

Interpretation of Anti-Nuclear Antibody (ANA) results

- Screening for anti-nuclear antibodies can be valuable where there is a clinical suspicion of connective tissue disease e.g. SLE, Sjogren's syndrome. Systemic sclerosis, Myositis.
- The ANA screen is performed by indirect immunofluorescence. Positive results are reported as 1) the immunofluorescence pattern (eg Homogenous, Speckled etc) and 2) the titre to indicate if this is a high positive or low positive ANA result.
- Samples are initially diluted to a 1 in 80 dilution (titre 1:80). Positive results are further diluted to a titre of 1:160, 1:320 and a final titre of 1:640.
- **The higher the titre where a positive result can still be detected on the ANA screen, the more positive the test is. This is a semi-quantitative result.**
- Autoantibodies to multiple nuclear antigens can result in a positive ANA test. A number of the most relevant autoantibody specificities in various connective tissue diseases have been defined and include autoantibodies to double stranded (ds) DNA and a number of extractable nuclear antigens (ENA) (Ro, LA, Sm, RNP, Jo-1, Scl-70).
- All positive ANA results will undergo additional testing for anti-dsDNA and -ENA antibodies. If anti-dsDNA and/or ENA antibody are positive, the patient should be reviewed and referred to Rheumatology.
- Where there is strong clinical evidence for connective tissue disease and ANA tests are negative, consider Advice and Guidance to Rheumatology or refer.
- **An ANA titre less than 1:160 (i.e. 1 in 80) is regarded as a weak positive ANA.**
- Weak positive ANA can occur in a variety of situations where the immune system is activated e.g. in infection, malignancy or other inflammatory disorders. ANA can also be detected in healthy controls and the prevalence increases with age and if female.
- The combination of weak positive ANA and no or few signs or symptoms of connective tissue disease make the likelihood of connective tissue disease small. These patients are also usually negative for anti-dsDNA and ENA Ab.
- If ANA titre is 1:160 or greater, but dsDNA and ENA Ab are negative AND the patient has no or few signs or symptoms of connective tissue disease there is a reduced likelihood of connective tissue diseases.
- Consider re-evaluating these patients annually, or sooner should the patient develop clinical symptoms/signs of connective tissue disease.