# MEDA Part 3: Medical Guidelines for Doctors completing MEDA Part 2

Thank-you for submitting a MEDA for your patient. We are committed to facilitating travel for passengers with medical conditions and improving passenger medical safety. The Air New Zealand MEDA is based on the International Air Transport Association (IATA) approved form. Your application will be reviewed by our experienced Paxcare and Aviation Medicine Unit teams, who will make the final determination of fitness to fly. To ensure rapid approval for your patient, we need to understand clearly their clinical condition and how they may be affected by air transport.

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## Key Physiological Considerations when assessing Fitness to Fly

Aircraft cabins are pressurized, but not to sea level. The cabin pressure is typically equivalent of up to 8000ft. This results in:

1) Less available oxygen ($PaO_2$ drops from 21% to a sea-level equivalent of around 15%)
2) Gas expansion in body cavities (approximately one-third increase in volume) – particularly relevant to trapped gas in the middle ear, sinuses, pleural space and after surgery.

Air travel also results in low humidity, motion, turbulence, immobility and increased stress for some passengers. Civil Aviation Rules require all passengers to be able to use the aircraft seat with the seatback in the upright position. Exit row seats are only permitted for able bodied passengers.

## When to Submit a MEDA

Submit a MEDA if your patient has any of the following:

1) An injury, illness or medical condition that may cause a significant problem for them or others in flight (see table below)
    - E.g. active heart disease/angina, severe mobility problems, psychiatric problems, injury and unable to bend at knee
2) A medical condition that may be made worse by the flight itself
    - E.g. significant lung disease, ear and sinus problems, recent surgery
3) An infectious disease that could be contagious at the time of travel
    - E.g. chicken pox, TB, measles, mumps, influenza
4) A requirement for special medical equipment
    - E.g. nebulisers, syringe pumps, CPAP, oxygen
    - Wheelchair to aircraft door alone does not require a MEDA if requested at time of booking

Consider a MEDA for passengers with an obvious medical condition that may cause difficulties or challenges during boarding (e.g. new limb casts, resolving chicken pox).

Consider continence, mobility and comfort of other passengers. Please advise about recent exacerbations or complications of chronic conditions. See the table below for further details on specific conditions.

There is no need to complete a MEDA for mobility problems requiring only a wheelchair to the aircraft door, visually impaired, hearing impaired or for uncomplicated singleton pregnancy travelling before the 36th week (see below for further details).

MEDA forms should be submitted 3-14 days prior to travel. For complicated medical situations, a MEDA may be submitted further in advance in order to gain Air New Zealand Medical Travel Approval prior to a firm booking. MEDA forms may need to be completed for travel on other airlines.

## Confidentiality

All information contained in MEDAs is treated in confidence and is used only by appropriate Air New Zealand personnel (or their agents) for the purpose for which it was provided – namely to facilitate medical clearance and special handling arrangements.

## Special medical equipment

All equipment requiring power supply must be approved a minimum of 48 hours but preferably two weeks prior to travel. Battery powered devices may be used in flight (except take-off and landing) if they have self-contained batteries and are no larger than standard cabin baggage items.

## Oxygen

If your patient requires oxygen during flight this must be pre-arranged a minimum of 72 hours but preferably 4 days prior to travel and will be subject to fees. Onboard oxygen supplies are for use in the event of a major aircraft emergency only and should never be relied upon for passengers who 'may' need oxygen. If unsure, refer to the recommendations for specific medical conditions below and/or discuss with the Air New Zealand Aviation Medicine Unit (+64 9 256 3924).

| Patient Condition on Room Air | General Advice on Supplementary In-Flight $O_2$ |
|---|---|
| Can walk 50m without dyspnoea or Sea-level $S_AO_2$ ≥93% | Unlikely to require (unless other medical considerations, see table below) |
| Sea-level $S_AO_2$ 89-92% | May require |
| Sea-level $S_AO_2$ ≤88% | Will require |

- For international flights, an "Airsep Lifestyle" oxygen concentrator is provided. Note this is an **on demand** pulse flow system so only operates when the patient breathes in. It is usually provided via nasal cannulae at 2L/minute. In the uncommon event where continuous flow oxygen is necessary, oxygen bottles will be provided on request.
- For domestic flights, you will be referred to an authorized provider who can provide the oxygen directly to you. Approval must still be obtained via a MEDA for each journey.
- Air New Zealand can only supply oxygen in-flight. If oxygen is required on the ground (e.g. during transit) it is the passengers responsibility to arrange supply.
- Personal oxygen bottles may **not** be used in-flight, but may be carried if packaged and transported per "Dangerous Goods" carriage regulations. Some personal Portable Oxygen Concentrators (POCs) may be permitted if pre-approved via MEDA.
- While Air New Zealand will make every effort to have oxygen available on the flight requested, due to operational matters this may not be possible. In these instances Air New Zealand reserves the right to request that travel is completed on a flight where oxygen can be supplied.

