention *(Arm 1: measure anthropometry + referral to self-paid BWeL-B stating basic cost per week)* vs Brief intervention *(Arm 2: measure anthropometry + referral to self-paid BWeL-B stating relative cost i.e. "same amount as a couple of cups of coffee per week")* Groups similar at baseline: Yes Intervention duration: 30 seconds Intervention components (AAH Model)	N/A	N/A	Program attendance (%) BWeL-B vs BWeL 2% vs 40%, P<0.0001 Referral acceptance (%) BWeL-B vs BWeL 47% vs 77%, P<0.0001 Basic cost vs relative cost 50% vs 43% Absolute difference -7%, 95%CI: -30, +18

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
	Ask: Height, weight and body fat percentage measured prior to intervention (Arm 1 + 2) Advice: Scripted referral; not tailored (Arm 1 + 2) Help: Referral to weight loss program (Arm 1 + 2)			Appropriateness/ Helpfulness BWeL-B participants reported that the interventions were appropriate/very appropriate (83%) and helpful/very helpful (78%). Combined helpfulness and appropriateness scores: Mean (SD) BWeL-B vs BWeL 4.0 (0.9) vs 4.3 (0.7), P=0.004 No difference between basic cost and relative cost referral

Article summary	Intervention summary	Intervention effectiveness		
		Weight outcomes	Health behaviour outcomes	Other outcomes
				groups (p = 0.89)

Footnote: CVD: cardiovascular disease, HDL: High-density lipoprotein, LDL: Low-density lipoprotein, N/R: not reported, RCT: Randomised Controlled Trial, SFA: saturated fatty acids, %EI: % energy contribution to total energy intake

Intervention summary

There were 25 study arms within the 10 included studies across child and adult populations, of which 17 were brief interventions. One study compared the same brief intervention, delivered at different times during a consult.[4] Five studies had 'usual practice' as the comparison group [1, 5-7, 9] where 'usual practice' typically represented a routine health check. One study arm was described as a 'control' [8], however had anthropometric, blood pressure and blood sample measures taken – similar to health checks described in other studies. One study compared a brief advice intervention to two-arms with a longer-term weight management program.[2]

Tables 2 and 3 summarise the studies for child and adult populations respectively. Table 4 presents the study arms in each study according to the Ask, Advise, Help (AAH) Model.

Child population

The one included child study evaluated a 9-minute brief advice intervention compared to usual practice (Table 2).[1] Children allocated to the intervention had anthropometric data collected, and received structured tailored advice to set goals to reduce consumption of sugar sweetened beverages underpinned by principles of motivational interviewing. Children identified as above a healthy weight were referred to a government funded healthy lifestyle program. Children in the usual practice study arm received advice only.

Adult population

Nine RCTs in the adult population tested a brief advice intervention (Table 3).[2-10] The duration of the interventions ranged from 30 seconds[3, 10] to up to 10 minutes.[7-9] One intervention duration was 20 minutes, but was still included in the review because it was conducted in an inpatient hospital setting – which was considered a relevant setting.[5]

Components of the brief advice interventions varied across the included studies. Four studies included the provision of tailored advice [3-5, 7], with one study describing use of motivational interviewing techniques.[5] Three studies included the provision of non-tailored advice [2, 6, 8], with one using a standardised script.[2] One study indicated that physicians gave advice to change participants' unhealthy behaviour but did not specify if the advice was tailored.[9] One study used a brief standardised script for practitioners to use to verbally refer participants to a weight loss program, but did not include any provision of advice.[10]

The provision of resources varied across the included studies reporting on adult populations. Four studies included referral to a longer-term program or service, one was government funded[3], one self-paid[10], one provided vouchers to attend a program at no cost[2], and one did not specify cost.[4] Printed resources including booklets, leaflets, and manuals were provided in four studies.[2, 4, 5, 8] Two studies provided individualised feedback letters or reports[5, 8] while another study provided a printed copy of health assessment results.[9] Two studies included the provision of a pedometer, physical activity diary, step chart and intervention booklet.[6, 7]

Interventions according to the Ask, Advise, Help (AAH) model

There were 25 study arms within the 10 included studies, of which 17 were brief interventions. Table 4 presents the study arms according to the AAH Model.

