

# Joint Pain & Connective Tissue Disorders

## Test for confirmation of CTD & Autoimmune Disorders


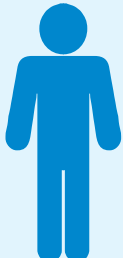


Arthritis (Joint Pains) presents as swelling, pain, stiffness and decreased range of motion in joints. Symptoms may be mild to severe and may stay for years. Severe arthritis can result in chronic pain, inability to do even daily activities. There are more than 100 types of arthritis and related conditions. It is most common among women and old age. Arthritis can cause permanent joint changes such as knobby finger joints. Some types of arthritis also affect the heart, eyes, lungs, kidneys and skin as well.

### Autoimmune Disease & Relevant Antigens

Systemic lupus erythematosus (SLE)	dsDNA, Histones, Ku, PCNA, Ro-52, Nucleosomes, Ribosomal Protein, Sm, SS-A native, SS-B
Lupus erythematosus neonatal	SS-A native, SS-B
SLE - Drug Induced	Histones
Sjogren's syndrome	SS-a native (60kDa), SS-B, Ro-52 recombinant
Systemic Sclerosis (SSc)	AMA-M2, Ku, Ro-52 recombinant, Sci-70
SSc - Diffuse & Limited forms	Sci-70, Centromere A
Dermatomyositis Adult/ Juvenile	Mi-2
Idiopathic Inflammatory myopathy	Ro-52 recombinant
Myositis (Polymyositis, Dermatomyositis, Idiopathic)	Ku, Jo-1, Mi-2
Polymyositis / SSc overlap syndrome	PM-Sci100
Mixed connective tissue disease	RNP/Sm
Primary biliary cirrhosis & other chronic liver diseases	AMA-M2, Centomere B
RA	Histones

### Risk of Common Autoimmune Diseases

	Women	Risk	Men	
	1 in 12	Over all risk	1 in 20	
	1 in 28	Rheumatoid Arthritis	1 in 59	
	1 in 42	Polymyalgia Rheumatica	1 in 59	
	1 in 100	Giant Cell Arteritis	1 in 200	
	1 in 111	Lupus	1 in 500	
	1 in 125	Sjogrens Syndrome	1 in 2500	
	1 in 200	Psoriatic Arthritis	1 in 167	
	1 in 1000	Ankylosing Spondylitis	1 in 167	
				

### Available Joint Pain Related Tests

- ✓ **Screening Tests:**  
 CBC | ESR | Bl. Glucose | Uric Acid | Rheumatoid Factor | Anti CCP
- ✓ **Further Tests:**  
 Calcium | Phosph | Alk. Phosphatase | CRP | ASO | PTH | Vit D
- ✓ **Other Special Tests:**  
 ANA-Elisa | ANA-IIF | ANA/ENA Profile (LIA-17 Antigens) | HLA B27-PCR





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### ANA ELISA | ANA IIF | ANA/ ENA Profile | HLA-B27 PCR

Over the last ten years, ANA testing has experienced significant advances. Improvements in automation, the development of new methods and a clearer understanding of the diagnostic utility of this testing have widened the options for laboratories. Following methodologies to detect antinuclear antibodies are available with us:

#### ANA by ELISA

Antinuclear antibody (ANA) tests identify antibodies present in serum that bind to autoantigens present in the nuclei of mammalian cells using the enzyme-linked immunosorbent assay (ELISA) method. It can be used for the qualitative/cumulative in vitro assay for human autoantibodies of the immunoglobulin class IgG against 27 different antigens.

#### ANA by IIF

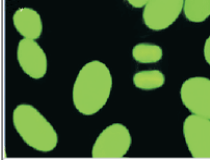
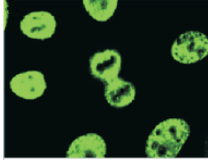
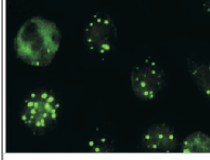
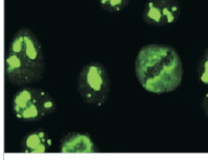
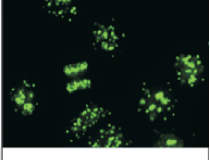
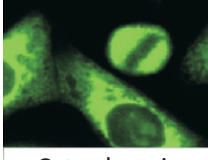
Indirect immunofluorescence antibody technique, having a high sensitivity, is now considered the Gold standard for screening/detection, expressed in terms of the pattern and intensity of fluorescence and the titer of a positive test. It is possible to detect many autoantibodies using the HEP-2 cells. This technique has high sensitivity (95%–100% for the diagnosis of SLE), and the staining pattern may provide a clue to the diagnosis.

#### ANA/ENA Profile by LIA

Line immunoassay technique is used for semi-quantitative detection of human autoantibodies of the IgG class to 17 different antigens: Mi-2, Ku, nRNP, Sm, SS-A (SS-A native and Ro-52), SS-B, Scl-70, PM-Scl, Jo-1, CENP B, PCNA, dsDNA, nucleosomes, histones, ribosomal P-protein & AMA-M2. This test may be performed on ALL POSITIVE serum samples for better semi-quantitative evaluation.

#### HLA B27 PCR

Test for detection of a unique HLA-B27 antigen using PCR technique is available. This antigen is a protein found on the surface of white blood cells fighting infection. The most common autoimmune disorders connected with HLA-B27 antigen are Ankylosing spondylitis - a form of arthritis that affects the spine, Juvenile arthritis - which occurs in children and Reactive arthritis - a type of arthritis in the joints.

Common ANA-IIF Patterns		ANA / ENA Profile - Specimen Report							
 <b>Homogeneous</b>	 <b>Speckled</b>	<b>Antigen</b>	<b>Intensity</b>	<b>Class</b>	<b>0</b>	<b>(+)</b>	<b>+</b>	<b>++</b>	<b>+++</b>
 <b>Nuclear Dots</b>	 <b>Nucleolar</b>	Mi-2	0	0					
 <b>Centromeres</b>	 <b>Cytoplasmic</b>	Ku	2	0	<input type="checkbox"/>				
		RNP/Sm	1	0	<input type="checkbox"/>				
		Sm	0	0					
		SS-A native	1	0	<input type="checkbox"/>				
		Ro-52 recombinant	1	0	<input type="checkbox"/>				
		SS-B	2	0	<input type="checkbox"/>				
		Scl-70	2	0	<input type="checkbox"/>				
		PM-Scl100	1	0	<input type="checkbox"/>				
		Jo-1	0	0					
		Centromere B	1	0	<input type="checkbox"/>				
		PCNA	0	0					
		dsDNA	0	0					
		Nucleosomes	93	+++	<div style="width: 100%; height: 10px; background-color: gray;"></div>				
		Histones	21	+	<div style="width: 20%; height: 10px; background-color: gray;"></div>				
		Ribosomal Protein	4	0	<input type="checkbox"/>				
		AMA-M2	1	0	<input type="checkbox"/>				
		Control	94	+++	<div style="width: 100%; height: 10px; background-color: gray;"></div>				
		Label	-1						
INTERPRETATION OF RESULTS BASED ON SIGNAL INTENSITY									
<b>Signal visual evaluation</b>		<b>Signal Intensity</b>		<b>Results</b>					
No signal		0-5		0 Negative					
Very weak band		6-10		+ Borderline **					
Medium to strong band		11-25 or 26-50		+ , ++ Positive					
Very strong band		> 50		+++ Strong Positive					
** Results in the borderline range from 6 to 10 should be evaluated as increased but NEGATIVE									