

Fit to Fly Workshop

Understanding Substance Use Disorders

Transport Canada

Gatineau, QC

June 6, 2017

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Introduction

- Thank you!
- Terminology
 - “Addiction”
 - Alcoholism
 - Substance abuse
 - DSM (IV and 5)
- Currently “Substance Use Disorder”
 - Mild, moderate or severe
- Why am I speaking here?
 - Currently running 19 recovery monitors
 - Over the last 25 years our success rate runs around 95%

6 things I think you need to know



1. It's all about impairment (not intoxication!!)

- Psychoactive drugs impair!
- Canadian society in general (and aviation in particular) does not understand impairment.
 - Acute vs. Withdrawal (Subacute) vs. Chronic
 - Psychological
 - Mood
 - Perception
 - Cognitive skills
 - Physical
 - Gross motor
 - Fine motor
 - Special senses

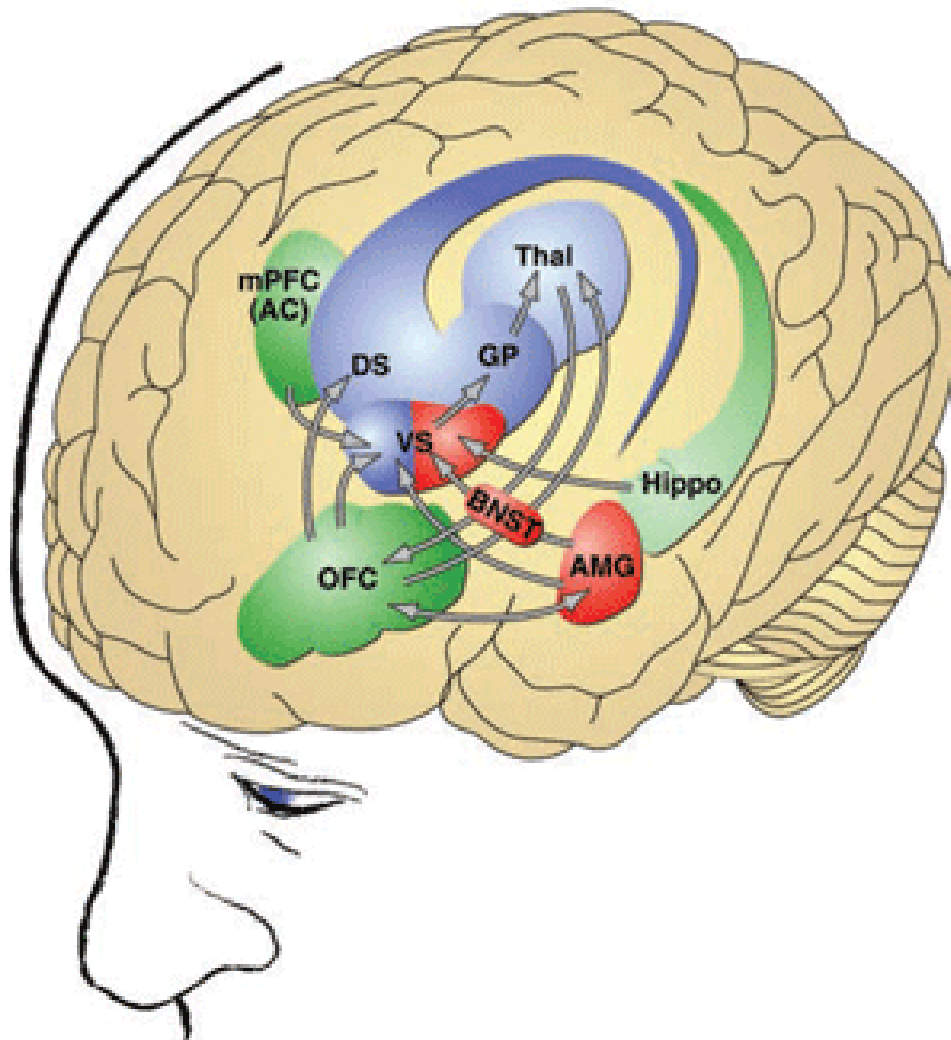


2. Addiction is a primary brain disease

- Roughly 66% of addiction is genetic
- We have worked out a lot of the neurobiology (next slide)
 - “Drug addiction is a chronic brain disease” Leshner AI. Addiction is a brain disease, and it matters. *Science*. 1997;278(5335):45-47.
 - “Imaging the addictive brain”
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2851068/>
 - Addiction circuitry in the human brain.
 - <http://www.ncbi.nlm.nih.gov/pubmed/21961707>
- As such, we cannot cure – only control – but “recovery” can alter a significant amount of abnormal function

