



A Generic Risk Management Approach  
in Aviation Medicine  
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**INTERNATIONAL  
CIVIL AVIATION  
ORGANIZATION**



## What is a Generic Risk Management Approach?

- A set of standardized questions that can assist **various stakeholders** to determine whether a condition could pose a serious risk to flight safety.
- The objective is not to diagnose a specific medical condition but can be used to **determine the appropriate level of decision-making** for medical fitness.
- It does **not replace** the traditional Aeromedical Risk Management Model.

## Conditions posing a serious risk to flight safety

- Sudden incapacity
- Subtle impairment of performance
- Progressive degradation
- Unpredictable deterioration
- Treatment-related impairment
- Increased operational vulnerability

## Generic Aeromedical Risk Management Model (AVIATE)

- A = Acute Event Risk
- V = Vigilance and Cognitive Performance
- I = Incapacitation Potential
- A = Awareness and Detectability
- T = Treatment
- E = Exposure and Operational Context

## A = Acute Event Risk (Sudden incapacitation)

**Question: Could the condition cause sudden:**

- loss of consciousness
- confusion
- collapse
- visual loss
- loss of motor control
- severe pain
- behavioural disturbance
- deterioration in flight

| Acute Event        | Condition        |
|--------------------|------------------|
| Syncope            | Arrhythmia       |
| Seizure            | Epilepsy         |
| Hypoglycemia       | Diabetes         |
| Visual disturbance | Migraine         |
| Cardiac event      | Coronary disease |

## V = Vigilance and Cognitive Performance

**Question: Can the condition impair mental performance?**

- concentration
- attention
- memory
- judgement
- situational awareness
- problem solving
- workload management
- decision making under stress

### Examples

- Depression
- Sleep disorders
- Dementia
- Concussion
- Medication side effects
- Fatigue

## I = Incapacitation Potential

**Question: If symptoms occur, can the pilot continue flying?**

- Can symptoms be self-managed?
- Can symptoms be delayed until after landing?
- Could symptoms incapacitate the pilot completely?
- Could symptoms incapacitate the pilot partially?
- Can another pilot readily compensate?
- Does the condition require immediate treatment?

### Examples

- Headache
- Gastro-intestinal
- Pain

## A = Awareness and Detectability

**Question: Will the pilot know a problem is developing?**

- Is there warning before symptoms occur?
- Is onset gradual or sudden?
- Can self-monitoring detect deterioration?
- Can coworkers recognize deterioration?
- Are symptoms obvious?
- Is the pilot usually aware of impairment?

### **Examples good detectability**

- Migraine aura
- Hypoglycemia (warning signs)
- Developing fatigue

### **Poor Detectability**

- Sudden seizure
- Some cognitive disorders

## T = Treatment and Control

**Question: Is the condition effectively controlled?**

- Is treatment available?
- Is treatment effective?
- Is treatment stable?
- Does treatment reduce risk significantly?
- Is adherence to treatment measurable?

### **Additional Questions**

- Does treatment impair performance?
- Are medications sedating?
- Are medications cognitively impairing?
- Do medications affect vision?
- Do medications affect alertness?

## E = Exposure and Operational Context

**Question: Does the aviation environment increase the risk?**

- Altitude
- Fatigue
- Circadian disruption
- Stress
- Workload
- Dehydration
- Prolonged duty
- Other operation specific factors

## Aeromedical risk management framework

- From prescriptive guidance to risk-based and evidence-informed
- Integrated risk and safety management
- Adaptable to new developments
- Measurable result-based outcomes
- Consideration of life stages