## Liquid, Aerosols or Gels on International Flights: Doctor's Letter for Medications

Aviation Security measures for international flights include that no liquids, aerosols or gels in containers over 100ml are permitted into the aircraft **with the exception of e**ssential prescriptions, non-prescribed medications, dietary supplements/foods and other medical items.

- It is recommended that passengers carry a **doctor's letter** supporting the need to take any essential medical items or dietary supplements/foods on board in carry-on baggage for presentation to Aviation Security. The letter should include the passengers full name (as on the passport), diagnosis, medication needed, quantities of medication required, and the doctor's full name and contact details.
- Carry-on baggage should only contain what is reasonably required for the flight(s) plus unexpected delays, missed connections, and lost baggage.
- Medication must be dispensed in reasonable quantities and carried in the original packaging with a clear printed prescription label including the name of the medicine, the passengers full legal name, doctor and pharmacy details.
- Pills and capsules are not restricted under the liquid, aerosols and gels policy.
- Countries have different custom regulations, which may be determined by contacting the relevant Embassy or High Commission.

**Medical Conditions and Recommendations on Fitness to Travel**

The following are guidelines to assist you in advising your patients on when they are likely to be fit for travel. A MEDA is still required even if your patient meets the guidelines. For patients who do not meet the guidelines, a case-by-case approach in consultation with the Air NZ Aviation Medicine Unit may be warranted in some circumstances.



| **Cardiovascular and other Circulatory Disorders** | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Angina**[viii] | If no angina at rest, can walk 50m at moderate pace without SOB or chest pain, and symptoms well controlled with medication, may travel without supplementary oxygen. | Angina with minor exertion, need to travel with in-flight with oxygen and medications in cabin bag. | Unstable or severe angina (i.e. Angina at rest or cannot carry out any activity without discomfort) will require AVMED unit clearance. Should only travel if essential, and with supplementary oxygen and wheelchair. In all cases, must bring medication in hand luggage. |
| **Myocardial infarction**[viii] | Any passenger with MI over 2 weeks ago and asymptomatic.<br><br>**Low risk** = 1st cardiac event, age<65, successful reperfusion, EF>45%, uncomplicated and no further investigations or interventions planned → may fly ≥3d. | **Moderate risk** = no evidence heart failure or inducible ischaemia or arrhythmia, EF>40% → delay travel ≥10d. | **High risk** = EF<40% with signs and symptoms of heart failure or requiring further investigation/revascularization or device therapy → should be discussed with AvMed Unit and travel delayed until stable.<br><br>Patients should not fly within 3d of MI, unless with medical escort, oxygen and AvMed Unit clearance e.g. emergency repatriation. |
| **Cardiac failure**[viii] | | | May travel with controlled and stable chronic heart failure. Adequate control = can walk 50m and up 1 flight stairs without SOB or chest pain, on room air. Borderline cases may require in-flight $O_2$ and/or |

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| | | | medical escort. Patients with SOB/chest pain at rest or unable to carry out any physical activity without discomfort or symptoms should not fly. Advisable to delay travel 6 weeks after an episode of acute heart failure. |
| **DVT**[vii] | If stable, uncomplicated and on adequate anti-coagulation. | N/A | If significant complications, ongoing symptoms or not adequately anti-coagulated. |
| **Pulmonary embolism**[vii] | If > 2 weeks stable, asymptomatic, uncomplicated and on adequate anti-coagulation | ≥ 5 days if anticoagulation stable, oxygen saturations normal on room air and no shortness of breath on minimal exertion. (walking 50m). | Less than 5 days, symptomatic-shortness of breath with minimal exertion and with complications/co-morbidity. |
| **Pacemaker or ICD insertion** | | ≥ 48 hours if uncomplicated, no pneumothorax | |
| **Angiography/ Angioplasty with or without stent** | | ≥ 24 hours if uncomplicated and original condition stable. | |
| **Cardiac surgery (major) e.g. CABG, valve surgery, transpositions, ASD/VSD repairs** | | ≥ 10 days if asymptomatic, uncomplicated recovery and CXR excludes pneumothorax. Post CABG, Hb ≥ 90g/L | |
| **Cyanotic congenital heart disease** | | If has symptoms at rest or with any activity – only essential flying, with $O_2$ 2L/min. | |
| **Hypertension** | Should not fly if severe and uncontrolled. | | |
| **Syncope** | See neurological section. | | |