Child population

The included child study had a 9-minute brief intervention which incorporated all components of the AAH model compared to usual practice which only incorporated the provision of advice (Advise).[1] The brief intervention included assessing anthropometric data (Ask), providing advice (Advise) and referral to a longer-term government-funded program (Help). Anthropometric data collection added 5.2 minutes to a consultation and the addition of a brief advice component was an additional 3.3 minutes.

Adult population

Ask

All the adult studies included a component of Ask, across a total of 19 study arms.[2-10]Anthropometric measures were collected in eight of the nine adult studies, across 14 intervention study arms[2-4, 6-10], three 'usual practice' study arms [6, 7, 9] and one 'control' study arm.[8] Four studies described 'usual practice' or 'control' study arms that measured blood pressure and collecting a blood sample.[6-9] 'Usual practice' study arms also included measuring family history and physical activity levels [7], past medical history [9], and alcohol use or consumption[5, 7]. Patients readiness to change their behaviour was also measured across two intervention arms[4] and one 'usual practice' study arm.[5]

Advise

Eight of the nine included adult studies incorporated components of Advise, across 12 intervention study arms[2-9] and one 'usual practice' study arm.[7] This included the provision of verbal advice.[2-9] or written feedback[5, 8] Tailored advice was provided in seven intervention study arms.[3-5, 7] and one 'usual practice' study arm.[7] All other advice was non-tailored[2, 6, 8], standardised[2], or not specified.[9]

Help

All the adult studies included a component of Help.[2-10] Seven of the nine adult studies, included a component of Help in the provision of printed resources[2, 4-8], individualised assessment reports[5, 8, 9], or a pedometer[6, 7], across 13 study arms.

Four of the nine included adult studies, incorporated a component of Help that included referral to another program, across seven study arms. Three study arms included referral to a government-funded weight management program[2, 3], two study arms included referral to a self-paid program.[10] and two study arms included referral to a local well-being service.[4]

Table 4—Intervention study arms according to Ask, Advise, Help (AAH) Model

Author	Ask	Advice	Help
Child population			
Collins[1]	Intervention	Intervention + usual practice	Intervention
Adult population			
Ahern[2]	Intervention + comparison[a] (Arm 1+2)	Intervention	Intervention + comparison[a] (Arm 1+2)
Aveyard[3]	Intervention (Arm 1+2)	Intervention (Arm 2)	Intervention (Arm 1)
Chacha-Mannie[4]	Intervention (Arm 1+2)	Intervention (Arm 1+2)	Intervention (Arm 1+2)
Freyer-Adam[5]	Usual practice	Intervention (Arm 1+2)	Intervention (Arm 2)
Hardeman[6]	Intervention + usual practice	Intervention	Intervention
Pears[7]	Intervention (Arm 1,2+3) + usual practice	Intervention (Arm 1+3) + usual practice	Intervention (Arm 1,2+3)
Piernas[8]	Intervention (Arm 1+2) + control	Intervention (Arm 1+2)	Intervention (Arm 1+2) + control
Son[9]	Intervention + usual practice	Intervention	Intervention + usual practice
Tudor[10]	Intervention (Arm 1+2)		Intervention (Arm 1+2)

[a]Comparison to longer-term program

Outcome measures

Child population

The included child study measured acceptance of referral to a healthy lifestyle program and minutes taken to conduct the brief intervention as a measure of feasibility.[1] Anthropometric data including height, weight and BMI was collected prior to delivering the brief intervention, however outcomes were not reported.

