

## Choosing and Interpreting Laboratory Tests

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Laboratory testing is an integral part of a medical practice. Chiropractors appear trained and licensed to interpret such testing, but why then are we not utilizing this tool in managing our patients' outcomes? Specifically, laboratory tests serve to form a diagnosis, provide prognostic information, screen for disease in at-risk individuals, and monitor ongoing treatment. Naturally, while laboratory tests help us differentiate between diagnoses, it is imperative that results are coupled with the appropriate history and clinical assessment.

The process of "putting together the whole picture" is the best clinical approach to patient care. Let me give you an example. A 77-year-old female patient of mine recently came to me and professed that she was frightened and felt she was becoming feeble, and that she just couldn't control her headaches. While I advised her to see her medical generalist, I ultimately ended up seeing her on two additional occasions. You see, after she was referred to a neurologist, and twice sought care in an emergency room, (and ended up with lots of prescribed anti-anxiety drugs - she admitted gratefully that at least she wasn't admitted for a stroke!), we soon figured out what the problem was: She suffered from self-removal medicosis. This patient had discontinued taking her prescribed thyroid and estrogen hormone medication, and neglected to advise anyone!

She had suffered a slow, downward spiral of depression, confusion, tremor, insomnia, and massive vortex and temple headaches. She even reported weeping for hours on end and suffering from a hand tremor. (Intention tremor is often seen with Parkinson's disease; one common prescribed treatment is L-dopa, or dopamine.) In this case, declining estrogen levels disrupted the balance between norepinephrine and dopamine, leading to vasomotor instability; one symptom of which is the commonly misunderstood hot flash.

Once her laboratory revealed the problem, we explained to her about estrogen and the postmenopausal brain, and how menopausal women, just like perimenopausal women, can experience a variety of somatic symptoms, such as headaches (which led this patient to the emergency room), as well as psychosocial factors such as anxiety and depression. An appointment was made with her generalist; she was asked to comply with her prescription use of estrogen and to return to her natural progesterone hormone. Within 48 hours, her "symptoms" were gone. Without ordering laboratory diagnostics, a true diagnosis may often be missed.

### Laboratory Tests Routinely Used in Chiropractic Care

The basic arthritic panel includes: antinuclear antibody (ANA), CPT 86038; C-reactive protein routine (CRP-routine), CPT 86140; sed rate (ESR), 85651; rheumatoid factor (RA), CPT 86431; anti-streptolysin O (ASO titer), CPT 86060; and uric acid (UA), CPT 84550.

Indications for ordering the basic arthritis profile/panel include:

- suspected inflammatory arthropathy;
- slower, delayed or unexpected response to therapeutic intervention;
- unexplained recurrence of vague joint symptoms, especially multiple, bilateral small and medium joint involvement;

- nontraumatic onset of musculoskeletal pain or familial history of inflammatory disorder;
- to modify or improve the chiropractic corrective care of action, or to determine the correct medical specialty for referral;
- to rule in or rule out a differential diagnosis; and
- unexplained fatigue and/or unexplained joint pain.

Antinuclear antibody (ANA): The presence of antibodies against nuclei is a good indicator of collagen-vascular disorders. A positive test may indicate conditions including: systemic lupus erythematosus (SLE), scleroderma, rheumatoid arthritis, and drug-induced lupus syndromes.

C-reactive protein routine: A positive test is a nonspecific indicator of inflammation. During the course of an inflammatory process - whether due to infection or tissue destruction - an abnormal specific protein, CRP, appears in the blood. This protein is virtually absent from the blood of healthy people. Almost any disease that brings about an inflammatory condition of any tissue will result in quantities of CRP being present in the blood and body fluids (synovial fluid).

Sed rate (ESR): Elevation of the erythrocyte sedimentation rate is a nonspecific indicator of inflammation somewhere in the body, and should never be used alone for diagnosis. Preferred method of detection is with a profile or panel of other laboratory testing.

Rheumatoid factor (RA): This titer can be used as an indicator of the activity of the disease, such as rheumatoid arthritis and its many variants.

Anti-streptolysin O (ASO titer): An increase is seen with infections (group A hemolytic streptococcus) or collagen-vascular disease, such as rheumatoid arthritis.

Uric acid (UA): Uric acid is formed from the breakdown of nucleonic acids; it is an end product of purine metabolism. The basis for this test is that an overproduction of uric acid occurs in such conditions in which there is an excessive breakdown of nucleonic acids (as in gout), excessive production and destruction of cells (as in leukemia), or an inability to excrete the substance produced (as in renal failure).

#### Case Study: A 61-Year-Old Woman With Sacroiliac Pain

Ms. W is a 61-year-old woman; her medical provider obtained a chest X-ray during the patient's annual physical. The doctor told Ms. W that her chest X-ray was normal, but that it looked as if she had some osteoporosis of her spine. Her familial history was strongly positive for her mother, who was known to suffer (and was crippled) from psoriatic arthritis. Ms. W was a known alcoholic who admitted she nipped for the pain in her hands, which were observed as sausage-sized digits with enlarged DIPs and MIPs.

Her arthritic panel revealed: positive HLA-B27, elevated CRP routine and sed rate, negative RA. Radiographs were obtained based upon the laboratory diagnostics, with yield and asymmetrical sacrolitis/fusion with parasyndesmophytes detected. She was consulted on the nature of inflammatory arthropathy; chiropractic preventative measures were outlined, and the chiropractic treatment plan was expanded and modified.

The ordering of laboratory testing should be a thoughtful process to maximize the use of the history and physical examination findings. One should always consider the following question prior to ordering a laboratory test: "How will this change my treatment plan and/or modify this patient's treatment outcome?"

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