



**CARDIO  
RUN  
2023**

**15<sup>eme</sup> CONGRÈS DE PATHOLOGIE  
CARDIO-VASCULAIRE**

**27-28-29 SEPTEMBRE 2023**

Hôtel Saint Alexis **ILE DE LA RÉUNION** France

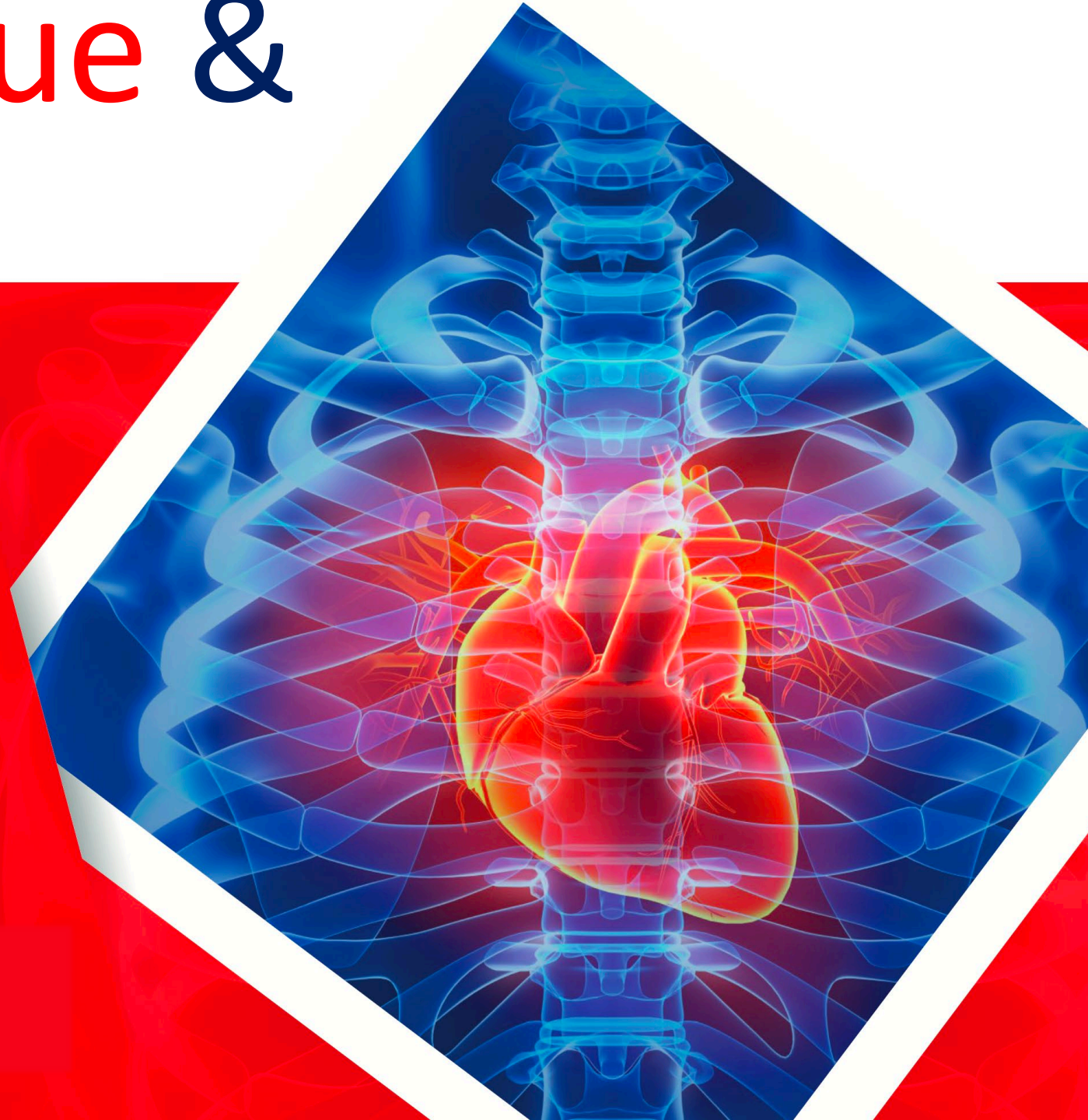


**Frédéric Lapostolle**

Urgences - SAMU 93, UF Recherche

Hôpital Avicenne, Bobigny & Université Paris 13

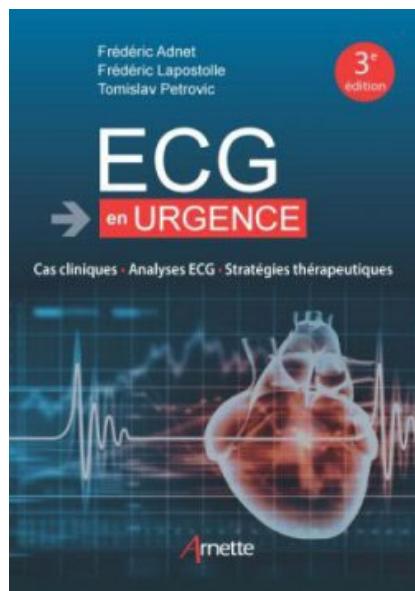
# Drogues de rue & coeur



# Disclosures

**Conferences** : Astra-Zeneca, Boehringer-Ingelheim, Mundipharma, Novartis, Nova-Biomedical, Serb, Teleflex

**Investigator – Research** : Astra-Zeneca, Boehringer-Ingelheim, Mundipharma, Novartis, Teleflex





Le Parisien

Mari, 23 Juin 2023

Enquête **Société, Santé**

# HHC, fentanyl, 3-MMC... Ces nouvelles drogues de synthèse, peu chères et addictives, casse-tête des autorités

L'Europe en dénombre 900. Fabriquées en laboratoire, ces substances moins coûteuses et plus addictives se popularisent en France. Après chaque interdiction, de nouvelles molécules sont mises sur le marché. Enquête sur un fléau.

# Overdoses mortelles à La Réunion : d'où provient cette substance inconnue "500 fois plus puissante que l'héroïne" ?

réunion ● 1



11 Septembre 2023







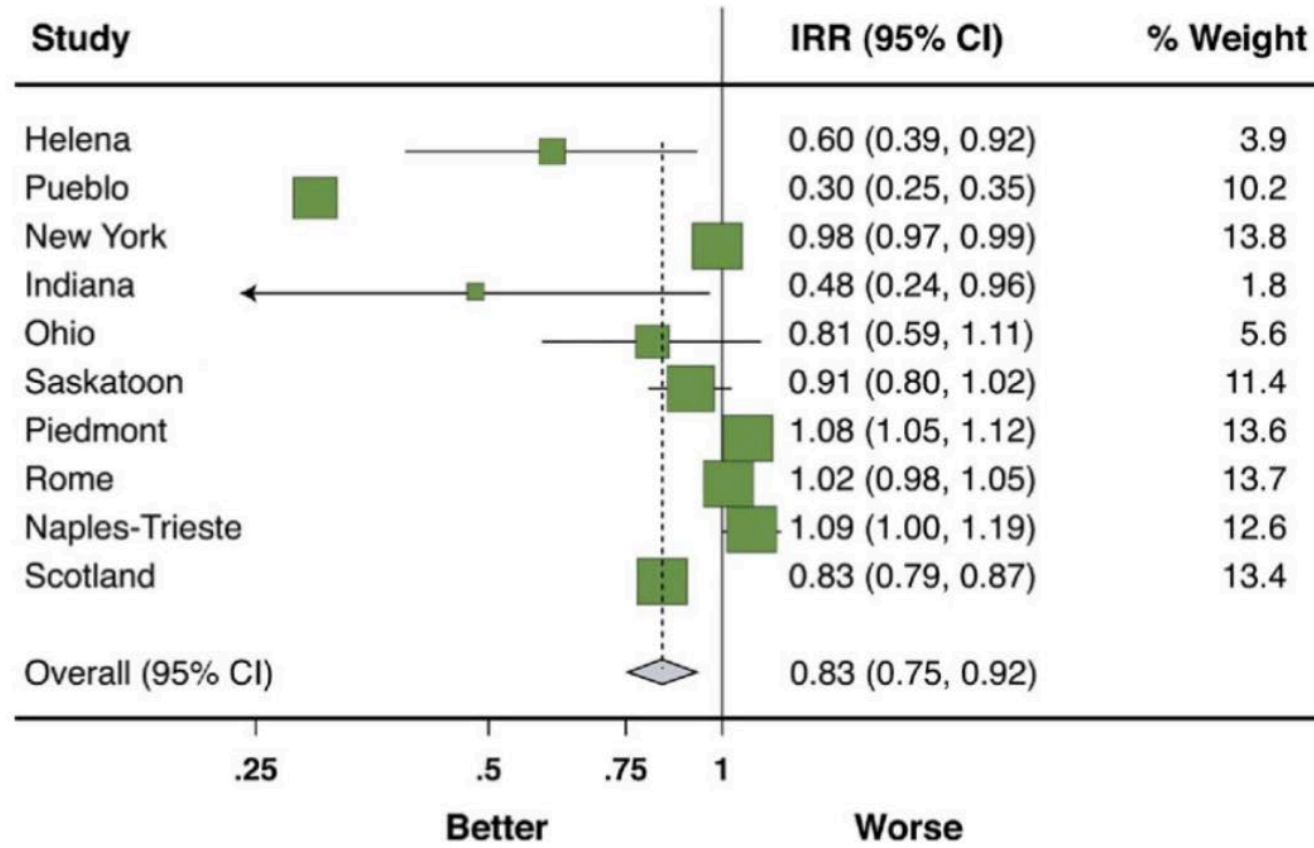
# Trafic de tabac : 600 000 paquets de cigarettes de contrebande saisis en Picardie



# Cardiovascular Effect of Bans on Smoking in Public Places

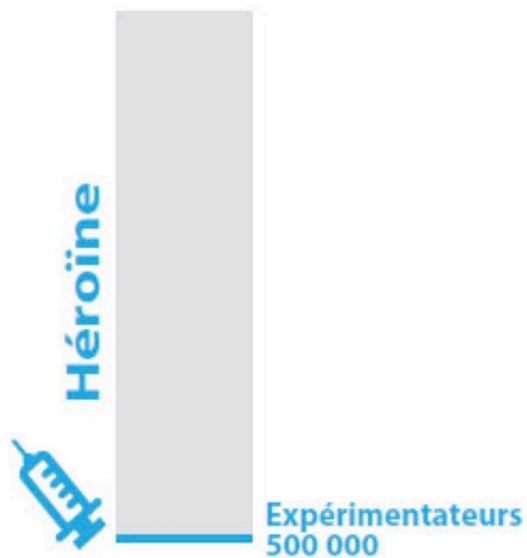
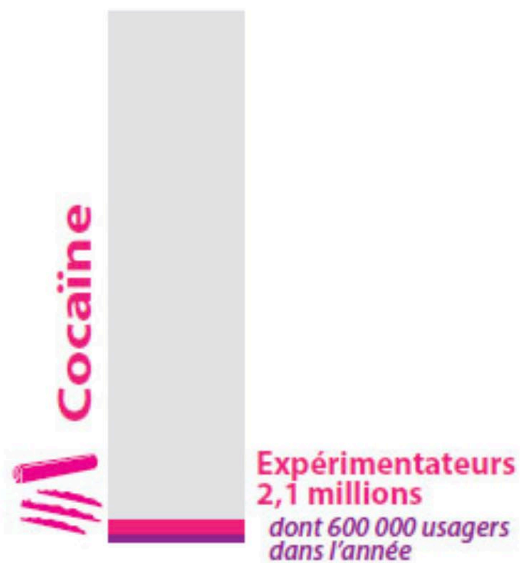
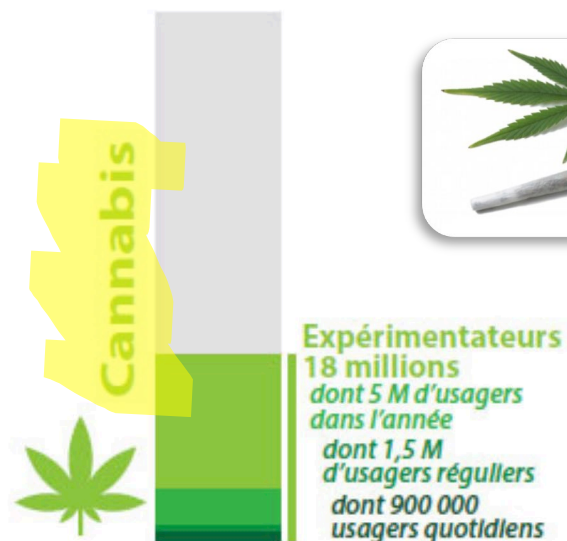
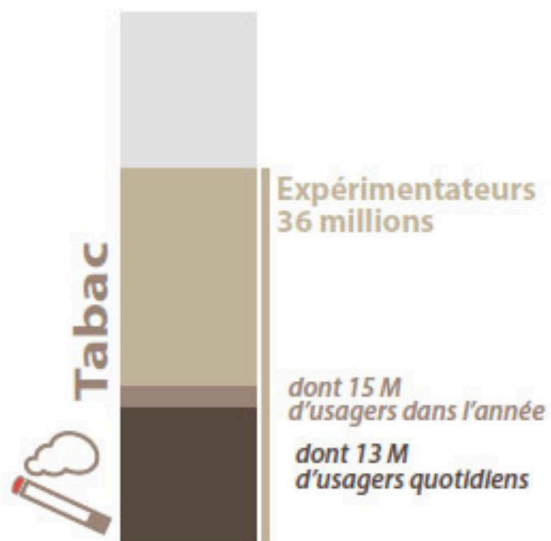
A Systematic Review and Meta-Analysis