Adult population

Anthropometric outcomes

Three studies measured weight outcomes including weight change at 3 months[2, 3, 8], 12 months[2, 3] and 24 months.[2] Anthropometric data including height, weight and BMI were collected in eight of the nine adult studies[2-4, 6-10], prior to delivering the brief intervention[3, 4, 6-10] or timing was not reported.[2]

Clinical outcomes

Two studies measured biochemistry/clinical outcomes related to dietary intake including LDL cholesterol, HDL cholesterol, total cholesterol, and triglycerides at 3 months[8] or 12 months.[2]

Health behaviour outcomes

Five studies measured health behaviours, including objectively measured physical activity[6, 7], self-reported physical activity[9], objectively measured sedentary behaviour[7], self-reported screen time[6, 7], self-reported general health scores[5], saturated fat intake[8] and alcohol consumption.[9] Health behaviour outcomes were measured at 4-weeks post intervention[7], 3 months[6, 8], 6 months[5], 12 months[5], 18 months[5] and 24 months.[5, 9]

Other outcomes

Six studies measured other outcomes including appropriateness and helpfulness of the intervention[3, 10], acceptability and feasibility of the intervention[7, 8], number of referrals[4], referral acceptance[4, 10], self-reported mental health scores[5] and physical activity intention.[7]

No studies across child or adult populations measured safety or patients' perceptions of stigma.

Intervention effectiveness

Weight outcomes

Three studies reported weight outcomes.[2, 3, 8] When compared to no intervention, a brief 10-minute advice intervention resulted in a -1kg difference in weight change (95% CI –2.52, 0.53, p=0.197) at 3 months follow up.[8] There was no additional benefit gained by including a shopping list feedback report (0.57kg weight change, 95%CI -2.11, 0.98, p=0.468).[8] Longer term (12 or 52 weeks) weight management programs resulted in greater weight loss compared to brief advice interventions at 3 months (-2.67kg, 95%CI -3.28, -2.07, p <0.0001; 1.76kg, 95%CI 1.35, 2.17, p <0.0001)[2, 3], and 12

months (-2.71kg, 95%CI -3.86, -1.55, p <0.0001[2]; 1.43kg, 95%CI 0.89, 1.97, p <0.0001).[2, 3] A 52-week program resulted in greater weight loss compared to a 12-week program at 12 months (-2.14kg, 95%CI -3.05, -1.22, p<0.0001).[2] However, at 24 months all results were no longer significant.[2]

Health behaviour outcomes

When compared to usual practice, brief advice interventions resulted in a statistically significant change in mean difference for self-reported mental (+5.13 units, 95%CI 2.43, 7.83, p=0.001) and general health scores (+0.20 units, 95%CI 0.08, 0.32, p=0.005) at 2 years[5]; a difference in positive intention to be more physically active 4 weeks post intervention (+0.36, 95%CI 0.08, 0.64, p= N/R)[7]; and positive difference in physical activity volume (+8.8, p=0.53) and step count (+242, p=0.25) at 3 months.[6] Impact of brief advice interventions on sedentary behaviour (-1.1% change in time spent sedentary/in light activity (7)) and screen-time (-0.32hrs/day, p=N/R [7]; +0.005hrs/day, p=0.96[6]) were mixed. There was also no significant effect on change from non-exerciser to regular exerciser (40yo: 10.5% vs 10.1%, p=0.075; 60yo: 14.3% vs 14.3%, p=0.582) and at-risk drinker to low-risk drinker (40yo: 4.9% vs 4.9%, p=0.724; 60yo: 7.0% vs 7.3%, p=0.437) at 2 years, compared to usual practice.[9]

Resource provision

Provision of a pedometer was acceptable and feasible to practitioners[7] and improved physical activity measures; however, results were not statistically significant.[6, 7] Referral to longer-term weight management programs demonstrated effectiveness if attended by participants.[2, 3, 10] Referral acceptance (47% vs 77%, p<0.0001) and program attendance (2% vs 40%, p<0.0001) were significantly lower for a self-paid program compared to a funded program.[10] There was no evidence of an effect on participants' tendency to accept a referral when comparing stating the true cost of the program to stating a comparison cost (50% vs 43%, 95%CI -30, +18, p=N/R).[10] Practitioner perspectives on whether programs should be funded were mixed.[10]

