

KESEHATAN PENERBANGAN JAMAAH HAJI

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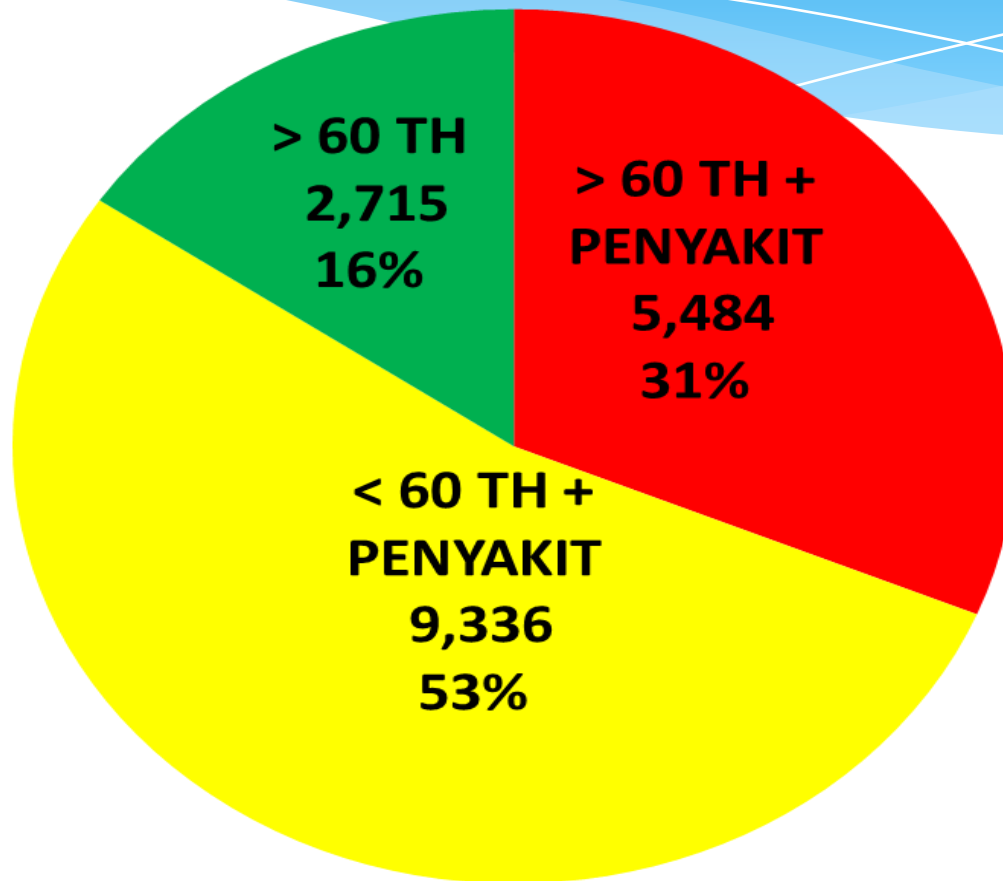


