Occupational Health & Safety of Flight Attendants

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www.otago.ac.nz/aviation_medicine
Disclosure Information

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Speaker Robin Griffiths

I have no financial relationships to disclose.

I will not discuss off-label use and/or investigational use in my presentation.
Government Concerns about Flight Attendant Health

- 1987: Canada Aviation OSHA Regs
- 2000: FAA/OSHA Report
- 2002: CASA Certification Proposal
- 2002: NRC Report CAQ
- 2004: GAO-04-54 Cabin Air Quality
- 2005: FAAA reversal
- 2007: EGOA Report
- 2007: JAR AMC OPS 1.995(a)(2)
- 2007: House of Lords report

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Is this fiddling while Rome burns?

- Medicals - ?Where is the Value Added?
- CAQ – Clarity vs hot air?
- Radiation
- Cancer
- Musculoskeletal injury
- Mental health
- Fatigue
- Reproductive health

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All Cause Mortality

- Overall low (SMR 0.80)
- Aircraft accidents
- Suicide (males)
- HIV
- Cancer

1. Blettner 2002
Medical Disqualifications\(^1\)

- **ENT** 30%
- **Musculoskeletal** 21%
- **Psychiatric** 12%
- **Cardiovascular** 9%
- **Cancer** 7%
- **Visual** 5%
- **Other**

1. Pombal 2005

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Ionizing Radiation

- 2-6 mSv/year
- Longer, higher latitude sectors
- High LET radiation
- Solar particle events
Strategies

- Occupational Exposure Limits
- Validation of CARI models
- Information to crew
- NOAA SPE notifications
- Pregnancy
- Cataract
- Chromosomal studies
- Cancer surveillance

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Cancer

- Skin
  - Melanoma
  - BCC/SCC
- Breast
- Prostate/Bladder
- NHL/Leukaemia
- Colon
- Brain?

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Controversial Areas

- Healthy worker effect
- Methodologies (response rates)
- Mortality vs incidence
- Over-diagnosis
- Confounding factors
  - Exacerbating (Kojo – family history)
  - Protective
- Looking for small risk amongst large ones
- Attributable risks (Pinkerton)

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Breast Cancer

4 major systematic reviews, based on 7 studies, average 50% risk increase:

Radiation:
  – Tokumaru 2006
  – Buja 2006

Circadian rhythms:
  – Megdal
  – Erren

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Melanoma

- Doubling of risk
- Concomitant SCC/BCC risk
- LET radiation (Sigurdson 2004)
- Role of UVL (Rafnsson 2006)
- Role of melatonin (Souza 2006)
Cabin Air Contamination

- USA
- UK
- Australia
- Carbon dioxide
- ETS
- Dryness & skin irritation
- Infectious disease transmission
Musculoskeletal Injuries

- Turbulence (Tvaryanas 2003)
- Manual handling (Glitsch, Schaub 2007)
- Galley (Spreadborough 2007)
- Slips, trips & falls (Agampodi 2009)
- Ergonomics (Logie)
Mental Health

- 17% FA’s “stressed” (Ballard 2006)
- “Emotion work” (Heuven 2004)
- Harassment (Gendreau 2006)
- Operational concerns (Skogstad 1995)
- Management/job security (Ballard 2004)
- 50% long-term incapacity is stress-related
Circadian Rhythms & Fatigue

- Longer sectors & hours
- Sleep loss
- Circadian dysrhythmia
- Subjective fatigue
- Performance
- Hypoxia
- Melatonin
- Family
Strategies

- FAA FA Fatigue Studies 1-5
- >90% of FA’s report hazardous fatigue
- 2.4% of ASRS incidents fatigue-related
- Scheduling/FRMS
- Duty times
- Standby/positioning
- Recovery time

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Reproductive

- Menstrual irregularities
- Primary infertility
- Foetal death? (Lauria 2006)
- Spontaneous abortions (Magann 2010)
- Endometriosis (Marino 2009)
- Theoretical associations with long/irregular hours, bending, stooping, lifting – last trimester (Bonzoni 2009)

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Making Real Health Gains for Flight Attendants

- Monitor cancer risks
- Injury prevention
- Mental health
- Fatigue risk management
- Investigate cabin contamination incidents

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