| Respiratory Conditions | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Pneumonia** | | Should not fly until fully resolved (no SOB, minimal or no cough). | |
| **COPD, emphysema, pulmonary fibrosis, Cystic fibrosis, pleural effusion, haemothorax**[vii] | **Mild COPD,** OXYGEN SAT >93% and able to walk 2 flight of stairs/50m OR Hx of recent travel in the 1ast year not requiring oxygen, | **Moderate COPDs**, Oxygen SAT at 88-93%, successful travel last year with supplemental oxygen and no other significant cardiac or other co-morbidities. In-flight oxygen required 2l/min pulsed delivery generally | **Severe COPD.** Significant respiratory impairment and function, Oxygen Sats less than 88%. Recent unresolved exacerbation/infection, cyanosis on ground despite supplementary $O_2$ or $PaO_2$ < 55mmHg. Inflight Hypoxic event with or without supplemental oxygen. History of |

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| | And no cardiac or other significant events. | sufficient for most people. Please indicate patient's current $SaO_2$ on MEDA form. | Pulmonary Hypertension and Right Heart Failure. Additional information that will be useful will include HAST, 6 minute walk test, respiratory physician report and echo measuring mean pulmonary arterial pressures. |
| **Asthma** | | Can fly if mild or moderate asthma, currently asymptomatic, travelling with medication in hand luggage. | Severe/brittle asthma – discuss with AvMed Unit. Note, most common cause for asthma attack in aviation setting is rushing to board flight and forgetting to have inhaler in carry-on bag. Consider a spacer. |
| **Pneumothorax – spontaneous or traumatic**[v] | Contra-indicated for flight if lung not fully inflated. | Rib fractures are not a contraindication to flight but there should be a CXR reported by a Specialist Radiologist excluding pneumothorax | Earlier travel may be considered in discussion with AvMed Unit. If Heimlich type drain and medical escort early transportation is acceptable. |
| **Chest surgery (pulmonary) e.g. lobectomy, pleurectomy, open lung biopsy**[vii] | Thoracoscopic procedures > 48 hours post-procedure and with no pneumothorax or other clinically significant complications | Open procedures, may fly ≥ 11days post-op if uncomplicated recovery, no pneumothorax. | |
| **Lung cancer** | Recent diagnosis of small lesions with no clinical symptoms, electrolyte disturbance or associated clinical respiratory disease. Or past history of lobectomy without recurrence of disease and asymptomatic. | If respiratory symptoms are minimal and stable and Hb is > 90 g/L and does not need oxygen, recent CXR/imaging does not show any large pleural effusions, and no brain metastases then ok for approval if specialists letters considers patient fit. Consider DVT risk to be discussed with the passenger by the treating specialist. | Not fit to fly if clinical stability in question. Correct severe or symptomatic anaemia + significant electrolyte disturbances. If does not meet criteria in column two the case must be discussed with AvMed unit. |
| **Major haemoptysis** | | | Contraindicated for air travel until clinically stable. Please indicate Hb on MEDA form. |
| **DVT/Pulmonary embolism**[vii] | See section on 'Cardiovascular and other Circulatory Disorders' | | |

| Endocrine | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Diabetes** | Should not travel if unstable, including hypoglycemic attack requiring assistance of other in the last 24hours. Brittle diabetes – see GP or endocrinologist before travel. | Passenger must carry medication(s) on board and administer own medications or have someone with them who can administer. Aim to avoid hypoglycaemia in flight. Note insulin should not be stored in aircraft hold as too cold. Insulin cannot be stored in aircraft fridge – consider purchase of small cooling storage wallet. Useful patient information websites re diabetes and air travel: www.diabetes.org.nz; www.diabetes.org.uk | |

| Pregnancy | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Singleton, uncomplicated pregnancy** | May fly without medical clearance up to the start of 38th week for domestic flights or short international flights (i.e. up to 5h duration).<br><br>For flights >5h duration, travel acceptable up to the start of the 36th week. Should carry a letter from GP/midwife confirming dates and that pregnancy is uncomplicated/fit for travel. | Pregnancies with complications or beyond the allocated timeframes at time of travel. | Will be considered on an individual basis. |
| **Multiple, uncomplicated** | | Travel up to the start of the 33rd week permitted with letter confirming dates and that pregnancy is uncomplicated/fit for travel. | |

