

DIABETES AND CARDIOVASCULAR DISEASE PATHOPHYSIOLOGY AND

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How does diabetes cause cardiovascular disease pathophysiology? Cardiac dysfunction in the absence of coronary artery disease, hypertension, and valvular disease is called diabetic cardiomyopathy. Diabetes-induced hyperglycemia and hyperinsulinemia lead to capillary damage, myocardial fibrosis, and myocardial hypertrophy with mitochondrial dysfunction.

What is the pathophysiology of cardiovascular disease? Pathophysiology of Cardiovascular Disease has been divided into four sections that focus on heart dysfunction and its associated characteristics (hypertrophy, cardiomyopathy and failure); vascular dysfunction and disease; ischemic heart disease; and novel therapeutic interventions.

What is the pathophysiology of diabetes and vascular disease? Individuals affected by diabetes display an increased risk of coronary events and cardiovascular mortality when compared with non-diabetic subjects. This phenomenon is largely explained by a deregulation of factors involved in coagulation and platelet activation.

What is the physiological relationship between cardiovascular disease and type 2 diabetes? Type 2 diabetes mellitus (DM) is a common metabolic disorder predisposing to diabetic cardiomyopathy and atherosclerotic cardiovascular disease (CVD), which could lead to heart failure through a variety of mechanisms, including myocardial infarction and chronic pressure overload.

What is the pathophysiology of diabetes? The pathophysiology of diabetes is largely based on insulin resistance, and many research studies have examined the factors such as environmental and genetic factors that promote type 2 diabetes.

mellitus (Fig.

How does diabetes affect the function of the cardiovascular system? If you have high blood sugar levels for a period of time, even slightly high, your blood vessels can start to get damaged and this can lead to serious heart complications. This is because your body can't use all of this sugar properly, so more of it sticks to your red blood cells and builds up in your blood.

What are the physiological factors of cardiovascular disease?

What is the main cause of cardiovascular disease? More than four out of five CVD deaths are due to heart attacks and strokes, and one third of these deaths occur prematurely in people under 70 years of age. The most important behavioural risk factors of heart disease and stroke are unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol.

Is heart disease a complication of diabetes? You've probably heard that people with diabetes are at risk for multiple health complications, including cardiovascular disease. As it turns out, cardiovascular disease is especially common among people with diabetes: The majority of people with type 2 diabetes will eventually develop it.

Why does diabetes cause vascular disease? Insulin resistance causes chronic inflammation and increased oxidative stress, imbalanced energy metabolism. This leads to neuroinflammation and the apoptosis of pericytes and microglial cells,^{88,89,92,93,94,95,96} thus disrupting vascular endothelial tight junctions and causing damage to the BBB.

What is the pathophysiology of diabetes leading to hypertension? The pathophysiology of hypertension in diabetes involves maladaptive changes in the autonomic nervous system, vascular endothelial dysfunction, enhanced activation of the renin-angiotensin-aldosterone system, immune function alterations, and harmful environmental factors.

How does diabetes damage nerves pathophysiology? Neuropathy is one of the long-term complications of diabetes. Over time, high blood glucose (sugar) levels can damage the small blood vessels that supply the nerves in your body. This stops essential nutrients reaching the nerves.

What is the association between diabetes and cardiovascular disease? High blood glucose from diabetes can damage your blood vessels and the nerves that control your heart and blood vessels. Over time, this damage can lead to heart disease.

What physiological system does diabetes affect? Over time, high blood glucose levels can damage the body's organs. Possible long-term effects include damage to large (macrovascular) and small (microvascular) blood vessels, which can lead to heart attack, stroke, and problems with the kidneys, eyes, gums, feet and nerves.

What is the relationship between diabetes and heart failure? People who have Type 2 diabetes, characterized by elevated blood sugar levels, are two to four times more likely to develop heart failure than someone without diabetes. But heart failure, a condition in which the heart fails to efficiently pump oxygenated blood through the body, also is a risk factor for diabetes.

What is the vascular pathophysiology of diabetes? The vascular complications of diabetes are the most serious manifestations of the disease. Atherosclerosis is the main reason for impaired life expectancy in patients with diabetes whereas diabetic nephropathy and retinopathy are the largest contributors to end-stage renal disease and blindness, respectively.

What is the basic pathology of diabetes? It is characterized by elevated blood glucose levels or hyperglycemia, which results from abnormalities in either insulin secretion or insulin action or both. Hyperglycemia manifests in various forms with a varied presentation and results in carbohydrate, fat, and protein metabolic dysfunctions.

