PROTOCOL V1.0

**ADMINISTRATIVE INFORMATION**

**Title**: The effectiveness of honey for symptomatic relief of hay fever: a systematic review and meta-analysis

**Identification** (1a): This report is a protocol of a systematic review

**Update** (1b): NA – this is not an update of a previous systematic review

**Registration** (2): GitHub

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**Contributions (3b):**

Tharin Azad: Lead author, Investigation, Data curation, Formal analysis, writing publication

Charlotte Albury: Supervision, Conceptualisation, Validation, writing publication

Joseph Lee: Supervision, Conceptualisation, Validation, writing publication

Nia Roberts: The information specialist consulted for advice on search strategy.

Harriet Bland: Will screen studies according to agreed exclusion and inclusion criteria

**Amendments (4):** NA – this is not an amendment of a previously published protocol

**Support**

**Sources** (5a): NA

**Sponsor** (5b): NA

**Role of sponsor/funder** (5c): NA

**INTRODUCTION**

**Rationale** (6): There is available research on the use of honey for hay fever, however, there has not yet been a systematic review conducted to collate the evidence. We hope this systematic review can serve to help practitioners provide evidence base medical advice as to whether honey may be an appropriate therapy to help treat/provide relief for seasonal allergy, which is a commonly held belief.

**Objectives** (7): 1. To establish the clinical outcomes associated with the use of ingested honey as a single treatment for hay fever, and to compare adjunct treatment with usual treatments plus honey and placebo. 2. To map the extent of research into this topic.

**METHODS**

**Eligibility criteria** (8):

* **Population**: All individuals above the age of 1 year with hay fever (self-diagnosed or medically diagnosed) of any gender and nationality in any setting
* **Intervention**: Honey or honey augmented with pollen (ingested)
* **Comparisons**:
  + Honey vs No treatment
  + Honey vs placebo
  + Honey as an adjunct to conventional treatment e.g. anti-histamine vs conventional treatment
  + Comparison between honey types
* **Outcomes**:
  + **Primary Outcomes**: Change to symptoms as measured by studies – e.g. runny nose, itchy eyes, overall symptom score.
  + **Secondary Outcomes**: Any other clinical outcomes, adverse effects.

**Types of Study:**

* Inclusion criteria – Study designs: randomised controlled trials, cluster or individually radomised
* We will include all papers in peer-reviewed journals assessing honey in comparison with no treatment, placebo, or conjunctive to usual therapy, to treat hay fever
* No limitation on language or years considered.
* Exclusion criteria –non-randomised studies, pseudorandomised studies, in vitro studies, animal studies, protocol-only, case series, book chapters and conference abstracts (literature that is not peer reviewed)

**Information sources** (9):

* Searches of the following databases will be carried out using keywords and MeSH terms:
* Medline, PubMed, EMBASE, AMED, CAB Abstracts, CINAHL, Cochrane Library
* References of included studies will be reviewed.

**Search Strategy** (10):

* An information specialist (Nia) was consulted for advice on search strategy, using ‘honey,’ ‘hay fever’ and ‘symptom relief’ as prompts for key words.

**Study records**

**Data management** (11a): Rayyan, EndNote

**Selection process** (11b): Two reviewers will carry out initial screening of titles and abstracts in duplicate, and then repeat the process for full text review to ensure that the remaining studies meet the inclusion criteria. If discrepancies arise, these will be discussed, and if they cannot be resolved, the reviewers will refer to a third reviewer.

**Data collection process** (11c): Data will be extracted by one reviewer and checked by a second. Should data not be available or unclear will email investigators once to clarify where appropriate and possible

**Data items** (12):

Authors, year, location, methods, number of participants in each arm, how many people have dropped out, how many completed, population information, intervention, outcomes.

**Outcomes and prioritisation** (13):

* + **Primary Outcomes**: effects on symptoms as measured by studies – e.g. nasal symptoms and ocular symptoms, overall symptom score
  + **Secondary Outcomes**: Any clinical outcomes, and adverse side effects.

**Risk of bias in individual studies** (14): For study bias assessment we will use the Cochrane Risk of Bias tool (for randomised studies).

**Data**

Data from randomised clinical trials and observational studies will be analysed separately, as will data about different conditions and different symptoms.

**Synthesis**

**(15a-)We will describe study characteristics**

(15a): RCTs will be meta-analysed where possible and appropriate. Cluster RCTs will be analysed with RCTs where possible and appropriate.

(15b): Statistical analysis will refer to the guidelines of the Cochrane Handbook. Higgins JPT, Thomas J, Chandler J, Cumpston M, Li T, Page MJ, Welch VA (editors). *Cochrane Handbook for Systematic Reviews of Interventions* version 6.3 (updated February 2022). Cochrane, 2022. Available from www.training.cochrane.org/handbook.

(15c): Sub-group analyses of different comparators will be conducted where possible and appropriate

(15d): If quantitative synthesis is not appropriate, we will describe studies.

**Meta-bias(es)** (16): Risk of publication bias will be assessed, using funnel plots and Egger’s tests where appropriate (where there are more than 10 qualifying studies measuring the same estimate).