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| **Complicated pregnancies, or history of premature labour** | | | On an individual basis. For fetal problems in which baby will need tertiary care travel up to term may be acceptable if escorted by midwife with delivery pack and no signs active labour prior to flight. |
| **Miscarriage** | Must be stable, no bleeding or pain for 24 hours. Must be haemodynamically stable. Hb >90 g/L | May not travel with active bleeding and/or pain. MEDAs required if bleeding in the last 7 days. | |

| Neonates | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Newborns and infants** | May travel ≥ 48h after birth if born at term and otherwise well/no complications. | <48 h<br><37/40 gestation<br>Complicated birth or requires ventilator/incubator.<br>Complicated neonatal medical hx. e.g. premature lung disease or congenital cardiac disease. | All MEDAs need to be reviewed by MO. |

| Orthopaedic | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Lower limb encircling plaster cast, (Domestic flights within New Zealand).** | Travel >24 hours post cast application, no mobility assistance rqd | Requiring mobility assistance | Major fracture including pelvis/femur<br>Co-morbidities<br>Hb < 90 g/L<br>Travel < 24 hrs |
| **Lower limb plaster cast, (All flights outside of New Zealand)** | Travel > 48 hours post cast application, with cast bivalved along length, no mobility assistance rqd. | Requiring mobility assistance | Major fracture including pelvis/femur.<br>Co-morbidities<br>Hb < 90 g/L<br>Travel < 24 hrs<br>Risk DVT for flights> 8 hours consider anticoagulation |
| **Upper limb fractures** | Travel > 24 hours post cast application, with no neurovascular compromise, no requirement to split cast | Requiring mobility assistance | Neurovascular compromise<br>Co-morbidities |

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| **Joint Arthroscopy Procedure** | Uncomplicated procedure. No mobility assistance required, Analgesia in hand luggage | Requiring mobility assistance | Only if complications or significant co-morbidities |
| **Spinal surgery (e.g. Discectomy)** | Uncomplicated, adequate pain relief and no mobility issues. Can travel after 2 days domestic and 3 days international. | Domestic flights under 2 days and international under 3 days after surgery with analgesia in hand luggage, wheelchair assist as required. | Surgery with complications e.g. dural tear, complex, multi-level procedure. |
| **Joint replacement (e.g. Hip, knee)** | | Domestic flights > 3 days if uncomplicated, pain well controlled, mobility and VTE prophylaxis considered.[i] | International flights at 7-10 days consider Hb > 90 g/L, anticoagulation for flights > 8 hours if no contra-indication |
| **Burns** | Small, Localised area (< 10%) | Burn > 10 %, medically stable and well in other respects, may travel with appropriate wound dressings, hospital with treatment plan,<br>Analgesia in hand luggage<br>Mobile without assistance | Large burns > 10%<br>Oral, facial or chest burn, if unstable e.g. in shock/ widespread infection or hospital to hospital transfer, must be discussed with AvMed Unit. |
| **Ventilators** | | Advice must be sought from the airline as to the compatibility of any ventilator with aircraft power and oxygen supplies. | Seriously ill cases will require detailed discussion. |
| **Head Injuries** | | See 'neurological' section. | |
| **Wired Jaw** | | See 'ENT and Dental' section. | |
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| **Psychological/ Mental health illness** | | | |
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Mental Health disorders including psychosis and complex psychiatric disorders.** | Fit for travel if condition stable for 14 days or more AND regular medication use/ management. Fit if living independently in the community, | Providing stable for 7days may travel with a doctor and/or psychiatric nurse escort. Consider stress of air travel and length of journey – in some cases 2 escorts/security escort may be required for safety reasons. | When the mental health disorder is unstable, including hospital to hospital transfers of unstable patients.<br>Transfer of people under the NZ Mental Health Act.<br>Where there is a medium to high risk of deterioration in flight, risk of harm to crew or other passengers, need for medical intervention in flight, sedation resulting in inability to provide self-cares |

