

This Is Cardiology – Jeopardy Style
Q&A Teaching

Bypasses, Blades, and Bylines 100

According to the Enhanced Recovery After Surgery: Cardiac Surgery guidelines, when should extubation occur?

What is “within 6 hours of ICU arrival” [10.1001/jamasurg.2019.1153](https://doi.org/10.1001/jamasurg.2019.1153)

Bypasses, Blades, and Bylines 200



This technique has undergone numerous changes since it was first described in 1996 as it evolves as an alternative to the traditional approach.

What is minimally invasive cardiac surgery (MICS).

Smaller incisions and femoral cannulation are some hallmarks of MICS. It is possible for aortic and mitral valve replacement and for LIMA CABG. These patients require different post-operative care, with different mobility consideration and changes to chest tube placement.

Bypasses, Blades, and Bylines 300

A Ross Procedure involves these valves

What is the Aortic and Pulmonic.

The diseased aortic valve is replaced with the native pulmonic valve. The pulmonic valve is then replaced with a valve from a cadaver.

Bypasses, Blades, and Bylines 400

Rather than sternal precautions, this technique is gaining popularity and support for moving after heart surgery

What is “Keep Your Move in the Tube”. See the article in the Canadian Journal of Cardiology [10.1016/j.cjca.2019.07.388](https://doi.org/10.1016/j.cjca.2019.07.388)

Rx Rhythms 100

Long term use of this medication can leave you looking like a Smurf or part of the Blue Man Group.

What is amiodarone.

A blue-grey discolouration can occur due to the accumulation of amiodarone and its metabolites, particularly in sun-exposed areas like the face and hands. This accumulation leads to the deposition of lipofuscin which leads to the discolouration.

Rx Rhythms 200

In addition to lowering cholesterol, this class of medications is also anti-inflammatory

What are statins (use this point to teach patients who don't have high cholesterol why they should take their prescribed statin!)

Rx Rhythms 300

Derived from salmon sperm, this medication has side effects include low blood pressure, slow heart rate, allergic reactions, and vomiting

What is protamine.

"Protamine sulfate is a polypeptide originally isolated from salmon sperm in the 1930s that was found to be able to reverse the anticoagulation effects of heparin in a dose-dependent manner."
<https://doi.org/10.1016/j.emc.2013.10.001>

Daily Double

The "red devil", this life-saving medication is also cardiotoxic

What is doxorubicin.

This occurs through a reduction in nitric oxide and an increase in superoxide.

Fundamentals 101 100

This valve has 2 leaflets

What is the mitral valve

Fundamentals 101 200

Ape to Man

What is the order to listen to heart sounds

Aortic 2nd ICS RSB, pulmonic 2nd ICS LSB, Erb's point 3rd ICS LSB, tricuspid 3rd ICS LSB, Mitral, 4th ICS midclavicular.

Fundamentals 101 300

Other than antipyretics, these therapies support reducing an elevated temperature

What is closing the blinds, removing blankets, and a cool bath

Fundamentals 101 400

These skills are equally, if not more important, than biomedical nursing skills

What are "soft skills" - compassion, empathy, humanistic care supporting hygiene, comfort, communication, mobility, safety, nutrition, and hydration

CCCN Fast Facts 100

As of February 1st 2025, there are 361 nurses holding this specialty certification, for which CCCN offers its members a virtual study group and extensive study guide to help members prepare.

What is the CNA Certified Cardiovascular Nurse in Canada (CCN(C)).

The next CNA Certification exam will be in the Fall! And if you had a chance to check out the posters, you might have read that certification is good for retention!

You can Apply to write between June 16th and September 30th and then write between November 1st and 15th. We usually offer our virtual study group in August, so make sure to read your CV weekly emails and follow our social media pages for that announcement. CCCN members can access our exam study at any time.

And if you're already certified, congratulations and don't forget to renew by continuous learning every 5 years!

CCCN Fun Facts 200

Last year, our Annual Spring conference hosted X delegates, engaged in over 25 educational sessions, and played a competitive photo scavenger hunt game of "Amazing Race" around this beautiful city.

Where is Calgary, Alberta?

Plan to join us in Saskatchewan in 2026! Details to come, save the date for May 22 & 23!

CCCN Fun Facts 300

The official journal for CCCN is a peer reviewed forum for disseminating timely, original research and other topics related to cardiovascular health and illness, with a focus on the nursing perspective.

What is the Canadian Journal of Cardiovascular Nursing?

The CJCNC is always accepting manuscripts in both official languages, and if you are interested in peer reviewing or participating in our editorial board please seek Krystina Lewis out this weekend to pick her brain!

