ebhc CONFERENCE 2026

THE ECOSYSTEM OF EVIDENCE

Navigating the future
of the ecosystem of evidence

Artificial intelligence and digital transformation
in research and healthcare

11th EBHC International Conference
Taormina, 21st – 24th October 2026

#EBHC2026

Impact of non-randomized controlled studies on systematic reviews in the presence of randomized controlled trials

An exploratory analysis

Petteri Sjögren, Susanna M. Wallerstedt, Cecilie Hongslo Vala

Speaker: Petteri Sjögren
HTA-CENTRE, SAHLGRENSKA UNIVERSITY HOSPITAL, GOTHENBURG, REGION VÄSTRA GÖTALAND, SWEDEN

30th GIMBE 1996-2026 EVIDENCE FOR HEALTH

International Society for Evidence-Based Health Care

Background

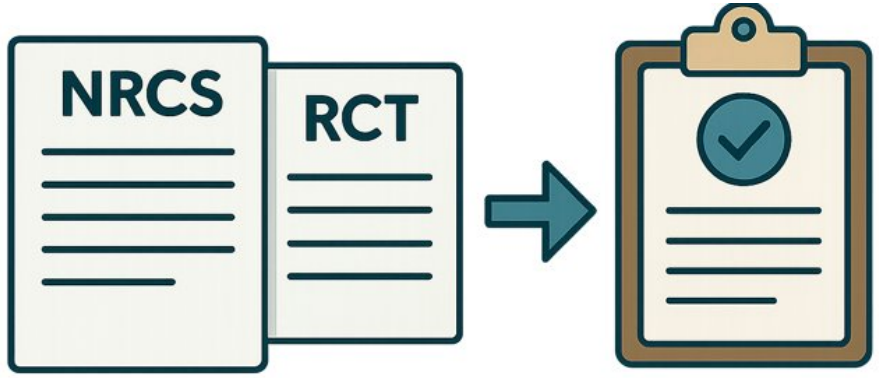
- RCTs and NRCSs contribute to the body of evidence
- Both designs are sometimes included in systematic reviews
- Risk of bias is generally lower in RCTs
- Issues of directness may occasionally favor NRCSs
- RCTs and NRCSs starts at different GRADE-levels
- Including both RCTs and NRCTs implies increased workload and later completion

Is it worthwhile to include both RCTs and NRCTs?

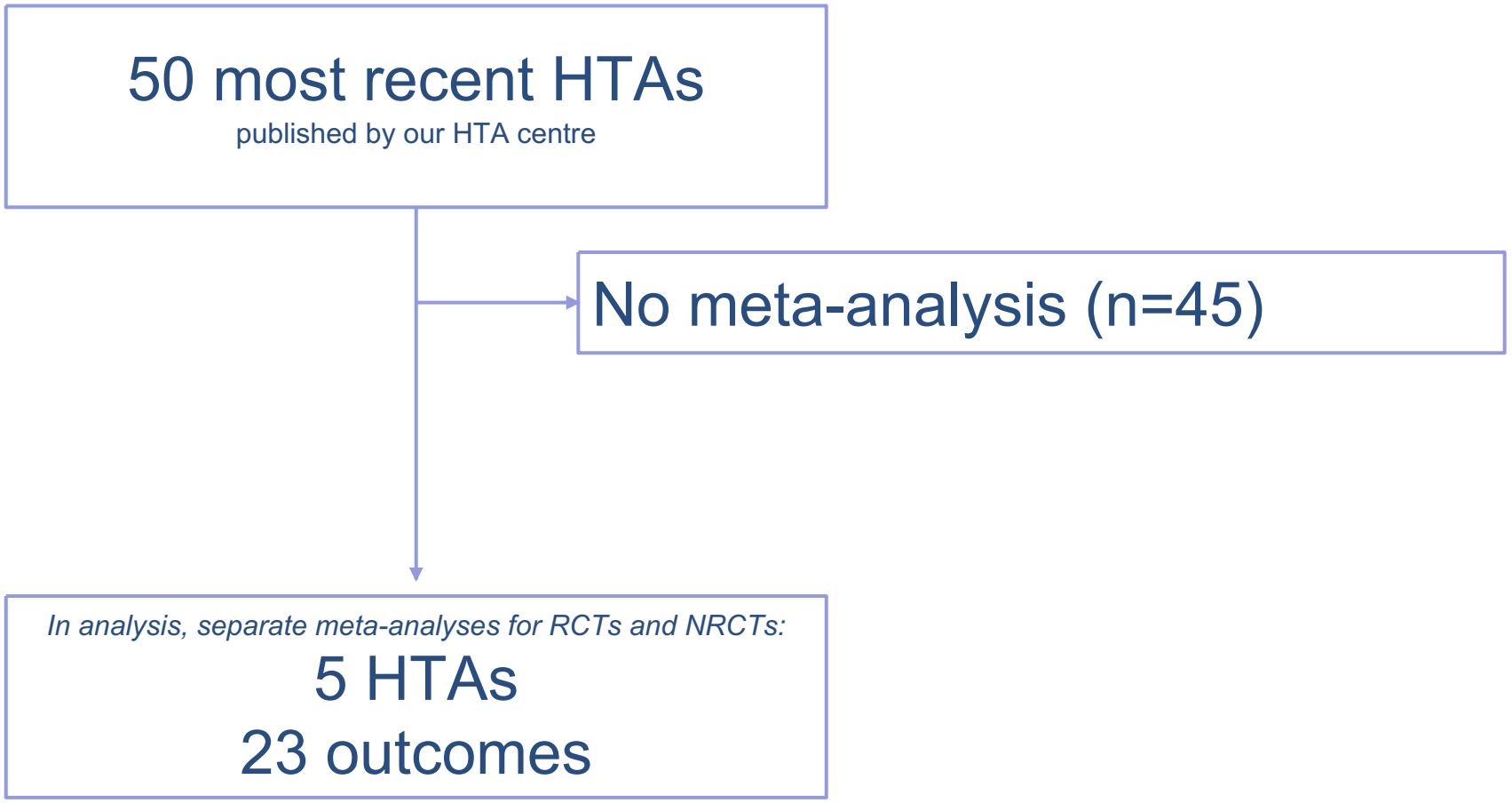
NRCS = non-randomised controlled trial
RCT = randomised controlled trial