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| | self-managing personal cares including any required medication.<br>Fit if condition unlikely to deteriorate in flight.<br>Consider travel related anxiety, alcohol and other substance use, use of sedative medication, length of travel, and need for active medical support during flight. | | |
| **Travel related anxiety including fear of flying** | Fit to travel if management strategies for anxiety are effective, including successful use during previous travel. If prescribed anxiolytic medication ensure ground trial before flight and advice about avoiding co-use of alcohol. | If travel related anxiety causing significant pre-travel symptoms OR has caused significant symptoms inflight in the past OR issues with alcohol or medication misuse AND/OR management strategies only partially effective. May require a travel companion to assist with inflight anxiety. | Where high risk of significant inflight symptoms/distress, problems with alcohol or medication misuse, or risk to crew and other passengers. |

| Neurological Conditions | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **CVA/TIA** | ≤ 48 hours should not fly. | Minor CVAs including TIAs fit for travel ≥ 72 hours if stable and improving.<br>Major CVA can travel after 10 days if stable. | Travel may be considered after 5 days with AvMed Unit clearance. Supplementary oxygen required within 2 weeks of major CVA. Nursing escort may be required dependent upon deficits. |
| **Seizures** | Should not fly if seizure < 24 hours before departure or uncontrolled epilepsy. | May travel if ≥ 24hours since seizure and control stable. | First-time seizure requires medical assessment & clearance**.** Note that relative hypoxia at cabin altitude can lower seizure threshold – encourage compliance with medication and avoid alcohol. |

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| **Syncope** | Acceptable for travel if < 70 yrs age with classic vasovagal symptoms, **no** history of CAD, significant heart arrhythmia, or suspected seizure disorders. | If age > 70yrs age or syncope within 24 hours must be cleared by a medical practitioner. | Passengers with frequent fainting or suspected underlying CAD, arrhythmias or seizure disorders should be discussed with AvMed unit. |
| **Closed head injury** | | Mild concussion (headache only) - travel > 48 hours. | Severe concussion (headache + other symptoms e.g. dizziness, memory loss, impaired concentration) – delay travel until symptoms resolved; requires AvMed Unit clearance. |
| **Skull fractures** | | | Depressed skull fractures require clearance from treating neurosurgeon and AvMed Unit. Basilar skull fractures – no flying until CSF otorrhoea, rhinorhoea has stopped and intracranial air has resolved. Travel > 3 days if clinically stable & CT scan shows no intracranial bleed or air. If scanning unavailable, can fly > 10days if clinically stable. Urgent emergency transfers require AvMed Unit clearance. |
| **Subarachnoid / Subdural haemorrhage** | | | Should not fly < 10 days from haemorrhage unless with AvMed Unit clearance. Travel ≥ 10 days if stable. May require medical escort depending on deficits. |
| **Hydrocephalus** | | Travel if clinically stable. | |
| **Increased intracranial pressure** | | | Travel when clinically stable and neurologically intact. |
| **Dementias** | Very mild dementias without behavioural issues. Independent living in the community. Ability to understand and follow crew safety directions. May require meet and greet services at airports.<br>No continence issues. | Moderate dementia AND dependent upon support of others to live in the community.<br>OR living in hospital/rest-home may travel providing stable behaviour & management with a nurse escort.<br>If stable (calm and co-operative) may be able to travel with a non-medical family/friend escort, but consider the stressors of travel and continence issues. | If severe e.g. significant risk of acute behavioural problems that would be difficult to manage in-flight even with escort.<br>Consider provision of oxygen if co-existing heart or lung disease. |
| **Brain tumour** | | | Not fit for travel if significant symptoms e.g. uncontrolled seizures. Consider need for escort if significant deficits. |
| **Cerebral Palsy** | Can travel if clinically stable. | | |

