

META-ANALYSIS POWERED BY ARTIFICIAL INTELLIGENCE.

*By Tove Holm-Larsen, MSc, PhD
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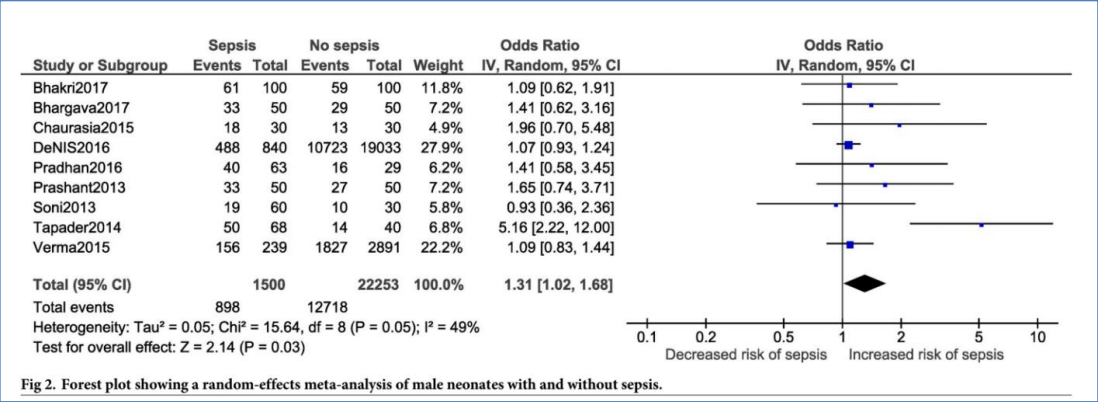


Background – the importance of meta-analysis

- Meta-analysis are the backbone in development of evidence
 - For clinical guidelines
 - For health technology assessment
 - To fight ‘fake news’



A meta-analysis is the statistical summary of all published evidence



Shruti Murthyl et al, 2019. Risk factors of neonatal sepsis in India: A systematic review and meta-analysis. PLOS one.

Our Aim

- We wanted to make meta-analysis easier
 - Through the use of artificial intelligence



Our Aim

- We wanted to make meta-analysis easier
 - Through the use of artificial intelligence
 - On the way we found that meta-analysis could be optimised in several ways:
 - Fast
 - Dynamic process
 - Fully updated process

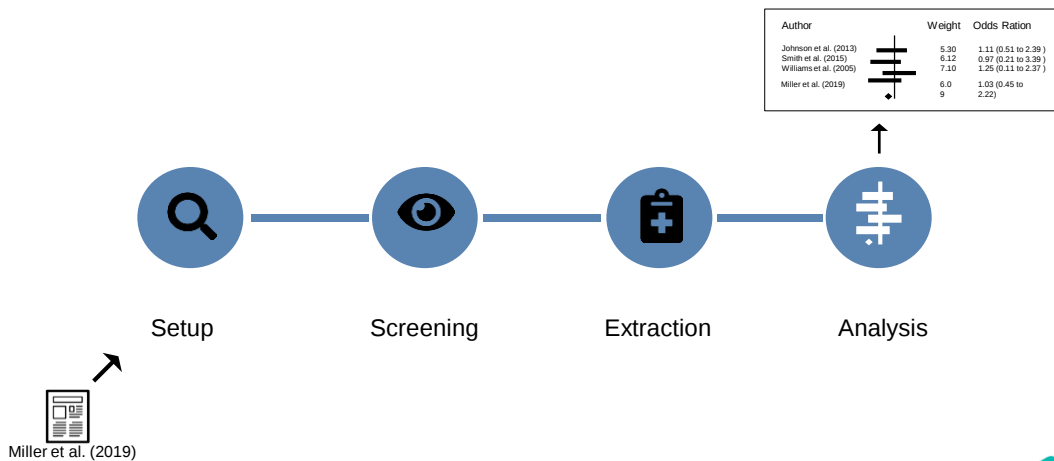


Our Aim

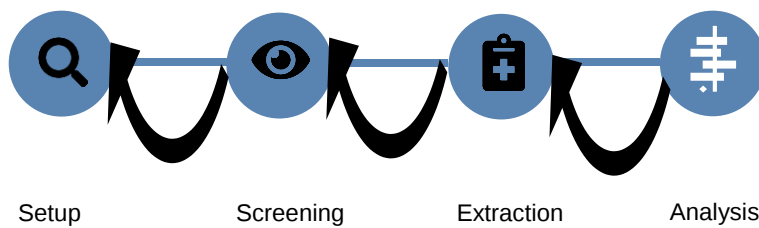
- We wanted to make meta-analysis easier
 - Through the use of artificial intelligence
 - On the way we found that meta-analysis could be optimised in several ways:
 - Fast
 - Dynamic process
 - Fully updated process
- We wanted to create a user friendly system, so we developed it in close connection with Pharma and the Danish Medical Agency