Brief advice intervention component

The effect of a brief intervention on general and mental health scores did not differ significantly by whether the intervention was delivered in-person or through computer generated feedback letters at 24 months (p=0.482).[5] There was also no significant difference between weight change or saturated fat intake at 3 months if a shopping feedback report was provided, compared to an advice only intervention.[8] One study explored delivering a brief intervention within 20 minutes of arrival compared to within 20 minutes to 4 hours of arrival and found that the timing of intervention delivery improved acceptance of support (59% vs 69%) but did not impact referral numbers to a local well-being service.[4] Due to the heterogeneity of intervention characteristics and reported outcome measures, any difference in effectiveness of interventions that included tailored compared to non-tailored advice is unable to be determined.

Intervention setting

Difference in effectiveness by intervention setting is unable to be determined as one intervention was delivered in an inpatient setting[5] with all others were delivered in primary care or outpatient settings.

Summary of study quality

All studies were RCTs, and groups were similar at baseline. Two studies measured outcomes without being blinded to study arm allocation.[2, 8] Three studies reported weight outcomes or objective physiological measures.[2, 3, 8] Three studies used objective and/or validated measures of health behaviours.[6-8] Six studies used self-report questionnaires.[2, 3, 5, 8-10] One study used referral uptake as the outcome measure for acceptability[4], and one measured participant acceptability using a non-validated questionnaire.[8]

Discussion

The purpose of this Evidence Check was to evaluate the effectiveness, safety and critical components of brief HEAL advice interventions when implemented as part of routine clinical care. The review identified interventions that were used or could be used by clinicians with patients assessed as being above a healthy weight and/or of any BMI in healthcare settings. A limited number of studies met the review eligibility criteria.

For child populations, the single eligible study[1] found that it was feasible to incorporate growth assessment and a brief advice intervention into a routine oral care consultation. For adult populations, the small body of literature found that brief advice interventions can effectively support weight management within clinical care. There is some evidence that brief advice interventions, delivered as part of routine clinical care, aligned with the Ask, Advise, Help model, are a useful strategy to address weight within a holistic health system response.

One study conducted in a child population was included in this review.[1] This study described the feasibility and acceptability of collecting anthropometric data (Ask), providing brief health advice (Advise), and referral to a government healthy lifestyle program (Help) within children's oral health appointments. Ninety three percent of participants had their height and weight data collected, and 18.2% of children classified as above a healthy weight range accepted a referral to a government healthy lifestyle program. Effectiveness of the intervention on child weight or health behaviour outcomes was not reported. Feasibility of incorporating the intervention into existing appointments was evidenced by the intervention only taking 8.5 minutes (3.3min for brief advice). Scale up strategies included the creation of a new service item by the NSW Centre for Oral Health dedicated to the measurement of a child's health and weight, and brief health advice. Qualitative data showed this intervention to be acceptable to parents and oral health clinicians.[1] The effectiveness, acceptability or safety of the intervention according to child weight status was not reported. While reviews were not eligible for inclusion in this rapid review, there are two systematic reviews of brief screening interventions for children's HEAL behaviours which provide relevant context.[11, 12] A global review of child health behaviour screening tools for assessing children's health behaviours demonstrated the feasibility and acceptability of interventions which included components of AAH – assessing behaviour (Ask) and providing early intervention (Advise and Help) – in primary health care.[11] The studies included in this review, together with published reviews, indicate that all AAH components are useful as part of brief HEAL interventions for children.

Three studies in adult populations explored the impact of a brief intervention on weight outcomes and provide evidence that brief advice interventions can support weight loss in adults.[2, 3, 8] The synthesis across studies suggests that a brief advice intervention can be as effective at 12 months post intervention as a 12-week program. Additionally, the effect can be strengthened by pairing brief advice with referral to a more intensive program. While three studies evaluated the effectiveness of brief advice interventions on physical activity measures[6, 7, 9], results were mixed. There was limited evaluation of other healthy eating and active living outcomes. Understanding the effectiveness of interventions in different settings was also unable to be determined as most studies were conducted

in primary care and only one study was conducted in an inpatient setting. Safety outcomes or participants' perceptions of stigma were also not evaluated in any of the studies (in neither child nor adult populations). The studies described interventions providing standardised or tailored advice, however, they did not describe specific strategies or language guides used to ensure advice was safe, culturally sensitive, inclusive and did not contribute to weight stigma.

