

Resource

The DAS28 score

The DAS28 is a measure of disease activity in rheumatoid arthritis (RA). DAS stands for 'disease activity score', and the number 28 refers to the 28 joints that are examined in this assessment.

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There are a wide range of measures of disease activity in RA including:-

- examination of your joints for swelling and tenderness,
- global scores of pain and overall status,
- [blood markers of inflammation \(e.g. ESR and CRP\)](#)
- questionnaires (e.g. the HAQ which assesses function),
- X-rays and newer imaging techniques, such as ultrasound and MRI.

The DAS28 is a composite score derived from 4 of these measures. This '28' version is a simplification of the original DAS score, which requires 44 joints to be counted. Other versions of the DAS28 allow the CRP to be used instead of the ESR, or the omission of either. To calculate the DAS28 your rheumatologist or specialist nurse will:-

1. count the number of swollen joints (out of the 28),
2. count the number of tender joints (out of the 28),
3. take blood to measure the erythrocyte sedimentation rate (ESR) or C reactive protein (CRP),
4. ask you (the patient) to make a 'global assessment of health' (indicated by marking a 10 cm line between very good and very bad).

These results are then fed into a complex mathematical formula to produce the overall disease activity score. A DAS28 of greater than 5.1 implies active disease, less than 3.2 low disease activity, and less than 2.6 remission.

The relevance and importance of DAS28 in your treatment pathway.



The HAQ questionnaire assesses function

The DAS score was originally developed by Dutch rheumatologists for the purpose of standardising and comparing results in clinical trials of new drugs for treating RA. With time the DAS28 has also been applied to routine clinical practice. In the UK a score equal or greater than 5.1 is one of the mandatory criteria required to be eligible for NHS funded treatment with biologic or targeted synthetic (including anti-tumour necrosis factor and JAK inhibitor) therapies. You will therefore have had at least one DAS28 score if you have been started on any biologic treatments. You will continue to have the DAS28 score measured at least every 6 months as a persistent fall by at least 1.2 points from your pre-treatment DAS28 score is required to allow continuation of treatment.

An important relatively new principle of treating rheumatoid arthritis is called 'treat to target'. This involves frequent assessment of RA disease activity (e.g. every month) followed by a change in treatment (higher doses or new drugs) until disease activity is brought down to an agreed target. One such target might be a DAS28 score of less than 2.6 (indicating remission) or less than 3.2 (low disease activity). Other targets might be a low CRP or ESR.

How is DAS28 used in clinical practice

Whilst it is appealing to be able to calculate a number on a measured scale to indicate how active or well-controlled your RA is; the DAS28 score has not been adopted in day-to-day (non-biologic) practice by all rheumatologists in the UK. This is in part because there are some pitfalls in the interpretation of the score. For example, if you never have a very high ESR blood result (even during a flare), or if your RA particularly affects the feet (these are not included in the 28 joint count) the score may be misleadingly low. Alternatively, if you always have many tender joints when all other markers of inflammation and RA disease activity are quiet, the score may be misleadingly high. It can also be difficult to decide whether an individual joint is swollen or tender, and this uncertainty may lead to misleading variability in the score when assessed by the same person on different occasions and also when assessed by several people on one occasion. When the DAS28 result seems problematic, such as a discrepancy between the ESR and the joint counts, it is possible to use an ultrasound to examine your joints to determine whether the rheumatoid inflammation is being

suppressed, and therefore whether or not a change in treatment is required.



It can be difficult to decide whether an individual joint is swollen and tender

Nevertheless, as the DAS28 score is one of the best measures we have of RA disease activity, it is very likely that your rheumatology department will measure your DAS28 routinely, and use this as one of the reasons to recommend a change in treatment. This can apply to either an increase or a decrease in therapy in the light of a high or low score, respectively. A persistently high score has been found to increase the likelihood of progressive joint damage, even in patients who appear to be doing well. Therefore, although not a perfect measure of disease activity, it might be useful to ask 'What's my DAS28 ?' next time you visit the rheumatology department.

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