

Autumn 2021

# GP Connect

Supporting best practice in cardio-metabolic health



## From the editor – Dr Andrew Terluk

Thank you for reading GP connect.

In this issue, Dr Ting outlines transcatheter aortic valve implantation (TAVI, also known as transcatheter aortic valve replacement, or TAVR). This has been a revelation in treating individuals with aortic stenosis, in particular those who are deemed high risk for a conventional surgical procedure. Once upon a time, patients in this category were put out to their proverbial pasture as no medication or therapy can ameliorate this condition.

### Statin side effects – myth or reality?

A quick note on a recent trial that I thought would be of interest. The SAMSON trial presented at the end of last year was a cleverly designed statin trial to ascertain the true side effects of statin medications.<sup>1</sup> The trial randomly assigned 60 individuals who had previously stopped statins because of adverse effects to 12 months of: 1. No medications, 2. Placebo and 3. Statin. An app-based system was used by the patients to record symptoms.

The 'symptom score' was 8 for no tablet, 15.4 for placebo and 16.3 for the statin. There was no statistical difference between statin and placebo (and a very significant difference between no tablet and the other two groups).

### So, what have we learned?

- Patients do get symptoms on statins.
- It turns out that statin symptoms are predominantly driven by a psychological expectation that a tablet will have an adverse effect.

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### What can be done in clinical practice?

- Informing the patient of potential adverse effects remains important and transparency helps the doctor patient relationship, however, reassurance and encouragement may also help individuals tolerate medications.
- Anecdotally I have found that if the patient's symptoms are mild then further education and reassurance are often all that is needed.
- CK biochemistry and standard blood tests may be useful to 'show' patients that no harm is being done.

Thanks for reading,

A handwritten signature in black ink, appearing to be "A. Terluk".



# Australian Doctor How to Treat: Climate Change and Cardiovascular Disease

Dr Fiona Foo

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To request copies of Dr Foo's How to Treat article, referral pads, and/or our patient resources, send us an email and we will have them dispatched to you.

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## Meet our team

We have experienced cardiologists in all major sub specialties to provide the highest quality of patient care. Our Sydney Cardiology team includes:



### Dr James Wong

Specialising in general cardiology, prevention of coronary artery disease and hypertension.



### Dr Bill Petrellis

Specialising in general adult cardiology and electrophysiology, including atrial fibrillation and device implantation.



### Dr Fiona Foo

Specialising in general and interventional cardiology with an interest in heart disease affecting women and sports cardiology.



### Dr Gunjan Aggarwal

Specialising in general adult cardiology and non-invasive cardiac imaging, particularly echocardiography and cardiac CT.



### Dr Abhinav Luhach

Specialising in general adult cardiology, cardiac CT, and preventive cardiology.



### A/Prof Martin Brown

Specialising in advanced heart failure, pulmonary hypertension, and transplant cardiology.



### Dr Ru-Dee Ting

Specialising in general and interventional cardiology, including cardiac haemodynamic studies and complex coronary intervention.



### Dr Andrew Terluk

Specialising in general cardiology with an interest in cardiomyopathy in the setting of cancer.

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# Transcatheter aortic valve implantation for the treatment of Aortic Stenosis



**Dr Ru-Dee Ting**  
Consultant general and interventional cardiologist at Sydney Cardiology - Chatswood, Parramatta, Blacktown, and Bella Vista clinics.

Aortic Stenosis (AS) is one of the most common valvular conditions, with an estimated 1 in 8 elderly Australians diagnosed with AS and many others still undiagnosed.

It can be latent for a long period followed by rapid progression with the appearance of symptoms which can include debilitating dyspnoea and chest discomfort. Symptomatic AS portends a high mortality rate (approximately 50% in the first two years after symptoms appear) among untreated patients (Fig 1). This is a higher mortality rate compared to most common cancers.

