



**PROFESSORIAL LECTURE**

**CORONARY ARTERY BYPASS GRAFT (CABG)  
SURGERY ON A BEATING HEART**

**PROFESSOR DR. MOHD ZAMRIN DIMON**  
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**4 December 2024 (Wednesday)**  
9:00 am - 12:30 pm

Auditorium 2, Hospital Al-Sultan Abdullah Universiti Teknologi MARA

Organised by:  
Faculty of Medicine and Hospital Al-Sultan Abdullah UiTM

UiTM *di hatiKu* **لومها بتوى، موليا**



## Professorial Lecture UiTM Professor Dr. Mohd Zamrin Dimon

### Coronary Artery Bypass Graft (CABG) Surgery on a Beating Heart



Program

## Professorial Lecture UiTM

Auditorium 2, Hospital Al-Sultan Abdullah UiTM

4 Disember 2024 (Rabu), Jam 9.00 pagi

**Nama** Professor Dr. Mohd Zamrin Dimon  
**Tajuk** Coronary Artery Bypass Graft (CABG) Surgery on a Beating Heart  
**Jangka masa** : 1 jam 31 minit

Transkrip:

- 31:46 : Assalamualaikum warahmatullahi wabarakatuh. Salam sejahtera, salam UiTM di hatiku, salam Malaysia Madani. Saya akan cuba untuk memberikan lecturennya ataupun ni dalam dwibahasa, sebahagian itu saya akan translate dalam bahasa Malaysia sebab ada audience terutama sekali dalam family saya dan juga beberapa pesakit saya yang datang sini untuk mereka sama-sama faham apa yang telah berlaku kepada mereka dan juga kepada ahli keluarga. Dan, some of it I will do it in English, especially some of the medical terms very difficult to translate in Bahasa Malaysia. This it the siapa-siapa yang belum ada kesempatan untuk mengimbas scan buku saya profesor lecture saya yang diterbitkan di UiTM. So ada mekanisme tu, scan qr code dan complete quick registration melalui M-Learning History. Percuma. Saya dapat kebenaran untuk harini. Mungkin selepas harini sama UiTM akan press ataupun tidak itu terpulang kepada UiTM Press tapi saya dah dapatkan link pada hari ini. Saya ingin memberikan special tribute kepada beberapa character ataupun individu yang sangat penting dalam membina ataupun build up my character ataupun my carrier. Ini adalah artikel yang diterbitkan tiga empat tahun lepas dalam one of the newspaper
- 34:18 : Artikel ini tribute kepada arwah mak saya, dan beliau adalah inspirasi seperti yang disebut oleh prof dekan tadi. Inspirasi kenapa saya ingin menjadi seorang doktor sebab satu hari saya melawat dia di hospital. Dia menceritakan tentang seorang doktor yang sangat baik, yang melawat dia dengan penuh dedikasi dan penuh professional dan dia cakap bagusnya doktor itu. Dan perkara itu menimbulkan inspirasi untuk saya dan juga kepada family saya, isteri saya, anak-anak yang banyak memberikan sokongan dan mereka faham tugas saya sebagai pakar bedah jantung. Isteri saya cakap tadi dalam perjalanan, sebelum pergi travel, anak saya sekolah asrama sebelum pergi travel, mesti kena pergi tengok patient dulu. Balik daripada travel singgah ke hospital dulu baru singgah ke rumah. Ha itu nature, so anak-anak harap dapat faham kerjaya ataupun carrier ayah. This is a tribute to my father. My late father. Yang ni gambar ni diambil 2 minggu sebelum beliau meninggal. Ni adalah majlis apresiasi, Allah izin saya dapat hadiah terbaik untuk surgical base masa Master of Surgery.



