

# Marijuana and the Heart



**Dr Tawanda Butau**

# Recent legislation...

- Personal use but not sale of marijuana



# What do we know for sure?

- In 1972, Beaconsfield and colleagues[5] exposed volunteers to marijuana smoke and found that heart rate increased by a mean of  $> 20$  beats/min and systolic blood pressure by 5-10 mm Hg. Another study involving healthy volunteers found that intravenous administration of delta-9-tetrahydrocannabinol (THC) increased heart rate but not blood pressure.[6] Of note, prior administration of a beta-blocker attenuated the effects of THC, suggesting that marijuana acts as a sympathomimetic.



# And....?

- In 1976, Gottschalk and colleagues[7] published one of the few randomized, double-blind, placebo-controlled, crossover trials with marijuana, albeit with only 10 people. Participants with angiographically documented coronary artery disease were given either a marijuana cigarette or a placebo cigarette that contained only trace amounts of THC. The researchers found that marijuana had no effect on anxiety, decreased myocardial oxygen delivery, and decreased the exercise threshold for angina in the study participants.

# Marijuana and myocardial infarction

- No direct cause-effect relationship between smoking marijuana and MI
- No improved chances of survival either
- Lots of confounders in available studies

# 'Beneficial effects'

- No robust RCTs to prove these effects but these are the reasons 'medical' marijuana came into use
- Better sleep in people with fibromyalgia
- Pain relief for patients with cancer and multiple sclerosis
- Improved appetite and weight gain in patients with HIV and cancer



**MARIJUANA**  
**CHEWING GUM**  
**TO RELIEVE**  
**FIBROMYALGIA PAIN**



# Known detrimental effects

- Smoking related lung damage
- Leading cause of substance-related psychosis in South Africa
- Impairs concentration and motor skills leading to self-harm as well as endangering others
- Interactions with other drugs – not well studied because the use of marijuana is illegal in most parts of the world
- Impairs memory and attention span for at least 24hrs after use

# Our future under 'Ganja'???





# Take home lessons

- There is no evidence to support the use of marijuana for cardiovascular benefit
- The negative psychiatric effects of marijuana are well established
- Legalization of its personal use in South Africa will have far-reaching consequences... but we wait and see how things unravel