Several studies in adult populations evaluated the acceptability of brief advice interventions delivered in routine consults. One study examined the impact of timing, i.e. when a brief intervention was provided, comparing delivery within 20 minutes of arrival to a consult to delivery within 20 minutes to four hours of arrival.[4] The study found that the timing of when the brief advice intervention was delivered did not significantly impact acceptability of the intervention, total number of referrals, or the participant's decision to accept or reject a referral.[4]

The impact of intervention cost on acceptability of a brief 30-second referral was explored in one study, demonstrating significantly fewer participants accepting a referral to a self-paid weight loss program compared to a government funded program.[10] Qualitative evaluations of included studies demonstrated that participants value clinical measurements, discussions about health risks, vouchers to attend long term programs, and referrals[13], and that reasons for non-participation include beliefs surrounding personal relevance, lack of free time and dissatisfaction with GP appointment scheduling systems.[14] Participants are also accepting of receiving a personalised shopping feedback report and suggestions for healthy food swaps; however, other household members' preferences were barriers to changing food shopping behaviours.[8, 15]

The studies in the adult population evaluated brief advice interventions that aligned with the Ask, Advise, Help model. All studies included a component of Ask[2-10], predominately collecting anthropometric measures. Eight of the included adult studies evaluated a brief intervention that included an aspect of Advise.[2-9] All studies included a component of Help[2-10] including the provision of written resources, assessment results, pedometers, or referral to a longer-term and more intensive program. One study had a brief intervention with Ask and Help only, comparing a 30-second referral script to a weight loss program stating the exact cost per week compared to relative cost.[10] The provision of a pedometer alongside with motivational advice had a positive non-significant effect on step count, physical activity and behavioural intention.[7] In summary, all aspects of the 'Ask, Advice, Help' model should be included in advice interventions. The evidence suggests this can be done in a brief intervention, but pairing it with referral to a more intensive intervention, may be an optimal combination.

The consideration of stigma and shame in weight-related interventions is a relatively new focus and, highlights the potential harm caused by insensitive language, though literature addressing this issue remains limited. Randomised controlled trials (RCTs) are typically regarded as the gold standard in evidence-based research and should inform clinical guidelines. However, the scarcity of RCTs in this space complicates the formulation of definitive recommendations. While many community programs addressing weight and health are likely in operation, they are often not rigorously evaluated or documented in academic literature. There is a need for greater collaboration between community organisations and academic institutions to evaluate and publish findings. This would allow for a more scalable and sustainable approach to addressing these issues.

Strengths

The strengths of this review lie in its rigorous methodology and systematic approach. The involvement of an academic librarian helped ensure a well-developed search strategy, while a structured screening process, with checks and cross-validation of data extraction, enhanced the reliability of findings. The review employed the AAH model, which provided a consistent framework to understand the critical components of the included interventions. Despite its rapid nature, the 10 studies included in the review were RCTs with balanced baseline characteristics, allowing for confident interpretation of follow-up results. This means that between group differences at follow-up can confidently be interpreted without risk of bias. These strengths make the review a valuable foundation for informing updates to clinical guidelines. While no non-randomised studies were identified or included in this review, interpretation of non-randomised evidence means that the intervention effect could be due to the impact of simply being in a study and other potential bias. There may also be grey literature examining brief advice interventions, or interventions being undertaken in community or clinical settings, and although not included in this review, these could be identified as part of designing a brief advice intervention for evaluation. This could be done rapidly, alongside review of the current NSW Health Guideline *Growth Assessment in Children and Weight Status Assessment in Adults*.