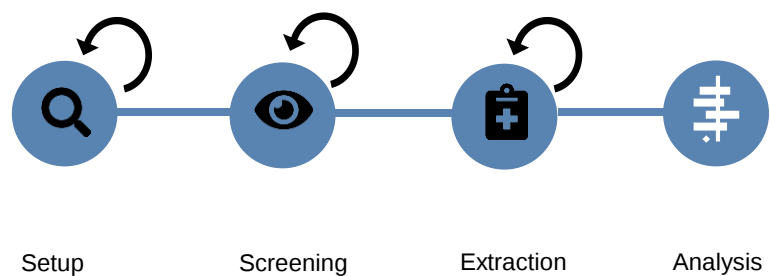
There are 4 main stages in a Meta-Analysis



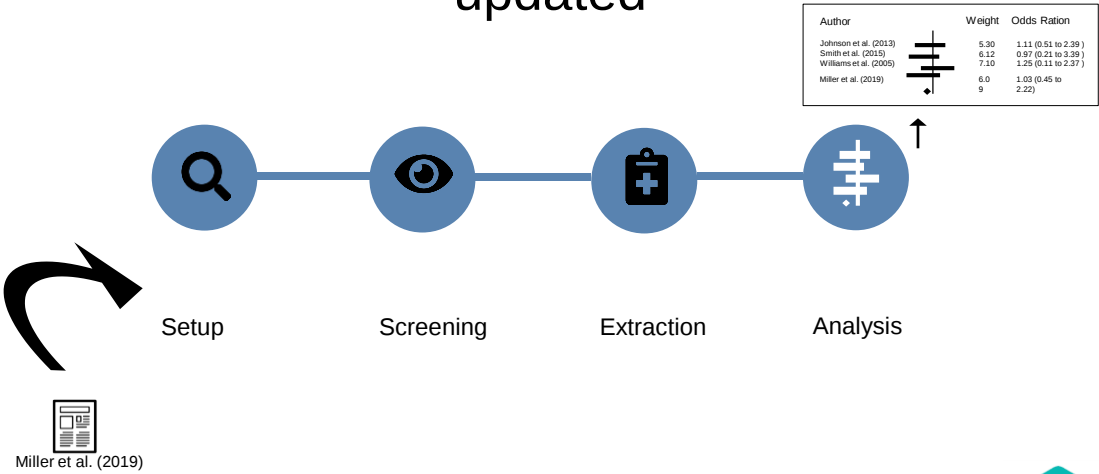
First priority was to make the system dynamic



Second priority was to increase the speed through machine-learning



Third priority was to make the system fully updated





Setup

My Meta Analyses

Search String

[desmopressin OR vasopressin OR DDAVP OR anti-diuretic OR antidiuretic] AND (prostat* OR BPH OR nocturia OR hyperplasia) AND **not children**

Automatic Exclusion

String	Exclusion Criteria
AND not children	Children

Extraction Form

Endpoint	Outcome Type
Time to first void	Time to event
Number of voids	Continuous

Study charectaristic

Charectaristic	Type
Number patients	Integer
Gender	Categorical
Race	Categorical

RETRIEVE



AEvidence MetaAnalyzer

localhost:8080/setup

SETUP SCREEN EXTRACT ANALYSIS

A Systematic Review of the Efficacy and Safety of Desmopressin for Nocturia in Adults

Search String

[desmopressin OR vasopressin OR DDAVP OR anti-diuretic OR antidiuretic] AND (prostat* OR BPH OR nocturia OR hyperplasia) AND **NOT children**

Automatic Exclusions

Exclusion String	Exclusion Criterion
AND NOT children	Children

Endpoints

Endpoint	Outcome Type
Time to first void	Time to event
Number of voids	Continuous

Study Characteristics

Endpoint	Outcome Type
	Select

Retrieve



Screening



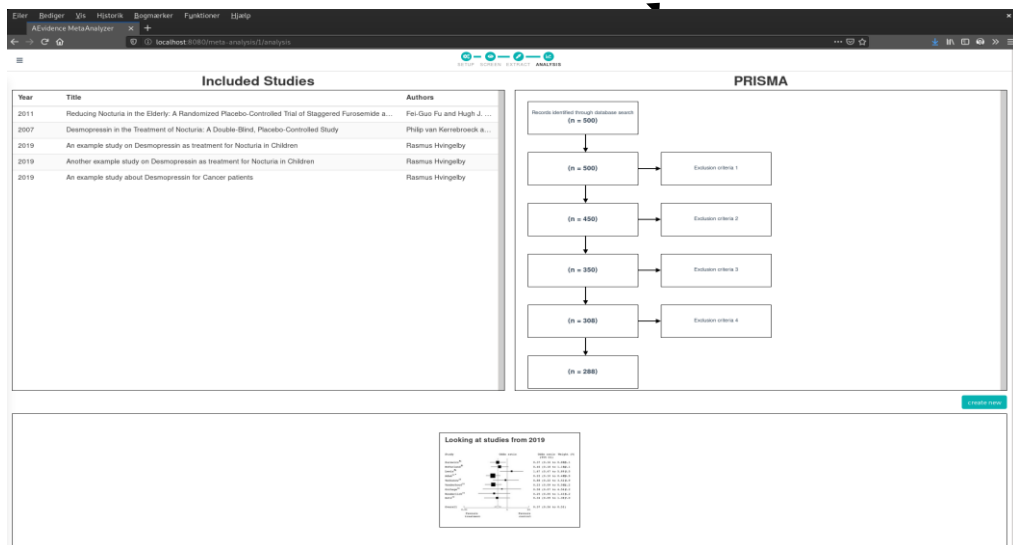
Year	Title	Authors	Decision
2016	This is the study that is currently shown	Peters et al.	?
2014	Lorem ipsum dolor es mit 1	Peters et al.	?
2013	Lorem ipsum dolor es mit 2	Peters et al.	?
2015	Lorem ipsum dolor es mit 3	Peters et al.	?
2019	Lorem ipsum dolor es mit 4	Peters et al.	?
2019	Lorem ipsum dolor es mit 5	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2016	This is the study that is currently shown	Peters et al.	?
2014	Lorem ipsum dolor es mit 1	Peters et al.	?
2013	Lorem ipsum dolor es mit 2	Peters et al.	?
2015	Lorem ipsum dolor es mit 3	Peters et al.	?
2019	Lorem ipsum dolor es mit 4	Peters et al.	?
2019	Lorem ipsum dolor es mit 5	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?
2019	Lorem ipsum dolor es mit	Peters et al.	?



