



# Anti-CCP

Insight – March 2019

- Early detection and treatment of patients with rheumatoid arthritis results in better outcomes.
- Anti-CCP antibodies is more accurate than rheumatoid factor for the diagnosis of rheumatoid arthritis.
- Anti-CCP antibodies predict greater likelihood of future RA-related joint damage.
- In patients with early inflammatory arthritis, anti-CCP and RF should be requested.

Rheumatoid arthritis (RA) is a common, chronic autoimmune disease targeting the synovial tissue within joints. The clinical features typically include pain, swelling, early morning stiffness in the small joints of the hands or feet. The cause of the disease remains poorly understood but developments over time have improved the tools available to assist with a diagnosis of RA.

Anti-cyclic citrullinated peptide (Anti-CCP, or sometimes referred to as ACPA) antibodies are an established diagnostic marker for rheumatoid arthritis and can be used together with the clinical history and findings of inflammatory arthritis to diagnose RA. An early and accurate RA diagnosis facilitates the current evidence-based approach of rapid introduction of effective treatment to prevent joint damage and alleviate symptoms, signs and measures of inflammation.

### Anti-CCP antibodies are useful diagnostic marker for RA

Anti-CCP antibodies are detectable in 50-70% of patients with rheumatoid arthritis (ie. a sensitivity of 50-70%), which is similar to the sensitivity of the traditional RA marker, rheumatoid factor (RF). Importantly, anti-CCP antibodies have better specificity than RF (95% vs 85% respectively) as RF may be detected in patients with infections, or in diseases other than RA. Given the better specificity, anti-CCP antibodies are less likely to be elevated (clinical false positive) in patients with joints symptoms resulting from other diseases.

### Significance of positive Anti-CCP antibodies

Anti-CCP antibodies are included in the updated 2010 American College of Rheumatology classification criteria for Rheumatoid arthritis. In addition to an established role in RA diagnosis, positivity for anti-CCP antibodies also predict RA patients that may endure a more challenging clinical course with worse joint damage and negative impacts to physical function and employment. Furthermore, anti-CCP antibodies may indicate future risk of RA as anti-CCP antibodies may be detectable several years prior to the onset of inflammatory arthritis.

### Tests for both anti-CCP and RF are useful in RA

As anti-CCP antibodies and RF may occur in isolation in RA patients, it is important to test for both antibodies. Patients who are positive for both anti-CCP and RF are at risk for more rapid progression to clinical RA. Melbourne Pathology measure the anti-CCP antibodies with the Thermo Fisher EliA CCP2 assay, which has proven diagnostic reliability for RA. On the basis of current evidence, anti-CCP antibodies and rheumatoid factor should be requested in patients suspected of rheumatoid arthritis.

### References

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After graduating from Monash University in 1997, Dr Unglik trained at the Royal Melbourne and Alfred Hospitals. He obtained combined fellowship with both the Royal Australasian College of Physicians and the Royal College of Pathologists of Australasia in 2007. After completing advanced training he was appointed to the Department of Clinical Immunology and Allergy at the Royal Melbourne Hospital where he was also Head of the Immunopathology laboratory unit until 2015.

Dr Unglik joined Melbourne Pathology in February 2010 as a Consultant Immunopathologist. He continues as a Consultant Clinical Immunologist and Allergist in the Department of Clinical Immunology and Allergy at the Royal Melbourne Hospital. He is also a member of the Australasian Society of Clinical Immunology and Allergy.



#### Dr Julian Bosco MBBS (Hons), BSc Med (Hons), PhD (Melb) FRACP, FRCPA

Dr Bosco completed his Bachelor of Medicine and Bachelor of Surgery with Honours in 2002 at the University of New South Wales. From 2007 - 2011 he trained in Clinical Immunology/ Allergy and Immunopathology in New South Wales and Victoria, at the Westmead and Royal Melbourne Hospitals.

Since being awarded his Fellowship with the Royal Australasian College of Physicians and Royal College of Pathologists of Australasia in 2011, Dr Bosco has held Clinical Immunology and Allergy consultant positions at both the Royal Victorian Eye and Ear and the Alfred hospitals. He also works as a consultant Immunologist and Allergist with Epworth Allergy Specialists and as an Immunopathologist with Alfred Pathology. He completed his PhD on the immunoregulatory properties of CD52 at the Walter Eliza Hall Institute of Medical Research. Dr Bosco joined Melbourne Pathology as a Consultant Immunopathologist in February 2016 and has a special interest in autoantibody-associated autoimmune disease, allergic disease and immunodeficiency.