Limitations

The limitations of this review stem from the evidence base rather than the quality of the review itself. Only one child study and nine adult studies met the eligibility criteria, restricting the strength of conclusions and recommendations. Critical appraisal was not performed due to the rapid nature of the review. While the included studies were all RCTs with balanced baseline characteristics, the heterogeneity of interventions, outcomes, and measurement tools made it difficult to compare results across studies. Additionally, no studies compared outcomes across different weight groups, and inconsistency in defining what constitutes a brief intervention further complicated identifying the critical components of successful interventions.

Conclusions and recommendations

This Evidence Check, commissioned by the NSW Ministry of Health, provides a rapid review of the current evidence evaluating the effectiveness, safety and critical components of brief HEAL advice interventions when implemented as part of routine clinical care. It found that a small body of literature supports that brief advice interventions delivered in routine clinical care settings can be effective, safe, acceptable and feasible for supporting healthy weight management in both children and adults.

Based on the review findings, the following recommendations are made for policy, practice, and future research. These steps will help optimise the delivery and effectiveness of brief HEAL interventions, ultimately contributing to healthier populations.

Policy recommendations:

1. Incorporate brief HEAL advice into routine clinical guidelines, ensuring consistency across healthcare settings, while also integrating sensitive language to prevent weight stigma and ensuring advice is culturally appropriate.
2. Enhance access to HEAL programs by strengthening referral pathways and making government-supported programs more accessible to those needing intervention.

Practice recommendations:

1. Implement the Ask, Advise, Help (AAH) model: Clinicians should routinely engage patients using this model, combining brief advice with referrals where needed.
2. Train healthcare professionals: Provide training to ensure the consistent delivery of brief interventions while using language that minimises stigma and is culturally appropriate, thus improving patient acceptance and engagement.

Recommendations for future research:

1. More randomised controlled trials are needed to assess the long-term impact of brief HEAL interventions, particularly regarding safety, lifestyle behaviour changes, and weight management outcomes across diverse populations.
2. Given the limited evidence in child populations, future research should explore interventions tailored to children, measuring effectiveness, feasibility, and safety outcomes in healthcare settings.

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Appendices

Appendix 1—Search strategy and results

Medline search strategy

Search strategy was translated for the other databases (CINAHL, SCOPUS, Cochrane, Emcare).

#	Searches	Results
1	(((brief or minimal or opportunistic) adj3 intervention*) or "one-time" or "one intervention" or "one dose" or "one contact" or "one session" or "short intervention").ti.	4873
2	("Healthy eating" or "health promotion" or "active living" or nutrition or food or diet or healthy or activity or movement or exercise or "physical activity" or lifestyle or sleep or "screen time" or "sedentary behaviour" or alcohol or smoking).ti,ab.	6093576
3	((behaviour* or behavior*) adj3 (change or therapy or modif* or strateg* or intervention* or advice or program* or class* or counsel* or educat* or instruct* or teach* or train* or guidance or lesson* or workshop* or module* or consultation* or session*)).ti,ab.	140675
4	((lifestyle or life style) adj3 (chang* or modif* or strateg* or intervention* or advice or program* or class* or counsel* or educat* or instruct* or teach* or train* or guidance or lesson* or workshop* or module* or consultation* or session*)).ti,ab.	46165
5	Diet, Healthy/ or Health Behavior/ or Behavior Therapy/ or Life Style/ or Exercise Therapy/ or Feeding Behavior/ or Health Promotion/ or Nutritive Value/ or Eating/ or exp Sleep/ or exp Alcohol-Related Disorders/ or Screen Time/ or Sedentary Behavior/	649743
6	("Body mass index" or BMI or "weight?loss" or "healthy weight" or overweight or obesity or "weight outcome").ti,ab.	601001
7	Obesity/ or Body Mass Index/ or Pediatric Obesity/ or Overweight/ or Body Weight/ or Weight Loss/ or Body Weight Changes/	534083
8	or/2-7	6853820
9	(RCT* or random* or placebo* or assign* or assess* or analyse* or dosage or rate* or ratio* or reduce* or response* or risk* or score* or effect* or blind or score* or significan* or trial* or control* or therapeutic or therapy* or treat* or model* or multicenter).ti,ab.	23483315
10	exp Epidemiologic Research Design/ or exp Research Design/ or exp Clinical Study/ or "Randomized Controlled Trials as Topic"/	2557148
11	9 or 10	23779431
12	1 and 8 and 11	2500
13	limit 12 to (english language and yr="2014 -Current")	1481