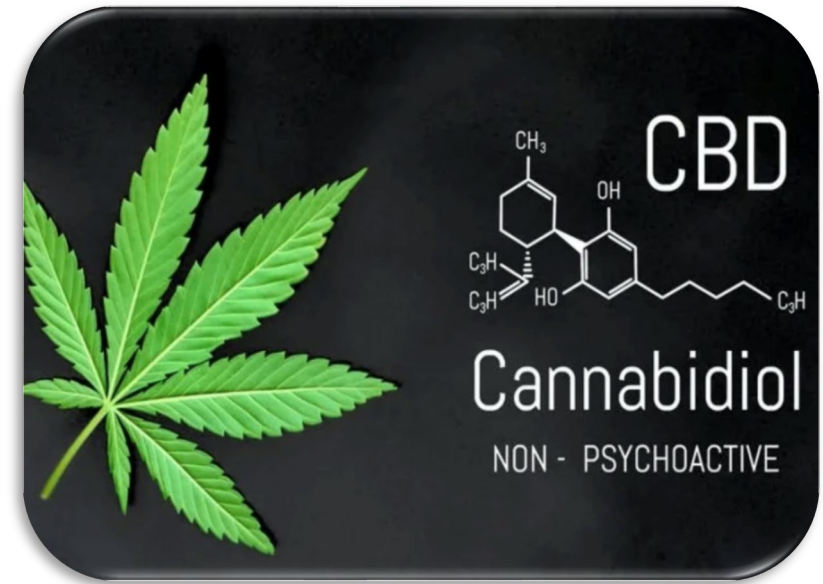
Meyers, *JACC*, 2009



**Figure 1** Effects of Community Smoking Bans on Incident Acute Myocardial Infarction (Person-Year Approach)

# Estimation du nombre de consommateurs de substances psychoactives en France métropolitaine parmi les 11-75 ans [1, 2, 3]





**Table 4.** Major Cardiovascular Adverse Events, Treatment-Emergent Adverse Events, and Reasons for Study Drug Discontinuation (Randomized Population, n = 839)

Event	No. (%)		P Value
	Placebo	Rimonabant	
<b>Major Cardiovascular Adverse Events</b>			
No.	417	422	
Composite of cardiovascular death, nonfatal MI, nonfatal stroke, or hospitalization (for revascularization, unstable angina, or TIA)	46 (11.0)	44 (10.4)	.79 <sup>a</sup>
Composite of cardiovascular death, nonfatal MI, or nonfatal stroke	7 (1.7)	13 (3.1)	.18 <sup>a</sup>
Cardiovascular death	2 (0.5)	0	.25
All-cause mortality	8 (1.9)	2 (0.5)	.06
Nonfatal MI	4 (1.0)	9 (2.1)	.17
Fatal or nonfatal stroke	1 (0.2)	4 (0.9)	.37
Hospitalization for revascularization, unstable angina, or TIA	40 (9.6)	36 (8.5)	.59

<b>Most Common Treatment-Emergent Adverse Events (Safety Population, n = 838)</b>			
No.	416	422	
Psychiatric disorders	118 (28.4)	183 (43.4)	<.001
Anxiety	49 (11.8)	76 (18.0)	.01
Depression	47 (11.3)	71 (16.8)	.02
Insomnia	38 (9.1)	52 (12.3)	.14
Depressed mood	20 (4.8)	29 (6.9)	.20
Major depression	9 (2.2)	13 (3.1)	.41
Suicidal ideation	10 (2.4)	7 (1.7)	.44
Suicide attempt	1 (0.2)	0	.50
Completed suicide	0	1 (0.2)	.50
Severe psychiatric disorders <sup>b</sup>	16 (3.8)	20 (4.7)	.52
Dizziness	53 (12.7)	61 (14.5)	.47
Fatigue	25 (6.0)	46 (10.9)	.01
Gastrointestinal tract disorders	74 (17.8)	142 (33.6)	<.001
Nausea	23 (5.5)	63 (14.9)	<.001
Diarrhea	14 (3.4)	33 (7.8)	.005
Vomiting	8 (1.9)	23 (5.5)	.01
Constipation	8 (1.9)	11 (2.6)	.51
Erectile dysfunction (n=271 and 274 men)	2 (0.7)	9 (3.3)	.03
Creatinine $\geq$ 150 $\mu$ mol/L	6/372 (1.6)	12/361 (3.3)	.13

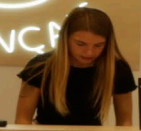
Nissen, STRADIVARIUS, JAMA, 2008



HUILE DE CHANVRE  
10L ... 1490 ... 200  
5L ... 890 ... 1100  
HUILE POUR INHALER  
3L ... 490 ... 500  
HUILE DE MASSAGE  
1L ... 900

INFUSION LIQUIDE  
PARFUMÉE POUR BOISSON  
D'EAU CHAUDE  
L'ARÔME S'ÉVAPORE  
LORSQUE LA BOISSON  
EST BUÉE  
EXTENSIF  
100% CHANVRE

E-LIQUIDE  
FLAV  
TOUTA  
CHANG  
200  
BOOSTER COLD  
100  
50



SEUL LIQUIDE  
BANANA  
KUSH  
100

MELO  
100  
50





Flowers  
CBD SHOP  
POWER

## CBD La Réunion

Saint-Denis Magasin Flowers Power  
CBD Shop

Découvrez notre CBD shop à La Réunion – Saint-Denis

Nos équipes expertes du chanvre et passionnées de CBD vous attendent dans votre boutique CBD shop.

Fleurs CBD ▾ Huiles CBD ▾ Résines CBD ▾ E-liquides CBD ▾ Thés Infusions au CBD ▾ Animaux CBD ▾

CBD Chat

CBD Chien

CBD Cheval



## Le CBD pour les maladies cardiaques : Réduire l'inflammation

L'inflammation du cœur peut, entre autres, endommager les cellules cardiovasculaires, voire les faire mourir. Elle peut être provoquée par certaines maladies, des virus, des médicaments ou même une attaque auto-immune. Si l'inflammation n'est pas traitée, elle peut entraîner la mort.

Le CBD est bien connu pour son potentiel à réduire l'inflammation nocive. L'endocannabinoïde 2-AG se lie au récepteur CB2, ce qui amène le système immunitaire à envoyer moins de cellules immunitaires à l'attaque. Une étude publiée dans la US National Library of Medicine a conclu que les endocannabinoïdes se comportent de manière "promiscuité" en ce qui concerne leurs interactions avec les récepteurs. On prend de plus en plus conscience de l'étroite corrélation qui existe entre le SCE élargi et les processus critiques impliqués dans l'inflammation.

## Abaissier la pression artérielle

L'un des effets secondaires potentiels du CBD est la baisse de la pression artérielle. Dans le cas des maladies cardiaques, il s'agit davantage d'un traitement que d'un risque. Le CBD semble élargir les vaisseaux sanguins, ce qui permet un meilleur flux sanguin. Par conséquent, cela réduit les dommages que l'hypertension artérielle cause aux parois artérielles.

Une étude croisée randomisée sur des patients en bonne santé a montré qu'une dose unique de CBD pouvait contribuer à réduire la pression artérielle. Dans le cadre de cette étude, neuf hommes en bonne santé ont pris soit du CBD, soit un placebo. Les résultats ont montré que ceux qui ont pris du CBD ont vu leur volume d'attaque diminuer, leur pression sanguine diminuer après une exposition au froid et leur pression systolique au repos diminuer.

## Le CBD pour les maladies cardiaques : Réduction de l'arythmie

On parle d'arythmie cardiaque lorsque le cœur bat trop tôt, trop vite, trop lentement ou trop irrégulièrement. Souvent, les arythmies peuvent être totalement inoffensives. Toutefois, lorsque le rythme cardiaque est exceptionnellement irrégulier ou qu'il provient d'un cœur endommagé, il peut présenter de graves risques pour la santé.

Les chercheurs ne sont pas sûrs de l'efficacité du CBD dans le traitement des arythmies, mais lors d'études sur des rongeurs, ils ont constaté qu'il était utile. Ils pensent que l'endocannabinoïde 2-AG joue un rôle crucial, mais des recherches supplémentaires sont nécessaires pour vérifier cette conclusion.