### **Need to strengthen aviation medical capacities**

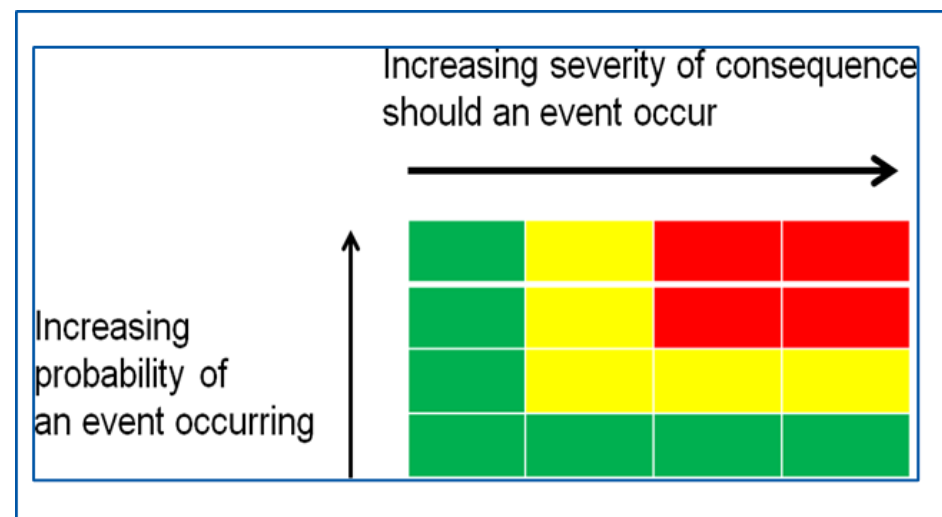
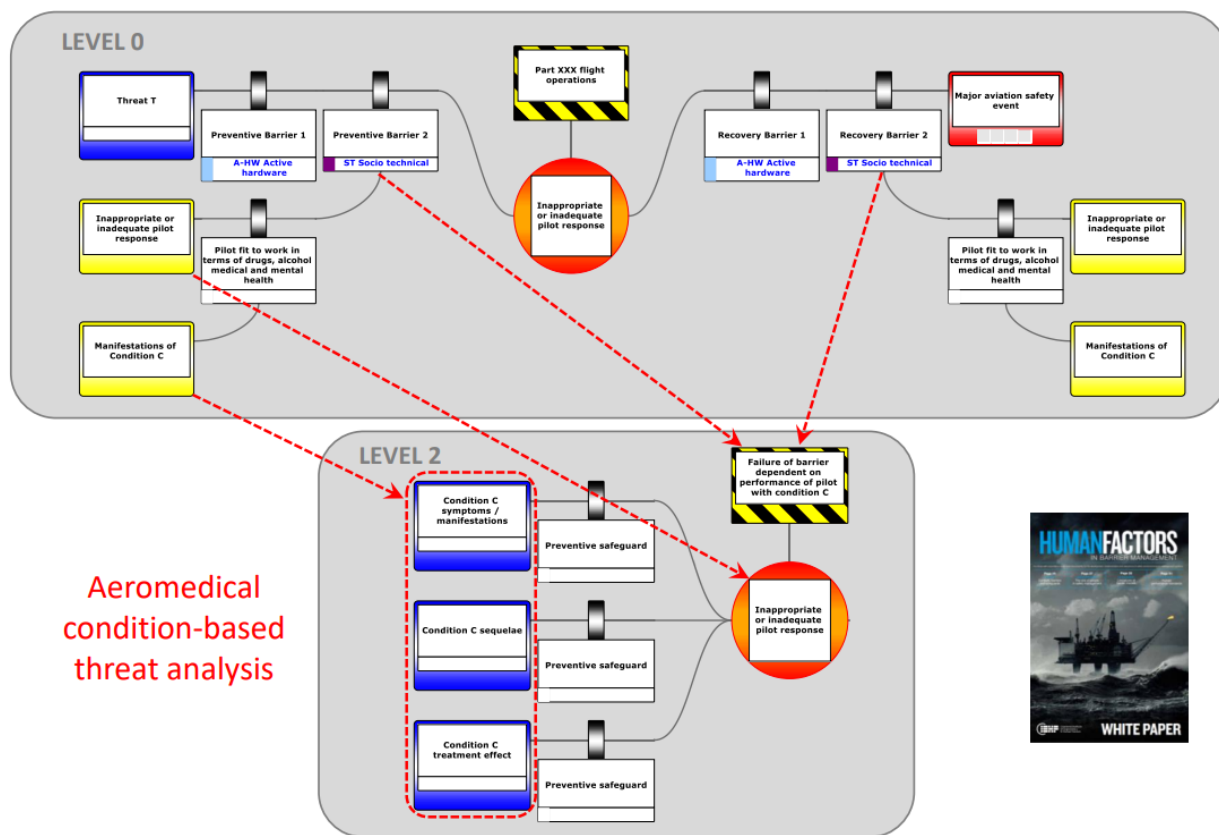
- Training
- Decision support
- Peer support
- Digital systems

# Aeromedical risk management framework

## Integrated Risk Management:

- Individual risk assessment
- Threat analysis with risk threshold: bow-tie (determined by Authority)
- Risk matrices (for use by examiners)
- Additional operational assessments as needed

