

**HAND ARM
VIBRATION**



**Don't forget to return
the headphones to the hostesses
at the end of the day.**

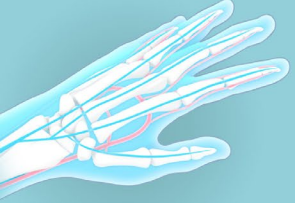
International conference
6-9 JUNE 2023
Espace Prouvé,
Nancy, France

No translation during the workshop tomorrow

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**HAND ARM
VIBRATION**



Dupuytren's Disease in Relation to Exposure to Hand-Transmitted Vibration:

International conference

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A Systematic Review and Meta-Analysis

Tohr Nilsson

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Dupuytren's Disease in Relation to Exposure to Hand-Transmitted Vibration:

A Systematic Review and Meta-Analysis

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Eirik Reiерth,

Lage Burström

proceedings MDPI

Check for updates

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following four levels:

<https://www.mdpi.com/journal/proceedings>

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Dupuytren's sjukdom i relation till exponering för handöverförda vibrationer

En systematisk kunskapsöversikt och meta-analys

Tohr Nilsson
Jens Wahlström
Eirik Reiерth
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VETENSKAPLIG SKRIFTSERIE

ARBETE & HÄLSA

Abstract in English (p. 1-4)

Original in Swedish (p. 1-46)

Dupuytren`s contracture: Fibroproliferative disease



- Palmar fascia (Dupuytren`s contracture)
- Plantar fascia fibromatosis (Ledderhose`s disease)
- Penis (Peyronie`s disease)
- Shoulder (Frozen shoulder)
- Knuckle fibromatosis (Knuckle pads)
- Plantar fasciitis (Heel spur)
- Pulmonary fibrosis
- Liver fibrosis

Diathesis for fibroproliferative disease

Fascia – "Biotensegrity"
HAND-ARM VIBRATION 6-9 JUNE 2023



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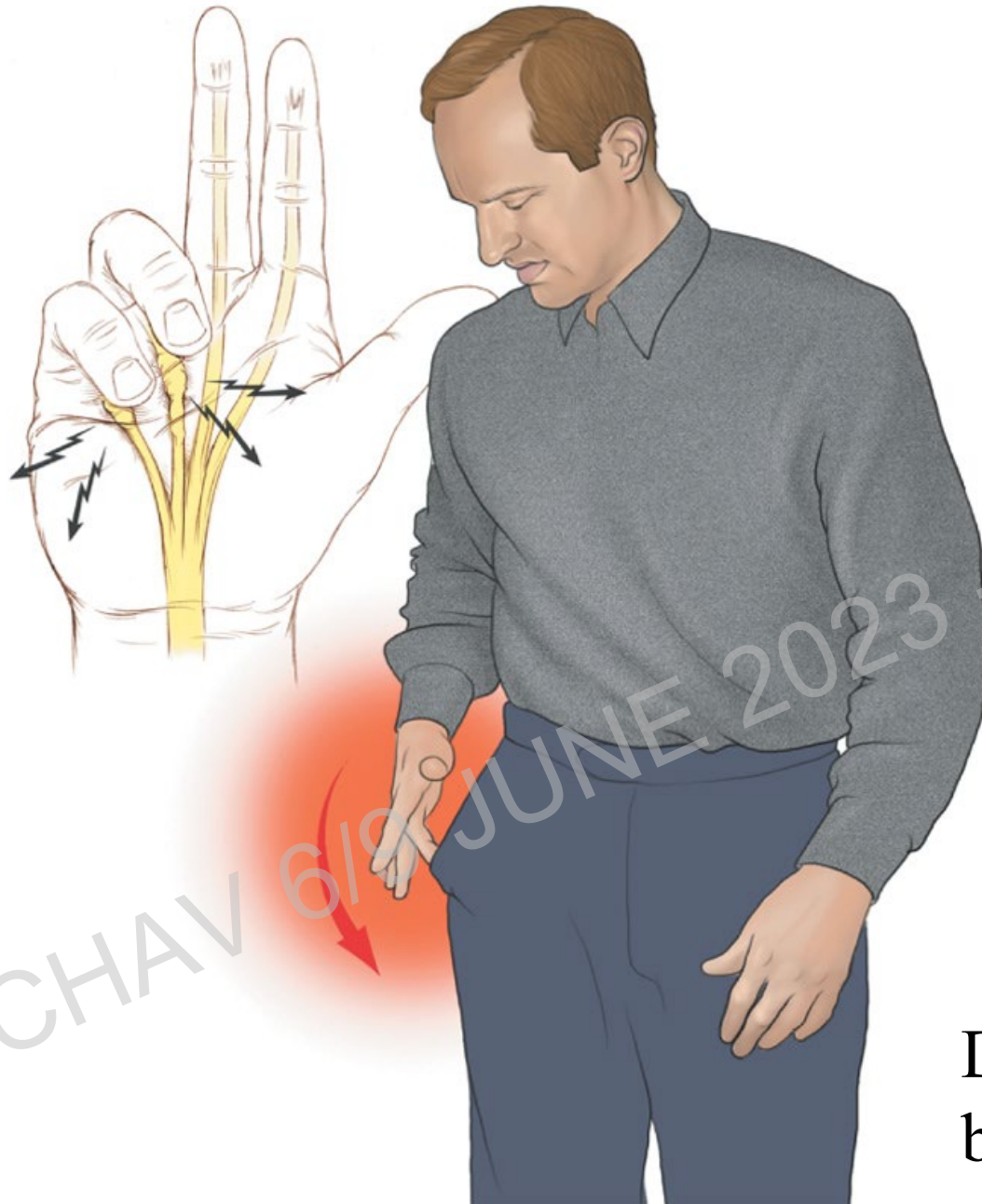
(From Kippel JH, Dieppe PA: Rheumatology, 2nd ed. London, Mosby, 1998, p 4-9.7.)