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| **Cranial surgery** | | ≤ 7 days since surgery should not fly. | May travel ≥ 10 days after uncomplicated craniotomy. If considering travel 7-10days post-op need CT or MRI scan to ensure no pneumo-cranium. Escort may be needed if passenger unable to self-care. |
| **Aneurysm coiling** | | | ≥ 3days can travel if uncomplicated. Escort may be needed if passenger unable to self care. |
| **Spinal Surgery** | See Orthopaedic section | | |
| **Autism** | | | |

| **Blood disorders** | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Anaemia** | | Generally fit to fly if Hb ≥ 90g/L. If due to chronic disease and compensated, consider accepting Hb ≥80g/L. | If lower or if concurrent lung or cardiac disease, consider transfusion +/- supplementary $O_2$. If acute anaemia, check Hb > 24hours after last blood loss, which must have ceased. |
| **Sickle cell disease** | | | ≥ 10 days after a sickling crisis. Must travel with pre-arranged supplementary oxygen. |
| **Bleeding disorders** | | Contraindicated if active bleeding. | |
| **Clotting disorders/ Thrombophilias** | | Anticoagulation stabilized and therapeutic. | |
| **Leukaemias** | In stable remission with Hb > 90 g/L | If not in stable remission however Hb > 90 g/L and letter from specialist stating passenger is fit for travel, may travel without oxygen.<br><br>If Hb is between 60 and 90 g/L and the passenger is otherwise well (e.g. no significant cardiac or pulmonary comorbid disease) may travel with supplemental oxygen 2 LPM pulse delivery | If Hb , < 60 g/L or clinical concern from treating Dr regarding fitness to fly, or if significant comorbid disease |

| **Communicable Disease** | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Varicella (Chickenpox)** | | May travel once **all** lesions have formed scabs - generally around 7 days after start of rash. Drs note required | . |

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| **Measles (English)** | | Travel 5 days from the start of the rash. | |
| **Rubella (German measles)** | | Travel 5 days from the start of rash. | |
| **Dengue Fever** | | Travel if clinically stable. Transmission Aedes mosquito. Not transmissible from person to person contact. | |
| **Hepatitis A,B,C** | | | Travel if clinically stable. |
| **HIV** | | | Travel if clinically stable. |
| **Lice** | | May not travel if active head or body lice present. | |
| **Meningitis (bacterial - meningococcal)** | | | May not travel if ill or had recent close contact to a person with meningococcal disease. |
| **Meningitis (Viral)** | | | Travel if clinically stable. |
| **Mumps** | | | Travel > 4 days from start of swelling if stable |
| **Shingles** | | Travel if otherwise well and all lesions crusted over generally around 7 days (and covered where practicable). | |
| **Tuberculosis (Tb)** | | | MEDA required from treating physician stating passenger is not infectious. |
| **Cholera** | | | > 6 days after onset as long as diarrhoea settled and clinically stable. |
| **Yellow fever** | | | May travel > 7 days if clinically stable. |
| **Viral haemorrhagic fevers** | | | Absolutely contraindicated for travel during acute illness. |
| **Mosquito borne viruses such Zika/Dengue/Chikungunya** | No MEDA required however if acutely symptomatic should not fly until symptoms resolve | N/A | N/A |

| Gastrointestinal | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Gastrointestinal bleed** | | No travel < 24hours following bleed. | May travel ≥10days if stable. After 1-9days travel may be considered if stable and clear evidence that bleeding has stopped e.g. endoscopic confirmation or serial Hb rising as expected over time. |
| **Major abdominal surgery e.g. bowel resection, open hysterectomy, renal surgery etc** | | Usual is travel ≥10 days post-op if uncomplicated recovery. | AvMed unit may consider travel at 7-9days if excellent recovery. |

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| **Appendicectomy (open)** | > 5 days with procedure and recovery uncomplicated | > 3 days post surgery and must have passed bowel motion and eating and drinking. Domestic, Trans-Tasman and International differs. Hb ≥ 90 g/L and stable | |
| **Laparoscopic surgery e.g. cholecystectomy, appendicectomy, tubal surgery** | Consider travel after 3 days if uncomplicated procedure and excellent recovery-.<br>For more complex procedures such as hemicolectomy OK to travel after 10 days if uncomplicated procedure and excellent recovery. | For less complex procedures can be cleared with MEDA after > 2 days if uncomplicated recovery and must have passed bowel motion and eating and drinking. | More complex laparoscopic procedures such as hemicolectomy and less than 10 days post surgery, provide MEDA and discharge documentation for review by aviation medical officer |
| **Investigative laparoscopy** | ≥ 24h if uncomplicated procedure, gas resorbed (no abdominal bloating/ distension present), and no other clinical concerns. | N/A | Provide MEDA and discharge documentation for review by aviation medical officer if criteria in column one not met. |
| **Colostomy** | | ≥ 5 days if simple uncomplicated colostomy. Colostomy must be working, patient tolerating oral intake, no abdominal distension, nausea or vomiting. Passenger or an escort able to care for the colostomy. | 10 days if also had major abdominal surgery i.e. bowel resection with colostomy. |
| **Nausea/vomiting or diarrhoea** | Contra-indicated if actively vomiting and/or profuse or bloody diarrhoea; or symptoms of dehydration (weakness, lightheaded). | 24 hours post vomiting or diarrhoea and asymptomatic. | |
| **Diverticulitis** | Flying contraindicated if acutely symptomatic | | If still being treated with antibiotics or if still acutely symptomatic, provide MEDA with results of Hb, WBC and CRP. |