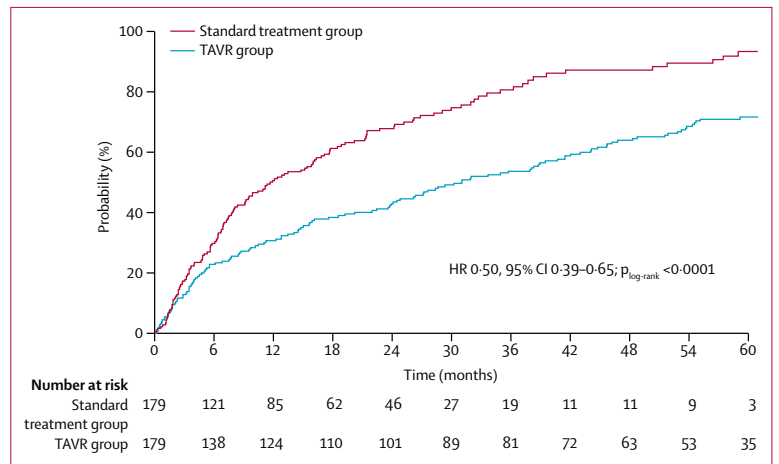


Fig 1: TAVI vs medical therapy in patients with inoperable aortic stenosis<sup>1</sup>

## What is transcatheter aortic valve implantation (TAVI)?

Historically, surgical aortic valve surgery (SAVR) has been the only option for patients with severe symptomatic aortic stenosis. This would involve a median sternotomy, surgical removal of the native valve and implantation of a prosthetic one (Fig 2). Surgical replacement reduces symptoms and improves survival but at least 30% of patients with severe symptomatic aortic stenosis do not undergo surgery due to advanced age, left ventricular dysfunction, or the presence of comorbidities.

TAVI is a minimally invasive catheter-based procedure that intravascularly implants a bioprosthetic aortic valve within the diseased native valve. The procedure can be done under sedation and does not involve a sternotomy. It is often performed via the femoral artery (Fig 3).

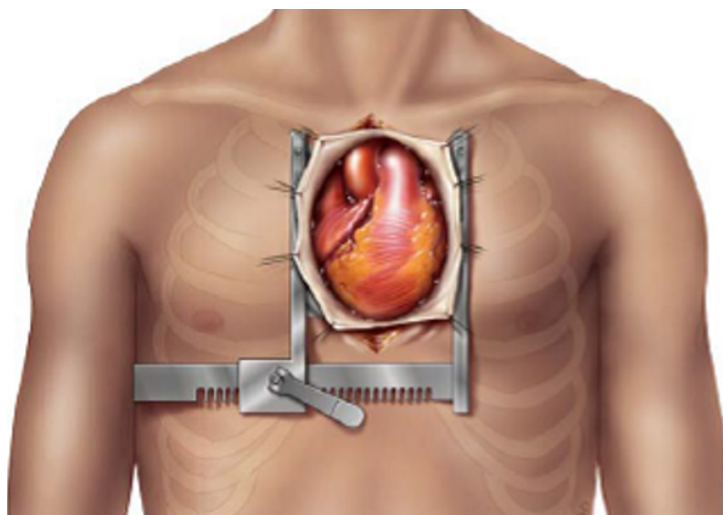


Fig 2: Medial sternotomy for surgical aortic valve replacement.

