

Should we consider Dupuytren's contracture as work-related? A review and meta-analysis of an old debate



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Introduction

- Since its description by Guillaume Dupuytren in 1831, a controversy has existed regarding whether acute traumatic injury or cumulative biomechanical work exposure can contribute to the development of this disorder.
- An exhaustive review was published in 1996 and concluded that there is good support for an association between vibration exposure and Dupuytren's disease, but a weak association with forceful work.

Liss GM, Stock SR. Can Dupuytren's contracture be work-related?: review of the evidence. Am J Ind Med 1996; 29:521-532.

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Introduction

- However, since this comprehensive review, occupational exposure and vibration have not been considered by many clinicians as potential risk factors for Dupuytren's contracture
- A meta-analysis was undertaken on epidemiological studies in order to assess any association between Dupuytren's contracture and work exposure

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Method

- Using the key words: "occupational disease", "work" and "Dupuytren contracture" without limitation on language or year of publication, epidemiological studies were selected from four databases (Pub-Med, Embase, Web of science, BDSP) after two rounds (valid control group, valid work exposure).

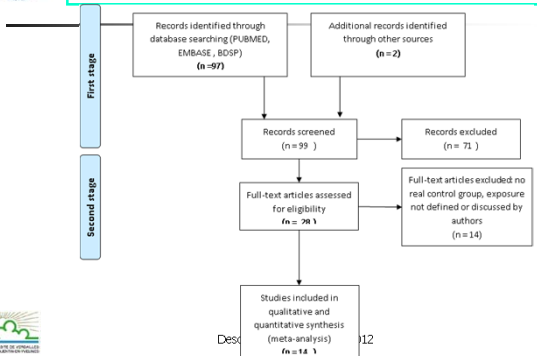
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Method

- A quality assessment list was constructed and used to isolate papers with high quality methodological criteria (scores of 13 or above, HQMC). Relevant associations between manual work, vibration exposure (at work) and Dupuytren's contracture were extracted from the articles and a metarisk calculated using the generic variance approach (meta-odds ratios, meta-OR).

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Results



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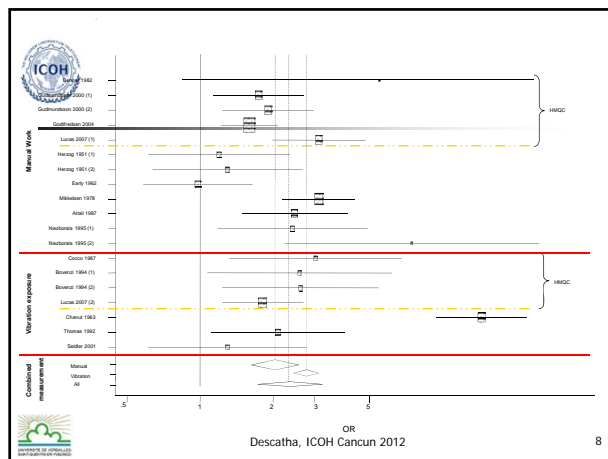
    graph TD
      subgraph First_stage [First stage]
        A[Records identified through database searching (PubMed, Embase, BDSP) (n=97)]
        B[Additional records identified through other sources (n=2)]
      end
      A --> C[Records screened (n=99)]
      B --> C
      C --> D[Records excluded (n=71)]
      C --> E[Full-text articles assessed for eligibility (n=281)]
      E --> F[Full-text articles excluded: no real control group, exposure not defined or discussed by authors (n=14)]
      E --> G[Studies included in qualitative and quantitative synthesis (meta-analysis) (n=14)]
  
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Results

- From 1951 to 2007, 14 epidemiological studies (including 2 cohort studies, 3 case-control studies, and 9 cross-sectional studies/ population surveys)
- Two different results could be extracted from five studies (based on different types of exposure), leading to 19 results, 12 for manual work (9 studies), and 7 for vibration exposure (5 studies). Six studies met the HQMC, yielding 9 results, 5 for manual work and 4 for vibration exposure. Five studies found a dose-response relationship.

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Results

- Manual**
Meta-OR = 2.02 [1.57 ; 2.60] (HMQC = 2.01 [1.51 ; 2.66])
- Vibrations**
Meta -OR = 2.88 [1.36 ; 6.07] (HMQC = 2.14 [1.59 ; 2.88])

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Discussion

- Limitations**
 - publication bias
 - selection of papers
 - 2 longitudinal studies
- Strength**
 - Method
 - Comparison with Liss and Stock review

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Conclusion

- These results support the hypothesis of an association between **high levels of work exposure** (manual work and vibration exposure) and Dupuytren’s contracture in certain case
- End of debate?

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