What are the two basic components of the pathophysiology of type 2 diabetes?

Which are the main reasons of diabetes and heart diseases? There is a strong link between diabetes and heart disease. These conditions share common risk factors, including high blood pressure, high cholesterol, obesity, and more. Over time, uncontrolled high blood sugar can damage the blood vessels and nerves that control the heart.

How does sugar affect cardiovascular system? High amounts of added sugar can result in chronic inflammation in the heart and blood vessels. This can boost blood pressure and increase heart disease risk.

How does insulin affect the cardiovascular system? Insulin administration reduces free circulating FFAs and enhances myocardial glucose uptake, especially at high doses. Probably, high-dose insulin infusion enhances myocardial function significantly, especially in patients with myocardial dysfunction due to coronary artery disease.

What is the strongest physiological risk factor for cardiovascular disease? High blood pressure. High blood pressure is a major risk factor for heart disease. It is a medical condition that happens when the pressure of the blood in your arteries and other blood vessels is too high.

What is the main factor of cardiovascular disease? What are the risk factors for cardiovascular disease? The most important behavioural risk factors of heart disease and stroke are unhealthy diet, physical inactivity, tobacco use and harmful use of alcohol.

What is the physiological effect of the cardiovascular system? The cardiovascular system (your heart and blood vessels) supplies your body's organs with oxygen and nutrients so your organs can do their jobs. Your blood vessels also carry carbon dioxide and other waste away for disposal.

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Why does diabetes cause vascular disease? Insulin resistance causes chronic inflammation and increased oxidative stress, imbalanced energy metabolism. This leads to neuroinflammation and the apoptosis of pericytes and microglial cells,^{88,89,92,93,94,95,96} thus disrupting vascular endothelial tight junctions and causing damage to the BBB.

What is the pathophysiology of diabetes causing stroke? Over time, excessive blood glucose can result in increased fatty deposits or clots in blood vessels. These

clots can narrow or block blood vessels in the brain or neck, cutting off the blood supply, stopping oxygen from getting to the brain and causing a stroke. Diabetes or prediabetes.

How does diabetes mellitus cause coronary heart disease? Diabetic patients exhibit an increased risk for development of atherosclerotic CAD for many reasons, including metabolic factors, like hyperglycaemia, dyslipidemia and insulin resistance, which lead to endothelial cell, vascular smooth muscle dysfunction,^{6, 7} impaired platelet function and abnormal coagulation.

What happens to your heart if you eat a lot of sugar? High sugary diets have been linked to high blood pressure, which, in turn, increases the risk of heart disease and stroke. Chronic inflammation. Sugar can promote inflammation in the body which leads to excess stress on the heart and blood vessels, which, in turn, increases the risk of premature death and stroke.

How does sugar lead to cholesterol accumulation in the arteries? Sugar also blocks an enzyme that your body needs to break down triglycerides and get rid of them. And when you have high levels of triglycerides along with high LDL and low HDL, the combination can lead to fatty build-up in the arteries and raise your chances of heart disease, heart attack, or a stroke.

Is it fat or sugar that causes heart disease? The verdict. Both fat and sugar matter when it comes to a healthy diet and your risk of developing heart and circulatory diseases. Pitting the two against each other is unhelpful as they are linked, both in terms of their effects on our health and in the foods we eat.

Why are diabetics more prone to cardiovascular disease? High blood glucose from diabetes can damage your blood vessels and the nerves that control your heart and blood vessels. Over time, this damage can lead to heart disease. People with diabetes tend to develop heart disease at a younger age than people without diabetes.

What is the pathophysiology of diabetic vascular disease? Diabetes mellitus substantially increases the risk of developing coronary, cerebrovascular, and peripheral arterial disease. The pathophysiology of vascular disease in diabetes involves abnormalities in endothelial, vascular smooth muscle cell, and platelet

function.

How does diabetes damage blood vessels pathology? How does diabetes affect blood vessels? Higher levels of glucose in the blood can cause plaque to build up in arteries, making it difficult for blood to efficiently pump through the arteries and reach areas like the eyes, legs, feet, and kidneys.

What is the pathophysiology of diabetes and heart failure? The pathophysiologic link between diabetes and HF is complex and multifactorial, involving various abnormal biochemical pathways including but not limited to abnormal calcium signaling, deranged glucose/fatty acid metabolism, and inflammatory pathways contributing to myocardial fibrosis, stiffness, and hypertrophy (7, ...