## Catégories



HUILE CBD



VAPE CBD



PERLES CBD



HUILE CBG



FLEURS CBD



CAPSULES CBD



HUILE CBN



COSMÉTIQUES  
CBD



INFUSIONS CBD



CBD POUR  
ANIMAUX



CHAMPIGNONS  
ET CBD

### Produits les plus vendus sur Cebedia



Perles CBD RELIEF  
★★★★★  
29,90€



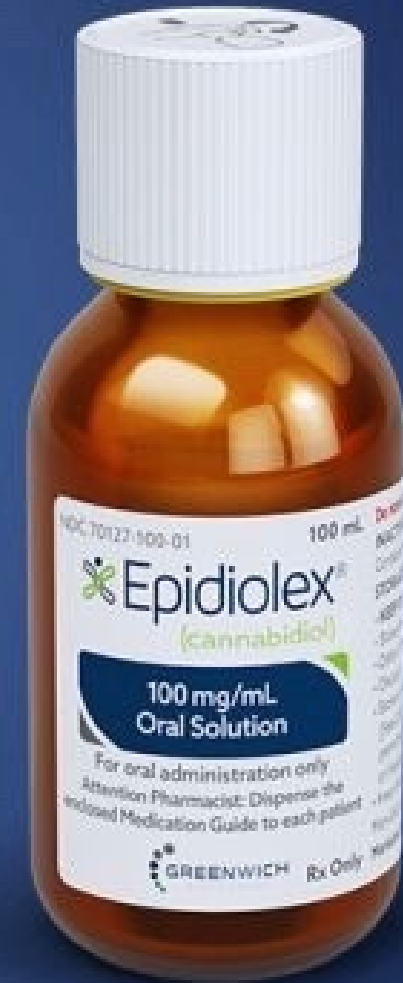
Bonbons THC+CBD  
★★★★★  
39,00€

# A Systematic Review and Meta-Analysis of the Haemodynamic Effects of Cannabidiol aut

Salamaden, Frontiers Pharmacol, 2017

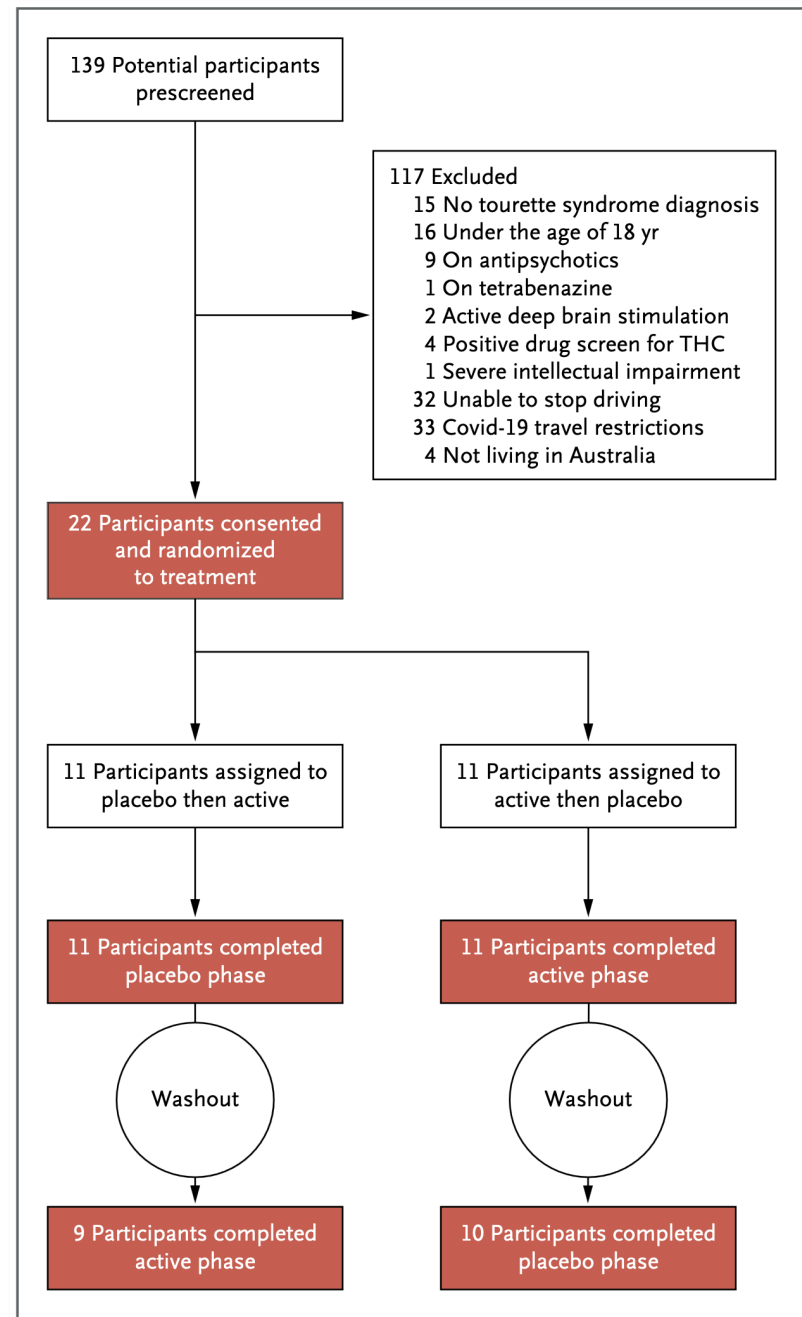
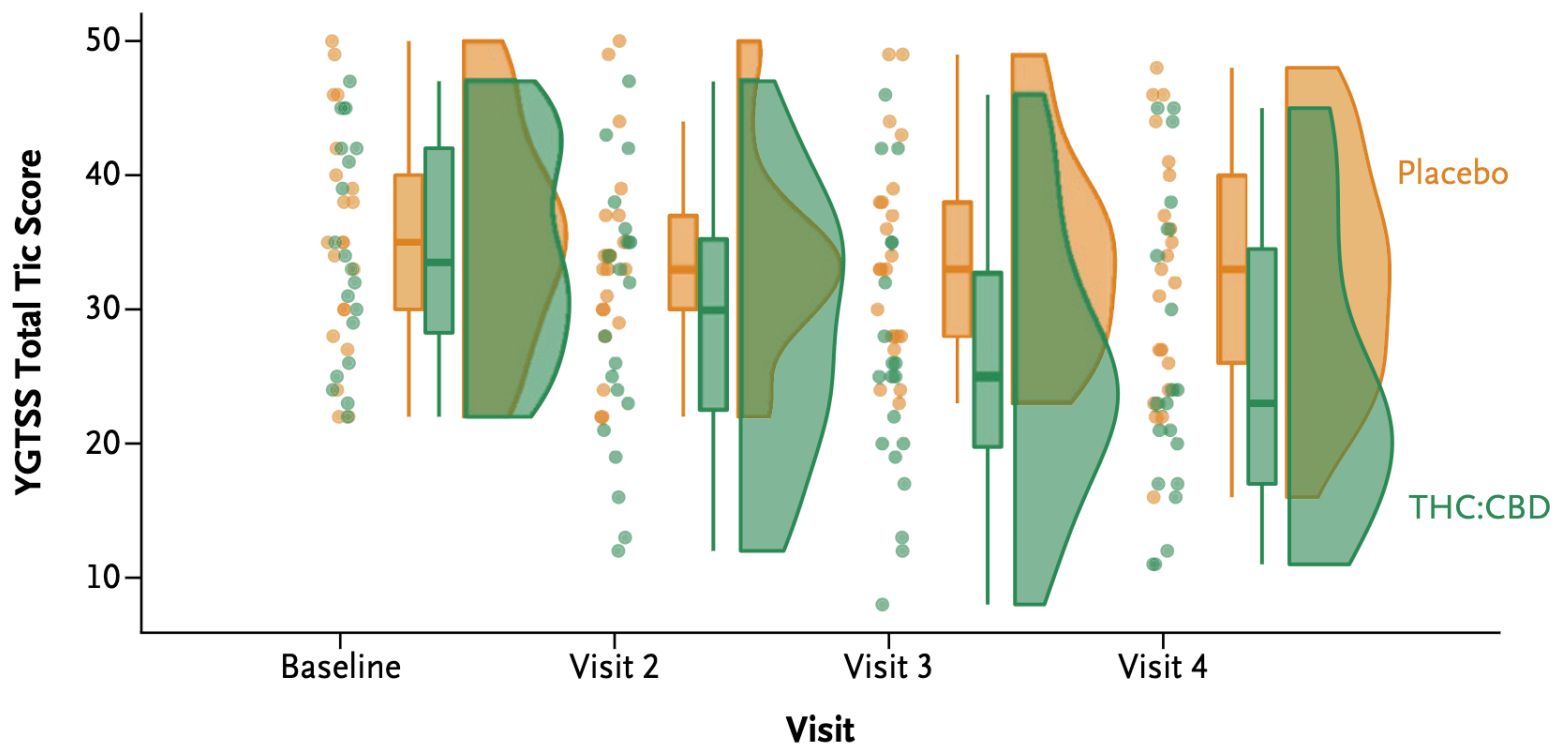
## CONCLUSION

This meta-analysis and systematic review has highlighted the haemodynamic effects of CBD administration *in vivo*. The positive effects induced by CBD include maintaining the fall in BP after global hypoxia, reducing the increase in MBP and HR post-stress, and increasing BF in ischaemia-reperfusion models. It is possible that beneficial effects of CBD on haemodynamics occurs when the cardiovascular system is abnormally altered, suggesting that CBD may be used as a treatment for various cardiovascular disorders, such as hypertension, myocardial infarction and stroke. However, the findings from the reviewed studies were predominately preclinical and significant effects were only observed in animals. Data from human studies investigating the effects of CBD on haemodynamics is still very limited and we suggest that further research in humans under pathological conditions is required.



ORIGINAL ARTICLE

# Tetrahydrocannabinol and Cannabidiol in Tourette Syndrome



## Review

# A Literature Review of Cannabis and Myocardial Infarction—What Clinicians May Not Be Aware Of

Chetty, *CJC Open*, 2020

**Table 1.** Case report data illustrating patient demographics, pattern of cannabis use, and clinical outcome

Reference/first author	Year	Age, y	Gender	CV RFs (HTN, DYS, DM, FamHx)	Tobacco	Regular user	Recent use <6 h ago	Synthetic	Other illicit	STEMI	Intervention (PCI/CABG)	Cardiac arrest	Death
Rezkalla <sup>31</sup>	2003	34	M	N	Y	Y	Y	N	N	N	N	Y	N
Caldicott <sup>22</sup>	2005	21	M	N	N	N	Y	N	N	Y	Y	N	N
Lindsay <sup>43</sup>	2005	48	M	Y	N	Y	Y	N	N	Y	Y	Y	N
Lindsay <sup>43</sup>	2005	22	M	N	Y	Y	Y	N	N	Y	Y	N	N
Tatli <sup>56</sup>	2007	24	M	N	Y	Y	Y	N	N	Y	Y	N	N
Korsalou <sup>42</sup>	2007	53	M	Y	Y	Y	N	N	N	N	N	N	N
Cappelli <sup>25</sup>	2008	26	M	N	Y	Y	Y	N	N	Y	Y	N	N
Dwivedi <sup>10</sup>	2008	23	M	Y	N	Y	N	N	N	N	N	N	N
Dwivedi <sup>87</sup>	2008	50	M	N	Y	Y	N	N	N	N	N	N	N
Montisci <sup>48</sup>	2008	31	M	N	N	Y	U	N	Y	N	N	Y	Y
Kocabay <sup>40</sup>	2009	32	M	N	Y	Y	Y	N	N	Y	Y	N	N
Bailly <sup>34</sup>	2010	36	F	N	N	Y	Y	N	N	Y	N	N	N
Karabulut <sup>30</sup>	2010	35	M	N	Y	Y	Y	N	N	N	N	N	N
Canga <sup>24</sup>	2011	28	M	N	Y	Y	Y	N	N	Y	Y	N	N
Mir <sup>47</sup>	2011	16	M	N	N	N	Y	N	N	Y	N	N	N
Mir <sup>47</sup>	2011	16	M	N	N	N	N	Y	N	Y	N	N	N
Mir <sup>47</sup>	2011	16	M	N	N	N	N	Y	N	Y	N	N	N
Pratap <sup>51</sup>	2011	19	M	N	U	Y	Y	N	N	Y	N	N	N
Safaa <sup>53</sup>	2011	40	M	Y	Y	Y	Y	N	N	N	N	N	N
Arora <sup>23</sup>	2012	37	M	Y	N	U	Y	N	N	Y	N	N	N
Renard <sup>52</sup>	2012	33	M	N	Y	Y	Y	N	N	N	N	N	N
Yurtdas <sup>49</sup>	2012	26	M	N	Y	Y	Y	N	N	Y	Y	N	N
Deharo <sup>55</sup>	2013	24	M	N	Y	Y	Y	N	N	Y	Y	N	N
Sayin <sup>54</sup>	2013	30	M	Y	Y	Y	U	N	N	N	Y	N	N
Ayhan <sup>27</sup>	2014	33	M	N	Y	Y	Y	Y	N	Y	Y	N	N
Casier <sup>59</sup>	2014	52	M	Y	Y	Y	Y	N	N	Y	N	Y	Y
Casier <sup>59</sup>	2014	23	M	N	N	Y	Y	N	N	Y	Y	Y	N
Casier <sup>59</sup>	2014	28	M	N	N	N	Y	N	N	Y	Y	Y	Y
Gunawardena <sup>32</sup>	2014	29	M	N	U	U	Y	N	U	Y	N	N	N
Hodcroft <sup>29</sup>	2014	21	M	N	Y	Y	Y	N	N	Y	Y	N	N
Ibrahim <sup>28</sup>	2014	56	M	Y	N	N	Y	Y	N	N	Y	N	N
Tse <sup>57</sup>	2014	45	M	Y	Y	Y	Y	Y	N	N	N	Y	Y
Jehangir <sup>33</sup>	2015	27	F	Y	Y	Y	N	N	N	Y	Y	N	N
Koklu <sup>41</sup>	2015	31	M	N	U	Y	Y	Y	N	Y	Y	N	N
Marchetti <sup>44</sup>	2015	50	M	N	Y	N	Y	N	N	N	N	Y	Y
McKeever <sup>45</sup>	2015	16	M	N	Y	Y	Y	Y	N	Y	N	N	N
Velibey <sup>20</sup>	2015	27	M	N	N	Y	Y	N	N	Y	Y	N	N
Walsh <sup>58</sup>	2015	26	M	N	N	Y	Y	Y	N	Y	N	N	N
Yilmaz <sup>59</sup>	2015	29	M	N	Y	N	Y	Y	N	Y	Y	Y	N
Keskin <sup>39</sup>	2016	15	M	N	N	Y	Y	Y	N	Y	N	N	N
McIlroy <sup>47</sup>	2016	39	M	Y	Y	Y	Y	Y	N	Y	Y	Y	N
Orsini <sup>50</sup>	2016	40	M	N	Y	U	U	N	Y	Y	N	Y	Y
Shah <sup>55</sup>	2016	24	M	N	Y	Y	Y	Y	N	N	Y	N	N
Tirkey <sup>38</sup>	2016	25	M	N	N	Y	Y	N	N	N	N	N	N
Ul Haq <sup>37</sup>	2017	31	M	N	N	U	Y	Y	N	Y	Y	N	N
Ul Haq <sup>37</sup>	2017	26	M	Y	U	U	Y	Y	N	Y	Y	N	N
Ul Haq <sup>37</sup>	2017	47	M	Y	U	U	Y	Y	N	Y	Y	N	N
Hamilton <sup>27</sup>	2017	50	M	U	U	U	Y	Y	U	Y	Y	N	N
Mehta <sup>21</sup>	2017	16	M	N	N	N	Y	Y	N	N	N	N	N

