

What are the effects on hand function for individuals having endocrine therapy for their cancer: A Scoping Review

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Introduction

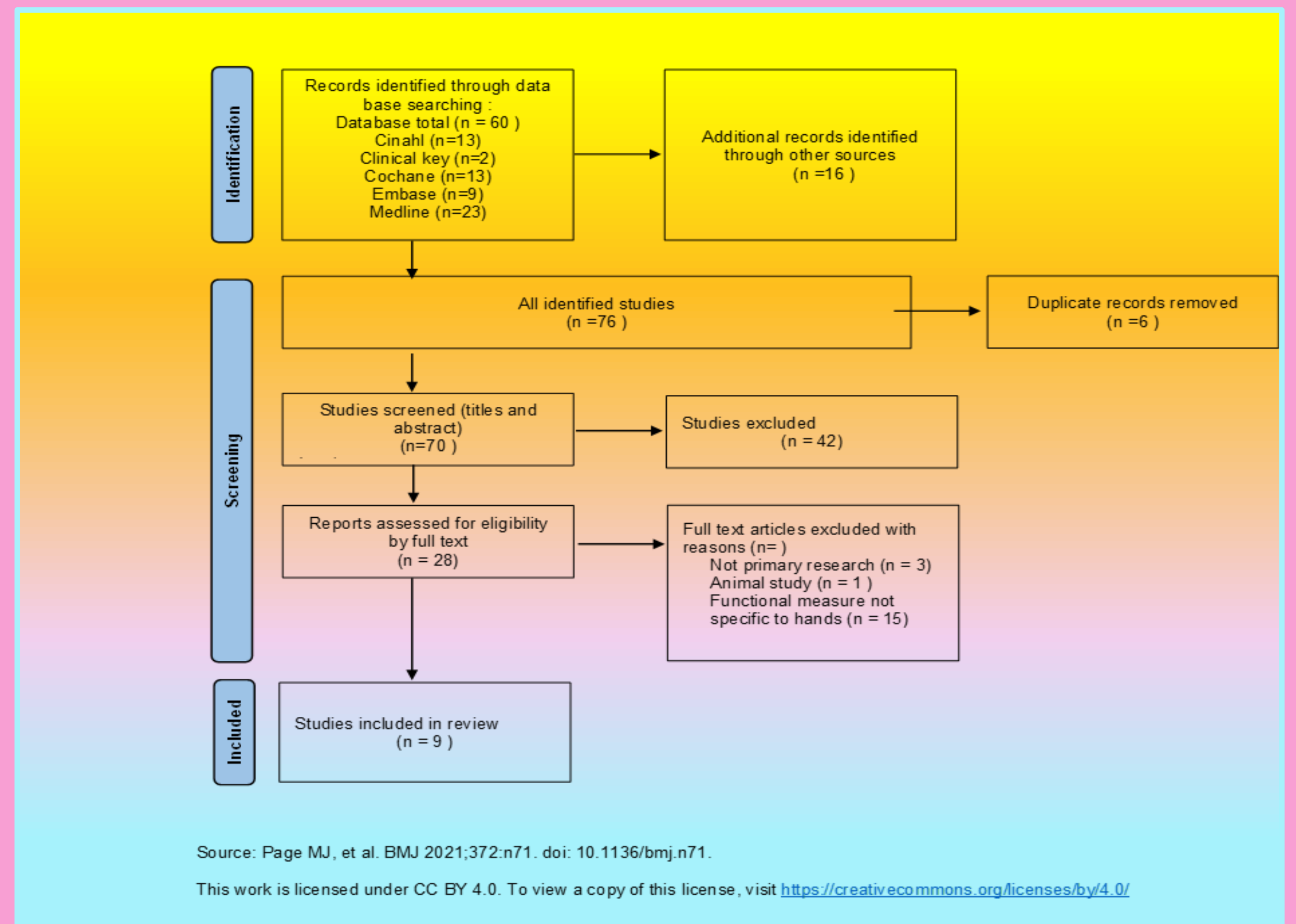
Aromatase inhibitors (AIs) are important in the treatment of hormone-receptor positive cancers. It is well documented that AIs can cause musculoskeletal side effects which can affect the hands.^{1 2} However it is unclear how these side effects affect hand function. This paper aims to capture what functional hand outcome measures have been used to observe the effect AIs have on hand function.