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| | especially if febrile.<br>If antibiotic course completed and symptoms fully resolved then no MEDA required.<br>Stable chronic diverticular disease not requiring antibiotic treatment | | |
| **Incontinence** | | Urinary: Advise on incontinence pads and consider IDUC.<br>Faecal: Ensure bowel evacuation prior to departure. | |

| **Renal disorders** | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Renal disease** | Stable and no associated heart failure | Required with complications. E.g. acute on chronic failure with heart failure. Hb>80 g/L. | Check Hb and consider need for transfusion or supplementary oxygen if Hb <80g/L (assuming patient is chronically anaemic and compensated to this level of anaemia). |
| **CAPD (Continuous Ambulatory Peritoneal Dialysis)** | May travel if clinically stable and Hb > 80g/L (see note above). Should travel with additional CAPD bags in case of delays. Due to large volumes of liquid being carried passenger will need to seek advice from airport authorities. | | |
| **Renal calculus** | May travel with history of current asymptomatic stones or has passed stone/been treated and now asymptomatic. Advise travel with analgesia. | Travelling with acute renal colic, renal tract obstruction. For domestic, must travel with health professional escort. | Travelling with symptoms, on international flight. |

| ENT disorders and Dental | | | |
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| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Ear pain, otitis media & sinusitis** | Contraindicated for travel if persistent ear pain and unable to clear ear. | May travel if able to clear ears, illness is improving, pain controlled. | |
| **Middle ear surgery** | | ≥ 10 days with MEDA from ENT specialist, uncomplicated. | Stapedectomy – as advised by surgeon – may require longer on ground |
| **Cochlear implant** | MEDA form not required unless complications or ENT surgeon has concerns e.g. re early travel post-op | | |
| **Tonsillectomy** | Due to bleeding risk, avoid non-essential air travel for 3 weeks post-operatively. | For urgent domestic travel, may fly after 10 days, assuming no post-op complications. | For earlier urgent domestic travel, clearance must be sought from AvMed Unit. |
| **Wired jaw** | | Must have escort with cutters and knowledge of how to use in emergency or if unescorted, self quick-release wiring. | |
| **Epistaxis (nose bleed)** | | Contraindicated for travel if active bleeding or has nasal packing in situ.<br>May travel if bleeding controlled > 24hours.<br><br>Check Hb if hospitalised. | |
| **Nasal surgery e.g. rhinoplasty, septoplasty** | | ≥ 10 days if uncomplicated. | Earlier travel may be considered if MEDA from ENT specialist. |
| **Dental procedures e.g. root canal, extractions** | ≥24h if symptoms controlled and with analgesia on hand. | | |

| Eye disorders | | | |
|---|---|---|---|
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Penetrating eye injury** | | | ≥ 7days – any gas in globe must be resorbed – confirm with ophthalmologist. |
| **Intra-ocular surgery** | | | Depends on gas used – ophthalmologist must confirm. Varies 7-42 days |
| **Cataract surgery** | | ≥24h | |

| | | | |
|---|---|---|---|
| **Corneal laser surgery** | | ≥24h | |
| **Retinal detachment** | | If treated with injected oil or laser surgery can fly within 24 hours. | If gas injection must wait up to 6 weeks depending on gas used. If unrepaired retinal detachment may fly as unlikely to worsen during flight. |

| **Terminal illness**[ii] | | | |
|---|---|---|---|
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| | | Consideration must be given to mobility, lung function, bowel and urinary function, analgesia in flight. | If clinical stability in question must be discussed with AvMed Unit doctor. Stretcher, oxygen and nurse escort may be required. |