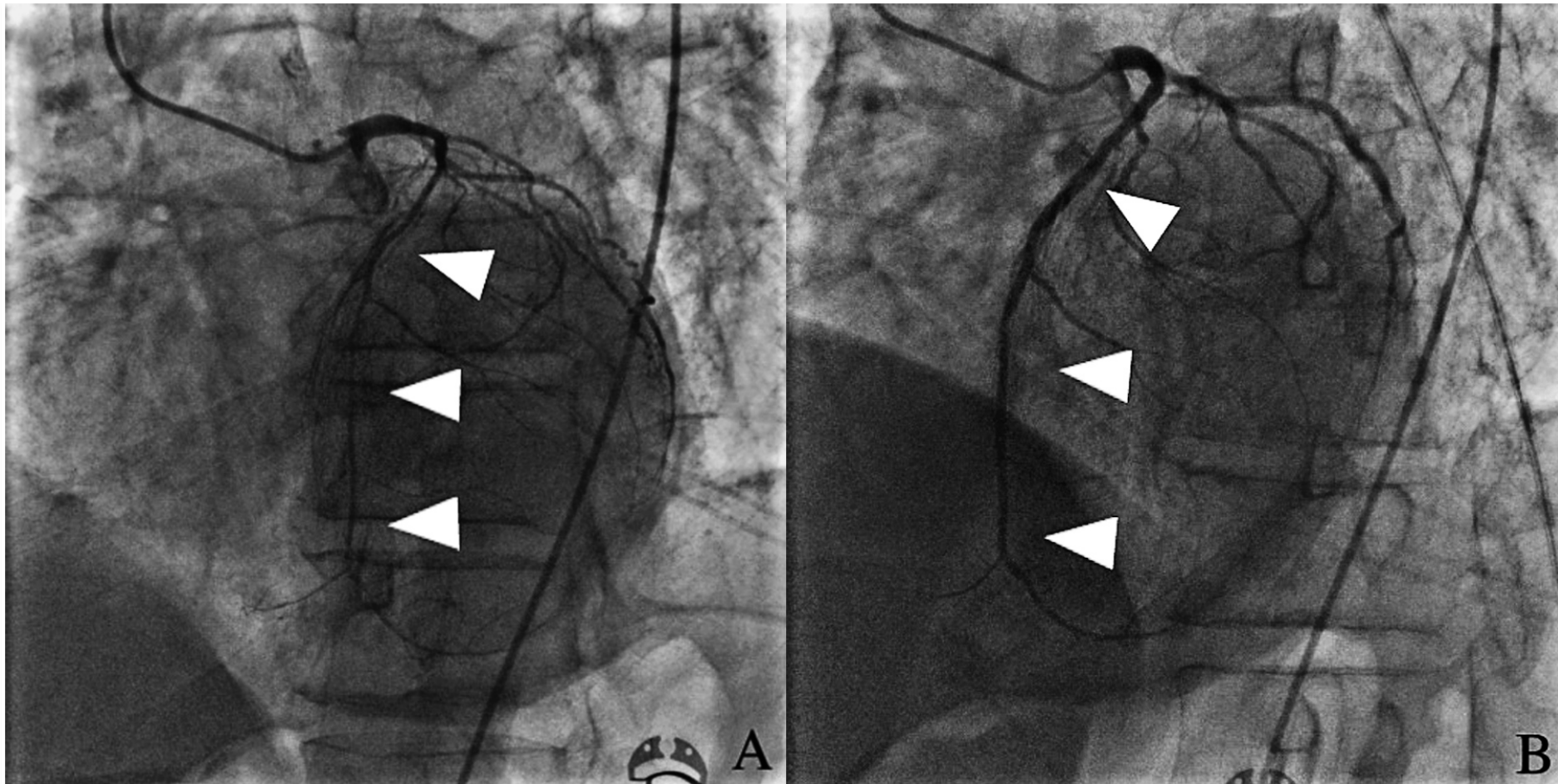
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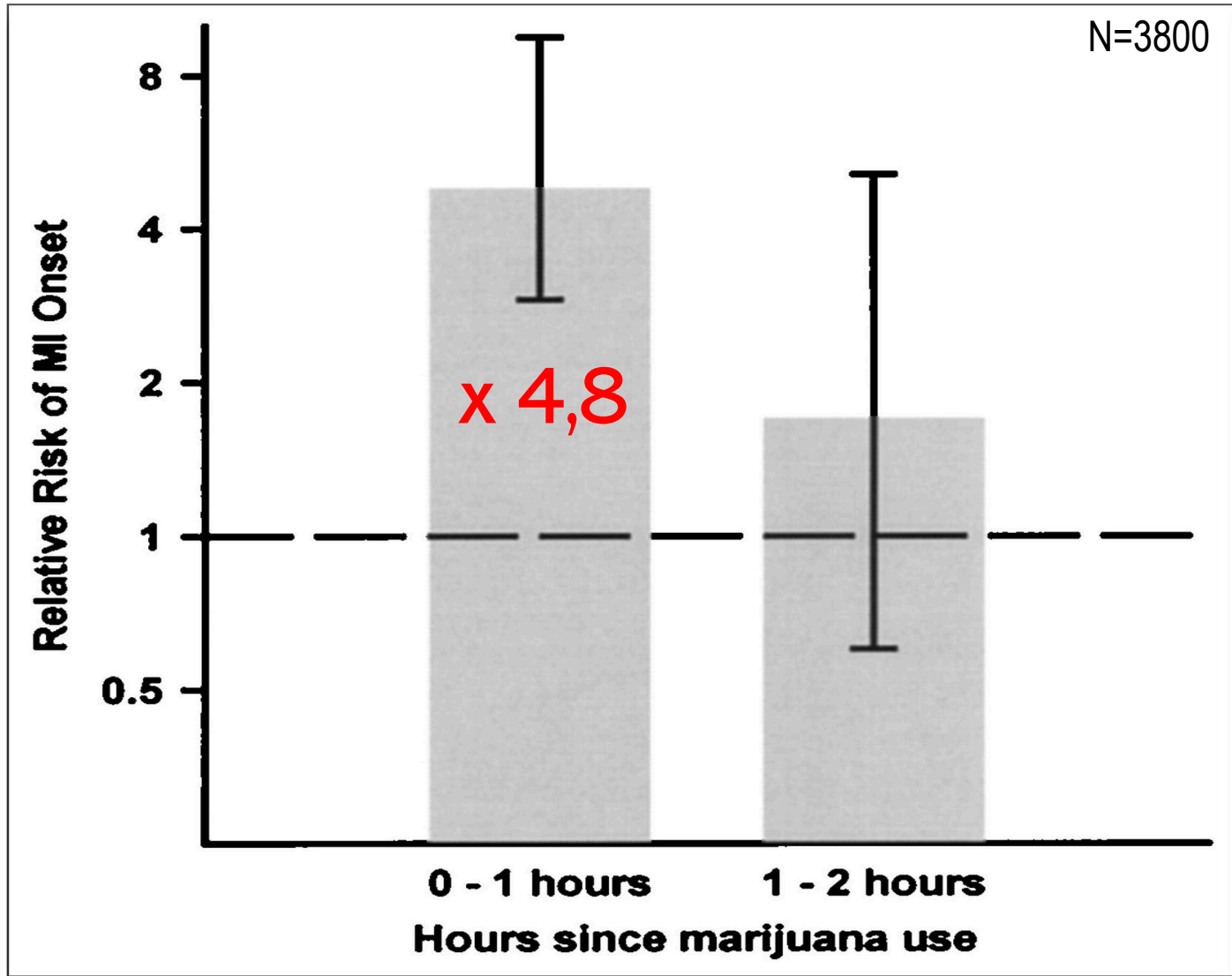
[ Original article ]

## Is recent cannabis use associated with acute coronary syndromes? An illustrative case series

Casier, *Acta Cardiol*, 2017



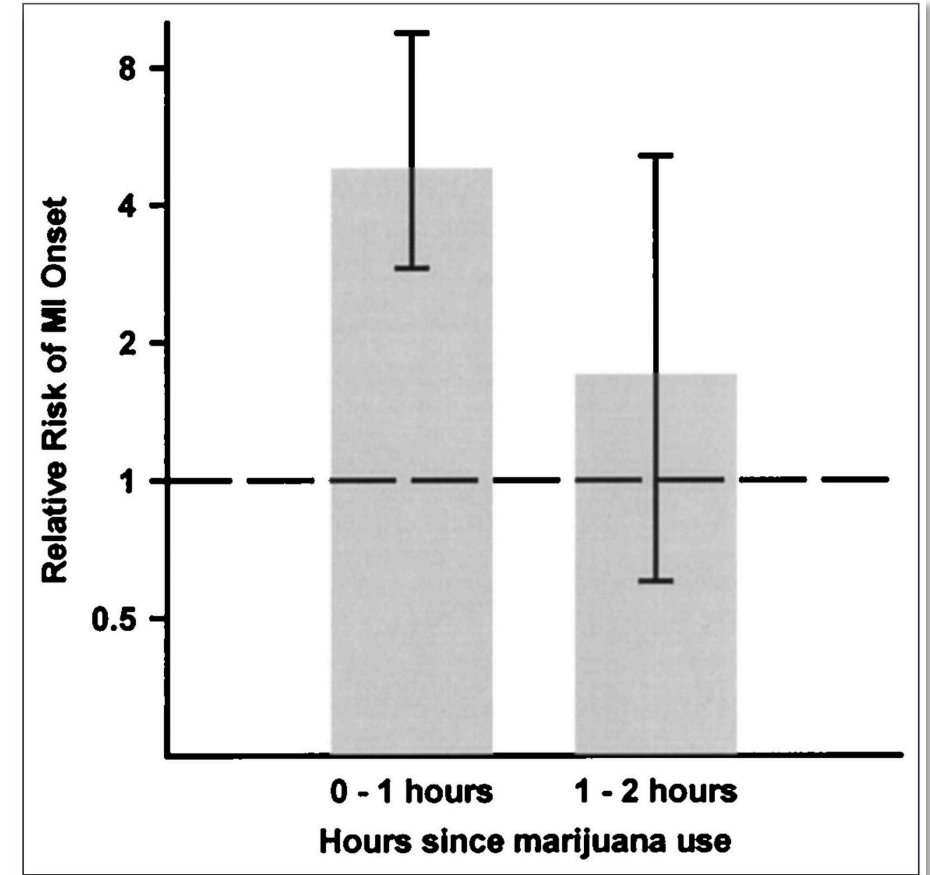
## Triggering Myocardial Infarction by Marijuana



Mittleman, *Circulation*, 2001

## Triggering Myocardial Infarction by Marijuana

Characteristic	Marijuana Users (n=124)	Marijuana Abstainers (n=3758)	P
Age			
Mean±SD	43.7±8.0	62.0±12.5	<0.001
<50	96 (77)	672 (18)	
50-69	28 (23)	1952 (52)	<0.001
70+	0 (0)	1134 (30)	
Sex			
Male	116 (94)	2508 (67)	
Female	8 (6)	1250 (33)	<0.001
Member of a minority group	28 (23)	495 (13)	0.003
Medical history			
Prior MI	29 (23)	1038 (28)	0.30
Prior angina	15 (12)	935 (25)	<0.001
Hypertension	37 (30)	1659 (44)	0.002
Diabetes mellitus	9 (7)	723 (19)	<0.001
Obese <sup>1</sup>	53 (43)	1184 (32)	0.008
Current smoker	84 (68)	1196 (32)	<0.001
Medication use before MI			
Aspirin	43 (35)	1414 (38)	0.51
Calcium channel blockers	16 (13)	911 (24)	0.004
β-blockers	16 (13)	817 (22)	0.02
ACE inhibitors	10 (8)	505 (13)	0.08



Mittleman, *Circulation*, 2001

RESEARCH

# Recent cannabis use and myocardial infarction in young adults: a cross-sectional study

Ladha, *CMAJ*, 2021

N= 33.173

**Table 3: Association between cannabis use and myocardial infarction among young adults from the 2017 and 2018 Behavioral Risk Factor Surveillance System surveys**

Characteristic	Unadjusted OR for myocardial infarction (95% CI)	Adjusted OR for myocardial infarction* (95% CI)
Cannabis use		
No	Reference	Reference
Yes	1.92 (1.11–3.34)	2.07 (1.12–3.82)
Frequency of use†		
No use	Reference	Reference
Less frequent	1.26 (0.46–3.45)	1.48 (0.52–4.21)
More frequent	2.20 (1.21–3.99)	2.31 (1.18–4.50)



# Role of Cannabis in the Incidence of Myocardial Infarction: A Review

Banerjee, Cureus, 2020

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distribution of marijuana in various states of the United States is the prime reason. **Our study finds a strong relationship between marijuana use and the incidence of myocardial infarction and mortality of patients after cannabis-induced** MI. Many cases in our research show that after marijuana use, even for the first time, there can be an event of MI, indicating that marijuana use should be considered a significant risk for MI. Mortality of patients after cannabis-induced MI could not be determined effectively due to insufficient data, but provided data says that there is a decrease in in-hospital mortality post-cannabis-induced MI. Various studies have proposed the pathophysiology of how these events occur. It is safe to say that cannabinoids act on the cannabinoid receptors to affect the cardiovascular system. They cause a mismatch in oxygen supply and demand in the myocardium, which can lead to ischemia. It can also increase platelet aggregation, which can lead to atherosclerosis, ultimately MI. The majority of the public use this for recreational purposes, thinking it is a safe drug, especially teenagers and older people. Public awareness about the ill-effects of marijuana is the need of the hour, and all physicians should always recognize those effects and advise their patients properly.

