

# UNEXPLAINED FATIGUE PROFILE

*There are a number of Autoimmune Disorders that are insidious in their initial presentation causing ill-defined symptoms including unexplained fatigue.*

## AUTOIMMUNITY

Autoimmune Disorders are the result of the immune system incorrectly recognizing the body's own tissues as foreign and attacking them.

## WHAT CAUSES AUTOIMMUNE DISEASES?

It is unknown why the immune system becomes misdirected; there are many factors, which may influence the development of an autoimmune disease.

- ▶ Genetic predisposition
- ▶ Environmental factors can trigger autoimmune disease:
  - Infections
  - Immunizations
  - Changes
  - Nutrition
  - Vaccinations
  - Hormonal
  - Smoking
  - Pollutants
- ▶ It should be noted that Autoimmune diseases are not contagious

## AUTOANTIBODY

When the immune system attacks the body's own cells, the production of autoantibodies is initiated. Autoantibodies are immune proteins directed against the body's own tissues.

## WHAT ARE THE 2 TYPES OF AUTOANTIBODIES?

- ▶ **Primary:** pathogenic antibodies, which directly cause a disorder by damaging tissue or disrupting normal cellular functions.
- ▶ **Secondary:** biomarker antibodies, which are not pathogenic in themselves but are produced as a result of the disease, and indirectly indicate an underlying pathology.

Both types may be used as diagnostic markers.

*The Unexplained Fatigue Profile tests for the following markers:*

### 2 MARKERS FOR THYROID DISEASE

- ▶ Anti-Thyroglobulin (anti-Tg) IgG
- ▶ Anti-Thyroid Peroxidase (anti-TPO) IgG

*Anti-TG are often the first autoimmune markers to appear, followed by the TPO response.*

### 3 MARKERS FOR RHEUMATOID ARTHRITIS

- ▶ Anti-CCP (Anti-cyclic citrullinated protein antibodies) IgG
- ▶ Rheumatoid Factor (RF) IgM
- ▶ Rheumatoid Factor (RF) IgA

*The presence of Anti-CCP and RF can often be detected years before radiological evidence of joint damage.*

### 2 MARKERS FOR CONNECTIVE TISSUE DISEASE

- ▶ ANA ELiA screen
- ▶ Anti-dsDNA (Double strand DNA) assays

These markers are associated with:

- ▶ SLE: Systemic lupus erythematosus
- ▶ MCTD: Multiple Connective Tissue Disorder
- ▶ DI-LE: Drug -induced lupus erythematosus
- ▶ Other conditions

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*(continued)*

## 2 MARKERS FOR CONNECTIVE TISSUE DISEASE

*ANA EliA screen*

*Anti-dsDNA (Double strand DNA) assays*

A positive antinuclear antibody (ANA) test indicates the possible presence of a Connective Tissue Disease. Positive ANA test results are associated with:

- ▶ SLE: Systemic lupus erythematosus
- ▶ DI-LE: Drug –induced lupus erythematosus
- ▶ MCTD: Multiple Connective Tissue Disorder
- ▶ Other conditions

These disorders present with a variety of symptoms related to different connective tissues. Autoantibodies to dsDNA appear to be specific to SLE.

## 3 MARKERS FOR RHEUMATOID ARTHRITIS

*Anti-CCP (Anti-cyclic citrullinated protein antibodies) IgG*

*Rheumatoid Factor including RF IgM and RF IgA*

Rheumatoid Arthritis (RA) is a chronic and progressive disease, characterized by joint swelling, tenderness and eventual destruction. The presence of Anti-CCP and RF can often be detected years before radiological evidence of joint damage. Anti-CCP antibodies are generated in response to modifications of joint tissue proteins during inflammation. Rheumatoid Factors are antibodies directed against the Fc portion of a patient's own antibodies creating large immune complexes and can intensify inflammatory tissue reactions, contributing to RA.

## 2 MARKERS FOR THYROID DISEASE

*Anti-Thyroglobulin (anti-Tg) IgG*

*Anti- Thyroid Peroxidase (anti-TPO) IgG*

A number of autoimmune disorders of the thyroid gland are characterized by the presence of autoantibodies against thyroid antigens. Anti-TG are often the first autoimmune markers to appear, followed by the TPO response. Autoantibodies against thyroglobulin are found in most patients with Hashimoto's thyroiditis (hypothyroidism), and to a lesser degree, in those with Graves' disease (hyperthyroidism). Some other non-thyroid autoimmune diseases, such as diabetes mellitus and pernicious anemia, may have positive markers for TD.

***Testing early may alert clinicians to an elevated autoantibody, years before symptom onset.***

***Patients with positive results to the Alletess Medical Laboratory Unexplained Fatigue Profile should be referred for further evaluation.***

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