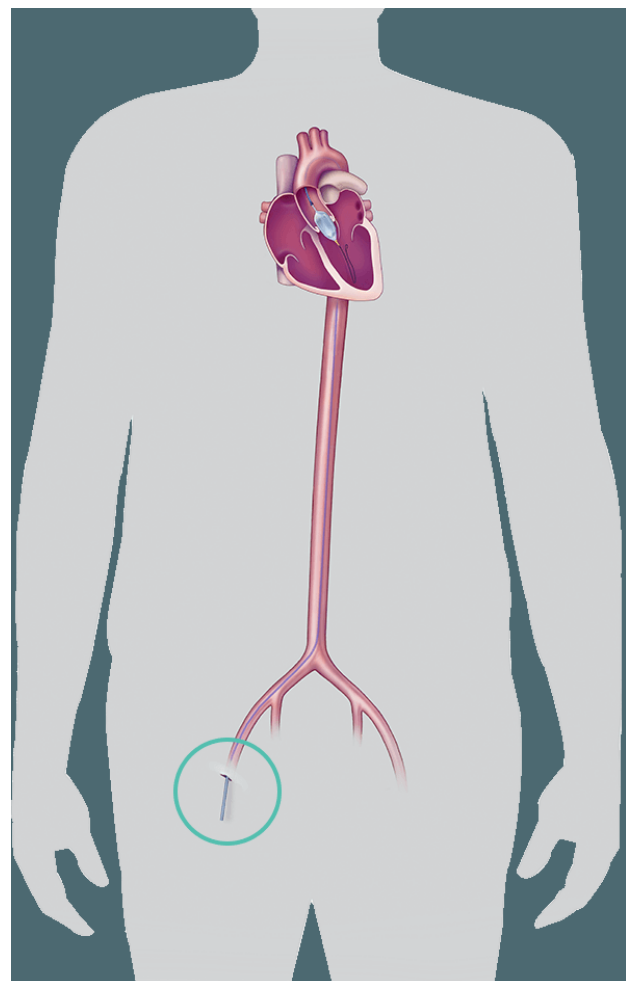


Fig 3: Transfemoral TAVI with percutaneous delivery of a transcatheter heart valve

## Who is it for?

Since 2002, when the procedure was first performed, there has been rapid growth in its use in patients who are at high surgical risk. This has revolutionised the management of elderly and higher-risk patients with aortic stenosis. Over the past decade, TAVI has generated a paradigm shift in the treatment of aortic stenosis. The earlier trials reported benefits in TAVI in higher risk groups and recently, two randomised trials comparing the outcomes of SAVR vs TAVI in low surgical risk cohorts were published. They provide strong evidence that TAVI is non-inferior, and in certain groups superior, to surgery over 1–2-year time frames. In addition, TAVI resulted in fewer strokes, less bleeding, and less atrial fibrillation than surgery, as well as a shorter hospital stay and faster recovery.<sup>2,3</sup>

It should be noted that asymptomatic patients were excluded in the major trials and current guidelines do not support intervention in asymptomatic AS, unless it is extremely severe. Aortic regurgitation is also not an indication for TAVI due to the risk of valve migration.

Estimated surgical risk no longer dictates the choice between surgery and TAVI; instead, the primary considerations are life expectancy and valve durability, both of which are related to the patient's age. Current data suggest that transcatheter heart valves have similar medium-term durability compared to SAVR and long-term results are accumulating.

## What can GPs do?

Early-stage AS involves symptoms such as shortness of breath, fatigue, and mild chest pains. Syncope is a late sign and is a risk factor for sudden death.

GPs play a significant role in expanding awareness, understanding and identification of patients with AS for referral to a cardiologist. The first step to diagnosis is to auscultate the heart. A systolic murmur may be indicative of AS. A referral to a cardiologist for an echocardiogram is the next step to objective diagnosis.

Asymptomatic valve disease requires close follow up. The ideal time to intervene is when symptoms first manifest.

## Key patient benefits of TAVI over invasive surgery:

- Less painful procedure, no sternotomy wound
- Faster recovery
- Sustained improved quality of life, fewer physical limitations, and feelings of wellbeing
- Lower complication rates
- Shorter procedure, earlier discharge from hospital.

## What is the patient experience?

Once referred to a cardiologist, the diagnosis of symptomatic severe aortic stenosis will be confirmed on echocardiography. The patient then undergoes a pre-op work-up including a cardiac CT, CT angiography and a coronary angiogram.

The option to treat with TAVI is determined by a multidisciplinary Heart Team where the patient's case is discussed, and a team consensus is reached on whether surgical valve replacement or TAVI is recommended. That recommendation is a shared decision-making process, respecting patient preferences and considering clinical and anatomic factors.

## What does ongoing management involve?

Approaches to encourage post-TAVI recovery have included early mobilisation, exercise training, patient education, and psychological support. Patients are also referred for cardiac rehabilitation.

Oral anticoagulation is not typically recommended although dual antiplatelet therapy with aspirin and clopidogrel for 3-6 months is often prescribed. Patients will require antibiotic prophylaxis prior to dental procedures.