How does sugar damage blood vessels? Excess blood sugar decreases the elasticity of blood vessels and causes them to narrow, impeding blood flow. This can lead to a reduced supply of blood and oxygen, increasing the risk of high blood pressure and damage to large and small blood vessels. High blood pressure is a risk factor for heart disease.

What is a good A1C level? For diagnosing purposes, an A1C level of: Less than 5.7% means you don't have diabetes. 5.7% to 6.4% signals prediabetes. 6.5% or higher usually indicates Type 2 diabetes (or Type 1 diabetes).

Why do diabetics have silent heart attacks? This is sometimes termed cardiac autonomic dysfunction or “autonomic neuropathy.” The nerves of the autonomic nervous systems can be severely damaged. “The result is that people will not necessarily feel chest pain, and this is one way that a silent heart attack is thought to be connected to diabetes,” he says.

How does diabetes cause clogged arteries? Causes of diabetic arterial disease
People with diabetes have too much sugar in their blood. This may change blood chemistry and cause blood vessels to narrow. Or, it can damage blood vessels — a process known as atherosclerosis. Atherosclerosis is also called hardening of the arteries.

What is the most common cause of death in diabetics? Indeed, myocardial infarction is the leading cause of death among individuals with diabetes mellitus.

Is it worth doing an MBA in Madras University? A: Yes, Madras University is a good option to pursue an MBA degree for admission to management courses. The university is ranked 39 among top universities in India as per the NIRF 2022 rankings.

What are the subjects for MBA in Madras University?

What is the pass mark for MBA in Madras University? 6.7. 2. A Student who secures not less than 50 percent marks in the External Written Examination and the aggregate (i.e. Written Examination Marks and the Internal Assessment Marks put together) respectively of each paper shall be declared to have passed the examination in that subject.

What is the rank of Madras University for MBA? Madras University is ranked 18th by Outlook 2023 under the MBA (Government) category, 65th by NIRF 2023 under the Overall category, and 50th by NIRF 2023 under the University (Overall) category.

Which MBA has highest salary? 1. MBA in Business Analytics: The MBA in Business Analytics is the highest-paid MBA specialisation in the world. Business Analytics (BA) is the technique of resolving business problems using data analysis, statistical models and other quantitative measures.

Which is better for MBA Anna University or Madras University? Anna University and Madras University are both really good. But Anna University focuses more on engineering than mba or bba. So, Madras University is a better option specially for MBA students.

How many seats for MBA in Madras University? M.B.A. (Regular): 45 Seats (Reservation Policy of Govt. will be adopted).

Which MBA specialization is best?

Is entrance exam necessary for MBA in Madras University? Madras University MBA admissions are entirely entrance-based. To secure a seat to MBA course at Madras University, candidates must qualify for TANCET exam with a valid score. Candidates who passed graduation in the relevant stream are eligible to apply for the course.

What is the B+ in MBA? Marking System A+, A, A- denotes excellent mastery of the subject and outstanding scholarship. B+, B, B- denotes good mastery of the subject and good scholarship. C+, C, C- denotes acceptable mastery of the subject.

What is the age limit for Madras University? Minimum Age Limit: Candidates who have completed 21 years of age as on 1st July of every year in which the candidate submits the application.

What is first class mark in Madras University?

Is MBA in IIT Madras worth it? One of the best colleges to pursue an MBA has great faculty and multiple placement opportunities. Placements: In our batch, around 60% of the students get placed at the dorms in Madras. The college has a well-developed placements cell that conducts various placement drives for the on-campus placements of the students.

Is Madras University prestigious? Madras University secured #65 position in the 'Overall' category by the NIRF rankings. It has consistently received good rankings over the years indicating that it is one of the top institutions to pursue education.

What is the placement package for Madras University MBA? Madras University placement report 2023 has been released by the university through the NIRF 2024 report. As per the placement data 2023, the median salary package received by the PG 2-year course students at Madras University was Rs 3,73,200 per annum, while for the PG 3-year courses was Rs 3,89,400 per annum.

What is the ranking of IIT Madras in MBA? One of the Top-B 50 schools in the country, the institute is placed at the 15th rank in the list of Top MBA Colleges by IIRF 2023. In 2022, NIRF ranked it 10th among management colleges in India.