PENDAHULUAN

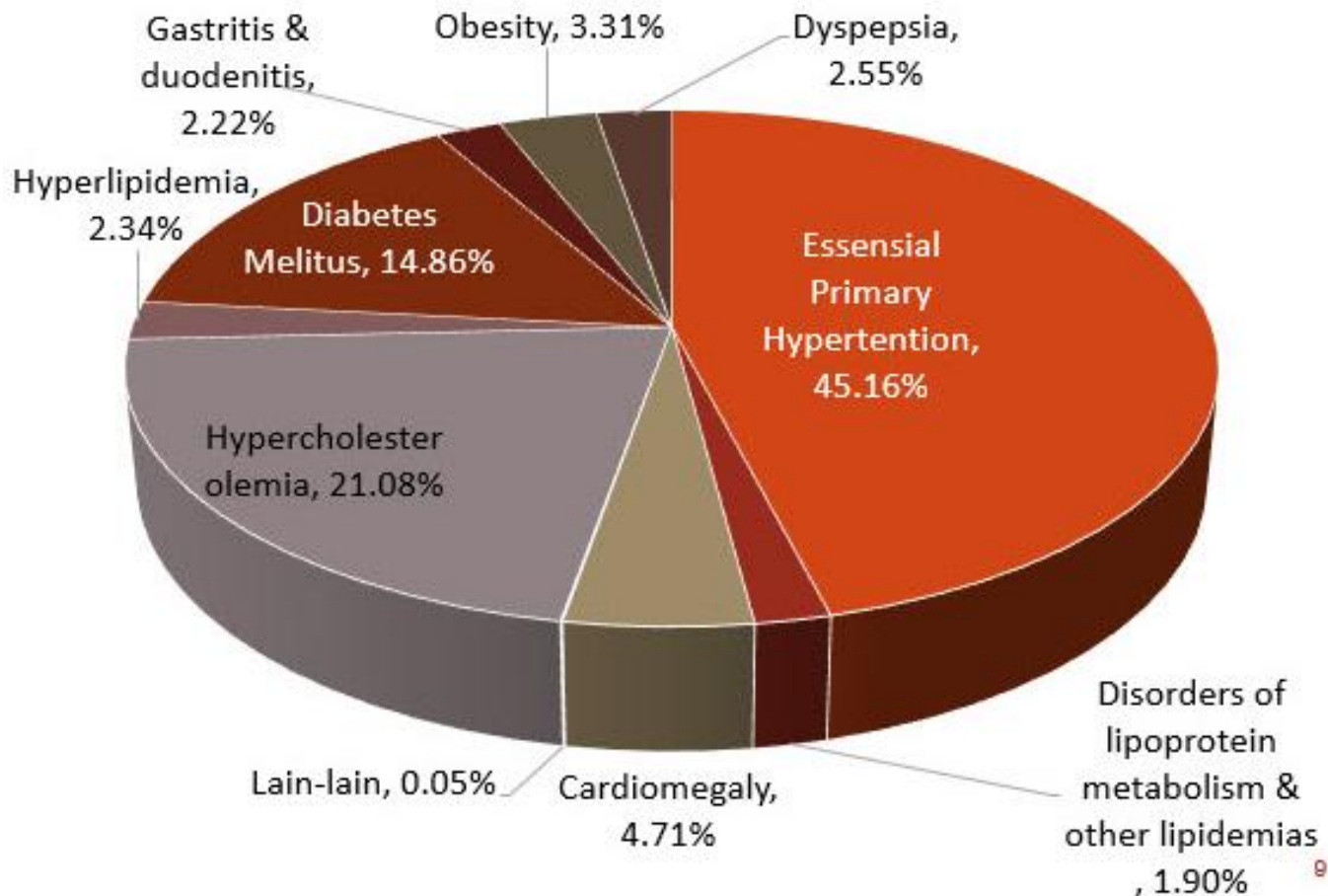
- * Status kesehatan CJH sebelum berangkat
- * Surabaya - Madinah / Jeddah
- * Kondisi matra : perbedaan lingkungan di darat - pesawat udara
- * Stress : preflight - inflight
- * → kesakitan atau kematian diatas pesawat