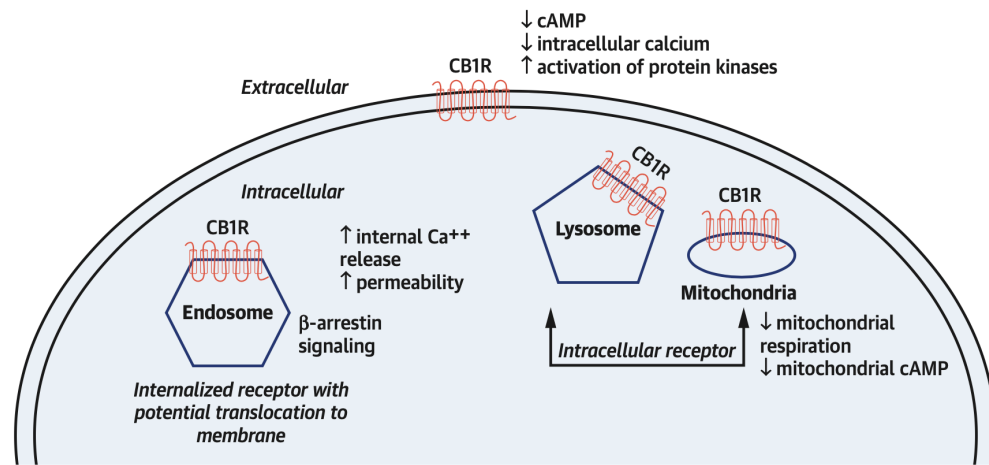
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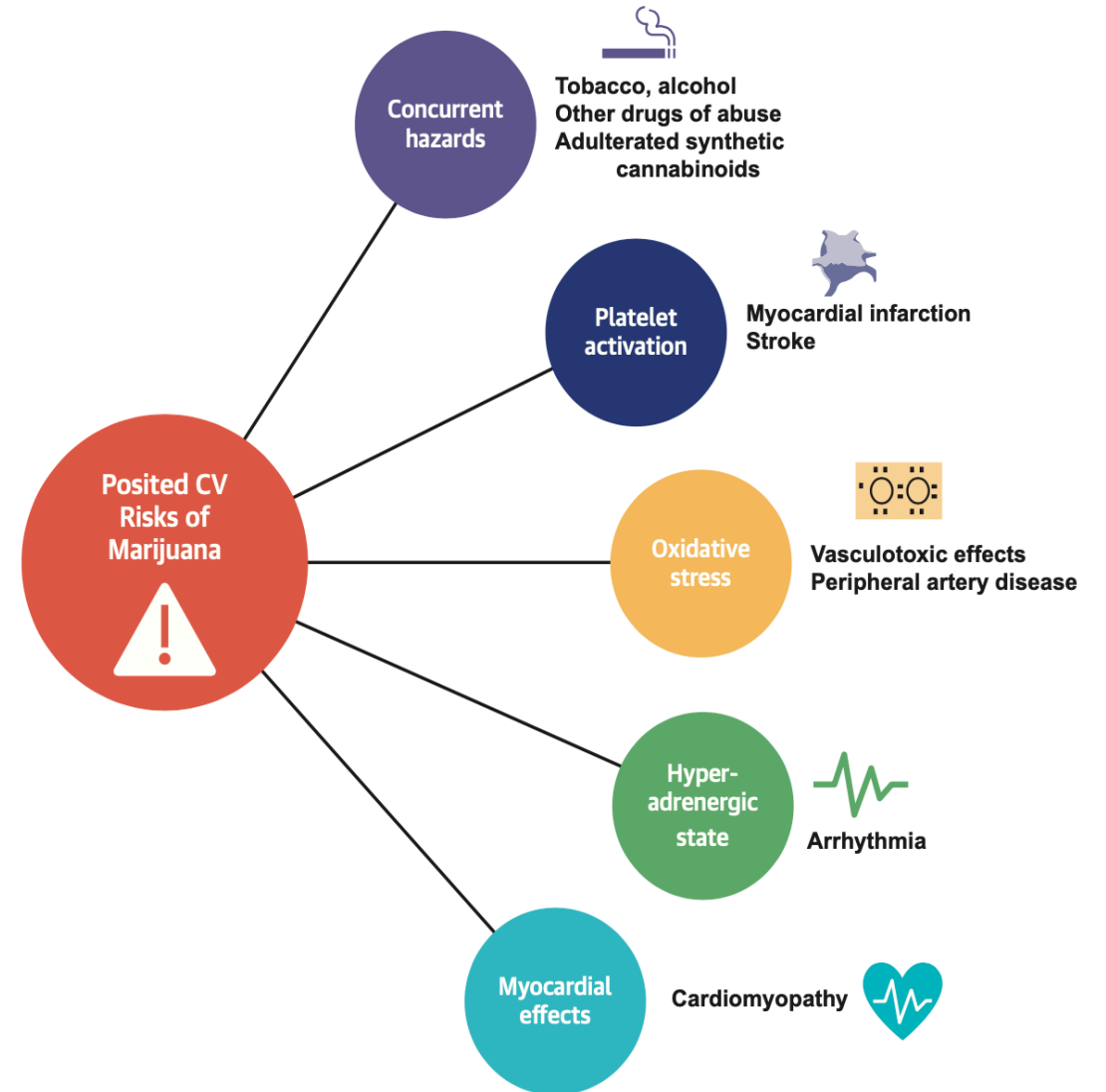
# Marijuana Use in Patients With Cardiovascular Disease