What are good questions for a music quiz? Hard music quiz questions Who was the first woman ever inducted into the Rock and Roll Hall of Fame? What was the first band to have an album advertised on a billboard? How is Robert Zimmerman better known? The album Dry by which artist was cited as one of Kurt Cobain's favourite albums of all time?

What are some good movie trivia questions?

What are some good questions for movies?

What are good music trivia questions?

What are the top 10 quiz questions for adults?

What are hot questions for music?

What are some cool trivia questions?

What are some fun facts about movies?

What was the first movie ever made? 1888. In Leeds, England Louis Le Prince films Roundhay Garden Scene, believed to be the first motion picture recorded.

What are the ice breaker questions for movies? Entertainment ice breaker questions ? If you could be in any movie, what would it be and what character would you play? ? Which actor would you want to play you in the movie about your life? ? If you were a wrestler what would be your entrance theme song? ? If you were a superhero what would your name be?

What makes movies fun to watch? An Appealing Escape A light-hearted movie can make us laugh and feel joy; a romantic movie can alleviate loneliness; an exciting movie can get our adrenaline pumping. Movies allow us to view the world from a variety of different perspectives. You could be an ant, a mob boss, or a superhero.

What are good Theatre questions?

What are 4 fun facts about music?

What are 5 music facts?

What are good music questions to ask?

What are fun quiz questions?

What are good quiz questions to ask?

What are the top five powerful questions?

What are the great music icebreaker questions?

How to do a music trivia game?

What is an open question about music? Open-ended questions in music are musical phrases or responses that do not have a specific fixed answer or ending. These questions allow for more freedom and creativity in musical communication, encouraging active listening and responsive playing.

What are 50 random questions?

What are some fun interesting questions?

What are some fun miscellaneous trivia questions for adults?

Did you know music facts?

What is the highest grossing movie of all time? Six films in total have grossed in excess of \$2 billion worldwide, with Avatar ranked in the top position.

What's a movie everyone watched?

What are good quiz questions to ask?

What are some musical questions?

How to make a good music quiz?

What are some survey questions about music?

What are fun quiz questions?

What are 10 trivia questions?

What are 50 random questions?

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encouraging active listening and responsive playing.

What are the 7 things of music? Let's explore how 7 essential musical elements—sound, rhythm, tempo, dynamics, melody, harmony, and texture—act together to create that powerful and emotive aural phenomenon we know and love as music.

How to do a song quiz?

What makes music fun to listen to? Our favorite melodies release dopamine, known as the feel-good hormone, which activates our brain's pleasure and reward system. Music can have a positive, immediate impact on our mental state; fast tempos can psychologically and physiologically arouse us, helping energize us for the day.

How can music be fun? The limbic system, which is involved in processing emotions and controlling memory, “lights” up when our ears perceive music. The chills you feel when you hear a particularly moving piece of music may be the result of dopamine, a neurotransmitter that triggers sensations of pleasure and well-being.

What are good questions for music? How often do you listen to music? What genres of music do you like? Which do you dislike? Can you play a musical instrument?

What is a musical question and answer? Question/answer call and response Part of the band poses a musical "question", or a phrase that feels unfinished, and another part of the band "answers" (finishes) it. In the blues, the B section often has a question-and-answer pattern (dominant-to-tonic).

What are good questionnaire questions?

What is the qualification for second lieutenant in Pakistan? Those aspiring to become Second Lieutenants can register only male candidates on the joinpakarmy.gov.pk website. To register, it's necessary to be a Pakistani citizen, have at least 55% marks in Intermediate education, be between 18-24 years old, and have a height of at least 5.4 feet.

How to get admission in Pakistan Military Academy?

What is the qualification for Pak Army? Age limits vary with the level of education, ranging from 17 to 25 years. Applicants must meet physical standards including a minimum height of 5'4" (162.5 cm). Educational qualifications require a minimum of 55% marks in Intermediate or equivalent, with higher education garnering more age relaxation.

What is the best age to join Pak Army? The age limit has been set as between 17-23. The candidates must have at least 60% marks in English, Science, and Arts subjects to apply for the Pakistan Army. For AFNS, the applicant must have at least 60% marks in Matric (biology) or 50% marks in F.Sc Pre-Medical.

How long do you have to be in the Army to be a second lieutenant? Through Officer Candidate School (OCS), you're commissioned as an Army second lieutenant after completing a brief enlistment period and the 12-week course, but you'll still need to earn a four-year degree from an accredited university.