Conduction defects may develop requiring a pacemaker implant. Their evolution is often unpredictable and requires careful monitoring with clinical review and ECGs.

## Key points

- Untreated symptomatic aortic stenosis portends a very poor prognosis.
- TAVI provides an excellent treatment option for patients deemed unsuitable for open-heart surgery.
- Early detection begins with simple clinical auscultation.
- GPs have a vital role in screening for AS and facilitating referral for further cardiac assessment.

**References:** 1. Kapadia SR, Leon MB, Makkar RR, et al. 5-year outcomes of transcatheter aortic valve replacement compared with standard treatment for patients with inoperable aortic stenosis (PARTNER 1): a randomised controlled trial. *Lancet* 2015;385(9986):2485-2491. 2. Mack MJ, Leon MB, Thourani VH, et al. Transcatheter aortic-valve replacement with a balloon-expandable valve in low-risk patients. *N Engl J Med* 2019;380:1695-1705. 3. Popma JJ, Deeb GM, Yakubov SJ, et al. Transcatheter aortic-valve replacement with a self-expanding valve in low-risk patients. *N Engl J Med* 2019;380:1706-1715.

# Our services

Sydney Cardiology is a world class comprehensive cardiology service, delivered with expertise and experience. Using state of the art diagnostic equipment in all five clinic locations, Sydney Cardiology strives to provide exemplary outcomes for long term patient care.

## Urgent access

We provide same-day urgent appointments and 24/7 on-call support for GPs with a dedicated phone number, **02 9966 7700**.

## Non-invasive testing

Including stress echocardiography, echocardiography, holter monitor studies, ambulatory blood pressure studies, coronary calcium score, dobutamine stress echo, electrocardiogram and event monitor recording.

## Echo, ABP, and holter monitor-only referral services

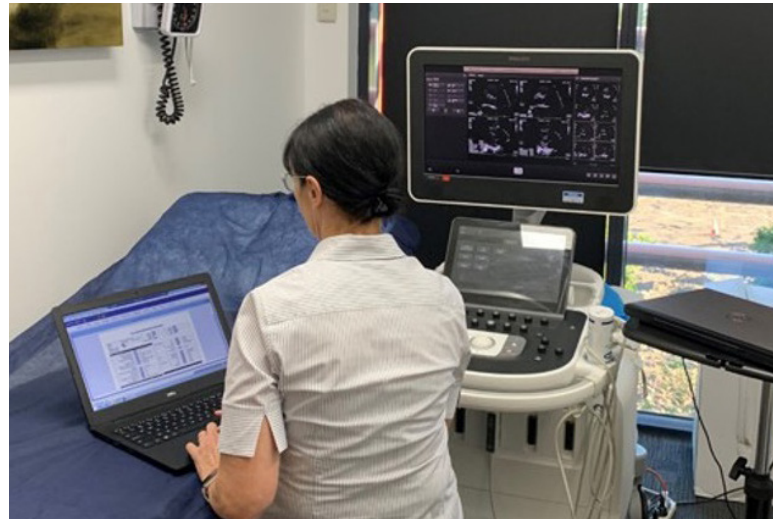
We provide echo-only, ABP-only, and holter monitor-only referral services, with a summary report on any adverse findings.

## Electrophysiology

Including diagnostic electrophysiology studies, ablation of cardiac arrhythmias, cardiac device implantation, pacemakers and defibrillators, and follow up of implanted cardiac devices.

## Cardiac procedures

Including coronary angiography, cardiac biopsies, right heart catheterisation, transesophageal echocardiogram and coronary angioplasty.



## ECG fax service

For urgent advice, 12-lead ECGs can be faxed to our locations.

Bella Vista - Fax: 02 9672 6214

Blacktown - Fax: 02 9676 8900

Chatswood - Fax: 02 9411 1904

Parramatta - Fax: 02 9635 1247

Sydney City Cardiology - Fax: 02 9422 6081

## Peripheral vascular services

Including renal and lower limb angioplasty, ankle brachial index and SphygmoCorR central blood pressure testing.