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- : Towards the end, saya dapat anugerah daripada USM dan dbuat penganjuran majlis makan malam dianugerahkan gelaran FAD. Dan 2 minggu selepas majlis ini, arwah ayah saya meninggal accident dalam perjalanan ke surau untuk solat Zuhur bersama dengan datuk dan nenek saya. Tapi apa yang menarik kat sini, apa yang nak share kat sini adalah selepas dia meninggal, barulah mak saya, ni mak tiri saya, dia bagitau macam mana saya dapat full ataupun best student ni sebab sepanjang saya menjalankan peperiksaan akhir, ayah saya solat hajat tiap-tiap malam dan dia berdoa. Dan benda tu dia bagitahu selepas beliau meninggal. Ni pentingnya doa orang tua untuk kejayaan anak-anak. Prashanth Joshi, my teacher, my mentor, my clique, he is the one actually yang membawa ataupun memperkenalkan ataupun yang melatih, yang memegang tangan saya untuk menjalankan pembedahan half-pump. Especially masa di Kuching seawal tahun 2003 hingga 2006. Ini adalah majlis, masa tu saya kurus, masa tu saya ringan lagi. Harini dah tambah berat sikit. Majlis apresiasi farewell pindah daripada Kuching ke UKM, dan ni alhamdulillah saya dapat berjumpa dengan Mr Joshi di Monash.
- 38:11 : Sekarang Mr Joshi bekerja di Monash dan he become Australian Resident, PR resident termasuklah wife dan keluarga dia. Thank you Mr. Joshi, for coming all the way from Monash to celebrate this. Thank you. Dan yang ke-empat adalah Prof. Dr. Brahmita, ada di sini. Tadi saya mintak dia untuk duduk di depan. Prof. Brahmita is my PIC, partner in crime. Saya kenal dia masa di UKM dulu, tahun 2008 rasa, dalam sekitar itu, bila kebetulan saya operate mak dia, dan lepas daripada itu, yang menariknya Prof Brahmita ni from the Faculty of Computer Science, UPM. Then, selepas dari pembedahan tu, mak dia sihat tu dan dia nampak dia observe certain thing dalam pembedahan yang boleh di innovate, boleh di aplikasikan banyak research-research collaboration yang kami buat bersama dengan ni, dan sepanjang jalinan kerjasama dengan Prof. brahmita dan team daripada fakulti dan at one time we worked together, the whole faculty we worked on a project. We counter 3.5 million of grants. Banyak submissions of LRJS, PRJS, everything. A lot of rejections but there is a lot of But a lot came out from the output research and PhDs and Master's students.



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38:11 : I think I would like to pay special gratitude to Prof. Brahmita for who I am now. This is another person who makes the whole thing about off-pump is reality. This is actually a lady who identified me. Those days, early days, when I was in training. She gave me the opportunity to embark on the UPM surgery. She's from industry. She passed away about two years ago. Special gratitude to her because she makes things into a reality without the contribution and also the collaboration with the industry. It is very difficult for us to move and innovate. I think this is important of the private and public partnership. This is one of the workshops that we attended. So many workshops, so many skills, so many conferences that we organized together through the participation of the late Ms. Patty Soon.

So now I go into my talk. Dia tak ada lah high-end sangat. It's not rocket science. Everybody will understand this lecture. Coronary artery bypass graft surgery on a beating heart. As a cardiac surgeon, we touch the patient's heart even before we open the chest. It's very important. It is not something that we have to, I always tell my trainees, it's very important for you to touch the patient's heart. I always tell my students, one of the things that signifies, differentiates between good doctors and average, mediocre doctors is you touch the patient's heart first before you even examine the patient. If you touch the patient's heart, the patient will allow you to do almost anything provided that you touch the patient's heart. The heart surgeon role begins long before the operating table. This relates the emotional connection between surgeon and patient.

So this is the off-pump. CPG is like the repairing, macam nak betulkan paip air yang bocor ataupun dan sumbat kat dapur. Tapi macam mana nak betulkan paip air ni ketika air tu masih lagi mengalir. Yang ini konsep yang disebut tentang off-pump surgery. Ataupun betulkan enjin kereta masa enjin masih berjalan. Kalau enjin tengah berhenti, jadi semua orang boleh godek-godek enjin itu. Tapi kalau enjin tu tengah berjalan, macam mana nak betulkan enjin yang tengah berjalan. So this is the concept of off-pump surgery.