Neurobiology of Cycle of Addiction

– functional anatomy



Binge/intoxication

- ventral striatum (VS), including nucleus accumbens
euphoria, reward
- dorsal striatum (DS)
habits, perseveration
- globus pallidus (GP)
habits, perseveration
- thalamus (Thal)
habits, perseveration

Withdrawal/negative affect

- amygdala (AMG), bed nucleus of the stria terminalis (BNST), together also known as the "extended amygdala"
malaise, dysphoria, negative emotional states
- ventral striatum (VS)
decreased reward

Preoccupation/anticipation

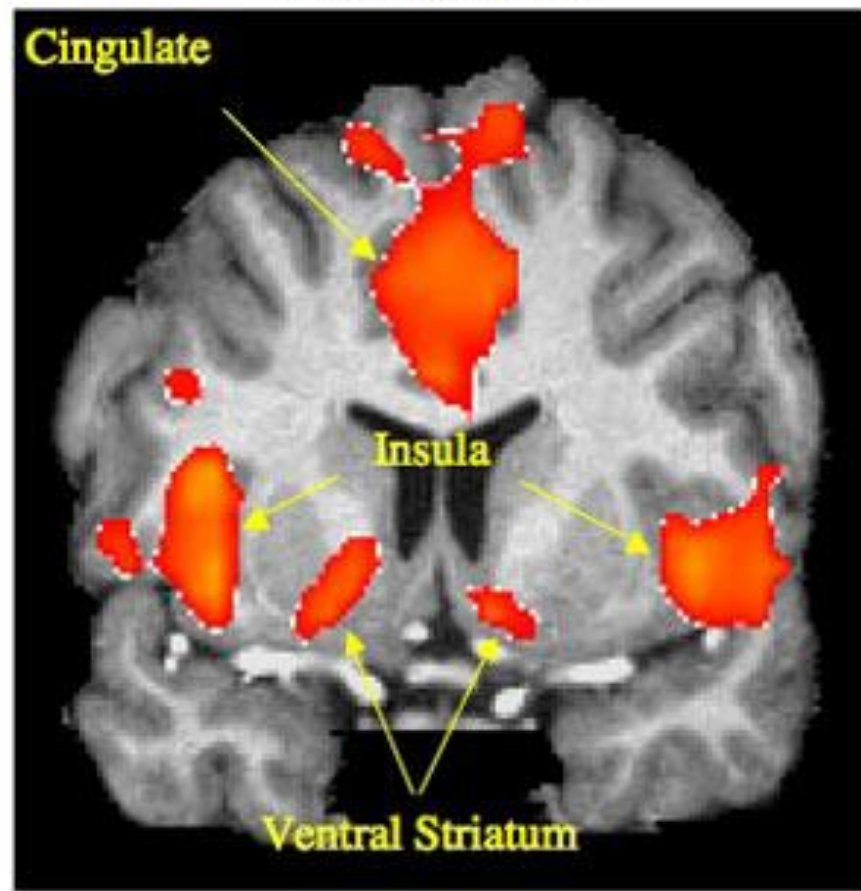
- anterior cingulate (AC)
- prefrontal cortex (mPFC), orbitofrontal cortex (OFC)
subjective effects of craving, executive function
- basolateral nucleus of the amygdala
conditioned cues
- hippocampus (Hippo)
conditioned contextual cues

Alcohol craving fMRI

Social Drinkers



Alcoholics



3. This is really common

- Exceeds low risk drinking guidelines

CAS	2008	2009	2010	2011	2012
18.0	19.8	19.1	19.1	18.7	18.6

- **Exceeds LRDG by Province**
 – *Chronic*

Can	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC
18.6	21.5	16.9	18.3	20.5	19.9	18.8	17.3	18.8	15.8	17.6