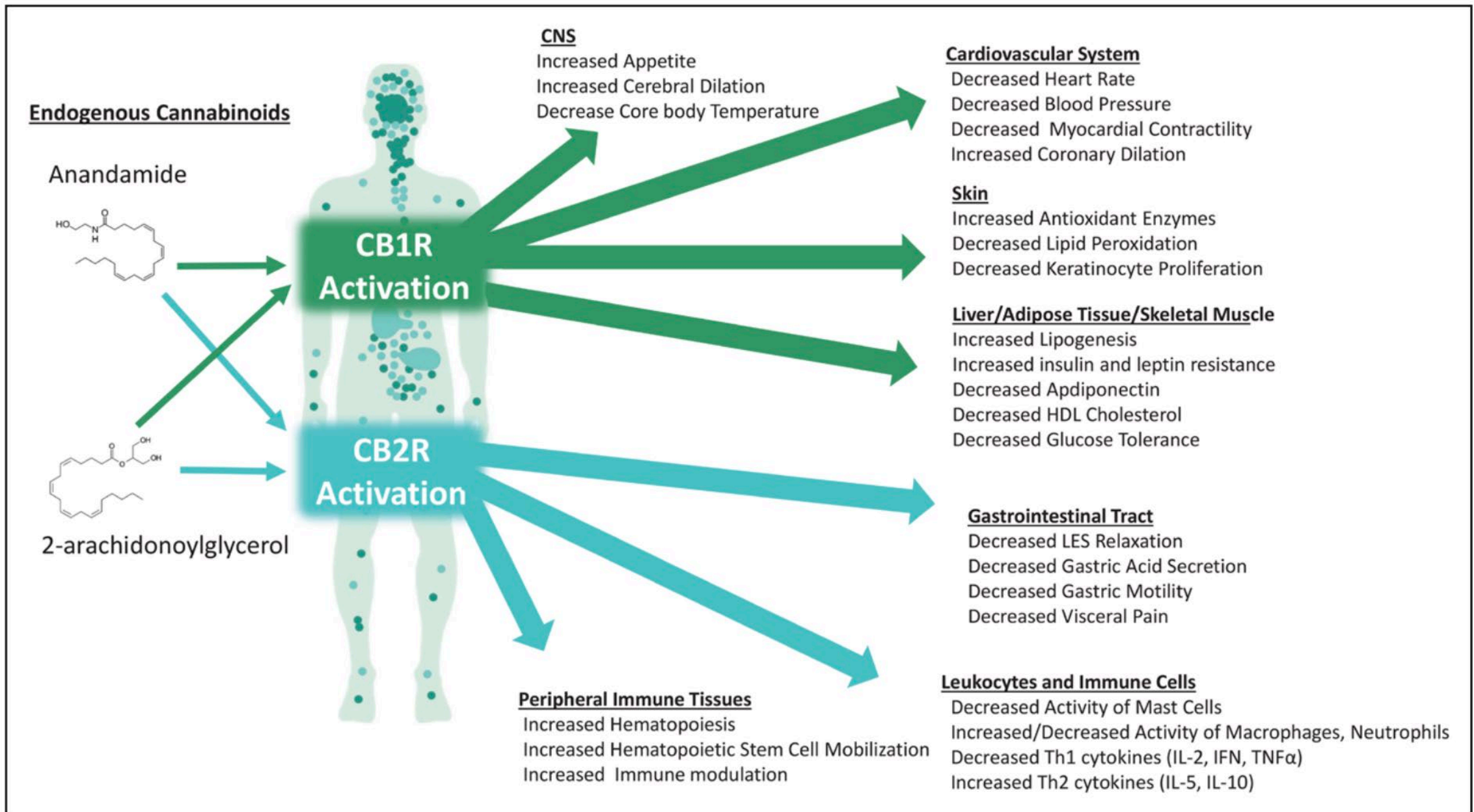
JACC Review Topic of the Week

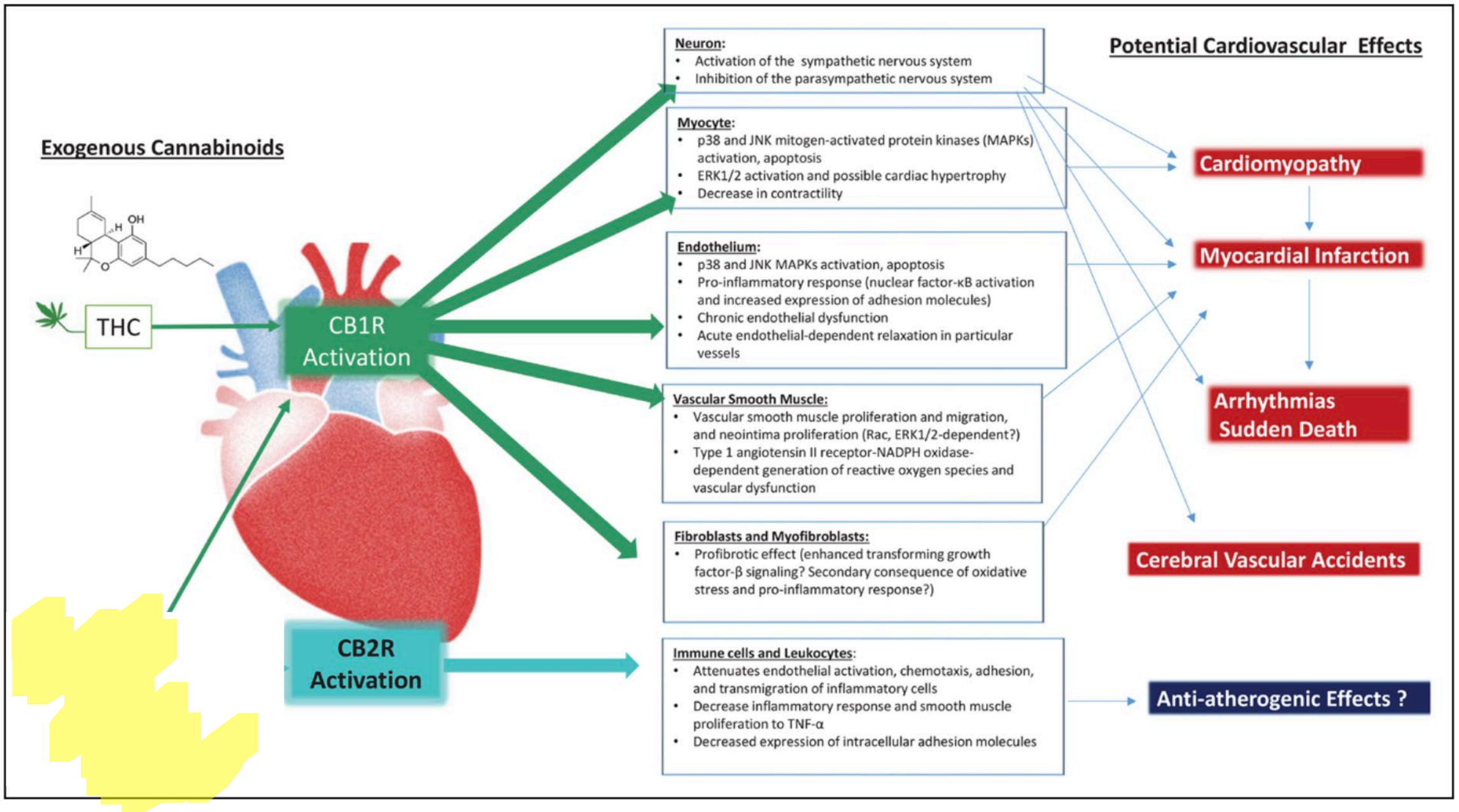
FIGURE 1 Cellular Mechanisms of Marijuana Effects



Cannabinoid receptor 1 (CB1R) is typically located on the cell surface and generally inhibits cyclic adenosine monophosphate (cAMP) formation that, in turn, decreases calcium influx. It can be internalized as a ligand-induced receptor mediating signaling pathway via β-arrestin. In contrast, intracellular CB1Rs do not translocate and can increase intracellular calcium through release of internal lysosomal calcium stores via increased membrane permeability. Additionally, CB1Rs located in mitochondria will decrease mitochondrial respiration and cAMP formation, thus regulating cellular energy metabolism.






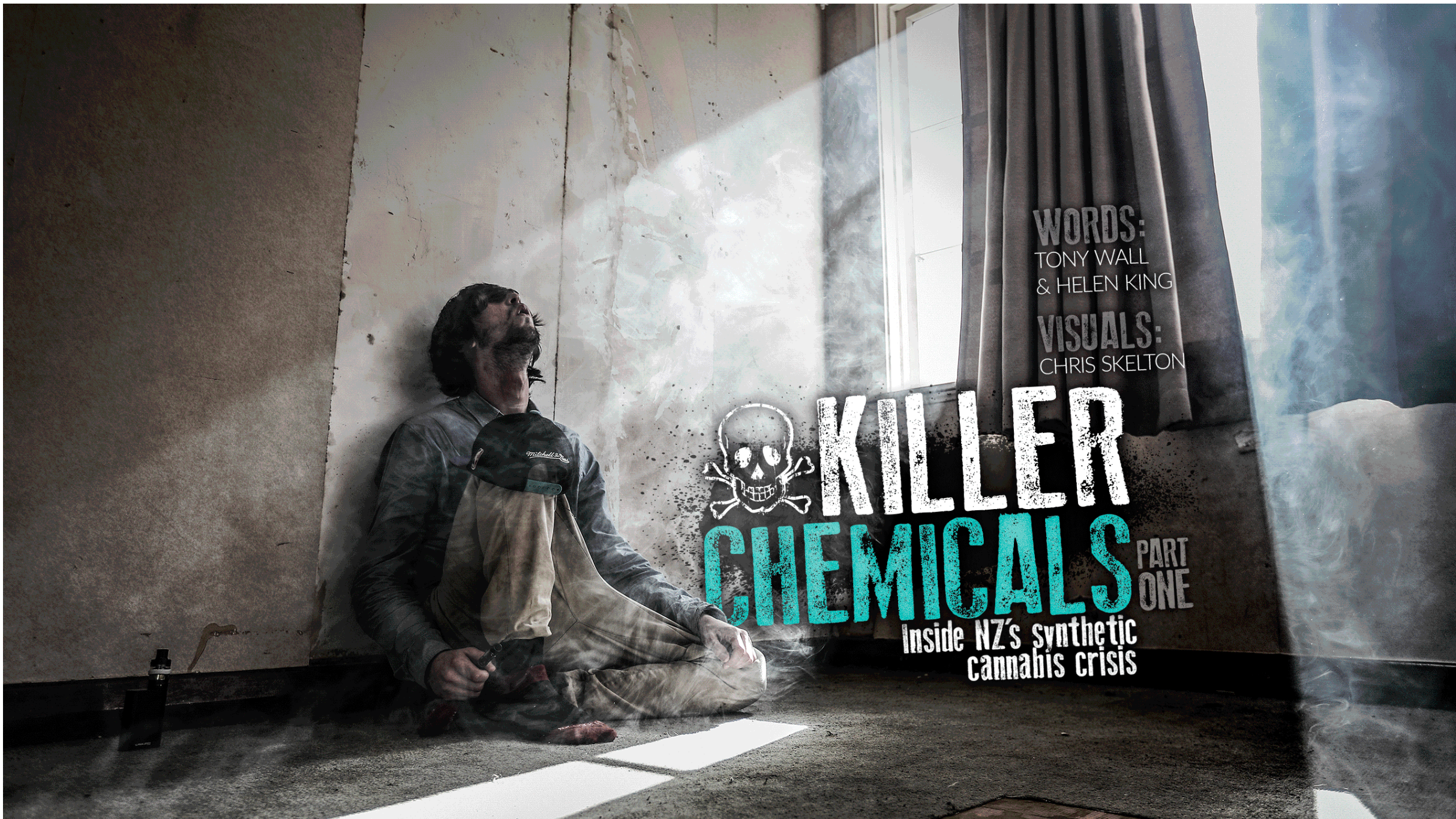


WORDS:  
TONY WALL  
& HELEN KING

VISUALS:  
CHRIS SKELTON

 **KILLER**  
**CHEMICALS** PART ONE

Inside NZ's synthetic  
cannabis crisis







## Des drogues dures qui arrivent en douce grâce au web

Les nouveaux produits de synthèse reproduisent les effets des stupéfiants. Difficiles à repérer, ces drogues – légales, puisque pas encore interdites ! – changent les habitudes des douaniers et des usagers.

Antoine Besse | 26 Jun 2015, 08h42 | MAJ : 26 Jun 2015, 11h50



RÉAGIR

Un site de vente de drogue légale, basé au Royaume-Uni, n'hésite pas à proposer une réduction de 20 % sur tous les produits !

**Marc Chaumeil**

# les inRockuptibles

vivement  
Truffaut!

Yelle  
pop zinzin



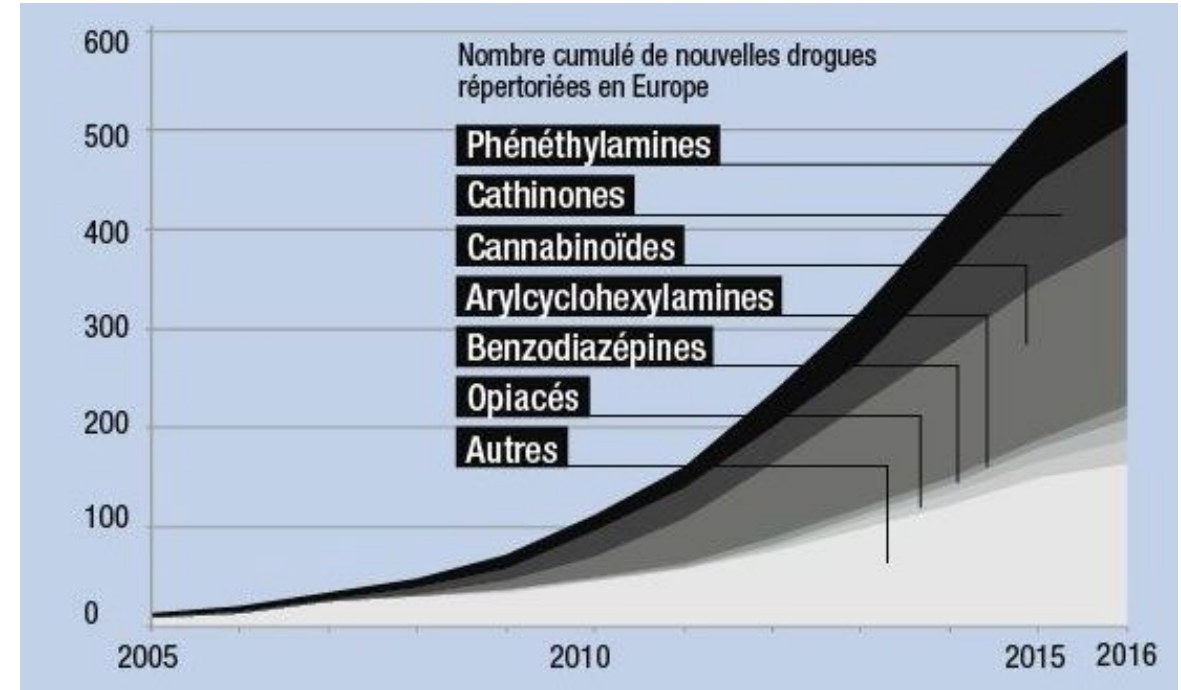
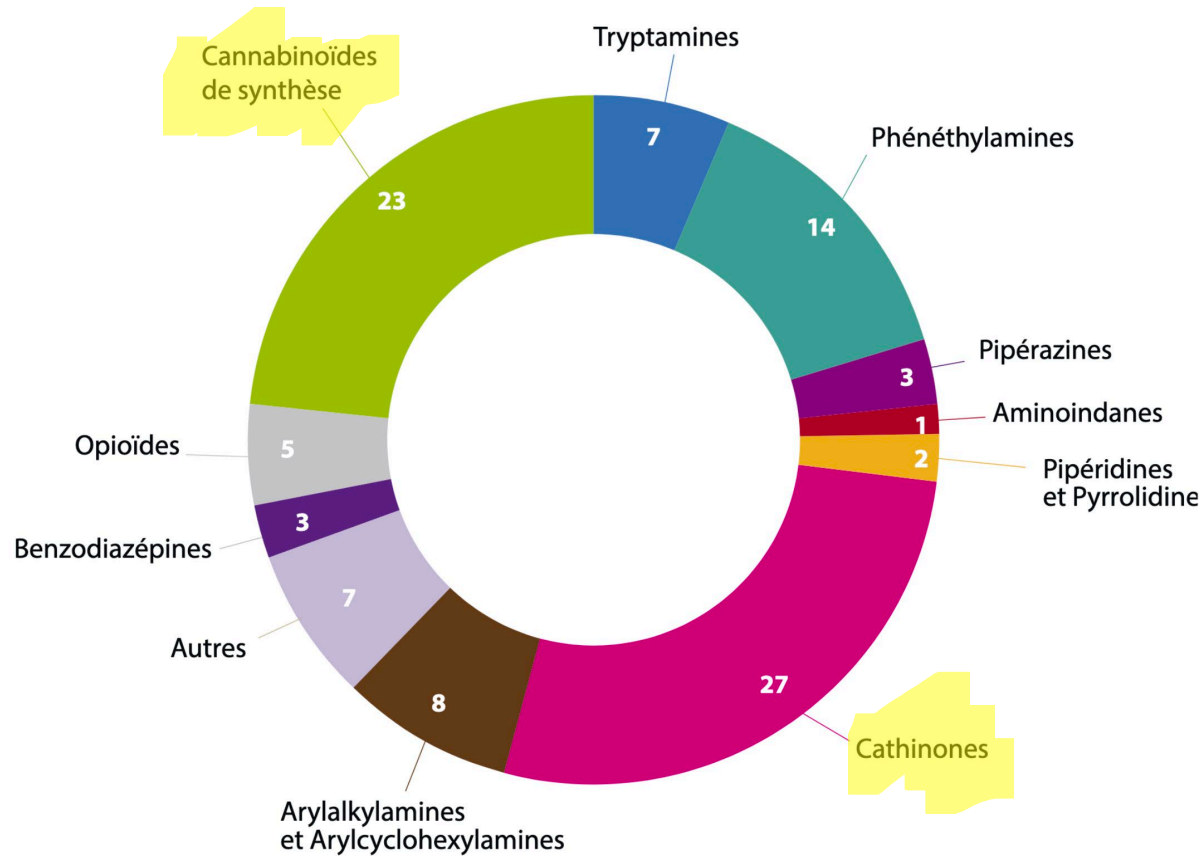
# la défonce à portée de clic

enquête sur les nouvelles drogues de synthèse





Figure 1. Nombre de NPS identifiés en France entre 2008 et avril 2017 par famille chimique (en %)