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- : So kenapa kita ada di sini? Of course the challenge with conventional method to save more life. Exploring the evolution of off-pump CABG. Sebenarnya cardiac surgery ni bermula dengan off-pump. The history of cardiac surgery bermula dengan off-pump sebelum the invention of the cardiopulmonary bypass machine. Cardiac surgery bermula dengan bila jantung tu masih lagi berdenyut sebelum adanya ciptaan machine pintasan jantung. And of course my intention is to celebrate the mentors, patient, team who made it possible. Sharing sessions, lessons and values that transcend the operating room. To my family, you are very unique. Your support and everything is very important for my progress. To my mentors, there's a lot more kat sini.
- 44:28 : Their wisdom and guidance has shaped not just my career but also my value as a surgeon. To my patients, their trust is very important for us to progress. To my colleagues, teams and department, your collaboration, dedication and hard work makes this program possible. To the management and institution, your vision and trust provide the foundation for this work to thrive. To my trainee and student, you are the future of this field and it's a privilege to get and mentor you. To my beloved audience, your curiosity brings this lecture to life bridging the gap between science and society. So understanding CABG, coronary artery bypass graft surgery as I akan go through laju, apa dia the essence of this operation. The heart pumps about 7,500 litres of blood daily, supplying oxygen. The function of the heart is to supply oxygen kepada whole body. The coronary artery delivers blood to the heart muscle itself ensuring its smooth function optimally. Without the coronary artery, jantung tidak boleh berfungsi. Salah satu daripada penyakit yang popular ataupun paling common adalah serangan jantung. Serangan jantung adalah saluran darah yang tersumbat yang tidak dapat membekalkan bekalan darah yang cukup kepada jantung sendiri. Jadi jantung stress, jantung tidak dapat bekalan dan dapat serangan pada masa itu. That's what it's called serangan jantung. When this artery is narrowed or blocked, it disrupts critical supplies causing coronary artery disease. CABG occurs due to atherosclerosis where the fatty deposit blocks the coronary artery. Symptoms include chest pain, angina, shortness of breath even sudden cardiac arrest.



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46:39 : Siapa yang pernah lepas serangan jantung dia tahu betapa sakitnya serangan jantung ini. Satu daripada risiko untuk serangan jantung ni adalah smoking. Jadi orang yang dapat serangan jantung ni dia akan rasa taubat nasuha, taknak isap rokok cause dia tahu sakit itu tengah mengalaminya itu. jadi kita yang belum dapat serangan jantung ni kita tak tahu how painful this serangan jantung. The leading cause of death globally. Coronary artery bypass graft surgery. It's bypass, pintasan. We don't remove the blockage. There's a different procedure. There is a bypass, so we put a different pathway. Through a vein or artery. A proven method to reduce symptoms and improve survival of severe coronary artery disease.

Coronary artery bypass graft surgery is not curative. It's a symptomatic procedure. It prevents patients from getting another heart attack. It supplies a new blood vessel. If the patient has the risk factor before the operation and they do not control the risk factor after the operation the disease can progress. Pesakit yang ada risiko serangan jantung sebelum pembedahan dan selepas pembedahan dia ada risiko sekiranya dia tidak control. Sebab tu salah satu daripada indicator yang patient itu bagus adalah selepas operation itu dia continue. Ada dua tiga patient follow up dengan saya sepuluh, lima belas tahun, and every 6 months dia datang jumpa saya dia akan tengok progress dan nampak this important of follow up after operation.

Common types of CABG. On pump and off pump. I will briefly discuss that. After this lecture, you can see our machine. We have a display exhibition on what is on pump CABG. Even kita bawak bypass machine tu di exhibiton room nanti. And di situ kita boleh tengok dan kita boleh nantikan. Of course, there are pros and cons of on-CABG. Conventionally, I was trained as an on-pump coronary artery bypass graft surgeon. In fact, I mentioned in my book the different perspectives on why I changed to off-pump surgery. This is the heart. The heart is not supposed to stop beating. Definisi mati adalah jantung berhenti. That's the definition of death. Korang boleh dapat brain death, tapi jantung masih lagi berdenyut. There's no such thing as cardiac death. Cardiac death is death. Bila jantung berhenti, seluruh organ akan eventually mati.