Activity reduction

- IT-society
mobile phone
computer

Disability often underestimated
by doctors!





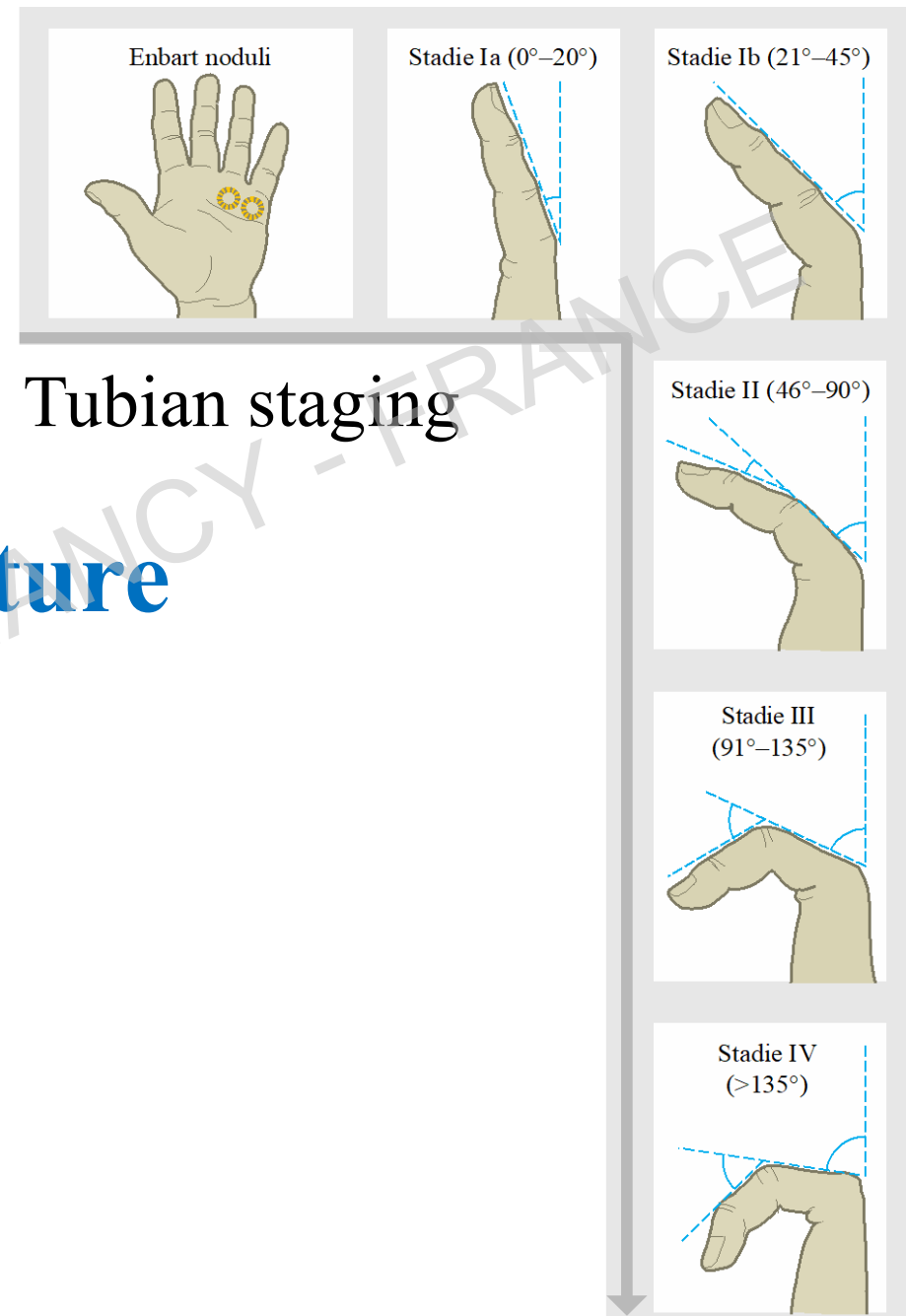
Bill Nighy

The degree of activity reduction depends on the type of work!



Disability related to contracture

- Prognosis?
- Functional impairment?
- Activity restriction??



Confounders

- Heredity
- Other fibroproliferative diseases
- Comorbidity (eg. diabetes, epilepsy)
- Tobacco
- Alcohol