## In-hospital care

All patients with appropriate private health coverage undergoing hospital procedures, do not incur any out-of-pocket costs. Sydney Cardiology has access to leading private hospitals, including:

**Sydney Adventist Hospital**  
Wahroonga

**Norwest Private Hospital**  
Bella Vista

**Macquarie University Hospital**  
North Ryde

**Northern Beach Hospital**  
Frenchs Forest

## Patient fees

Sydney Cardiology is a private clinic however there are no out of pocket costs for Pensioners and Department of Veterans Affairs patients.



# The (dangerous) faces of hypertension



## Dr James Wong

MBBS FRACP FCANZ

Consultant cardiologist at Sydney Cardiology - Bella Vista, Chatswood, and Parramatta clinics.

Almost everyone, especially our patients, has heard of white coat hypertension (WCH) but not everybody is familiar with masked hypertension or masked uncontrolled hypertension. While WCH may be a relatively benign finding, masked and masked uncontrolled hypertension are dangerous and common situations whereby high blood pressure is missed and therefore uncontrolled, often for many years, resulting in serious complications including stroke, heart attacks, heart failure, and dementia.

## What is masked hypertension (MH)?

MH is when the office blood pressure measure appears normal, even though it is in fact elevated. Standard sphygmomanometers used in most consulting rooms are often inaccurate in diagnosing hypertension. Elevated blood pressure may only become apparent with out-of-office readings either by ambulatory blood pressure (ABP) monitoring, by home blood pressure (HBP) recordings, or when disease manifests.

Masked uncontrolled hypertension (MUCH) means that blood pressure control is ineffective in a hypertensive patient already on BP-lowering therapy. As with MH, the office blood pressure measure seems to be satisfactory or normal on treatment, but out-of-office readings (by ABP or HBP) would show overall BP control is not effective.

It is concerning that despite the availability of blood pressure lowering therapy, MH and MUCH remain the leading risk factors for cardiovascular deaths and morbidity.

## How common is masked hypertension?

For masked hypertension, the literature estimates a prevalence of 10-30% indicating it may be common.

The Global Blood Pressure Screening Campaign of the International Society of Hypertension 2019 screened 1.5 million people – of these, 34% had hypertension; of those with hypertension, 23% had untreated or inadequately treated hypertension (to <140/90mmHg).<sup>1</sup>