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49:48 : The definition of death is when the heart stops beating. Sometimes, we play God. We stop the patient's heart during the operation. We try to revive. We think we are God. But we are not God. This is a long procedure. How we convert the function of the heart into a machine. Through various cannulations. This is what you see. Ada banyak cannula-cannula yang pasal kita pasang dalam jantung masa kita pembedahan nak mengalihkan fungsi pump tadi tu kepada machine. Jantung tu kita boleh berhentikan dengan letakkan aortic cross-clamp. Aortic cross-clamp. Kita bagi cardioplegia. Cardio is the heart. Plegia is the arrest. We arrest the heart. Berhentikan jantung. Slowly, jantung berhenti dan lepas itu kita buat apa yang kita nak buat. Kita boleh open the chamber. Kita boleh buat coronary artery bypass. This is one of the common operations in the world. About 50,000 all over the world a year. Roughly about that.

What is off-pump? Off-pump, we do operation bypass while the heart is still beating. I don't want to go into detail. You can read about the benefits in my book if you are interested. These are the challenges of heart pump. Number one is the training and expertise. Mastering the off-pump technique requires extensive training. Special gratitude to Miss Betty because she provided the means for us to go to the other special training. This is very impossible for us to do if we just depend on the budget from the government and institutions.

Technical demand. Operating on a moving heart requires extraordinary precision and advanced technical skill. Surgeons must adjust to the constant motion and make real-time decisions during the procedure. This is a broader insight. Highlight the importance of embracing complexity and mastering innovation technique to improve patient outcome. In certain parts of the world, for example in Japan, Korea, even in India, the majority of the CABG now is done off-pump. In certain parts of Europe, it's about 30-40%. But in Malaysia, it's mainly about 10% that is done off-pump. Precision, recovery, adaptability is one of the important factors why we choose this procedure. Of course, they need special tools and techniques to enable us to perform this..So kalau you nampak, this procedure ada stabilizer, exposure, blower, dan sebagainya untuk memudahkan pembedahan tanpa kita meletakkan ataupun memberhentikan jantung tadi dalam machine.



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- 53:20 : This is a video. This is one of my landmarks. I go all over places just to share. Because I believe that this is a skill that every cardiac surgeon must have this skill. A few trainees here, this is an opportunity for you to know. In certain situations, certain conditions, you have no option, you have no choice. You have to do the surgery during the heart still beating. Sometimes we can't afford to put the patient back on cardiac pulmonary bypass. We can't afford to put the patient on an arrested heart. These are certain situations. It's a bit technical, but I have to show you because there are some videos that relate to how we really do the procedure. We can't afford to put the patient on an arrested heart. These are certain situations. It's a bit technical, but I have to show you because there are some videos that relate to how we really do the procedure. I'm not going into detail on the technical aspect and evidence of it. These are some of the rules and techniques that I already share in my books. Those of you interested, it will be relevant for you to see. You can go into the detail. There are several rules, several exclusions. Some surgeons say every patient can do off-pump, but at the moment I'm very selective in off-pump. So I comes to the stage where not all patients is suitable to do, especially when I'm training other surgeons. Sometimes we have to let our trainee to do the procedure. So this is exactly how we do the operation. We stabilize the portion, the part of the heart that we want to anaesthetize the most.
- 55:13 : So, jantung masih bergerak. Ia masih membekalkan darah ke seluruh badan tapi bahagian yang kita nak graf ataupun nak buat surgery tu kita stabilkan menggunakan alat-alat yang tertentu dan kita buat pembedahan. So no music during the surgery. The only music that is allowable during my surgery at this time is the heartbeat. So the heart beating, that signifies the progress of the patient. So any disruption of the heartbeat, we can determine what are the... And of course the coordination between the surgeon and the anaesthetist is very important during this time. I'm not going to full all this. So these are some of the patients that we operated. They allow me to share. There's one patient that is currently in the ward actually. You all know this. This patient is a very special patient to me because he came to me.



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: This is Prof. Kamil, penulis buku travelogue Haji. Kita operate dia bulan mac yang lepas. Dia minta saya share gambar ni dan mohon doakan dia. Sebab beliau sekarang dia wad, ada masalah penyakit lain. Beliau di wad 8C. Kita doakan beliau. Alhamdulillah he recovered from heart surgery tapi beliau ada masalah lain. This is one or two days before they discharged him from the ward. This is also special because we did minimally invasive CABG for him. Sebelum dia datang operation, yang menakutkan saya sebagai pakar bedah tu dia sebarkan whatsapps, viralkan warkah terakhir, as a surgeon, panik saya. These are the things that you need to embark on lessons from the beating heart. There are so many lessons from the beating heart. Very important. I want to highlight about the mentor. I appreciate being here. Most of my mentors have very important roles. Their existances provide guidance, experience and also encouragement. Help to see potential in ourselves. Through mentors, they see potential in ourselves. The difference between a mentor and a teacher is sometimes a teacher just teaches you. But being a mentor, you have to follow up the progress and everything.