Confounders, modifiers, and the Age-Period-Cohort problem

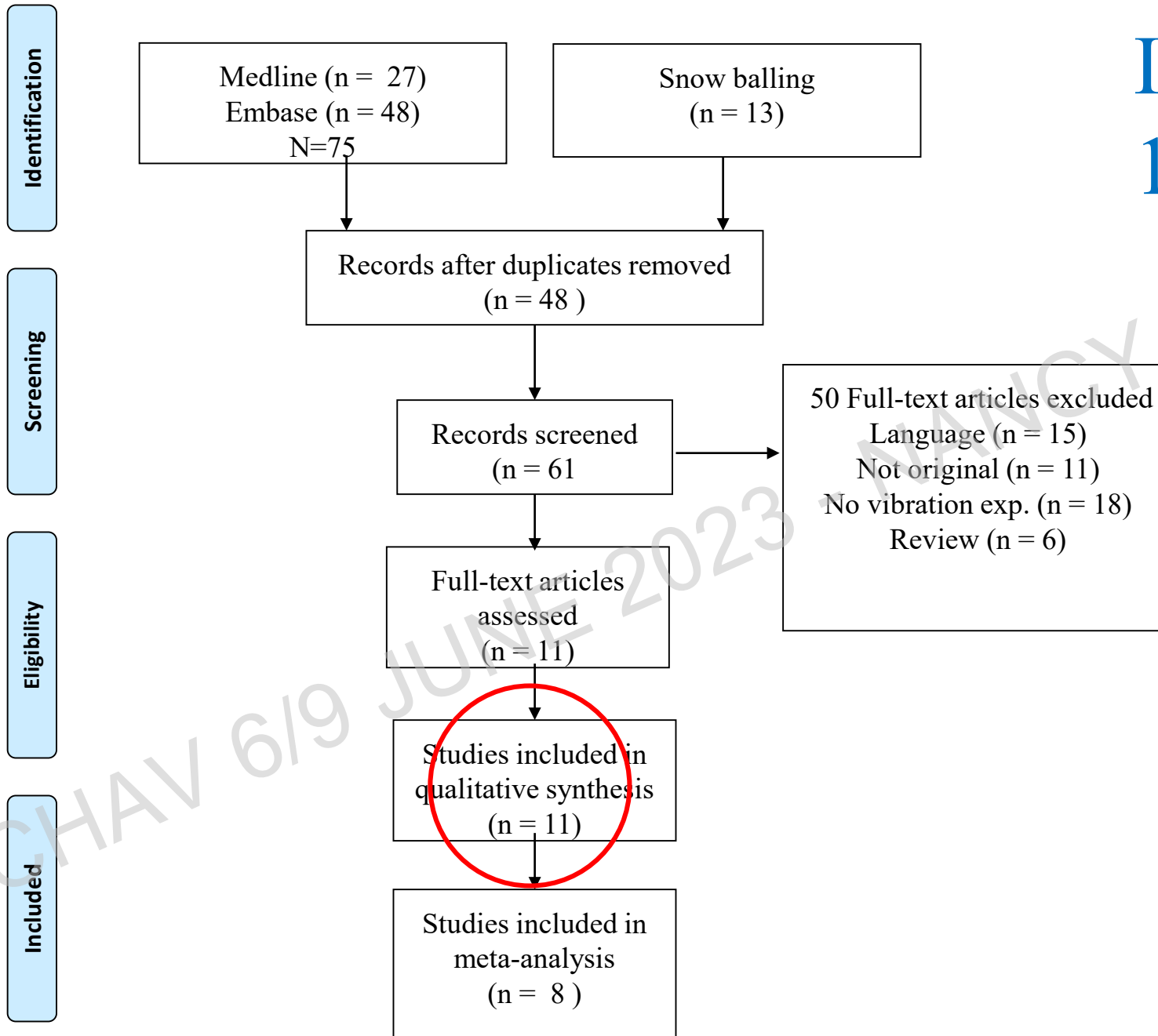


Aim

- To study the risk of Dupuytren's disease in relation to exposure of hand-transmitted vibration.
- To estimate the magnitude of such an association using statistical synthesis (meta-analysis).