# Cannabinoïdes de synthèse



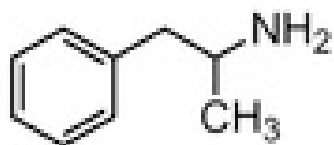
## Chest pain, troponin rise, and ST-elevation in an adolescent boy following the use of the synthetic cannabis product K2



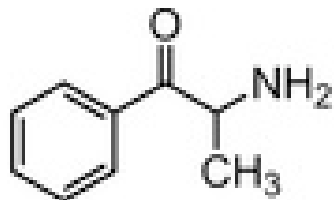
Zaleta, *Ann Pediatr Cardiol*, 2016

# Cathinones de synthèse

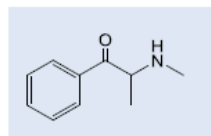




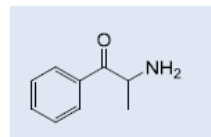
Amphetamine



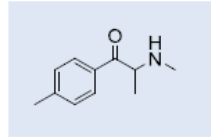
Cathinone



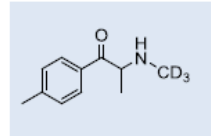
MCA-835-HC 835  
d,l-Methcathinone.HCl  
(Ephedrone.HCl)



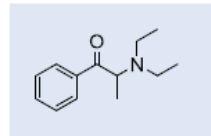
CAT-880-HC 880  
d,l-Cathinone.HCl



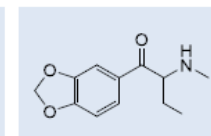
MMC-1252-HC 1252  
Mephedrone.HCl  
(4-MMC.HCl)



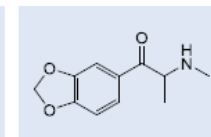
MMC-1271-HC 1271  
Mephedrone-D<sub>3</sub>.HCl  
(4-MMC-D<sub>3</sub>.HCl)



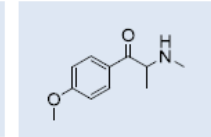
AMF-1286-HC 1286  
Amfepramone.HCl  
(Diethylpropion.HCl)



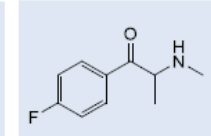
BTL-1288-HC 1288  
Butylone.HCl  
(bk-MBDB.HCl)



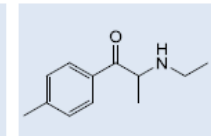
MTY-1289-HC 1289  
Methylone.HCl  
(bk-MDMA.HCl)



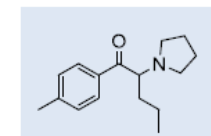
MTH-1290-HC 1290  
Methedrone.HCl  
(bk-PMMA.HCl)



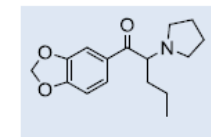
FMC-1291-HC 1291  
Flephedrone.HCl  
(4-FMC.HCl)



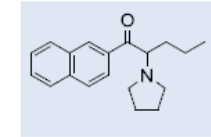
MEC-1299-HC 1299  
4-Methylethcathinone.HCl  
(4-MEC.HCl)



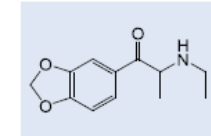
PYR-1333-HC 1333  
Pyrovalerone.HCl



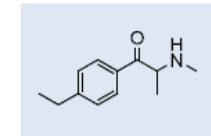
PYR-1340-HC 1340  
3,4-Methylenedioxy-  
pyrovalerone.HCl



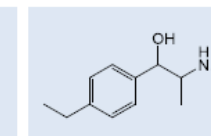
NPH-1396-HC 1396  
Naphyrone.HCl  
(O-2482)



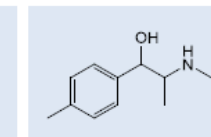
ETY-1399-HC 1399  
Ethylone.HCl  
(bk-MDEA.HCl)



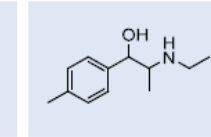
ETM-1402-HC 1402  
4-Ethylmethcathinone.HCl  
(4-EMC.HCl)



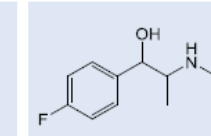
ETE-1405-HC 1405  
d,l-4-Ethylphedrine.HCl



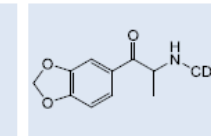
MTE-1406-HC 1406  
d,l-4-Methyl-  
ephedrine.HCl



MEE-1455-HC 1455  
d,l-4-Methyl-N-ethyl-  
norephedrine.HCl



FEP-1456-HC 1456  
d,l-4-Fluoro-  
ephedrine.HCl

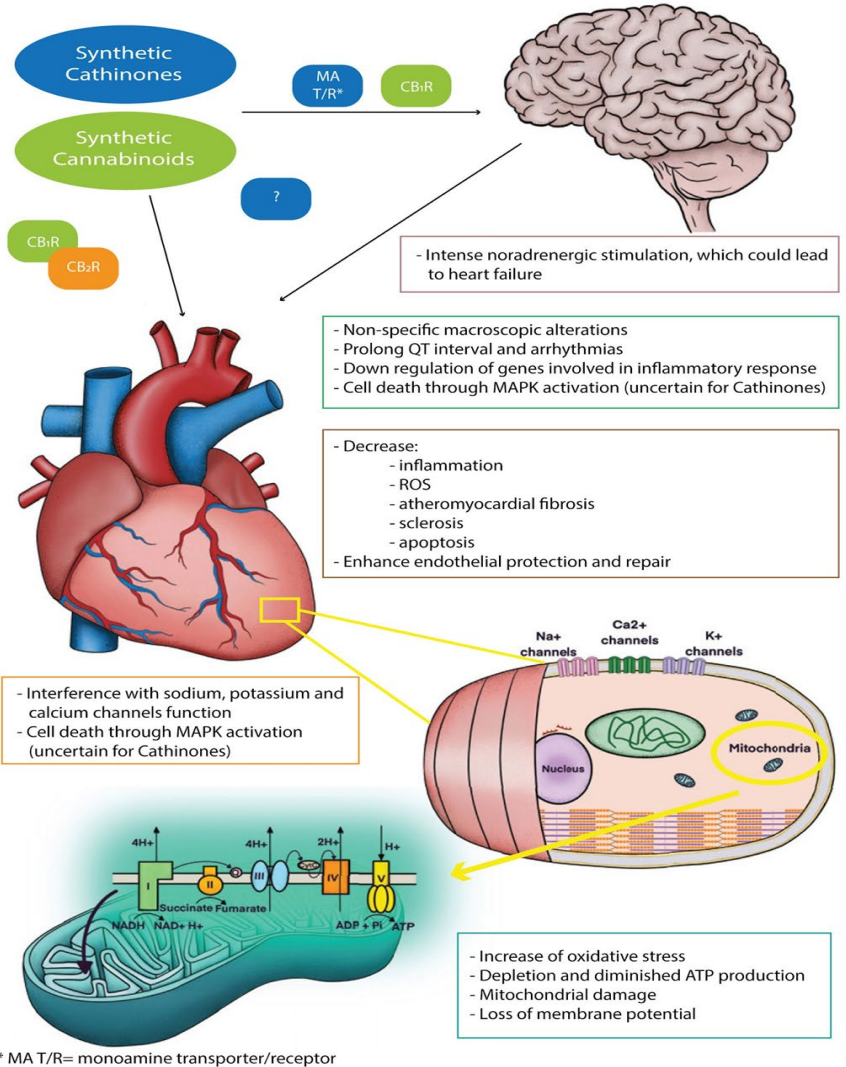


MTY-1464-HC 1464  
Methylone-D<sub>3</sub>.HCl  
(bk-MDMA-D<sub>3</sub>.HCl)

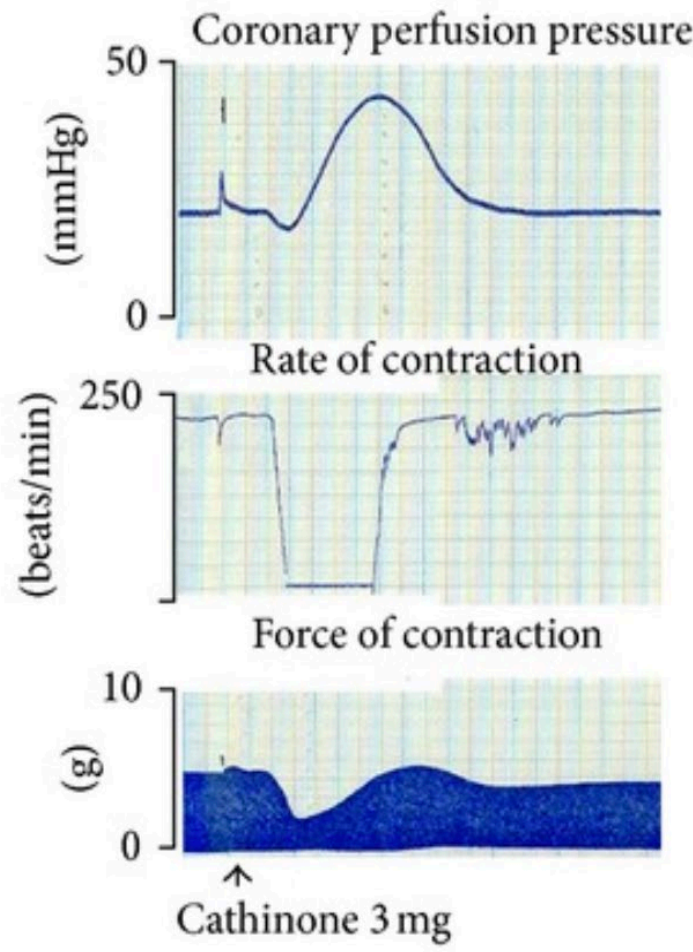
# Khat chewing is a risk factor for acute myocardial infarction: a case-control study

Al-Motarreb, *Br J Clin Pharmacol*, 2005

	OR	95% CI	P-value
<i>Model without dose</i>			
Civil servant	0.09	0.03–0.27	0.0001
Khat chewer	5.83	1.86–18.24	0.0025
Cigarette smoker	7.02	2.47–19.99	0.0003
<i>Duration of khat chewing session (h)</i>			
3 or less	4.46	1.05, 18.96	0.0428
4–5	17.05	3.04, 95.55	0.0013
6 and more	39.33	3.88, 398.48	0.0019
<i>Number of cigarettes per day</i>			
1–10	1.79	0.37, 8.65	0.4660
11–20	17.57	2.85, 108.52	0.0020
More than 20	32.98	4.22, 257.93	0.0009
<i>Restricted to khat effective period (14.00–24.00 h) (n = 66)</i>			
Civil servant	0.12	0.038, 0.409	0.0006
Khat chewer	8.96	1.8, 44.61	0.0074
Cigarette smoker	4.84	1.549, 15.14	0.0067



### Coronary vascular pharmacology of cathinone



- Guinea pig isolated Langendorff heart preparation
- Cathinone causes coronary vasoconstriction and negative inotropic effect







John Styth Pemberto

**TIRED,  
THEN  
DRINK**  
**Coca-Cola**

**IT RELIEVES EXHAUSTION**  
When the BRAIN is running under full pressure send down to the FOUNTAIN for a glass of  
**Coca-Cola**

you will be surprised how quickly it will raise the Tired Brain—soothe the Rattled Nerve—  
and restore Wasted Energy to both Mind and Body.  
It enables the entire system to readily cope with the strains of any excessive demands  
made upon it.