RISIKO TINGGI

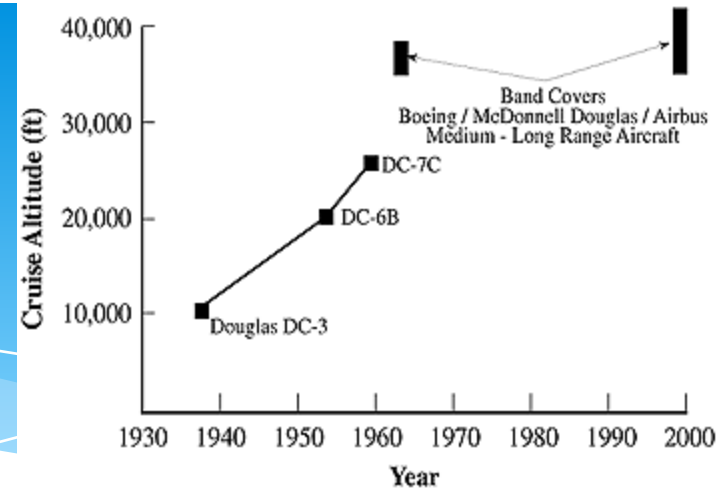


PENYAKIT CJH

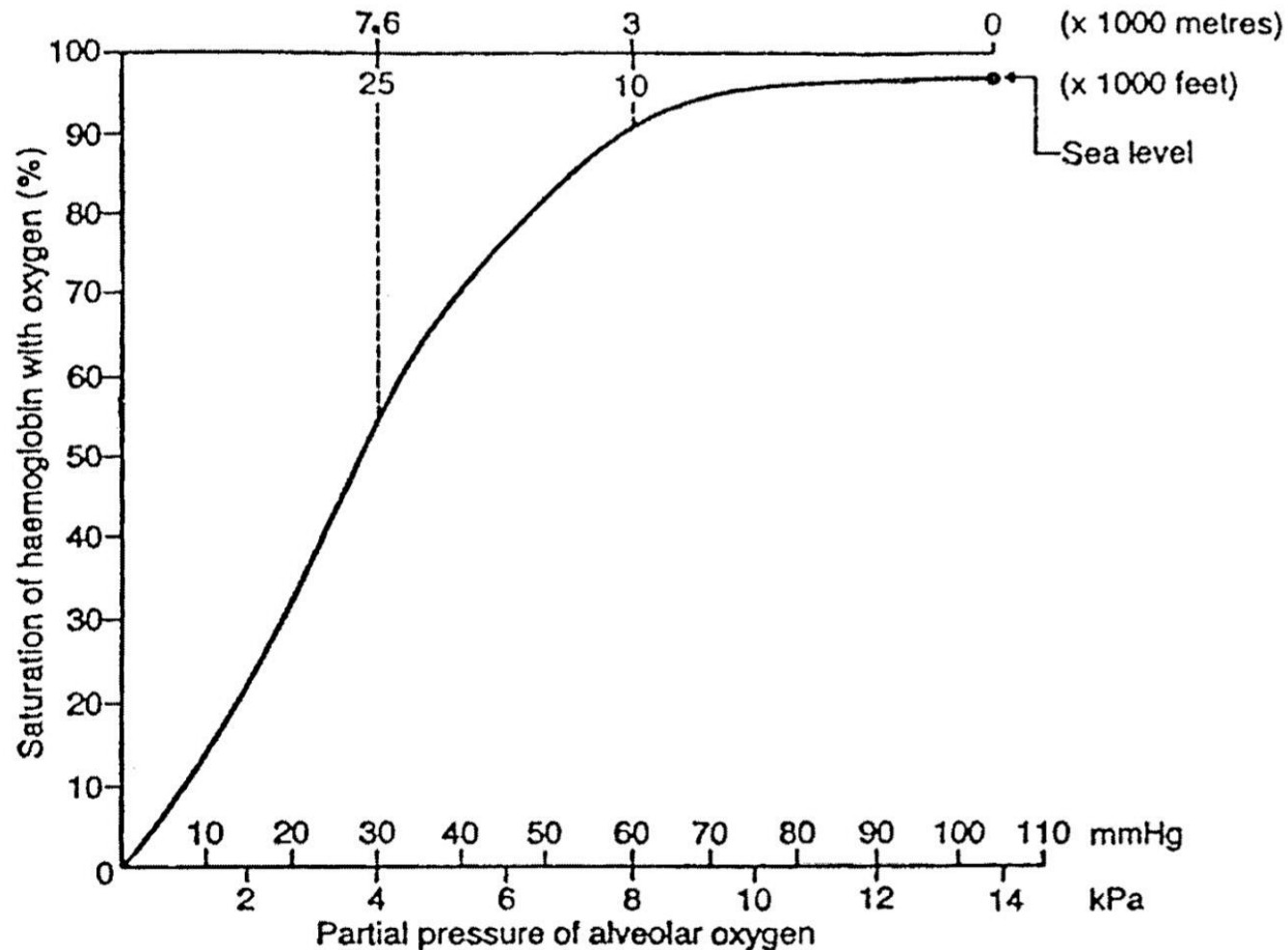


PERJALANAN UDARA

- * Pesawat Boeng 747
- * Kloter SUB : 450 orang
- * Durasi : 8 – 10 jam
- * Jarak jauh, melewati zona waktu : beda 4 jam
- * Ketinggian pesawat 30.000-40.000 kaki
dpal→ kabin & kokpit otomatis seperti 5000 – 8000 kaki



Oxyhemoglobin Dissociation Curve



ALTITUDE PHYSIOLOGI

- * Changes in atmosphere pressure
- * Relative hypoxia
- * Trapped gas
- * Decompression sickness
- * Cabin depressurisation
- * Hyperventilation
- * Cabin air quality



