

The Leeds dactylometer

Dactylitis has been defined as “uniform swelling such that the soft tissues between the metacarpophalangeal and proximal interphalangeal, proximal and distal interphalangeal, and/or distal interphalangeal joint and digital tuft are diffusely swollen to the extent that the actual joint swelling could no longer be independently recognised.”(1) Dactylitis is a hallmark clinical feature in patients with spondyloarthropathies (SpA) and is commonly observed in psoriatic arthritis.

Dactylitis occurs in 16-48% of cases of psoriatic arthritis (PsA). Acute dactylitis has been shown to be a clinical indicator of disease severity in PsA; conversely, chronic, non-tender diffuse dactylitic swelling may be less clinically significant (2). Dactylitis is due to inflammation in the majority of tissues in the digit - the tendon sheaths, joints, bones and soft-tissues in between (3). Recurrent dactylitis, often in the same digit(s), may be the only clinical manifestation of PsA.

The only validated tool for assessing dactylitis is the Leeds dactylometer (4). The validity of this instrument has been assessed using the OMERACT filter. The instrument and tool have demonstrated good evidence of responsiveness in a clinical trial (5). In addition, the instrument incorporates a definition of dactylitis (a 10% difference in the ratio of circumference of the affected digit to the contralateral digit). Using the contralateral digit as a normator enables any inter-individual variation in measurement technique to be minimised. The instrument comes with an assessment sheet (see reverse) and an Excel spreadsheet which provides automatic computation of the Leeds Dactylitis Index.

How to use the Leeds dactylometer

1. The fingers and toes are visually inspected by the examiner. Those digits which look dactylitic are measured.
2. Slip the loop of the dactylometer around the base of the digit adjacent to the web space. Pull the indicator strip tight so that the base of the digit blanches slightly (see illustration). The collar of the device should be firmly pressed against the base of the digit, as illustrated.
3. Record the circumference in mm on the dactylometer record sheet
4. Repeat the procedure on the contralateral digit

5. If both ipsilateral and contralateral digits are thought to be dactylitic then use the reference range (given at the foot of the sheet) as the comparator.
6. Squeeze the digit at the level of the proximal phalanx and record the tenderness score as indicated
7. Calculate the total score as indicated or enter the values in the Excel spreadsheet.



Reference List

- (1) Rothschild BM, Pingitore C, Eaton M. Dactylitis: implications for clinical practice. *Seminars in Arthritis & Rheumatism* 1998; 28(1):41-47.
- (2) Brockbank JE, Stein M, Schentag CT, Gladman DD. Dactylitis in psoriatic arthritis: a marker for disease severity? *Ann Rheum Dis* 2005; 64(2):188-190.
- (3) Healy PJ, Groves C, Chandramohan M, Helliwell PS. MRI changes in psoriatic dactylitis extent of pathology, relationship to tenderness and correlation with clinical indices. *Rheumatology* 2008; 47(1):92-95.
- (4) Helliwell PS, Firth J, Ibrahim GH, Melsom RD, Shah I, Turner DE. Development of an assessment tool for dactylitis in patients with psoriatic arthritis. *Journal of Rheumatology* 32(9):1745-50, 2005.
- (5) Healy PJ, Helliwell PS. Measuring dactylitis in clinical trials: which is the best instrument to use?[see comment]. *Journal of Rheumatology* 34(6):1302-6, 2007.