Objective

The objective of this scoping review is to identify which hand specific functional measures have been used to understand the effect AIs have on hand function. It will also discuss whether the outcome measures are sufficient in representing how hand function is affected by utilising the International Classification of Functioning core sets for hand conditions.³

Method

- Scoping review of the literature was conducted in December 2023.
- Included studies with participants over the age of 18 years receiving endocrine treatment for their cancer.
- Original articles in English from 2000 onwards were included.



	Inclusion criteria	Exclusion criteria
Population	<ul style="list-style-type: none"> • Studies observing participants over the age of 18 years. • Studies observing men and women receiving AI's for any type of cancer 	<ul style="list-style-type: none"> • Studies discussing patients undergoing chemotherapy specific treatment or other types of cancer treatment
Intervention	<ul style="list-style-type: none"> • Approved AI medication- Anastrozole, Letrozole and Exemestane. • AI's taken for a minimum of 2 months. 	<ul style="list-style-type: none"> • Studies that only discuss Tamoxifen as an intervention for treatment
Outcome	<ul style="list-style-type: none"> • Studies observing functional outcome measures related to the hand. • Studies observing patient beliefs regarding hand function 	<ul style="list-style-type: none"> • Studies that do not discuss functional outcome measures. • Studies that do not report on outcome measures related to hand function
Other	<ul style="list-style-type: none"> • Peer reviewed articles. 	<ul style="list-style-type: none"> • Poster presentations • Systematic review



Results

- Of the 76 records identified, 9 studies met the inclusion criteria.
- From the 9 studies, there were 6 different outcome measures used to quantify hand function
- The *Modified Sphygmomanometer* and *Jamar Hydraulic Hand Dynamometer* were the most frequently used

Name of study	Outcome measure					
	Jamar hydraulic hand dynamometer	Australian Canadian Osteoarthritis Hand Index (AUSCAN)	The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)	Modified sphygmomanometer	Dutch arthritis impact measurement scale (AIMS)	Physical domain of the Patient-Reported Outcomes Measurement Information System computerized adaptive test (PROMIS-CAT)
Boonstra et al (2013)	✓				✓	
Lintermans et al (2014)				✓		
Lintermans et al (2011)				✓		
Lintermans et al (2012)				✓		
Martinez et al (2021)			✓			
Morales et al (2008)				✓		
Seibert et al (2024)	✓					✓
Singer et al (2012)	✓	✓				
Sitlinger et al (2019)	✓					

44% of studies measured hand function in terms of 'grip strength' only

Patients' beliefs were not explored

4/6 outcome measures considered activity

Outcome measure	Brief international classification of functioning Core sets for hand conditions (2009) and code																								
	Functional function (B12)	Strength function (B22)	Speed, accuracy, precision, temperature and other manual (B24)	Stability of grip (B26)	Mobility of joint functions (B28)	Stability of joint functions (B29)	Muscle power functions (B30)	Control of voluntary movement (B32)	Protective functions of the skin (B33)	Force exerted and manual strength (B34)	Structure of hand/wrist region (B35)	Structure of upper extremity (B36)	Control of body posture (B37)	Use of hand and wrist (B40)	Hand and forearm posture (B41)	Self care (B5)	Domestic life (B6)	Work and employment (B66)	Education and training (B67)	Work and employment (B68)	Education and training (B69)	Support and education (B7)	Services systems and policies (B7)		
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Conclusion

- Against the International Classification of Functioning core sets for hand conditions, the outcome measures identified did not always consider the complexity of hand function
- This limits the understanding of how AIs affect hand function for individuals living with cancer.
- Further research is required to gain insight into how hand function is affected by AIs and the hand therapists' role in their rehabilitation

Acknowledgements

We would like to thank the National Institute of Health Research for funding time to conduct this scoping review

What's next...? "Time to listen"

Embedded consultation- create an advisory group of people to discover how their hands are affected to shape and influence through relevant perspective.

From the Patient and Public involvement- discover the most relevant outcome measure that measures hand function

Authentic co-design research looking at the effect of hand function for patients taking AIs for their cancer