Wrap up: making it all mean something

Dr. Jessica Rigutto
Human Nutrition Laboratory

Evidence = background *and* discussion *and*...
What evidence to put where in your thesis

- Background, introduction to your thesis
  - systematic reviews, literature reviews, one or two very high-quality trials or other evidence (e.g. state that there are no trials)
  - Mechanistic papers
  - *Avoid citing textbooks (outdated?) – but textbooks can be a good place to look at reference lists!*
- Literature Review (if you choose to/must include one in your thesis)
  - Systematic search reported correctly (search terms, databases, date of search)
  - Results of search reported clearly as an overview
  - Consider including a PRISMA chart
  - Data from all included papers should be summarised in the text and/or table (see examples on next slides)
- Discussion
  - Cite only literature complementary to your findings, to justify and support your results
  - Refer to new science, RCTs, cohort studies, case studies
  - Only reference reviews if you are really short of space!

Writing up:
Tell your story

- Use the “10 points” for synthesised literature to help you design and formulate your literature review
  - *Adapt it for help with your introduction and discussion!*
- State clear objectives and methods for your (re)search
- The content should be appropriate to your audience, i.e. at Master level
- Take care when including, reanalysing and presenting data – double check to make sure all entries, units, etc are correct

- Most important: Tell a story and engage your reader!

Reminder: **Key characteristics of a good literature review**

- ✓ Clear question
- ✓ Use of a search strategy
- ✓ No bias in write-up
- ✓ Data summary where appropriate
  - ✓ e.g. table, chart
- ✓ Balanced presentation of evidence from the literature
  - *without "information overload"*

Example characteristics summary: table

Table 1 Characteristics of included studies

	Author & year Last search date	Aim of study	Participants; Study designs considered	Treatment / Exposure; Setting	Control, if applicable	Pre-defined outcomes	No. studies; Study designs included; Locations	Gaps relevant to our research question	AMSTAR score
Quantitative studies (including meta-analyses)									
1	Taylor et al. (2014) Last search date – April 2013 Ref.: [32]	To evaluate the impact of iodine supplementation in pregnancy and childhood on thyroid function and child Neurodevelopment in populations with mild-to moderate Iodine deficiency.	School-age children from populations of mild-to-moderate iodine deficiency (determined from the median population urinary iodine) RCTs, quasi-randomised trials, prospective cohort or case–control studies considered	Maternal iodine supplementation in pregnancy; Childhood iodine supplementation Setting: Mild to moderate iodine deficiency	No supplementation or significantly lower dose of supplements	Thyroid function; thyroid volume; cognitive performance	17 studies included in the review, of which 9 RCTs and 8 observational studies Relevant studies: 4 RCTs reporting on neonatal thyroid function Locations: Belgium, Denmark, Germany and Spain	Review only covers maternal and infant thyroid function, and child neurodevelopment. There are no growth outcomes considered. Not all relevant age groups are included (only neonates and school age children)	8
2	Bougma et al. (2013) Last search date – November 2011 Ref.: [8]	To examine whether iodine status of mothers or infants affects the mental development of young children	Children 5 years and under RCT, non-randomised trial, prospective cohort trials considered	Exposure to different iodine levels before pregnancy, during pregnancy, or shortly after birth; or Examination of iodine exposure related to mental development outcome Setting: Not defined	Placebo, historical control, iodine sufficient siblings or children of similar age used as control group	Mental development score	24 studies included in the review, of which 2 RCT, 8 non-randomized intervention trials, 10 prospective cohort (women), and 9 prospective cohort (infants) Relevant studies: None. No studies report on growth (total of 24 studies included in review) Locations: China, DR Congo, Ecuador, Peru, Spain, Portugal, USA, Netherlands, Italy, UK, Canada.	Review only investigates mental development. There are no growth outcomes considered. Not all relevant age groups are included (only under 5 years).	8
3	Ristić-Medić et al. (2014) Last search date – December 2011 Ref.: [33]	To identify and examine studies investigating iodine intake and biomarkers of iodine status and to combine these studies in a meta-analysis to estimate the dose–response relationships between iodine intake and iodine status.	No criteria specified RCTs, prospective cohort studies, nested case–control studies, cross sectional studies considered	For RCTs: Iodine intervention (iodised salt, iodised oil, iodised water, iodine tablets, iodine-enriched food or milk formula) Observational studies: Evaluation of iodine intake (food frequency questionnaire, dietary	For RCTs: Placebo or low-dose iodine supplement (<100μg iodine per day)	For RCTs: Mean concentrations of UI, serum Tg, serum TSH, analytical methods to assess iodine status For observational studies: Concentration of UI, serum Tg, serum TSH, analytical methods to assess iodine status	58 studies included in the review, of which 33 RCTs 30 observational studies (5 being part of the included RCTs) Relevant studies: None Locations: Africa, Americas, Asia, Australasia, Europe	Review looked at iodine biomarkers. Does not consider iodine-related outcomes i.e., growth.	8

