

A GRIP FORCE OVER 104 NEWTON IS ASSOCIATED TO LESS ACTIVITY LIMITATIONS AND PAIN IN WOMEN WITH HAND OSTEOARTHRITIS

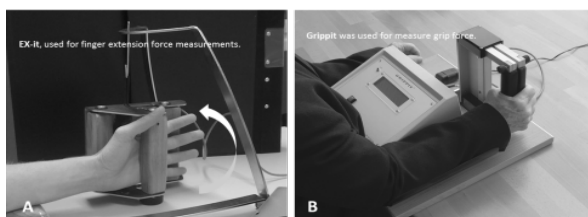
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OBJECTIVE

Was to measure impairment in terms of grip force, extension force, pain and stiffness and to assess patient-reported activity limitations in order to determine a threshold value of grip force.

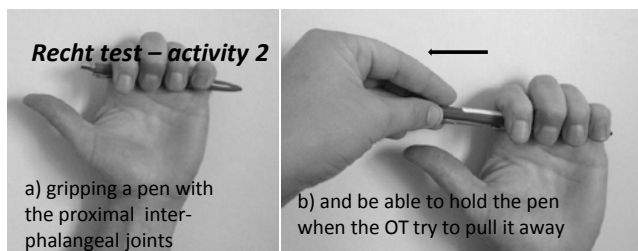
METHOD



The study comprised women with hand OA (n= 53, age 69 ± 9 (53-88) years). Grip force was measured with the **Gripfit** instrument (B), the extension finger force was measured with a **Ex-it** (A) (Newton, N), **pain** and **stiffness** were graded using a visual analogue scale ,0-100 (best to worst). Hand activities were evaluated with **Recht's test** (3 activities) and with the patient-reported **Quick Disabilities of the Arm Shoulder and Hand (DASH) Questionnaire**. (11 items). The results are presented as mean and SD, measured on dominant hand.

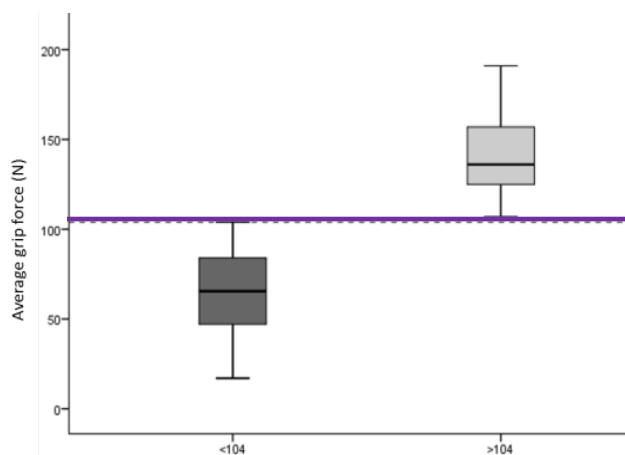
RESULTS

The most difficult part of the Recht test was the second activity, gripping a pen with the proximal interphalangeal joints; **66%** failed using their dominant hand and this was related to grip force.



CONCLUSION

A grip force of 104 N appears to provide a good indication for associations between hand function and hand activities. This threshold value could be useful in hand training, working outside home and designing of technical equipment.



Women with a grip force below 104 N had significantly greater difficulties performing hand activities, and more pain and stiffness than women with a grip force above 104 N.

	Flexion ≤ 104N n = 35	Flexion > 104N n = 18	Test of differences
Peak extension force (N)	24 ± 10	28 ± 9	t=1.12, p=269
Average extension force (10 sec, N)	18 ± 9	23 ± 10	t=1.86, p=069
Peak grip force (N)	83 ± 34	174 ± 33	t=9.83, p<0.001
Average grip force (10 s, N)	64 ± 26	145 ± 31	t=10.42, p<0.001
QuickDASH	49 ± 18	32 ± 16	t=3.63, p<0.01
Recht test ii	no	yes	
VAS Pain	53 ± 23	43 ± 23	t=1.62, p=0.112
VAS Stiffness	52 ± 24	39 ± 26	t=1.84, p=0.072
Age (years)	71 ± 9	67 ± 8	t=1.99, p=0.052
Diagnosis duration (years)	3.1 ± 3.4	3.3 ± 2.9	t=-0.20, p=0.841