– *Binge*

Can	NL	PE	NS	NB	QC	ON	MB	SK	AB	BC
12.8	17.9	12.7	14.2	14.2	12.8	12.8	10.9	14.5	11.6	12.8

4. We know how to diagnose this

- Addiction looks like chaos



5. We know how to treat this

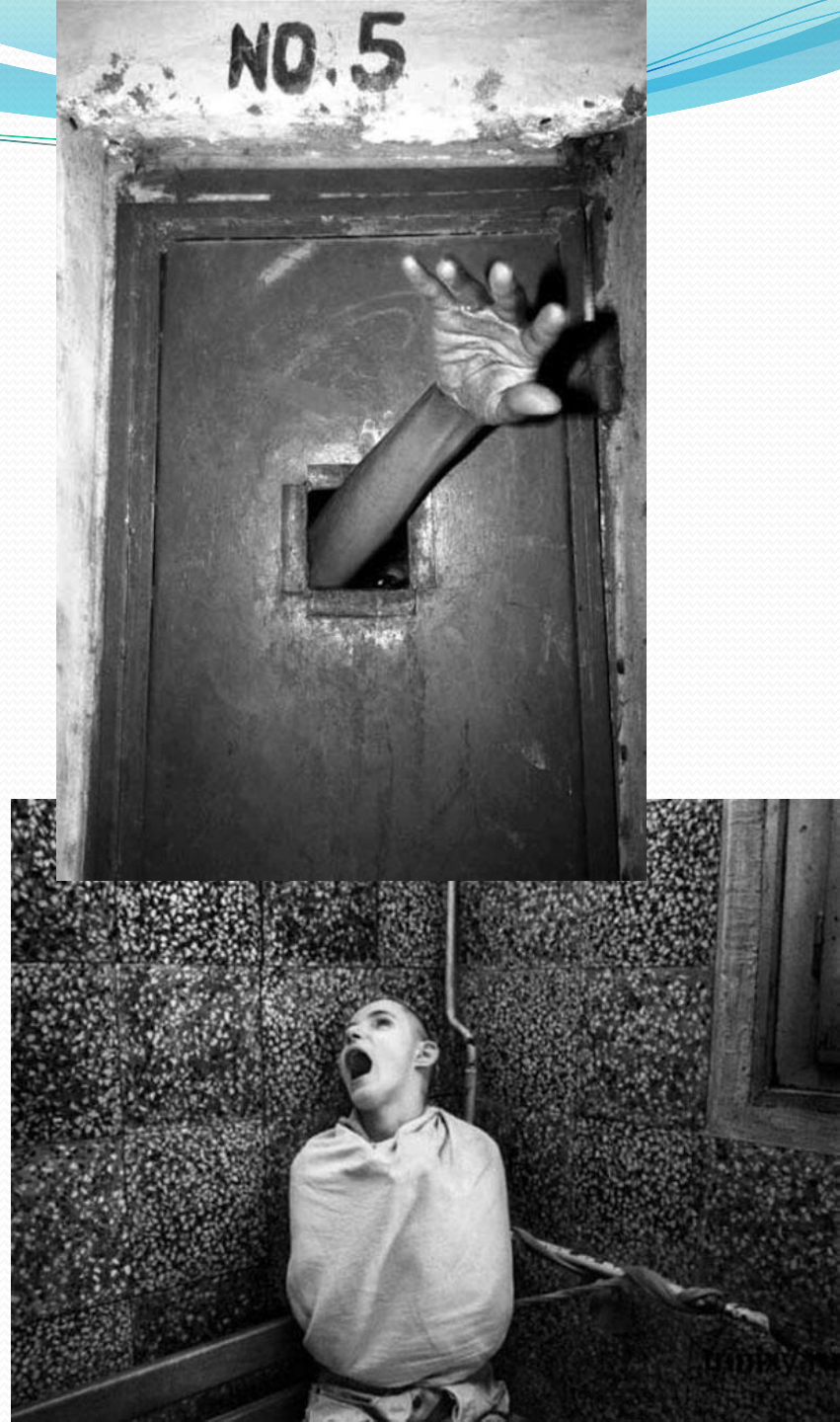
- Rev. Brian Murray will introduce
- All this afternoon's sessions focus on practicalities

Addiction Recovery



One key point

- “Alcoholics are not bad people trying to be good. They are sick people trying to get well.”
- We stopped punishing sick people a long time ago – except for alcoholics.



6. We know what air carriers need

- This affects about 10% of pilot population
- We already know all about scenario based training and SMS in aviation!
- You need:
 - A thoughtful, well-rehearsed SOP
 - Training (for ALL company personnel)
 - Policy
 - Process for the aftermath



Scenarios

- Pilot enters the crew room dishevelled and behaving abnormally...
- Rumours circulate about one of the training Captains and cocaine...
- 25,000 hour Captain smelling of alcohol is confronted by an 18 year old CSA on her second week on the job....
- A pilot's spouse phones the airline alleging a drinking or drugging problem
- Hotel management call Ops center with concerns...

This is good business

- Would you like your company or union featured in the following headlines?