58:24 : Dr. Zainudin always said to me, Every champion has a coach. There's no champion without a coach. If you want to become a champion, you find a coach and sometimes you have a different coach for different specialties or weaknesses that you want to build up. So that's important about the coach and also the mentor. Role as student and mentee. I want to highlight this. It's very important also for us, especially in the academia. Be coachable. Be proactive in learning. There's a lot of students here. Proactive in learning. Ask questions. Study beyond practice, for example. Cultivate discipline. There's a lot of discipline that's going on. Especially if you want to embark into a specialty that's very challenging. Particularly cardiothoracic, neurosurgery, for example. These are disciplines that require. Penat, yes. Tired, yes. Anak saya, penat, ya. Kalau kita penat, rehat pastu kita teruskan. Okay? Maintain growth mindset. The important, everything, every obstacle is an opportunity. Challenges is an opportunity for us.



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: So there's a lot of challenges. Every patient that we operate, it's not 100% success. Okay? Everything that we operate, there are patients who die. There are patients who die in OT. There are patients who die in ICU. There are patients who die in OT after a month. That's normal. But the important thing is that we do the best we can. Learn from that mistake. Respect and gratitude. Very important. How high you go, how high you achieved, you always have to respect your teacher, your mentor. This is also very important characteristic of us as a human being. Even cardiac surgery. Goal takes and responsibility. Stay mentally tough. It's very tough. Very tough. Very tough journey. Very tough. So, as I said, when we are tired, rest. Then we move on. Reflect and self-evaluate. Stay committed to excellence. Okay? And these are some of the mentors that, again, is very important. Every person, there are certain things that I learned from Mark Connolly when I was in previous hospital. He came in and he teach me how to take IMA five minutes.

1:01:48 : Take down the IMA. And there's a certain technique I use, and, of course, you do it off-pump. So, that's Mark Connolly. There are certain things that you learn from certain people. So, don't stop looking for mentors. Takanashi is very important. We bring him in. He's from Japan. He's from Japan. And when he comes here, he will bring the whole team there. Anesthetist. Professionist. No. Anesthetist. Scrub nurse. Then EVH. And he himself. So, four people will come and operate. We have the opportunity to operate with him, I think, three or four times. During the time, even right from the beginning, we started the department. So, this is him in OT. Then his specialty is actually anarthroctomy. Dia buat anastomosis itu panjang. Very long anastomosis and multiple grafts. And long anarthroctomy. And new canalization of the LED. So, these are some of the... Professor Kim. Kim Bong Kim from Seoul, Korea. National Seoul University. I had the opportunity to work with him one week. So, I learned one technique, which is the Y-Graft. Y-Graft in situ. And also the non-touch technique of the vein. So, this technique is actually very useful in certain situations, in certain conditions. Sometimes we don't have enough graft, enough vein. Different situations. So, this is some of the tips that I learned and picked up from him. And we're still in contact previously. He's already retired and moved to a private hospital. And so, this is a picture of Y-Graft or multiple connect the vein into the LED.



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Auditorium 2, Hospital Al-Sultan Abdullah UiTM