Aims

To explore the impact of including NRCSs on conclusions and certainty of evidence in systematic reviews when RCTs are available



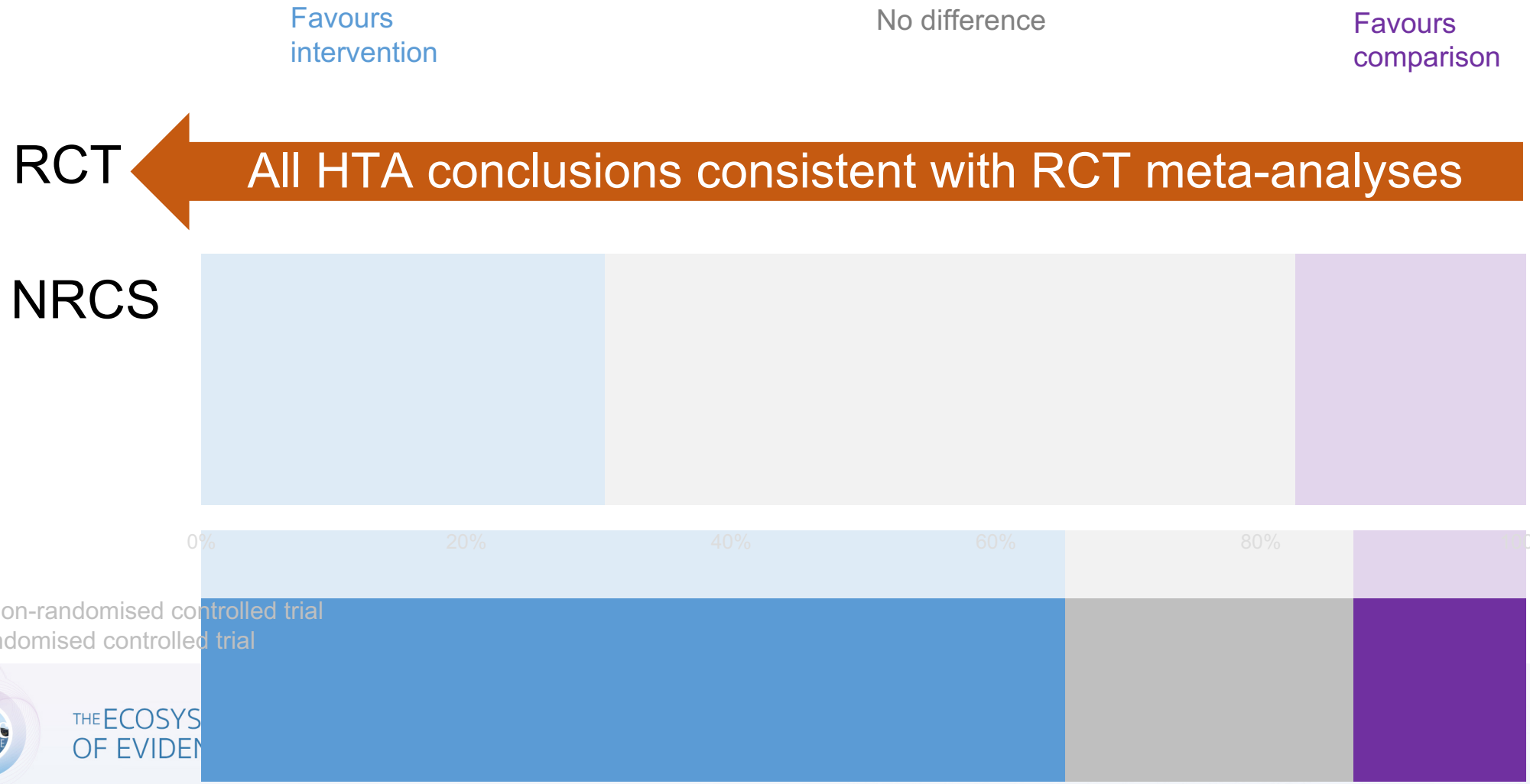
Methods



HTA = health technology assessment
NRCS = non-randomised controlled trial
RCT = randomised controlled trial

- Thermal ablation of benign thyroid nodules
- Cervix length screening combined with progesterone treatment in singleton pregnancies
- Advanced insulin pump systems in type 1 diabetes
- Robot assisted knee arthroplasty
- Clopidogrel versus ticagrelor in acute coronary syndrome

Results: Meta-analyses 23 outcomes



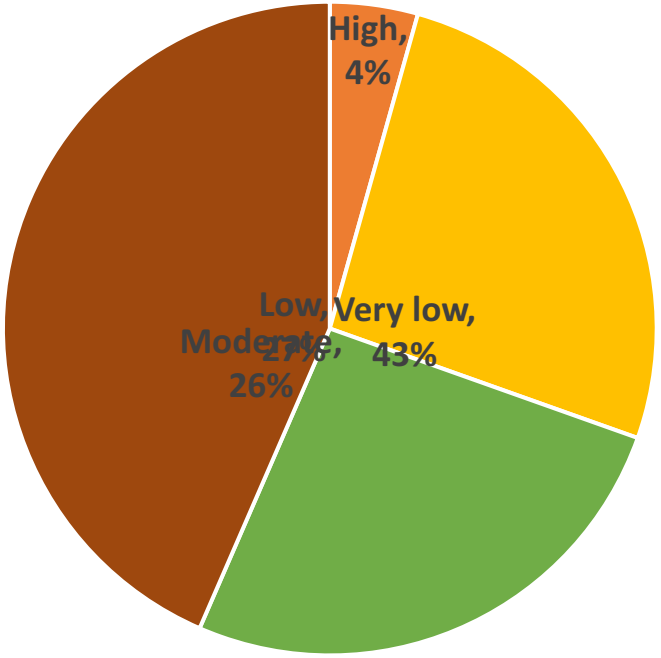
NRCS = non-randomised controlled trial
RCT = randomised controlled trial

For the 23 studied outcomes:

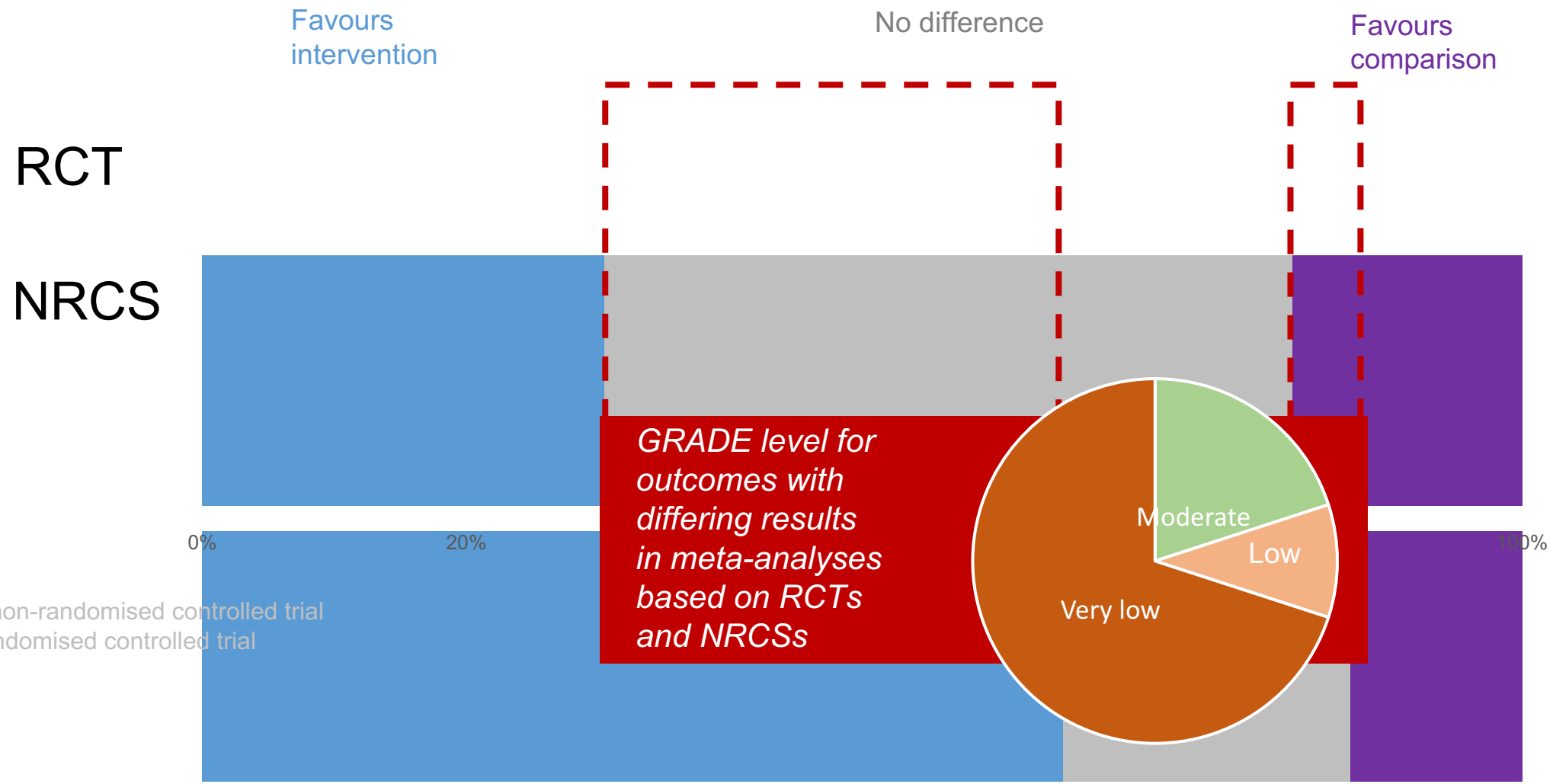
RCT (median)
2 studies
1,257 participens

NRCS (median)
3 studies
35,738 participens

The certainty of evidence (GRADE):



The conclusions were consistent with the pooled RCT results for all outcomes



NRCS = non-randomised controlled trial
RCT = randomised controlled trial

Limits

- Data originate from a single HTA centre
- Assessment procedures, including impact of NRCSs, may differ across HTA bodies

Conclusions

- Including NRCSs in systematic reviews alongside RCTs had negligible impact on the conclusions

- The inclusion of NRCSs when RCTs are available may be questioned

ebhc CONFERENCE 2026

THE ECOSYSTEM OF EVIDENCE

Navigating the future
of the ecosystem of evidence

Artificial intelligence and digital transformation
in research and healthcare

11th EBHC International Conference
Taormina, 21st – 24th October 2026

#EBHC2026

30th 1996-2026 GIMBE EVIDENCE FOR HEALTH

International Society for Evidence-Based Health Care

Thank You!

Questions?

Petteri Sjögren
HTA-CENTRE, SAHLGRENSKA UNIVERSITY HOSPITAL, GOTHENBURG, REGION VÄSTRA GÖTALAND, SWEDEN AFFILIATION