Overview of search results

Research Team			Sax Team		
Database	**Result**	**Date run**	**Result with RCTS**	**Results without RCTS**	**Date run**
Medline	1481	20/08/2024	1540	1597	24/9/2024
CINAHL	1103	20/08/2024	1021	1139	24/9/2024
SCOPUS	1317	20/08/2024	1327	1393	24/9/2024
Cochrane	1487	20/08/2024			
Emcare	1134	20/08/2024			

Appendix 2—Early findings table

Early findings table presented to NSW Ministry of Health 12 September 2024

Reference details	Country	Age range	Study design	Intervention aim	Intervention Setting	Intervention duration	Intervention Summary*	Outcome measures	Outcome success
Ahern et al. 2017	England	18+ years	Non-blinded, parallel-group, RCT	Impact of self-help resource compared to 12- and 52-week weight management program	Primary Care	5 minutes	Brief advice vs 12-week vs 52-week program	Anthropometry, Blood pressure, Quality of Life, Biochemical markers	No
Aveyard et al. 2016	England	18+ years	Parallel, two-arm, RCT	Impact of brief advice compared to referral to weight management group in primary care	Primary Care	30 secs	Control/Advice: Advised that health would benefit from weight loss Intervention/ Support: Referral to a weight management group	Weight loss, Actions taken at 3 and 12 months Appropriateness, helpfulness of brief intervention	Yes

Chacha-Mannie et al. 2020	England	16-75 years	Single pragmatic parallel RCT	Impact of a brief opportunistic health promotion intervention targeting smoking, alcohol and weight in an urgent treatment centre	Walk-in or minor injury unity, now known as urgent treatment centres	Mean: 4 min SD: 2.85 min Mode: 2 min	Arm A: Receive intervention during initial consult Arm B: Receive intervention during full consult	Referral and supports provided following brief intervention	Yes
Freyer-Adam et al. 2018	Germany	18-64 years	Three-arm RCT	Impact of brief intervention targeting alcohol has on mental and general health in hospital inpatients	General hospital wards	Median 20 min	In-person counselling (PE) vs Computer-generated feedback letters (CO) vs Assessment only (AO)	Self-reported mental and general health scales	Yes
Hardeman et al. 2020	England	40-74 years	Two-parallel-group, RCT	Impact of brief interventions targeting physical activity within routine health checks	Primary care	5 min	Face-to-face discussion, provision of a pedometer, step chart for self-monitoring and information booklet	Physical activity, enactment of key BCTs	No
Pears et al. 2016	England	40-74 years	RCT	Impact of brief interventions targeting	Primary care	9 min 35 secs	Motivational VBI vs Pedometer VBI	Physical activity, Screen/TV viewing time	Yes

				physical activity within routine health checks			vs Combined VBI or the Health Check consultation ONLY (Control) Face-to-face consultation and provision of written materials	Feasibility, acceptability and cost	
Piernas et al. 2020	England	≥18 years	Parallel RCT	Impact of brief intervention targeting food shopping on saturated fat intake	Primary care	10 min	Brief Support vs Brief Support + Shopping Feedback vs Control	SFA intake, LDL cholesterol Feasibility	Yes
Son et al. 2018	Korea	40 years and 66 years	RCT	Impact of brief counselling in routine practice	Primary care	10 min	Brief consultation with GP regarding CVD risk and preventive lifestyle changes	Health behaviours (smoking, drinking, exercise)	Yes
Tudor et al. 2020	England	≥18 years	Observational feasibility with an embedded two-arm parallel group RCT	Impact of brief intervention to refer to weight management program	Primary care	30 secs	Basic cost referral vs cost comparison referral	Weight loss program attendance, appropriateness and helpfulness of intervention	No