



Investigation of echogenic surface enhancements for improved needle visualization in ultrasonography: A PRISMA systematic review.

Hovgesen, Caroline Harder; Wilhelm, Jens E.; Vilmann, Peter

Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

[Link back to DTU Orbit](#)

Citation (APA):

Hovgesen, C. H., Wilhelm, J. E., & Vilmann, P. (2017). *Investigation of echogenic surface enhancements for improved needle visualization in ultrasonography: A PRISMA systematic review.*. Abstract from DMTS Annual meeting, Vingsted, Denmark.

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

SKABELON
Foredragskonkurrence



DMTS landsmøde

Forfatter/Kontakt person: Caroline Harder Hovgesen
Adresse: Akademivej 100B, 203, 2800 Kongens Lyngby
Tlf. nr.: 61261164
E-mail: caroline.harder@gmail.com

Slet eksempel og skriv abstrakt i testruden: Alle forfattere skal anføres; foredragsholderen skal understreges, max 250 ord:

Investigation of echogenic surface enhancements for improved needle visualization in ultrasonography: A PRISMA systematic review.

Author: Caroline Harder Hovgesen*; Jens E. Wilhjelm*; Peter Vilmann, MD, DSc**

*Technical University of Denmark, Department of Electrical Engineering

** Institute for Clinical Medicine, Herlev, Denmark

Abstract: *Background:* Visualization of standard needles at steep angles in clinical Ultrasound (US) images is a problematic and important concern. This systematic review evaluates published studies that investigate echogenic needles and how surface enhancements can improve needle visualization. *Method:* A systematic search was performed in five databases: Cochrane Library, Embase (through Ovid), MEDLINE (through PubMed), Scopus, and Web of Science from inception to April 12th, 2017. Each search was based on the search terms: ultrasound, needle, visualization, and comparison, with related synonyms and spelling matters. *Results:* 29 studies were identified and included in the qualitative synthesis. *Conclusion:* Overall, studies agree, that echogenic surface enhancements improve needle visualization in US images at steep angles regardless of target, applied US device and probe, operators, assessors, and methods of assessment.