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1:03:42 : So, this is very ingenious and he's already published a lot of paper based on this. And this is Seoul National University. And Kieta Kikuchi. Kieta Kikuchi is another Japanese. So, he introduced me on the minimally invasive off-pump. Tapi minimal invasive. So, I started about five, seven years ago. When I was very busy during that time. I was a dean. I was very lucky. We have Prof. Abid and Prof. Arwah Izham. and Prof. Adli. So, these are the techniques that we use. Small invasive. I'm very selective nowadays. Mainly because of the training that I have to go through. So, I have to prioritize the training and trainee. Rather than doing all this alone myself. So, later on maybe we can embark on that. And another person is the Massimo Lemma. I learned one very important. This is also about minimally invasive off-pump. But he introduced the concept of looking at the chest x-ray. How to evaluate the various techniques that you do from the chest x-ray. Then locate the suitability and exclusion criteria for the minimally invasive. Especially the location of the border. Middle border of the heart in relation to the ribs. So, I think this is also. And Dr. McGinn. This popularized the minimally invasive, and then modified by Kieta Kikuchi and also Dr. Massimo Lemma. I have the opportunity to learn from him. And also meet him at the ISMICC about ten years ago. This is his result. Presenting that time thousand cases of minimally invasive in the ISMICC. And now it's becoming more popular. But, of course, the acceptance and also the take-up of this procedure is not that famous nowadays in Malaysia. Because of various reasons. Mainly on the training and also the availability of the equipment and instrument. I think this is something that we have to look into. So, these are some of the universal lessons from mentorship. Why is it important? Was it related with this lecture? Yes, I think it's very important. Because being a mentor is very important to me, and this is also another important aspect that I would like to share with you. In my books, as I mentioned, my initial skepticism of OPCAB reflected our comfort of doing surgery using a traditional technique.



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1:06:39 : So, actually, the one person that really changed my mind and my perspective many, many years ago is actually Dr. Liao Pao. And he came in from the U.S. I managed to operate with him, assist him in the operating theater. There's a lot that's changed in my perspective of how a pump should be conducted.

1:08:12 : The off-pump really challenged my capability, our capability, actually. And as I said earlier and shared with you, challenge actually ignites or challenges us for growth. So, it's very important about growth. If you want to grow, you have to embrace discomfort where growth happens. So, growth doesn't happen on the pillow, on the couch. Maybe. Okay? Be open to new techniques, ideas, and methods. As I said, I don't do off-pump, all of my patients, off-pump is certain indicated. But having the off-pump capability changed the perspective of how we approach every patient. And the greatest breakthrough often starts with the words, let's try something new.

Of course, some people, why change when there's something new? And change when there's nothing happened in that. But I always believe there's no reason to live a mediocre life. So, carry a path shaped by individual values, goals, and circumstances. Every choice reflects a unique commitment to making a difference. So, it's very important that every one of us have something peculiar or something unique to themselves that we can share with others. So, some of us, we have the opportunity to advance knowledge and training future experts, and for others, about creating opportunity to serve in different ways, and what is important, all contributions are essential to healthcare growth and also the impact that comes with it. So, there are certain values that shape our choices, and the selection of career also depends on values that instill on us. The family, the mentor, the life experience influence what we prioritize.



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1:10:43 : And of course, my example, I've given my mother. My mother gave me inspiration. Saya selalu bagitahu anak saya, saya yakin mak saya pandai, sebab tu saya pandai dengan izin Allah. Sebab ada satu masa tu kami tengah mengaji di ruang tamu lepas maghrib, kakak saya tengah baca Quran, mak saya tengah lipat baju di dalam. Tengah-tengah ngaji tu mak saya jerit, "salah tu!". Saya impressed, oh mak saya boleh tahu walaupun dia tak baca kitab di dalam. Masa tu kita kecil, lima, empat tahun, from now on, mak saya pandai. Alhamdulillah. Kemudian kami dari orang kampung, gaji rm300 sebulan, imagine 300 ringgit sebulan nak tampung 8 orang adik-beradik. My mother kene simpan duit sikit-sikit. Tiap kali ada benggali datang kampung jual roti kaya, mak saya mesti ada duit nak beli roti kaya itu, roti kaya dia sangat sedap yang I still remember yang oh, mak saya pandai simpan duit. So banyak berlaku pengalaman-pengalaman kita.