CCCN Fun Facts 400

Updated in 2024, this statement is included in our strategic plan: Advancing cardiovascular nursing through leadership, advocacy, research and knowledge translation.

What is the CCCN Vision?

The updated CCCN vision is part of our 5 year strategic plan. It also includes our mission, values and pillars that all help guide our decisions and actions.

<https://cccn.ca/uploads/65a13dba10ada.pdf>

Let the Beat Drop 100

This term describes the scenario where a pacemaker delivers stimuli, but the heart fails to respond appropriately, often due to lead dislodgement or myocardial fibrosis.

What is loss of capture

When this happens, you will see a pacer spike followed by no P wave or QRS complex. Troubleshooting is required to regain capture. Patient assessment is required to ensure stability as this can occur intermittently or continuously.

Let the Beat Drop 200

This phenomenon occurs when a pacemaker fails to deliver pacing stimuli due to sensing extraneous electrical signals, leading to potential bradycardia or asystole.

What is oversensing-induced pacing inhibition

With oversensing, the “fence” is too low, so the pacer “sees” too much and is inhibited. You need to raise the fence by decreasing the sensitivity to ensure the pacer only “sees” QRS complexes.

Let the Beat Drop 300

In patients with left bundle branch block (LBBB), sinus rhythm, QRS duration ≥ 150 ms, and NYHA class II–IV symptoms, this therapy is indicated to improve symptoms and reduce morbidity and mortality.

What is cardiac resynchronization therapy (CRT) with biventricular pacing

Heart failure patients can have dyssynchrony in contractions of the left and right ventricles, which further reduces their EF. CRTs have leads in both the left and right ventricles. They stimulate both ventricles to improve contractility and coordination of contractions, improving the EF.

Let the Beat Drop 400

This pacing strategy, recommended in the 2023 HRS/APHRS/LAHRs guidelines, aims to preserve ventricular synchrony by directly stimulating the His-Purkinje system

What is conduction system pacing (CSP)

In this set up, the ventricular pacing lead is placed on the ventricular septum rather than the ventricular apex. It improves biventricular coordination as there is less cell-to-cell depolarization.

Need More Data 200

In critically ill patients, this dynamic parameter is a better predictor of fluid responsiveness than static measures like CVP.

What is pulse pressure variation (PPV) or stroke volume variation (SVV)

The PPV Calculation is $PPV (\%) = (PP_{max} - PP_{min}) / [(PP_{max} + PP_{min}) / 2] \times 100$ and SVV is $SVV (\%) = (SV_{max} - SV_{min}) / [(SV_{max} + SV_{min}) / 2] \times 100$. The magical number for both is 13%. If it is higher than 13, the patient would benefit from volume optimization, lower than 13%, the patient has already been optimally volume resuscitated and would respond best to a vasopressor. Rationale: During positive pressure ventilation, intrathoracic pressure increases during inspiration, reducing venous return and preload. This transiently lowers stroke volume and pulse pressure. In fluid-responsive patients, these variations are more pronounced.

Need More Data 400

This value, calculated as $(SBP - DBP)/SBP$, is used as a noninvasive estimate of arterial stiffness and vascular tone.

What is pulse pressure ratio?

The PPR is a reflection of systemic arterial pulse pressure. It represents the pulse pressure relative to the systolic pressure and is used in shock assessment, particularly for detection of

low vascular tone as would be present in distributive shock. Low PPR (<0.25) indicated vasodilation (septic shock), high PPR (>0.35) suggests better tone and preserved CO. Magical number – less than 0.25 as an identifier of shock.

Need More Data 600

This intervention is appropriate for a patient with ScvO₂ of 52%, MAP of 62 mmHg, and lactate of 5.2 mmol/L after fluid resuscitation.

What is initiation or escalation of vasopressor therapy (e.g., norepinephrine)

In this scenario, central venous oxygenation is lower than normal, MAP is lower than the usual goal of 65mmHg, and lactate is elevated. This means the heart is pumping too weakly. The train is moving slowly and there is too much time for oxygen to exit the blood. There is also not enough oxygen being delivered, leading to anaerobic metabolism and the production of lactate. An alpha and beta agonist such as norepinephrine can support improved contraction of the heart along with improved blood pressure. This will improve oxygen delivery, leading to a reduction in lactate, and speed up the train, keeping more oxygen in the venous blood

Need More Data 1000

A post-MI patient with a wedge pressure (PCWP) of 28 mmHg, CVP of 20 mmHg, and low cardiac output may benefit from this mechanical support.