Is 2nd Lieutenant a good rank? Second lieutenant is a junior commissioned officer military rank in many armed forces. The lowest officer rank, it is usually placed below lieutenant or first lieutenant.

What is the salary of Pakistan Military Academy cadets? Salary of a military cadet in Pakistan Military Academy is around Rs 40,000. However, most of it goes back to the government in the shape of cost of various dresses and equipment issued to them.

How long is Pakistan Military Academy? To become an officer, cadets undergo a rigorous two-year military training program. The Pakistan Military Academy (PMA) plays a crucial role in providing training to Gentlemen Cadets (Officer Cadets) from the Pakistan Army as well as from Allied countries.

In which city is Pakistan Military Academy? The major training institutions of Pakistan Army are: Pakistan Military Academy: Pakistan Military Academy also known as PMA Kakul, is a Pakistan Army Officers training school located in Kakul, Abbottabad, Khyber Pakhtunkhwa. The academy was established on 14 August 1947.

What is the army's age limit? Age limits Air Force: 17 - 42. Army: 17 - 35. Coast Guard: 17 - 41.

What is the height requirement for Pak Army? Cut-off heights for induction in the Pakistani Armed Forces are 157.48 cm for females and 162.56 cm for males, corresponding to CDC (scaled) percentiles of height 19.36 (25.86) for females and 2.72 (3.82) for males.

How much weight is required for the Pak Army?

Is 50 too old to join the Army? To join as a soldier, the upper age limit for enlistment is the day before the candidate's 43rd birthday. Rejoiners can still join as a soldier until their 52nd birthday, and as an officer (if they have previously commissioned) until their 57th birthday.

Can a 25 year old join the Army? Be a high school graduate with a diploma or possess a high school general education development transcript that reflects successful completion. Be at least 21 years old, but not more than 39 years old at time of selection (waiver authorized to age 45).

Is 27 too late to join the Army? Requirements to join the Army. Perform important day-to-day operations and ensure the success of your unit's mission. Requirements to join as an enlisted Soldier include: Be between 17 and 35 years old. Be medically and physically fit.

Can you become an officer without a degree? Being a U.S. citizen and having a four-year college degree or higher are the bare minimum requirements for officer school. Beyond that, the selection process is highly competitive across service branches.

How fast do you rank up in the Army? Junior Enlisted Army Ranks Privates (PVT), or E-1's, advance to Private 2nd Class (PV2), or E-2, after six months of service. While Private 2nd Class personnel typically attain the rank of Private First Class (PFC), or E-3, after reaching 12 months of service and four months in their grade.

Which branch promotes the fastest? Traditionally, among enlisted ranks, the Army and Marine Corps tend to promote the fastest in the early stages. In these two branches, members can often reach the rank of E-4 (Corporal in Marines, Specialist in Army) within a year or two of service.

What is the salary of second lieutenant in Pakistan? Basic Pay of a 2/Lt in Pak Army is Rs. 38,140. However after adding/ subtraction of miscellaneous allowances and deductions it will be somewhere Rs. 40,000.

What is the average salary for a 2LT in the Army? Total salary range for US Army Second Lieutenant The estimated total pay range for a Second Lieutenant at US Army is \$73K–\$122K per year, which includes base salary and additional pay. The average Second Lieutenant base salary at US Army is \$94K per year.

Do 2nd lieutenants salute 1st lieutenant? Salutes are not exchanged between enlisted members. Second lieutenants are required to salute first lieutenants. The “unwritten rule” that there is no rank amongst lieutenants does not follow military standards.

What is the meaning of 2nd Lieutenant? A second lieutenant is an officer of low rank in the army. [British] 2. countable noun. A second lieutenant is an officer in the army, air force, or marines who ranks directly below a first lieutenant.

What is the difference between a first lieutenant and a second lieutenant? In the army, a junior lieutenant is a second lieutenant, usually a newly commissioned young officer. A first lieutenant is the more senior rank in the army; it was formerly used in the navy to identify the second in command of a ship.

Can a second lieutenant be a pilot? On you way to becoming a pilot, you will spend between two and a half and three and a half years in training before you are qualified to fly an aircraft operationally. All of this training will occur after you have commissioned as a Second Lieutenant in the Air Force.

What is Cadet 2nd Lieutenant? The grade of Cadet Second Lieutenant (C/2d Lt) is the first cadet officer grade of the Civil Air Patrol cadet program, and second milestone award (after Cadet Staff Sergeant).

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