Included 11 articles



Identification

Screening

Eligibility

Included

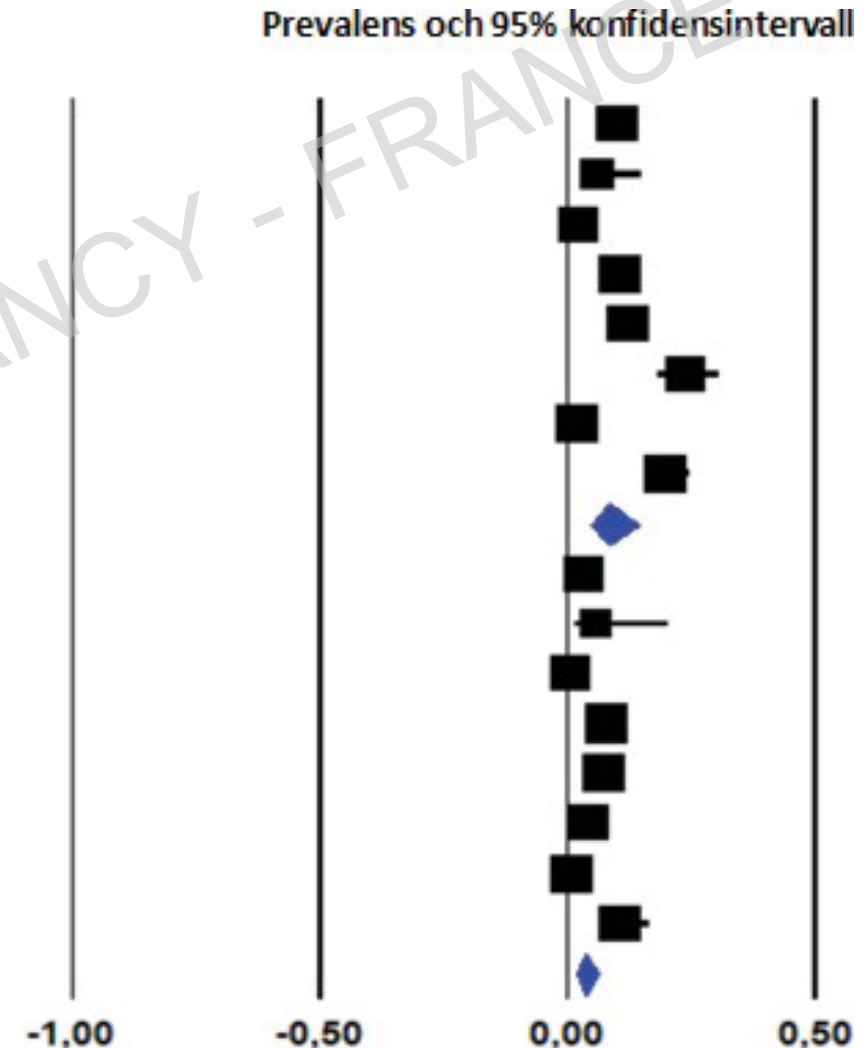


Prevalence of Dupuytren's contracture and vibration

Studie namn	Studiegrupp	Prevalens (%)	95% KI för prevalensen	
			Undre gräns	Övre gräns
Bovenzi (1994)	Exponerade	10	8	13
Dasgupta & Harrison (1996)	Exponerade	6	2	15
Descatha et al (2012)	Exponerade	2	2	4
Descatha et al (2014)	Exponerade	11	9	12
Lucas et al (2008)	Exponerade	12	10	15
Murinova et al (2021)	Exponerade	24	18	30
Palmer et al (2014)	Exponerade	2	1	3
Thomas & Clarke (1992)	Exponerade	20	16	25
Exposed		8	5	14
Bovenzi (1994)	Inte exponerade	3	2	7
Dasgupta & Harrison (1996)	Inte exponerade	6	1	20
Descatha et al (2012)	Inte exponerade	1	0	1
Descatha et al (2014)	Inte exponerade	8	7	9
Lucas et al (2008)	Inte exponerade	8	6	9