What is intra-aortic balloon pump (IABP) or Impella (percutaneous LV support)

A normal PCWP is 4-12mmHg and a normal CVP is 0-6mmHg. Both are measures of preload. When these are elevated but cardiac output remains low, the heart needs help pumping. If we reduce preload, cardiac output will drop further. Reducing afterload with an IABP or Impella will improve cardiac output. An IABP is a balloon in the aorta that deflates just before the heart beats, dropping the pressure in the aorta and effectively “sucking” blood out of the heart. An Impella spins in the apex of the left ventricle and effectively ejects blood into the aorta.

Are You a Wild Type 200

Infiltrative cardiomyopathies such as amyloid classically show this pattern on ECG and echocardiogram.

What is low voltage on ECG with increased wall thickness (concentric hypertrophy) on echo

This is because the amyloid infiltration thickens the ventricular walls and reduces the electrical transmission seen by the ECG.

Are You a Wild Type 400

This red flag symptom in a patient with preserved EF heart failure should raise suspicion for cardiac amyloidosis.

What is bilateral carpal tunnel syndrome or unexplained neuropathy

Are You a Wild Type 600

In patients with AL amyloidosis, treatment targets this underlying disease process.

What is plasma cell dyscrasia (e.g., multiple myeloma or MGUS)?

Plasma cell dyscrasia refers to a group of disorders characterized by the abnormal proliferation of plasma cells in the bone marrow, leading to the production of monoclonal antibodies, also known as M proteins. These disorders range from benign conditions like monoclonal gammopathy of undetermined significance (MGUS) to more aggressive malignancies like multiple myeloma.

Are You a Wild Type 1000

This emerging RNA interference therapy, currently in trials, aims to reduce production of mutant or wildtype transthyretin protein in ATTR amyloidosis.

What is partisiran or vutrisiran

ITS ALL IN THE PAST 200

This procedure, using a bioprosthetic valve to replace a native diseased valve in a minimally invasive fashion, was first performed in Canada in 2005, only 3 years after its worldwide debut in France.

What is a TAVR/TAVI

A TAVI, or TAVR, was first performed in Canada by Dr John Webb at St Paul's Hospital, in Vancouver, BC.

ITS ALL IN THE PAST 400

In 1973 this organization was launched as one of the councils of the CHF(HSFC), and has spent the last 52 years committed to the advancement of Canadian cardiovascular Nurses.

What is the CCCN?

That's right, it is us, and we have been proud and honoured to represent, and serve cardiovascular nurses across Canada all these years through our conference, journal, webinars, position statements, standards and more!

ITS ALL IN THE PAST 600

Dr John Callaghan was the first to successfully perform this procedure in Canada in 1956 at the University of Alberta Hospital in Edmonton.

Open Heart surgery

In 1956 the first Open Heart Surgery to be performed in Alberta, Canada was a pediatric ASD repair. The surgery was a success thanks to the newly invented “heart lung pump.”

ITS ALL IN THE PAST 1000

This female doctor paved the way for women in medicine, while transforming congenital heart disease diagnosis and treatments. https://www.youtube.com/watch?v=J_03t7N2Ypw

Who is Dr Maude Abbott?

Dr Maude Abbott not only broke through the female physician glass barrier, but became a world renowned expert on heart defects, compiling her findings in the “Atlas of Congenital Cardiac Disease.”

BROKEN HEARTS CLUB 200

The 3 Hallmarks of Heart failure.

Edema, Dyspnea and Fatigue

Edema, Dyspnea and fatigue, though classic, are only a few of the many symptoms associated with heart failure.

BROKEN HEARTS CLUB 400

After important clinical events such as hospitalization, consideration for invasive therapies, and requested by the patient/ family should all trigger this discussion.

What is advanced care planning

Advance Care Planning should be discussed early and often when it comes to heart failure. For more information, be sure to tune into tomorrow morning's sessions “Improving Palliative Care Knowledge of Nurses Caring for Heart Failure Patients.”

BROKEN HEARTS CLUB 600

According to the CCS 2021 HF guidelines, Patients with HFrEF should be treated with 4 standard therapies (in the absence of contraindications).

What are ARNIs (or switching from an (ACEI) or (ARB); β -blockers; mineralocorticoid receptor antagonist (MRA); and SGLT2 inhibitors.

Examples could include: ARNI (like Entresto (Sacubitril/Valsartan), Beta Blocker (Metoprolol), an MRA (Spironolactone) and SGLT2 inhibitor (Jardiance aka empagliflozin) - whether you're diabetic or not due to excellent antiinflammatory properties.

BROKEN HEARTS CLUB 1000

A patient with persistent HF with EF <35% despite optimal medical therapy, NYHA III-IV symptoms, and ECG showing QRS>130ms with LBBB should be referred for this therapy.

What is CRT-D/ ICD-CRT

ICD-CRT is recommended for certain HFrEF patients for primary prevention. They help detect and correct life threatening rhythms like Vfib and VTach; which can increase in frequency as heart muscle weakens and dies.

