

May 05/11: The ANA test shows low evidence in pediatric routine screening.

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**Key messages:**

- *The ANA test is often used inappropriately and is therefore useless in pediatric primary care.*
  - *If ordered, low titers <1:640 can be ignored for children not showing features of systemic illness.*
  - *Recommendation of the authors: only test children with symptoms due to SLE or MCTD; ANA tests with titers >1:160 should be confirmed by anti-dsDNA and anti-ENA tests.*
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**Review for the generalist: The antinuclear antibody test in children - When to use it and what to do with a positive titer**

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**Background:** The indirect immunofluorescence (IIF) test to determine antinuclear autoantibodies (ANA) has become a much overused test in pediatric primary care. It is indiscriminately used as part of the rheumatologic work-up for children showing up with any musculoskeletal or rheumatologic symptom. The evidence of such a test and a positive test result is questionable.

**Summary:** Reviewing the studies dealing with ANA testing of pediatric populations reveals that the ANA test is not useful for an early diagnosis of children with rheumatic findings due to its low sensitivity and specificity. Positive ANA tests are found frequently in a pediatric hospital population. The presence of ANA only rarely predicts occult SLE or other connective tissue diseases although a negative ANA test makes the diagnosis of these diseases unlikely. Even the information about the pattern does not improve the utility significantly.

The authors recommend to use the test only for children with symptoms due to SLE or MCTD and to order anti-dsDNA and anti-ENA tests only for a positive ANA test showing titers >1:160.

**Conclusions:** The ANA test shouldn't be ordered routinely for children with musculoskeletal complaints. The high false-positive rate and the resulting little clinical utility limit the use of the test for the diagnosis of SLE, MCTD and similar systemic illnesses. Because the ANA test is frequently positive in non-autoimmune diseases low titers of <1:640 should be ignored except in children showing signs for systemic diseases.

The authors propose a cost-effectiveness study to evaluate if the ANA test can be replaced by testing for anti-dsDNA and anti-ENA. The replacement may additionally avoid needless venipuncture pain, unnecessary referrals, and significant parental anxieties.

**Comment:** This review underlines that the ANA test cannot be the method of choice in pediatric routine screening of children with musculoskeletal or rheumatologic symptoms. The EliA CTD Screen allows the initially screening for anti-dsDNA and the fourteen most prevalent anti-ENAs in one assay giving clear and reliable results.