Training the next generation, of course, that is the dream. Pada saya, jadi kenyataan. Terima kasih kepada Dato' Zainuddin, Dato' Razali, dan juga semua yang membantu, kami merealisasikan this article, 2008, kalau dekan kata dulu 2012. Ada 12 tahun. this is actually my idol. Ini lah idol saya, Allahyarham Dato. Zainal Abiddin. Saya tak pernah jumpa dia. Artikel ini pada masa itu, sama macam Dato' Razali, kalau saya tak silap, this other article yang keluar pada masa saya umur 11 tahun, by him, yang pada masa tu mencari dana untuk mohon sumbangan untuk menghantar kanak-kanak yang sakit jantung berlubang ke Filipina, kenapa nak kena hantar sampai ke Filipina? That was 1979. We sent patients. Dato' Rozali said, let's send them to the Philippines, by Dato' Nik Zainal. So, I was thinking, why do we have to send patients to the Philippines? Wasn't there a surgeon at that time? That's a trigger. Tak ada ke surgeon pada masa tu, thats triggered. So, these are the inspirations. Semoga Dato' Allahyarham, Dato' Zainal Abidin, get continuous inspiration from his inspiration. So, inspire is very important. The heart of resilience, thriving through challenges. This is another topic.



Program

## Professorial Lecture UiTM

Auditorium 2, Hospital Al-Sultan Abdullah UiTM

4 Disember 2024 (Rabu), Jam 9.00 pagi

**Nama** Professor Dr. Mohd Zamrin Dimon  
**Tajuk** Coronary Artery Bypass Graft (CABG) Surgery on a Beating Heart  
**Jangka masa** : 1 jam 31 minit

Transkrip:

1:14:53 : I can write another book. InshaAllah. The power of adversity. Every challenges. So, we need challenges. Kita perlukan challenges. Embrace challenges.

Come, come, come. Challenges. Then, for us to grow. Bukannya melarikan diri daripada challenges. Tadi, saya jumpa dengan Prof. Kamil. Saya minta izin balik sama ada boleh share gambar atau tak. Saya beritahu kepada dia, orang yang hebat, sebab dia tengah diuji dengan satu yang sangat hebat. Orang yang hebat, pasti cabarannya adalah hebat. Jadi, kalau kita tidak pernah tercabar, tidak pernah rasa tidak selesa, sebagainya, belum tentu kita orang yang hebat. Lesson from operating room, as I said. It's very important lesson that we have to go. There's a turning obstacle into stepping stone. Inner voice of growth. Always ask yourself, what challenges in life feel insurmountable? How can you turn them into opportunity to growth? And remember, growth begin when you embrace discomfort.

Your challenges are your teachers. Adversities spark innovation and transformation. I'm finished with my talk. About the off pump and also this. So, what next? Incidentally, I found this in my... No voice? No voice? This was done many, many years ago.

[Video Playing]

So, this is a conventional stenotomy. And of course, a lot of things are happening that I have no opportunity.



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1:17:53 : Saya belum ada kesempatan lagi untuk nak buat. My own limitation and also some of it also because of the resources that we have. But what we are looking into is actually this surgery that is the future of coronary revascularization. And I have the opportunity to meet this person personally. So, these are the technique and this can be done off palm and also on palm. So, using the small incision, not opening the sternum, but through the inter... in between the rib bones. I've done this technique different approach but using the lateral, do Kikuchi and also McGinn, off palm. But this technique can be done on palm. I've done a few patient here, but I still need to refine this and this is actually the technique, not through the sternum, but through the intercostal space. And I said, again, it's very important, the mentor and inshallah, with the help of the industry, we bring him, the guy, to Malaysia next year and we will conduct a very big event and also mentorship and also proctoring. This notes, this is his notes. Actually, I met him in Greece a few months ago. And this is him, together with my trainee, two of my trainee, and this is another nose because I have certain question that I want to answer and then he clearly put it in the notes and then I understand what is that. But of course, having him is also very important and also the plan for next year, inshallah. So this is Professor Dr. Babliak from Ukraine in the war zone. And he's managed to, I'm supposed to go, right? But one month before the war, sebelum perang itu, I was supposed to go in January. War start dekat bulan tiga, tak silap, ataupun COVID. Masa lepas COVID, perang pula. So I think, and he's very humble guy and also very good cardiac surgeon. Okay, these are some of the brochure that I will offer. Okay, general knowledge take home for everyone of you. Sayang isteri tinggal-tinggalkan, sayang anak, tangan-tangankan. Tangan-tangan itu maksudnya kalau perlu cubit, kita cubit. Kalau kita lempang, kita lempang. Tapi sekarang kalau kita lempang anak, abuse masuk penjara. So sayang jantung, stres. Streskan dia. Fungsi jantung, macam saya sebut tadi itu, fungsi jantung adalah untuk nge-pump darah. Jantung adalah muscle, so they pump. So fungsi secara terkawal.