Is This a STEMI 200

This pseudo-STEMI condition shows peaked T waves, wide QRS, and ST elevation-like changes

What is hyperkalemia

Hyperkalemia causes an overall membrane depolarization that inactivates many sodium channels. The faster repolarisation of the cardiac action potential causes the tenting of the T waves, and the inactivation of sodium channels causes a sluggish conduction of the electrical wave around the heart, which leads to smaller P waves and widening of the QRS complex.

Is This a STEMI 400

A tall R wave and horizontal ST depression in V1–V3, with upright T waves, are key signs of this STEMI equivalent.

What is posterior myocardial infarction?

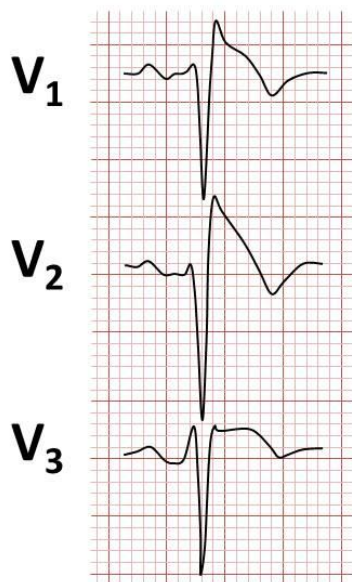
ST depression can actually be reciprocal changes. In this case, the depression seen in the leads looking at the anterior heart (V1-V3) are showing elevation in the posterior leads (V7-V9). Depression in V1-V3 should trigger a 15-lead ECG that looks at the right ventricle and posterior left ventricle.

Is This a STEMI 600

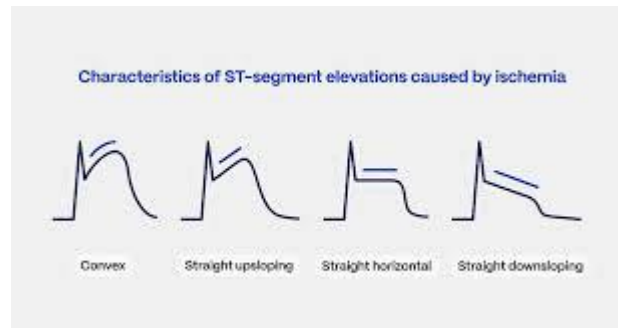
This condition presents with ST elevations in V1–V3 and a "coved" or "saddleback" morphology, often in men with a family history of sudden cardiac death.

What is Brugada syndrome

Brugada syndrome is a rare, inherited condition that affects the heart's electrical system, potentially leading to dangerously fast and chaotic heart rhythms and sudden cardiac death.



Brugada

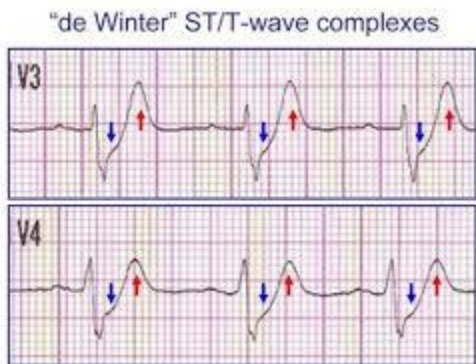


Ischemia

Is This a STEMI 1000

This STEMI equivalent shows upsloping ST depression at the J point with tall, symmetrical T waves in precordial leads, often seen before anterior wall infarction.

What is the de Winter pattern



Lightning Round

An echocardiographic finding of apical ballooning pattern with basal hyperkinesis may mimic MI but is often triggered by emotional stress and can lead to transient cardiogenic shock.

What is Takotsubo cardiomyopathy

Takotsubo cardiomyopathy is a temporary heart condition that develops in response to an intense emotional or physical experience. It's also known as stress cardiomyopathy or broken heart syndrome. In this condition, the heart's main pumping chamber changes shape, affecting the heart's ability to pump blood effectively. It is called Takotsubo because on echo the heart resembles a Japanese octopus trap, called a *takotsubo*.

Lightning Round

AKA the I.T. Drug

What is Adenosine.

Final Question

A resident saying “Oh, he’s got the ninja heart” usually means this surprising echocardiographic finding.

What is a small, hyperdynamic heart (often seen in sepsis or tachycardia)?

Rationale: The term "**ninja**" implies something that's **small, fast, and agile** — just like the visual appearance of this heart on echo. The heart is **Small in size** (underfilled ventricles), **Hyperdynamic** (very strong, fast contractility), often with “**kissing**” **ventricular walls** on echocardiography as seen in **high-output states**, such as **early sepsis, fever, tachyarrhythmias, or hypovolemia**