# Aeromedical risk management framework

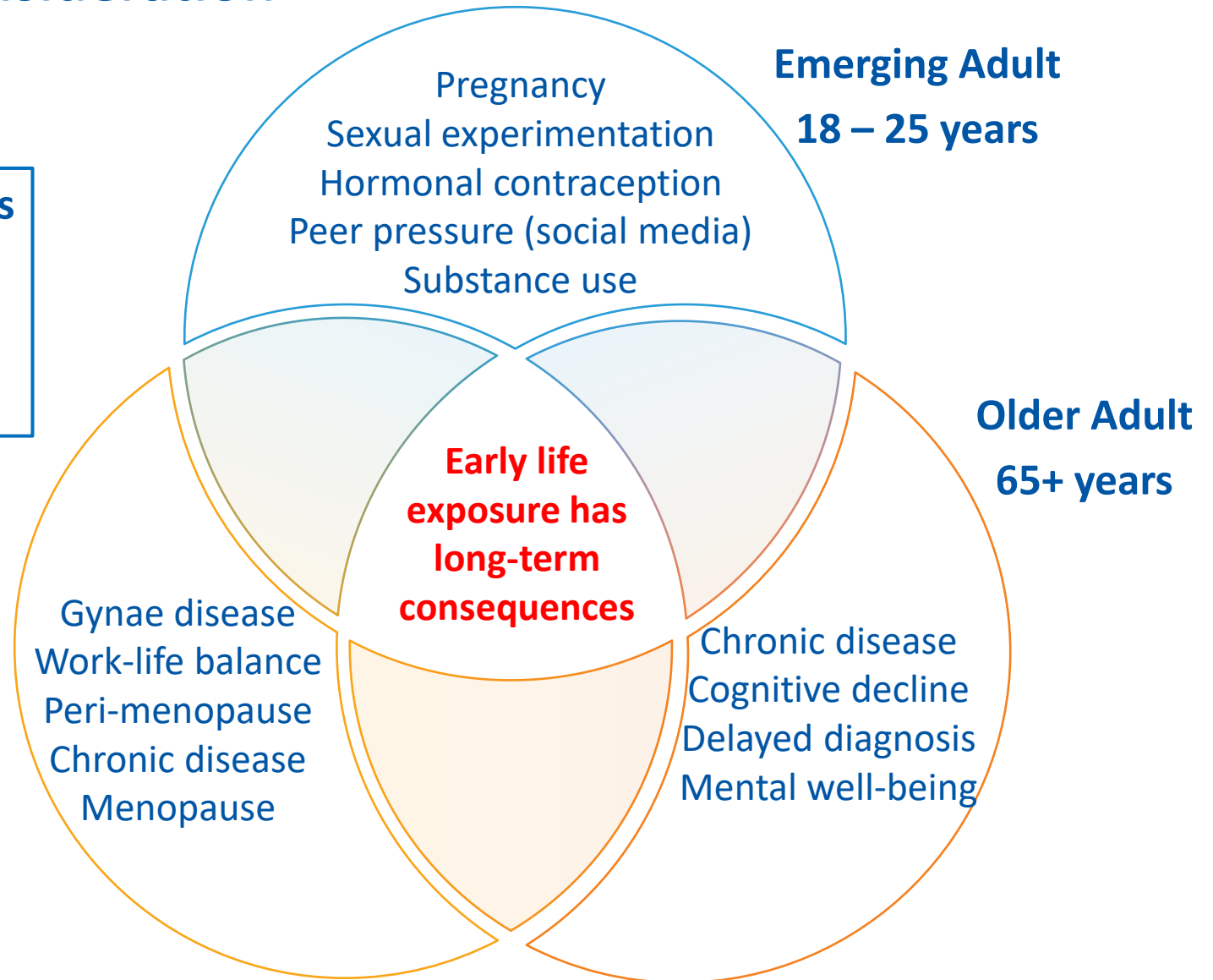


## — Life stages consideration

### General considerations

- Anthropometry
- Physical demands
- Physiology
- Working environment

**Adult**  
26 – 64 years



## **Risk management during life stages for women in aviation**

### **Focus on different life stages considering:**

- Health awareness
- Health promotion
- Preventive screening
- Early diagnosis and intervention
- Optimal treatment
- Preserve optimal functioning within working environment
- Monitor scientific and technical developments

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# Thank You