STRESS OF FLIGHT

- * *Lowered barometric pressure*
- * *Lowered partial pressure of oxygen*
- * *Noise*
- * *Vibration*
- * *Uncomfortable temperature*
- * *Low humidity*
- * *Jet lag*
- * *Cramped seating*

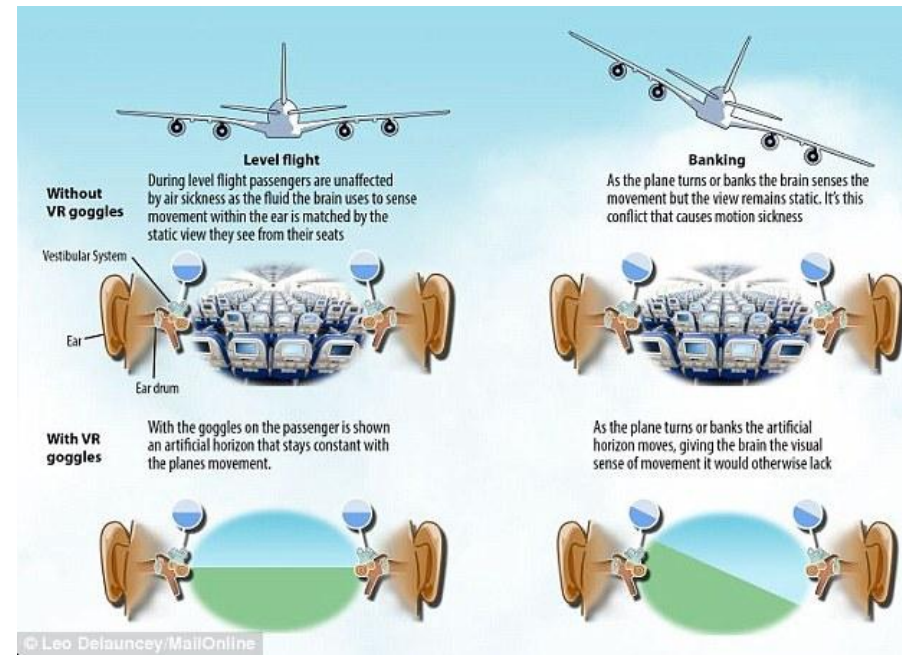


GANGGUAN KESEHATAN PENERBANGAN

- * Motion sickness
- * Jetlag
- * Masalah THT
- * DVT
- * Cardiovascular disease
- * Pulmonary disease
- * Neuropsychiatry
- * Communicable disease
- * Kondisi khusus lain : hamil, paska operasi, anemia, penyakit dekompresi, diabetes, fraktur, penyakit mata, radiasi dll

MOTION SICKNES

- * Gejala : mual, keringat dingin, pusing, letargi dan muntah
- * Pencegahan : perut jangan kosong, jangan membaca menunduk, bila mual tetap tegak
- * Obat pencegah misal dramamine



Aerotitis/barotitis, Sinusitis dan Pulpitis

- * Nyeri akibat perubahan tekanan udara *ascend* maupun *descend*
- * Volume udara mengembang 25 % pada 5000 – 6000 kaki
- * Kondisi infeksi /radang telinga, sinus, ganggren atau pulpitis → nyeri
- * Manuver valsava
- * Dekongestan