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- 1:21:27 : And of course, kalau ini perlu dibuat dengan terkawal dan nasihat doktor. Okay, konsep heart rate ataupun maksimum degupan untuk setiap orang adalah 220 tolak dengan umur. 220 minus your age. 220 tolak 57. That is my maximum. Kalau lebih daripada maksimum heart rate, kita akan collapse, kita akan pengsan. Sebab darah tak cukup bekalan. So that is the function. So 220 minus dengan umur. Ini konsep yang kita tengok, konsep heart rate. Jadi physical activity adalah untuk kita mencapai 70-80 persen maksimum degupan jantung. Kalau maksimum degupan jantung kita, orang yang 100 tahun, dia 120. 120, bila dia capai 120, dia akan tercungap-cungap. Tercungap-cungap. So kalau umur 50 tahun, 220 tolak 50, 170. Jadi 70 peratus ataupun setengah orang boleh go into 80 peratus adalah 120 kali ataupun 130, 70 persen of that. So some people can go up to 85 persen, 90 persen depending on they punya endurance dan juga training. So kalau orang yang fit stamina dia, dia boleh ber-exercise dan capai heart rate sehingga 70 hingga 80 persen sebelum tercungap-cungap.
- 1:23:05 : Tapi orang yang tak fit, dia jalannya sekejap, heart rate dia dah dup, 120, dah tercungap-cungap. Naik tangga sikit, dah tercungap-cungap. This is the concept yang the fitness, the stress. Jadi salah satu cara untuk nak sayang jantung kita adalah kita kena streskan jantung. Kalau jogging, jangan jogging rata macam itu sahaja. Kalau berjalan, jangan berjalan static macam itu sahaja. Kena ada up and down. Up and down sampai kita cungap-cungap, cungap-cungap. Lepas itu berhenti. Lepas itu cungap-cungap lagi. So that's why one of the best exercise adalah hiking and of course, play racquet tennis ataupun badminton ataupun bergantung kepada you punya flexibility. Again. So time's up. So this is a take-home message. Ada satu lagi yang saya nak share. Ini sesuatu yang our vision balik nantilah. Masa ini tak adalah ringan sangat. Boleh, naik atas. ABC. Okay. Okay, this is a gift. Ini hadiah untuk yang hadir dan kepada semua ini. E-Journal. Boleh scan itu. E-Journal ini special. Saya bagi hadiah untuk yang hadir pada hari ini dan boleh share. Boleh distribute. Kalau tengok, boleh scan. Boleh scan hadiah.



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Transkrip:

: Why is E-Journal? Key features. This is something that Intentional Growth yang saya sebut tadi itu. Growth. You punya growth. Ada dua version. Interactive Edition dan juga pen. Boleh type. Entry. Ataupun boleh scribble. Boleh tulis. Dalam. Dekat situ. Dan kalau nak tengok macam mana dalam itu adalah dia melalui PDF. Macam mana nak nak share.

Because we believe that it is very important to have an Intentional Growth. Sometime kita ini. You will be surprised. Sometime apa yang kita tulis 5 tahun, 10 tahun lepas. Bila kita tengok balik terjumpa balik. Yang ini saya telah tulis 10 tahun lepas. Tapi dia dah jadi pada hari ini ataupun 5 tahun akan datang. So that is the power of being Intentional. Directly or indirectly. I think that is very important. Start with the vision. With the dream. With the vision. And then the Intentional purpose. And then we reflect. I think this is the reason why I share. Ataupun we share this journal. Okay. Kalau nak tengok balik. Dia punya itu. Dalam itu ada beberapa apps yang.

Ha. This one. Okay. You can go through. Macam contohnya August ataupun January. You can go to January. Ada special note letter daripada saya.

I share with you some of the books. Awaken the Giant Within. Contohnya. Then other special notes when you have time. This is some of my gift to all of you. You can share. You boleh share.

And I share some of the books that is important. That I read. Sometimes do 3 times. Okay. I think with that. I would like to thank all of you. Terima kasih keadaan hadiran. Yang dalam majlis ini. Dan. Semoga berjaya. Assalamualaikum warahmatullahi wabarakatuh. Terima kasih.