Murinova et al (2021)	Inte exponerade	4	2	8
Palmer et al (2014)	Inte exponerade	1	1	2
Thomas & Clarke (1992)	Inte exponerade	11	7	17
Not Exposed		4	2	6

Low prevalence

Low prevalence



Risk of Bias assessment (reliability)

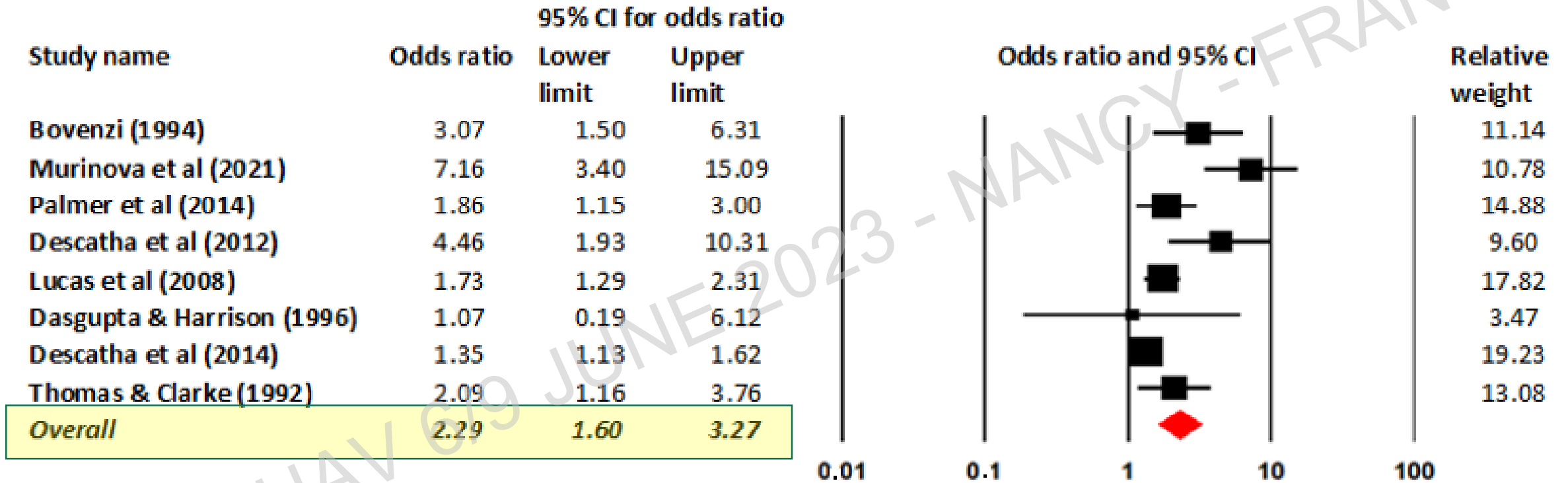
Exposure		
	Alternativ	Points
Current exposure level (m/s ²)	Objective measurements	2
	Subjective estimate	1
	Data missing	0
Previous acceleration level (m/s ²)	Objective measurements	2
	Subjective estimate	1
	Data missing	0
Previous exposure time (years)	Objective measurements	2
	Subjective estimate	1
	Data missing	0
Current exposure time (hours/day)	Objective measurements	2
	Subjective estimate	1
	Data missing	0
Previous exposure time (hours/day)	Objective measurements	2
	Subjective estimate	1
	Data missing	0