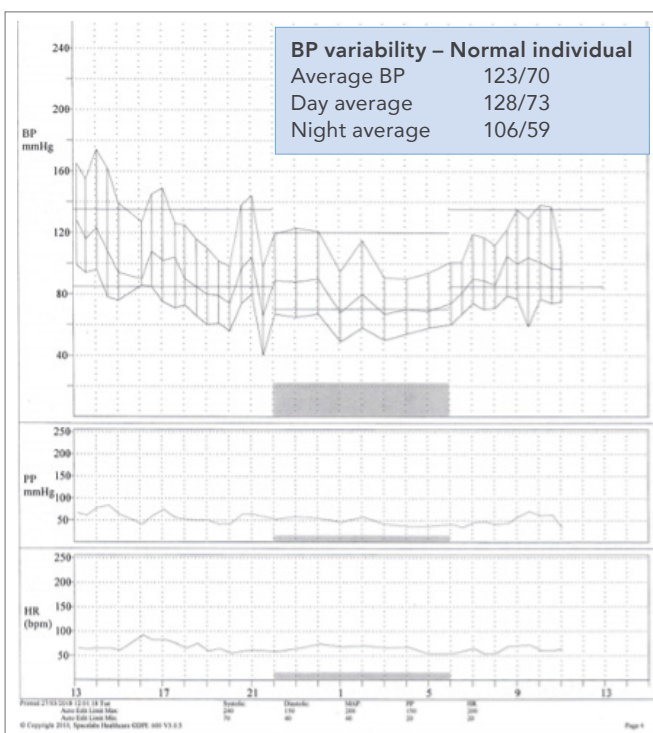


Figure 1. Blood pressure variability – patient in normal range

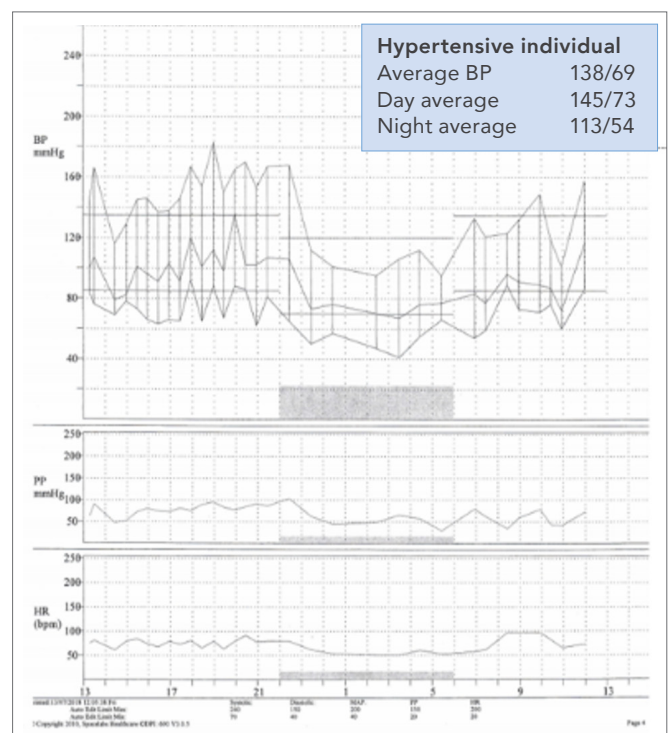


Figure 2. Blood pressure variability – hypertensive patient

The ABP profiles above show considerable BP variability in a normal person and also a hypertensive person. Note that both have normal and elevated readings.

## Why is elevated blood pressure missed?

Hypertension is silent. Without symptoms, the subject may not be aware or informed or motivated to seek assessment.

There are other reasons including the nature of individual blood pressure variability (which may make detection of elevated blood pressure difficult) and the limited accuracy of all the usual office blood pressure measuring devices (Figures 1 and 2).

## What is the optimal means of diagnosing hypertension?

Home blood pressure monitoring is helpful in the diagnosis of hypertension although it is subject to bias.

The recommended standard of detecting high blood pressure is 24-hour ambulatory blood pressure monitoring but it is currently underutilised - it is not readily available, and its cost is yet to be reimbursed (although this is intended by Medicare).

## What are the consequences of sub-optimal management?

Ineffective hypertensive control leads to all the manifestations of cardiovascular disease including ischaemic heart disease, stroke, chronic kidney disease, cerebral small vessel disease, cognitive dysfunction, and dementia.

## What about nocturnal hypertension (NH)?

Nocturnal hypertension is another aspect of hypertension which may be missed or unrecognised without a 24-hour ABP study. In healthy patients, night-time BP should dip 10-15% - patients whose blood pressure does not dip have a significantly higher frequency of complications such as stroke.

The presence of nocturnal hypertension is a marker for poor future prognosis. It is not uncommon in obstructive sleep apnoea, diabetes mellitus, and chronic kidney disease.

## Conclusion

Long-term blood pressure management is essential for the effective management of lifetime cardiovascular risk. There remains a large burden of hypertension and undertreatment of hypertension is the major issue.

Keep in mind the different faces of hypertension.



## How to detect and manage potentially dangerous blood pressure phenotypes

1. Be aware of masked, masked uncontrolled, and nocturnal hypertension.
2. WCH is not the problem.
3. Office BP is inaccurate. Use ambulatory BP and home BP.
4. Consider testing for organic pathology associated with hypertension
  - Coronary artery calcium score
  - Doppler echocardiogram
  - Carotid duplex, possibly brain MRIIf BP is well controlled organ pathology should not be found.
5. Inform and educate your patient. Utilise HBP to assist management and patient involvement.