Farebrother et al. Nutrition Journal 2015

Example characteristics summary: figure

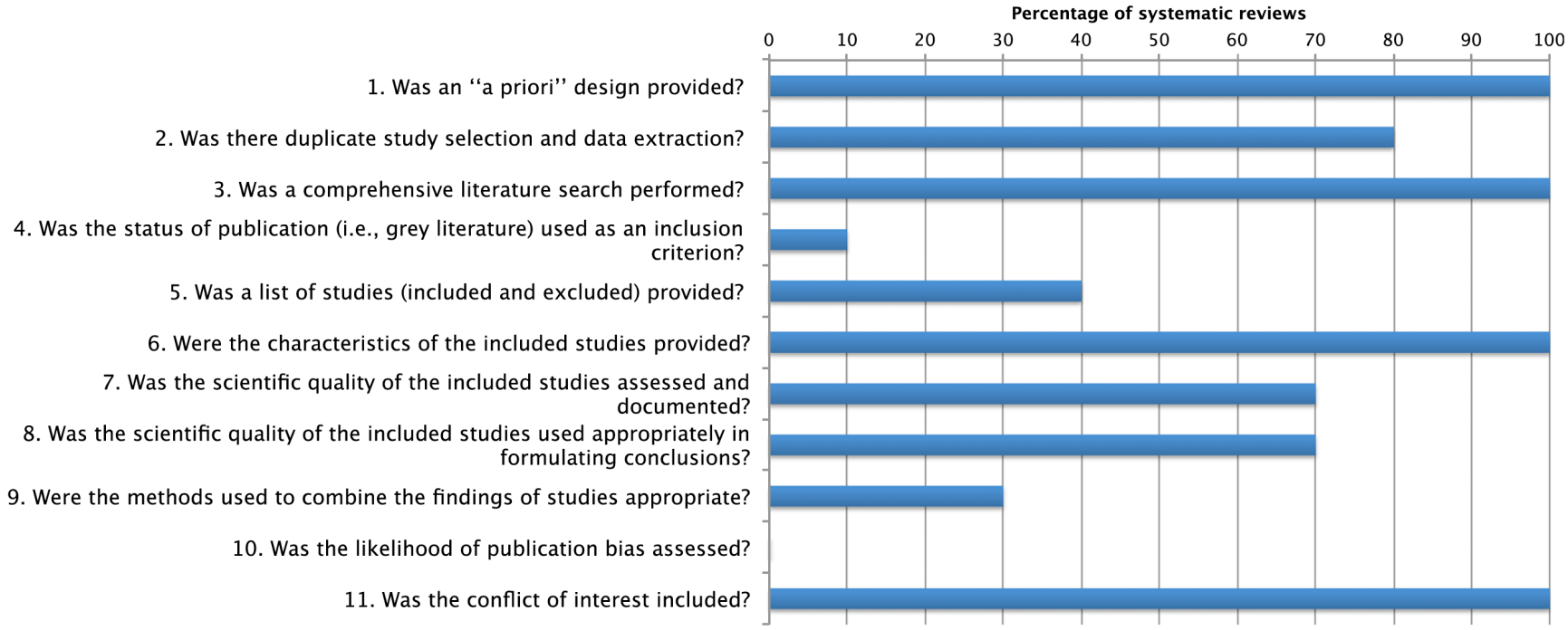


Fig. 3 Breakdown of AMSTAR score per domain

Farebrother et al. Nutrition Journal 2015

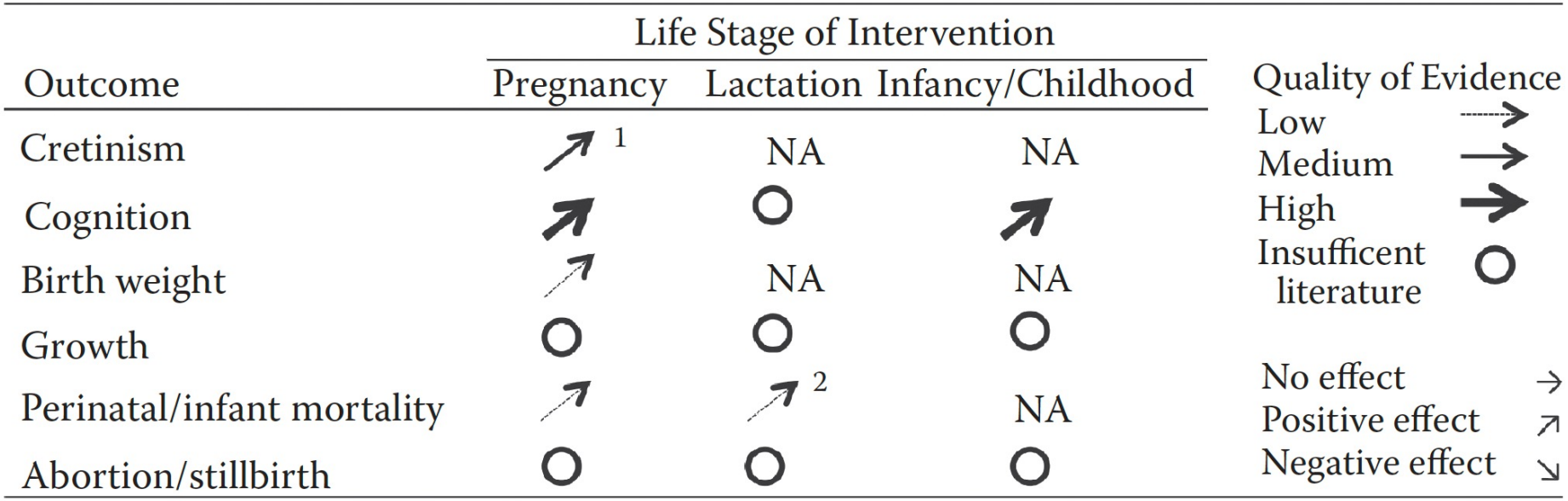
Example data summary: table

Table 3. Thyroglobulin concentrations and/or prevalence of thyroid autoimmunity in studies reporting excess iodine intakes

Study location	Described iodine source	Population group age range	Median UIC (μg/L) [Median BMIC (μg/L)]	*n*	Tg (μg/L)	*n*	Serum/ DBS	Thyroid antibody	Prevalence	Refe-rence
Adult, male and female										
Mexico, Mexico City	NR	18–67 years	267 (161–482)[a]	48	NR			TPOAb TgAb	9% 10.5%	97
China, Hebei province	Drinking	20–50 years	1152 (753–1539)[a]	506	NR			TPOAb TgAb	Males: 11% Females: 20% Males: 5% Females 16%	98
China, Huanghua, Hebei	Drinking	14–79 years	615 (470–768)[a]	1074	6.4 (3.6–11.4)[a]	1074	Serum	TPOAb TgAb	10.5% 9%	57
China, Huanghua, Hebei Province (2004)	Drinking water	19–83 years	635 (427–745)[a]	864	10.2 (5.9–20.4)[a]	864	Serum	NR		57
Adult, nonpregnant women										
Tanzania, Kinondoni, Dar es Salaam	Iodized salt	18–44 years	473 (321–689)[a]	298	18.1 (12.1–28.8)[a]	321	DBS	NR		46
Kenya, Kibwezi, Makindu County	Iodized salt Iodine-rich ground-water	18–44 years	289 (173–458)[a]	293	26.6 (18.9–39.8)[a]	213	DBS	NR		46
China, Liaoning Province	Drinking water	39 ± 13 years[b]	223 (128–375)[a]	211	6.9 (4.4–13.35)[a]	211	Serum	TPOAb TgAb	7% 8%	99

Farebrother, Zimmermann, Andersson. Ann N Y Acad Sci, 2019

Example data summary: figure



Farebrother & Rohner. Biology of the First 1,000 Days, 2018