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Is your pilot drunk? Unions are making it hard for the airline to be sure



ASHLEY NUNES, SPECIAL TO FINANCIAL POST | April 17, 2017 3:55 PM ET
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ASHLEY NUNES
Unions are making it hard for the airline to be sure



problem

ASHLEY NUNES

Special to The Globe and Mail

Published Wednesday, Jan. 11, 2017 5:00AM EST

Last updated Wednesday, Jan. 11, 2017 2:28PM EST

189 Comments

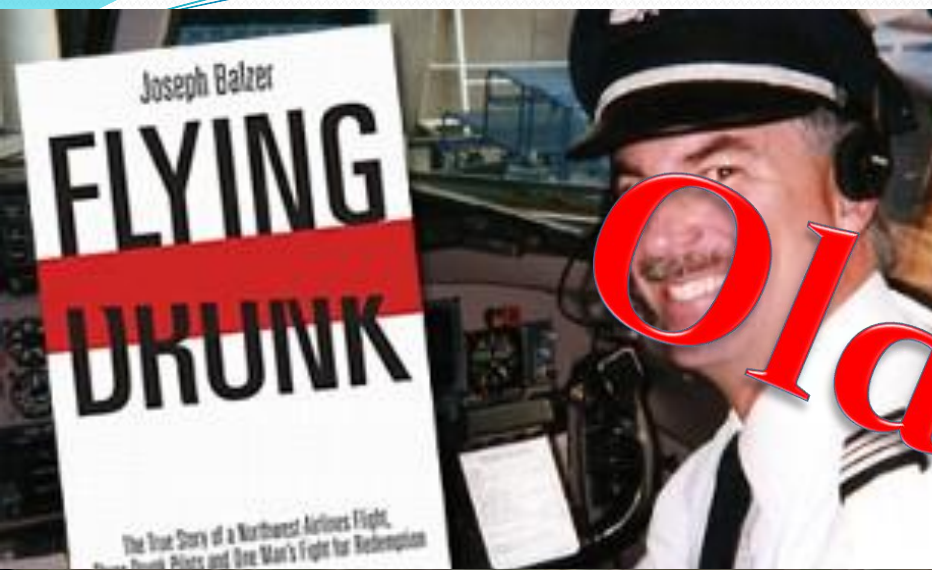


Ashley Nunes is an Atlanta-based researcher in transportation safety, regulatory affairs, and behavioural economics.



UK Cops Pull Suspected Drunk Pilot Off United Jet

Nov 10, 2013 6:13 PM CDT



Joseph Balzer
FLYING DRUNK
The True Story of a Northwest Airlines Flight, a Drunk Pilot, and One Man's Fight for Redemption

Old Slide



Drunk Pilot Caught Just Before Take-Off

Sep 21, 2013 3:42 PM CDT

BRITISH POLICE CHARGE

"... PERFORMING AN AVIATION FUNCTION WHILST EXCEEDING THE PROSCRIBED ALCOHOL LIMIT."





Sunwing pilot accused of passing out drunk in cockpit worst case expert has heard of

Miroslav Gronych was released on bail and ordered to surrender his passport

By Meghan Grant, CBC News | Posted: Jan 03, 2017 1:44 PM MT | Last Updated: Jan 03, 2017 4:5



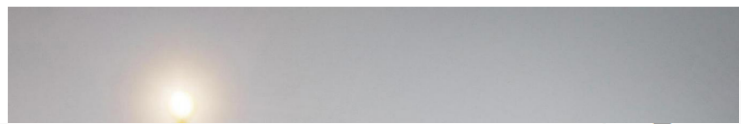
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United Airlines pilots arrested at Glasgow Airport 'for being drunk' before flight to US

They were due to fly 141 passengers from Scotland to the United States

Catriona Webster | Sunday 28 August 2016

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Citilink CEO resigns after 'drunk' pilot incident

03 JANUARY, 2017 | SOURCE: FLIGHTGLOBAL PRO | BY: MAVIS TOH | SINGAPORE

Two top executives at Indonesian carrier Citilink have tendered their resignations, after a video of one of its pilots allegedly showing up for work drunk went viral.

The airline's chief executive Albert Burhan and its operations director Hadinoto Soedigno resigned on 30 December, taking responsibility for the incident.

Related Content

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Canada reviews safeguards after alleged drunk pilot incident

Citilink Data Snapshot

\$470M Total Revenue

New Slide

A final plea....

- (the pilot) “ **chose** to consume an incredible amount of alcohol,” (the prosecutor) said.
- "There is no reason he can give as to why he decided to drink the alcohol," said (the pilot's) lawyer, "He lacked the **willpower** not to drink."
- In handing down the sentence, (the judge) said it is likely (the pilot) **will never work again as a pilot**. "The essential issue in this case, then, is the appropriate sentence to send a message of **denunciation** and **deterrence** to commercial airline pilots," she said.