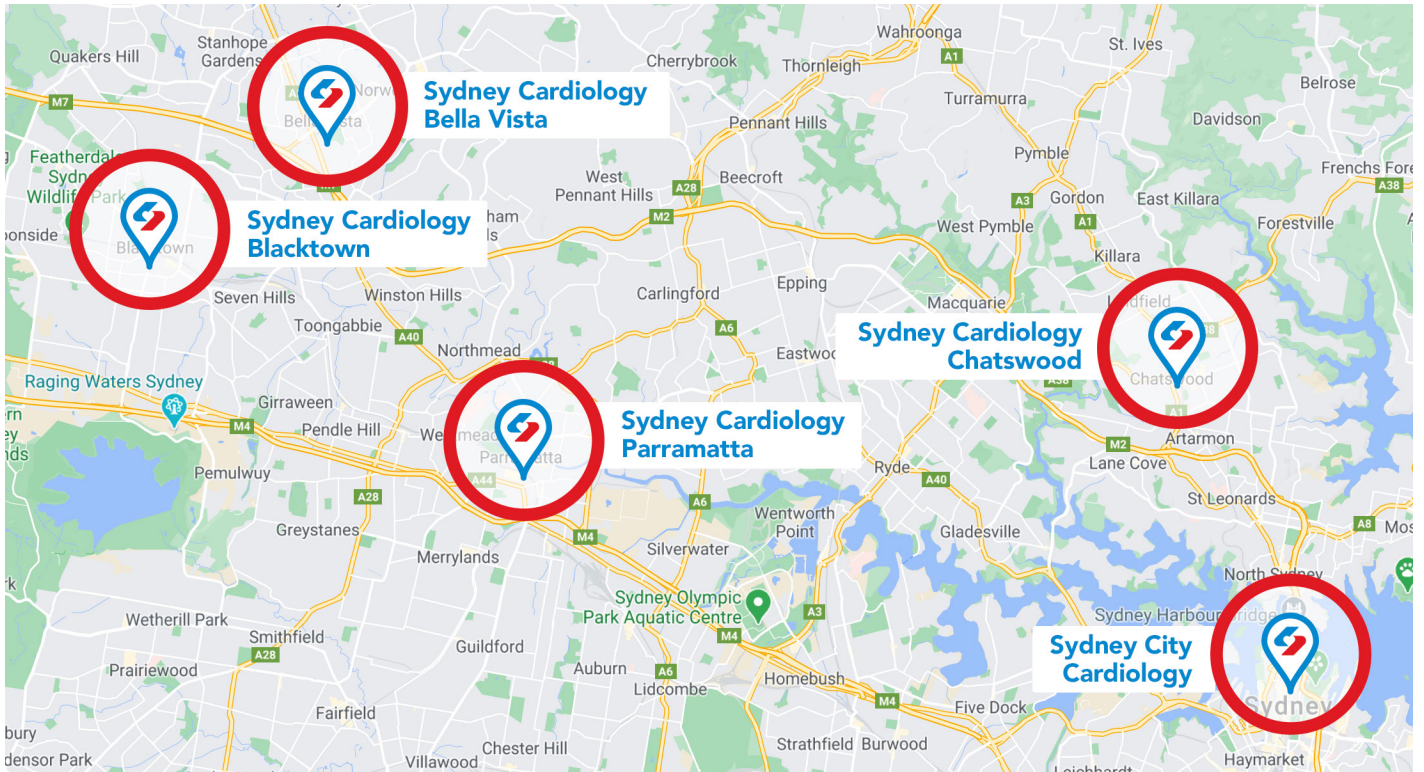
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Tel: 02 9422 6000 | Fax: 02 9672 6214

### Blacktown

Suite 4, 15-17 Kildare Road, Blacktown NSW 2148

Tel: 02 9422 6050 | Fax: 02 9676 8900

### Chatswood

Suite 901, Level 9, Tower B, 799 Pacific Highway, Chatswood NSW 2067

Tel: 02 9422 6040 | Fax: 02 9411 1904

### Parramatta

Level 5 Suite 501, B1 Tower, 118 Church Street, Parramatta NSW 2150

Tel: 02 9422 6060 | Fax: 02 9635 1247

### Sydney City Cardiology

Suite 102, Level 1, 37 Bligh Street, Sydney 2000

Tel: 02 9422 6080 | Fax: 02 9422 6081

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Call (02) 9966 770 for specialist advice