JETLAG



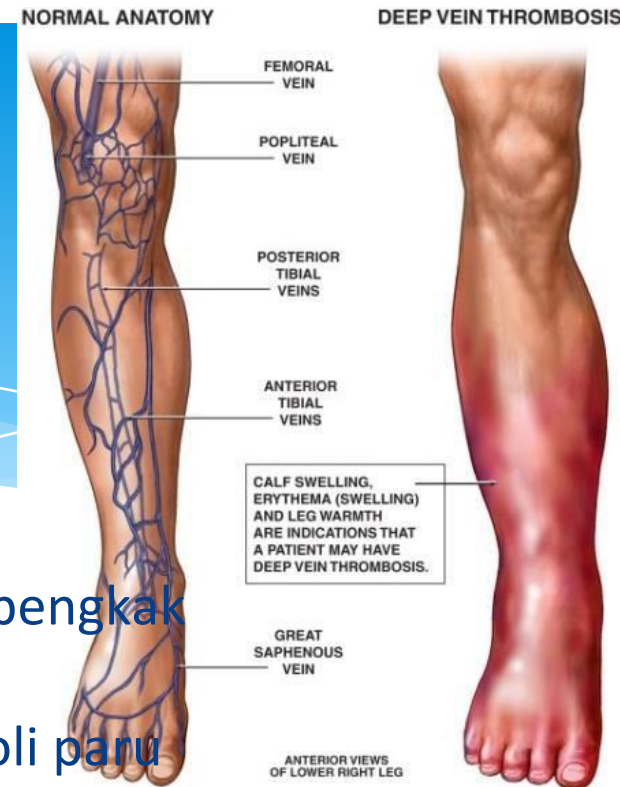
- * Penerbangan jarak jauh → gangguan siklus sirkadian → sinkronisasi siklus siang dan malam di tempat tujuan.
- * Gangguan psikofisiologik
- * Gejala : lelah fisik dan mental, dehidrasi, penurunan performance dan motivasi, gangguan pola tidur.
- * Faktor memperberat jetlag : kondisi sakit, stress, kondisi kabin berubah, minum alkohol, duduk terlalu lama.
- * Upaya : mengatur diet, waktu istirahat, rileks, ubah jam WAS naik pesawat, aktifitas biasa.

DVT

- * Deep Vein Thrombosis
- * Duduk lama → *Economy Class Syndrome*
- * Bisa asimtomatik
- * Gejala : 24 jam setelah take off, Nyeri tekan atau bengkak pada betis
- * Nyeri dada, sesak nafas dan atrial fibrilasi → Emboli paru
- * Faktor risiko :

Dalam Kabin : immobilisasi, hipoksia, hipobarik, dehidrasi, humiditas rendah

Kondisi pasien : Obesitas, PJK, HT, Keganasan, penyakit kronis, hormon, Postop, DVT sebelumnya, lesi vena, merokok



CARDIOVASCULAR DISEASE

- * Hypobaric hypoxia
- * Tachycardia
- * Cardiac decompensation

CARDIOVASCULAR CONTRAINDICATION

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1. Uncomplicated myocardial infarction within 2–3 weeks
 2. Complicated myocardial infarction within 6 weeks
 3. Unstable angina
 4. Congestive heart failure, severe, decompensated
 5. Uncontrolled hypertension
 6. CABG within 10–14 days
 7. CVA within 2 weeks
 8. Uncontrolled ventricular or supraventricular tachycardia
 9. Eisenmenger syndrome
 10. Severe symptomatic valvular heart disease
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Evaluasi Kesehatan

- * Sebelum berangkat
- * Ketentuan umum : kondisi medis tidak stabil → tidak laik terbang
- * Kondisi medis tidak stabil + stresses of flight → masalah serius mengancam jiwa
- * Evaluasi : penyakit jantung (angina pectoris, CHF, MI), DVT, Asthma, Emphysema, seizure disorder, stroke, mental illness, diabetes & infectious disease.

TIDAK LAIK TERBANG



- **Anaemia** - with haemoglobin less than 7.5g/dL
- **Cardiac Failure** - uncontrolled
- **Cerebral Infarction** - within the last 3 days
- **Contagious or Communicable** diseases
- **DVT** - acute
- **Fractures** - unstable/untreated
- **Haemorrhage** - recent gastro-intestinal

TIDAK LAIK TERBANG



- **Jaw** - fractured with fixed wiring
- **Myocardial Infarction** - within last 7 days
- **Operations** - depending on the nature of the surgery, within 5 to 10 days.
- **Otitis Media** - with loss of Eustachian tube function
- **Pneumothorax** - suspected or confirmed
- **Pregnancy** beyond the 36th week of gestation
- **Psychiatric Disorders** and those whose behaviour is unpredictable, aggressive or may disrupt the flight or endanger other passengers

TIDAK LAIK TERBANG



- Respiratory Disease - with marked breathlessness at rest
- Sickling crisis - recent
- Sinusitis - severe
- Any Conditions which may be exacerbated by the flight environment
- Unstable Conditions with a risk of deterioration prejudicial to the passenger or the flight

Perawatan Medis

- * Gejala dan tanda : distress
- * Respon : gawat darurat medis
- * Pertolongan pertama
- * CPR
- * Emergency medical kit → airlines
- * Laporan kasus penyakit dan kematian