| **Cancer** | | | |
|---|---|---|---|
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| Cytotoxic drugs | | | Customers carrying cytotoxic/cancer drugs delivered via subcutaneous ports (power ports) or Hickman Catheters are unable to fly.<br><br>The relevant flight and personal safety reasons relate to potential spills of cytotoxic drugs in the cabin environment and the risks for customers using these devices having no rapid access to emergency care in the event of device disconnection or sudden drug infusion. |

| **Other conditions/circumstances** | | | |
|---|---|---|---|
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Allergies** | We are unable to guarantee allergen-free meals or aircraft cabins. | Food may be brought onto the aircraft but is unable to be refrigerated, stored or warmed during flight. Food is subject to quarantine regulations overseas. | |

| | | | |
|---|---|---|---|
| **Anaphylaxis**[iii,iv] | Allergen-free environment (including meals) cannot be guaranteed – passengers can bring their own food but this cannot be refrigerated, stored or warmed due to food hygiene regulations. . | Recommend travel with adrenalin auto-injector in hand luggage and passenger must be capable of self-administration or travelling with escort who can administer adrenaline auto-injector.<br><br>Unaccompanied minor < 16 years not possible. Needs adult travel companion able to manage case in the event of inadvertent exposure to allergen. | Requests for allergen-free environment in-flight |
| **Scuba diving** | | | >24h following uncomplicated scuba diving. Flying should be further delayed if multiple dives in the 3days before travel. |
| **Decompression illness** | | | In discussion with treating physician (hyperbaric medicine) and AvMed Unit – generally 3-7days after treatment. |

| **Organ Transplant/Biopsy** | | | |
|---|---|---|---|
| | No MEDA required (if all apply) | MEDA for PAXCARE assistance (if not cleared without MEDA) | MEDA for MO Review |
| **Kidney Transplant**[vi] | Stable pre-transplant status with Hb >80g/L | Any other pre-transplant patients with supporting MEDA from the treating specialist specifying no clinical concerns for flying | If acutely unwell or criteria in column two not met |
| **Liver/Kidney Biopsy**[vi] | Stable post procedure >72hours, Hb > 90 g/L and INR considered suitable for domestic air travel by treating specialist. | Stable post procedure > 24 hours, Hb > 90 g/L and INR considered suitable for domestic air travel by treating specialist | If acutely unwell or criteria in column two not met |

Other info:
HEPA air filters and frequent air exchange make for minimal air re-circulation during a flight however it is not possible to guarantee that there will be no exposure in the close confines of an aircraft with surface touching being another possible exposure point

[i] Cooper H J - Air Travel during early post-operative period after TJR – American Academy of Orthopaedics Annual Meeting March 2013.
[ii] Foreign travel for advanced cancer patients: a guide for healthcare professionals – Perdue and Noble Postgrad Med J 2007;83:437–444. doi: 10.1136/pgmj.2006.054593

[iii] **http://www.anaphylaxis.org.uk/living-with-anaphylaxis/travelling/booking-your-flight/**

[iv] **http://www.anaphylaxis.org.uk/living-with-anaphylaxis/travelling/holiday-top-tips/**

[v] Sacco, F., & Calero, K. R. (2014). Safety of early air travel after treatment of traumatic pneumothorax. *International Journal of Circumpolar Health*, *73*(1).v73.24178

[vi]. Email correspondence with Vascular/Renal transplant surgeon- Dr Carl Muthu, ADHB.

[vii]. Shrikrishna, D., & Coker, R. K. (2011). Managing passengers with stable respiratory disease planning air travel: British Thoracic Society recommendations. *Thorax*, *66*(9), 831–3. ISSN: 14683296 .

viii. Smith, D., Toff, W., Joy, M., Dowdall, N., Johnston, R., Clark, L Cleland, J. (2010). Fitness to fly for passengers with cardiovascular disease. *Heart*, *96 Suppl 2*, ISSN: 1468201X

Rose D M, Fleck B, Thews O, *et al.* Blood Gas-Analyses in patients with cystic fibrosis to estimate hypoxaemia during exposure to high altitude in a hypobaric chamber. Eur J Res 2000; 5, 9-12

J Cyst Fibros. 2002 Dec;1(4):281-6. **Predictors of desaturation during formal hypoxic challenge in adult patients with cystic fibrosis.** Peckham D[1], Watson A, Pollard K, Etherington C, Conway SP.

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