Reliability assessmnet (Risk of bias) sorted by descending reliability

Study	Design	Diagnosis	Exposure Min 1 max 10	Methods	Total
Bovenzi (1994)	Cross-section	5*	7	6	18
Morelli et al (2017)	Case-control	7**	1	8	16
Haines et al (2017)	Case-control	5**	2	8	15
Murinova et al (2021)	Cross-section	5**	3	6	14
Palmer et al (2014)	Cross-section	2*	7	4	13
Descatha et al (2012)	Cross-section	5**	1	4	10
Burke et al (2007)	Cross-section	4**	1	4	9
Lucas et al (2008)	Cross-section	4**	1	4	9
Dasgupta & Harrison (1996)	Cross-section	3*	1	4	8
Descatha et al (2014)	Cohort	1**	1	6	8
Thomas & Clarke (1992)	Cross-section	4**	1	2	7

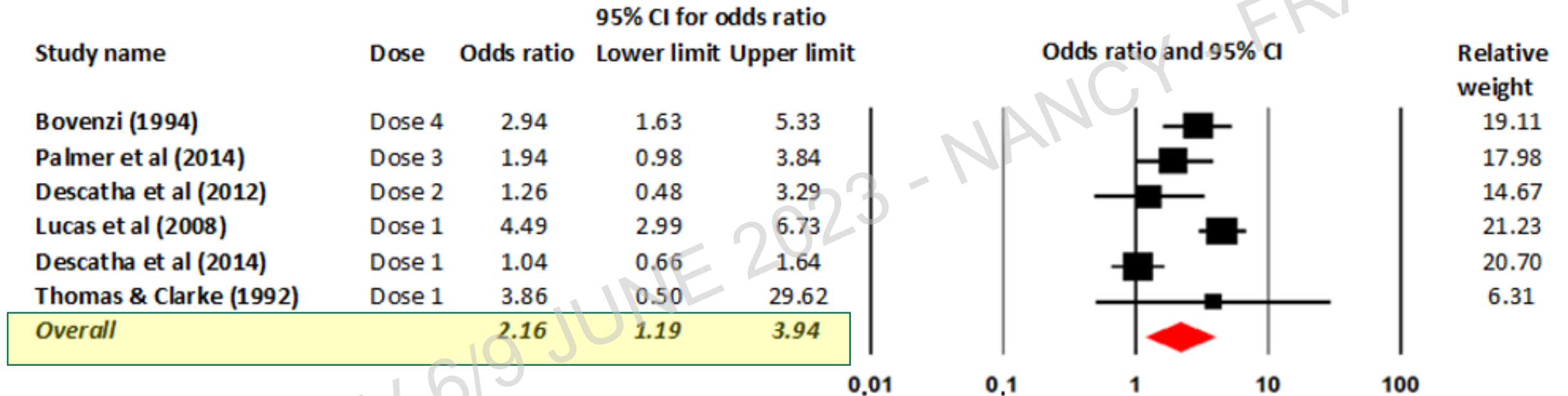
* Dupuytren`s contracture only ** Dupuytren`s disease or Dupuytren`s disease with contracture

Risk of Dupuytren`s disease and vibration*



* sorted by descending reliability

Risk of Dupuytren's disease between groups within the same study that are "low exposed" vs "high exposed" *



This analysis limits the influence of confounding factors

* sorted by descending reliability

Conclusions: Dupuytren's contracture and vibration

- A risk (OR) for Dupuytren's disease for vibration exposed of **2.28** (95% CI 1.60 - 3.27).
- High-exposed relative to low-exposed gave a risk (OR) of **2.16** (95% CI 1.19 - 3.94)

The combined results from the narrative and statistical synthesis support the conclusion that work with vibrating machines may constitute a single risk factor for Dupuytren's disease.

- Given that the scientific basis is small, that there is an interaction between age and exposure, and that there may be individual differences in predisposition.

The findings support an association between vibration and Dupuytren's disease.

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UMEÅ UNIVERSITY



VISARE
NORR



Thank you!

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