Extraction

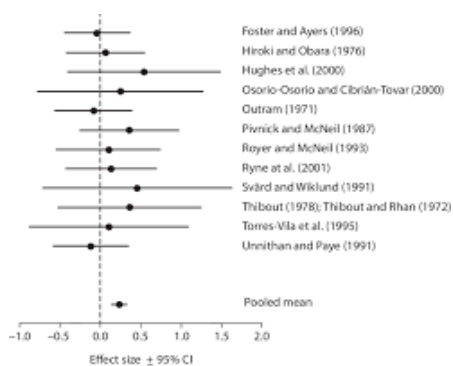


Intervention	Patients	Assessments					
		Baseline	3 Months	6 Months	Baseline	3 Months	6 Months
Control/Placebo	128	2.68	0.8	1.64	0.8	0.8	0.8
Desmopressin, 25µg	133	2.64	0.9	1.36	0.9	0.9	0.9



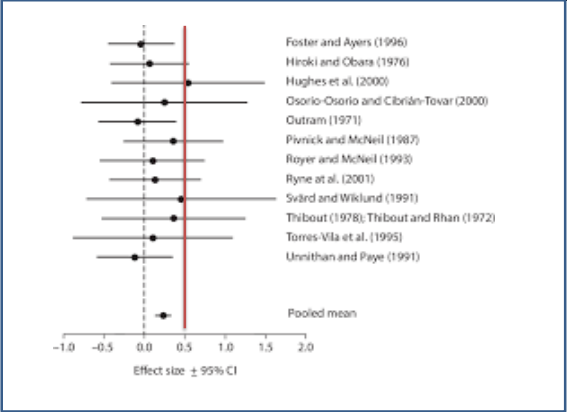
Main target areas

Go/no go decisions



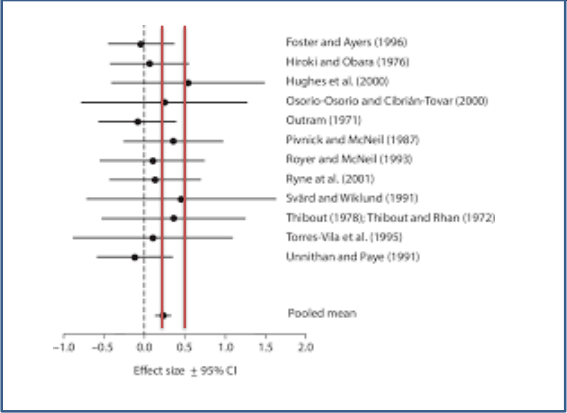
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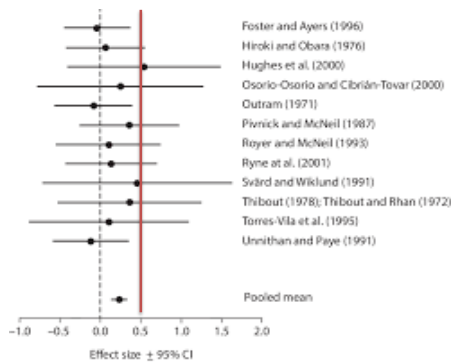
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Main target areas

Go/no go decisions



Publications



Probably the best beer in the world and surely the best health data

The health care sector looking to new types of health data to drive innovation in personalized medicine. In Denmark we have some of the best health data in the world. But how do we balance the need for better, more personalized medicine with respect for data integrity, safety and privacy?

The DataFair Team would like to invite you to a special event on

November 5, 2019 at 7 pm at
Carlsberg Conference Centre
Gamle Carlsberg Vej 15
2500 Valby

This will be a unique opportunity to sample some of the best beers in the world while discussing how to make better use of health data.



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