**AT ALL FOUNTAINS  
ALSO IN BOTTLES 5c.**

**COCA-COLA**  
**SYRUP \* AND \* EXTRACT.**

For Soda Water and other Carbonated Beverages.

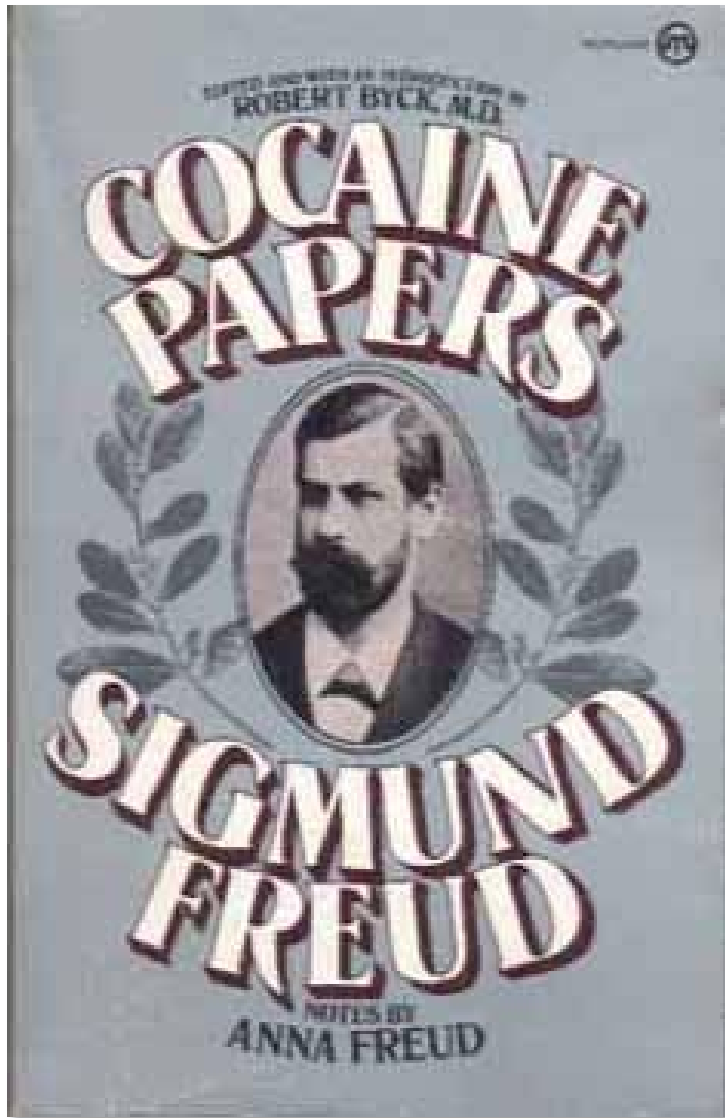
This "INTELLECTUAL BEVERAGE" and TEMPERANCE DRINK contains the valuable TONIC and NERVE STIMULANT properties of the Coca plant and Cola (or Kola) nuts, and makes not only a delicious, exhilarating, refreshing and invigorating Beverage, (dispensed from the soda water fountain or in other carbonated beverages), but a valuable Brain Tonic, and a cure for all nervous affections — SICK HEAD-ACHE, NEURALGIA, HYSTERIA, MELANCHOLY, &c.

The peculiar flavor of COCA-COLA delights every palate; it is dispensed from the soda fountain in same manner as any of the fruit syrups.

*J. S. Pemberton;*  
Chemist,  
Sole Proprietor, Atlanta, Ga.

Année de disparition la cocaïne ?





« Approuvé par...

*Frédéric Auguste Bartholdi, Anatole France, Jules Verne, Alexander Dumas, Sir Arthur Conan Doyle, Robert Louis Stephenson...*

*Célébré par les figures royales et religieuses : la reine Victoria, le roi George, le grand Rabbin de France Zadoc Kahn, les papes Pies X et Lèon XIII »*



« La cocaïne a une action remarquable sur les nerfs de la langue (...) à son contact, elle devient anesthésiée et insensible... »

Friedrich Wohler, 1860



Première anesthésie locale oculaire

Carl Köller, *Wien Med Wochenschr*, 1884



Corning, Spinal anesthesia and local medication of the cord. *N Y Med J*, 1885

Koller, Historical notes on the beginning of local anesthesia, *JAMA*, 1928

Altman, Cocaine's use in ophthalmology: our 100-year heritage. *Surv Ophthalmol*, 1985

Goerig, *Reg Anesth Pain Med*, 2012



# COCAINE TOOTHACHE DROPS

Instantaneous Cure!

PRICE 15 CENTS.

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**LLOYD MANUFACTURING CO.**

218 HICKORY AVE., ALBANY, N. Y.

For sale by all Druggists.

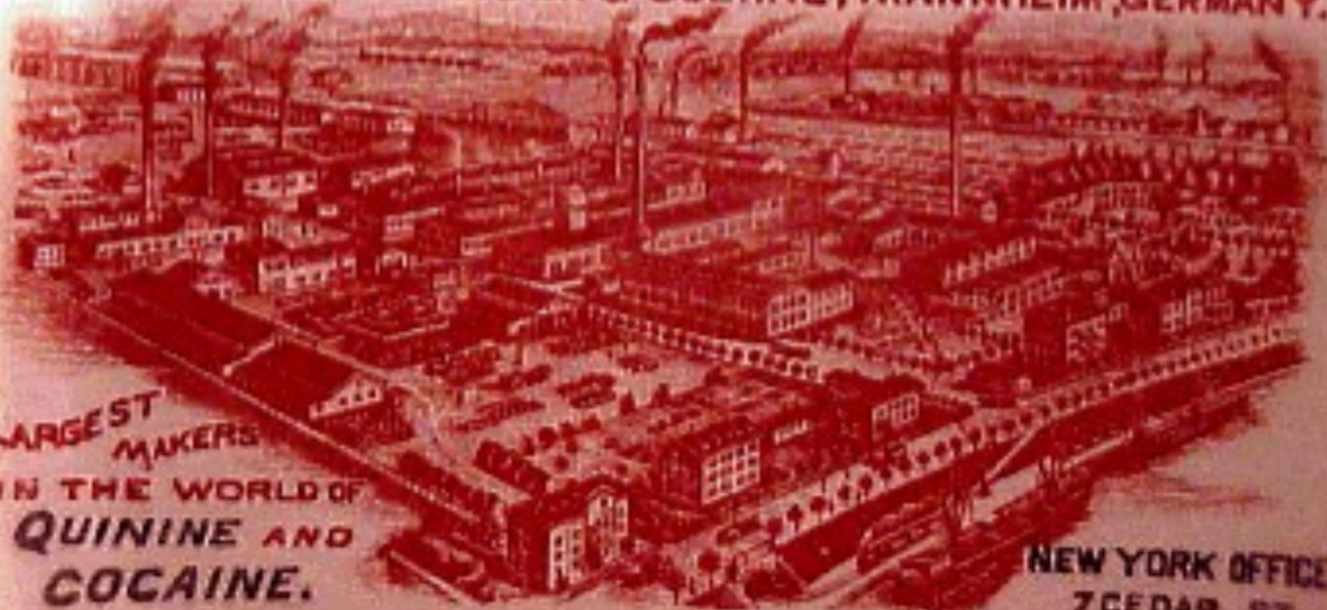
(Registered March 1887.)

See other side.

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**LACTOPHENIN,**

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WORKS OF C.F. BOEHRINGER & SOEHNE, MANNHEIM, GERMANY.



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**QUININE AND  
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NEW YORK OFFICE  
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The NEW ENGLAND  
JOURNAL of MEDICINE

# Cocaine-Induced Coronary-Artery Vasoconstriction

Richard A. Lange, M.D., Ricardo G. Cigarroa, M.D., Clyde W. Yancy, Jr., M.D., John E. Willard, M.D., Jeffrey J. Popma, M.D.,  
Michael N. Sills, M.D., Wade McBride, M.D., Anatole S. Kim, M.D., and L. David Hillis, M.D.

**ORIGINAL ARTICLE**

**Volume 321:1557-1562**

**December 7, 1989**

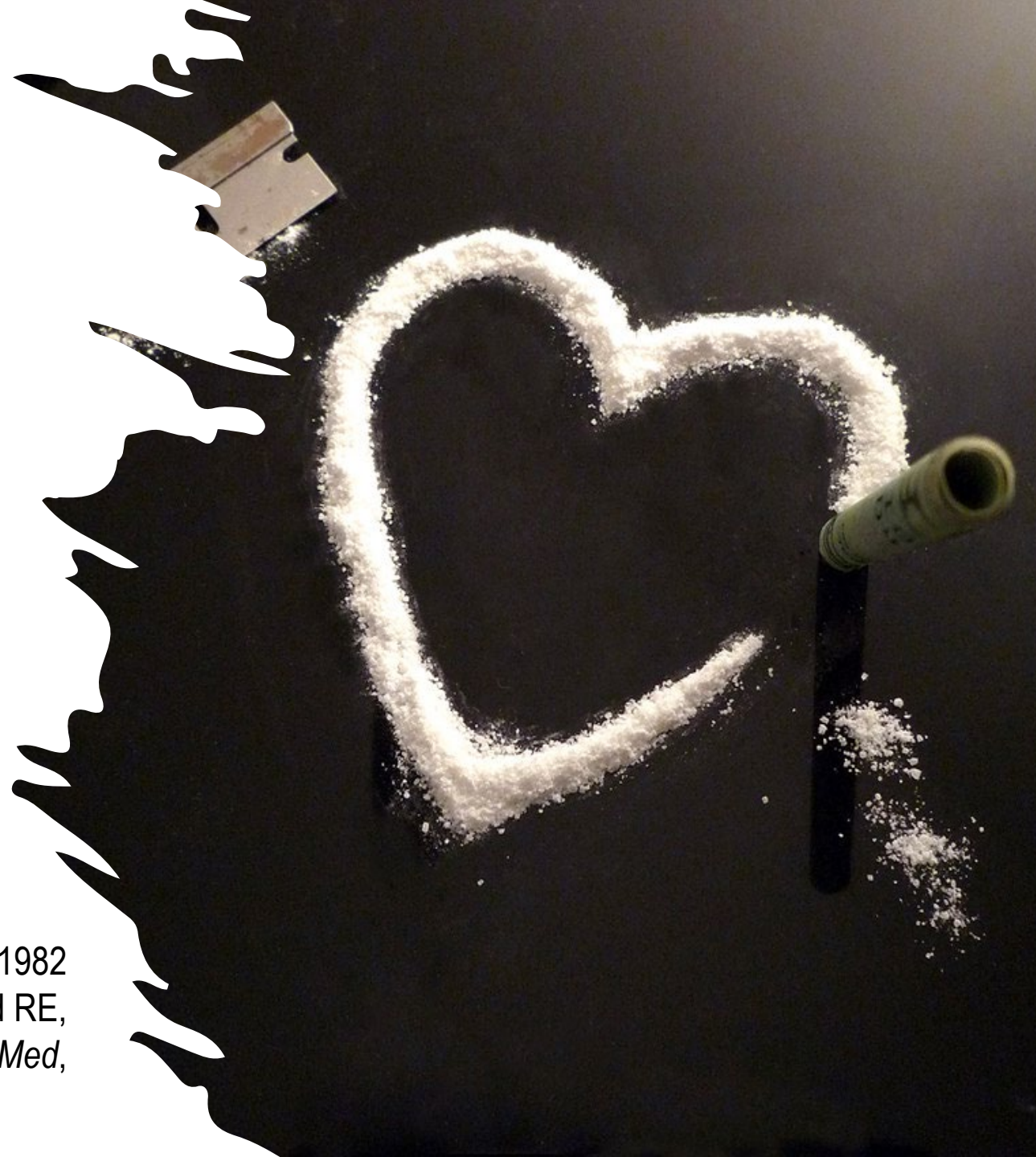
**Number 23**



# Cocaïne & infarctus du myocarde

- sans lésion coronaire
- sans facteurs de risque
- voire sur coronaires saines

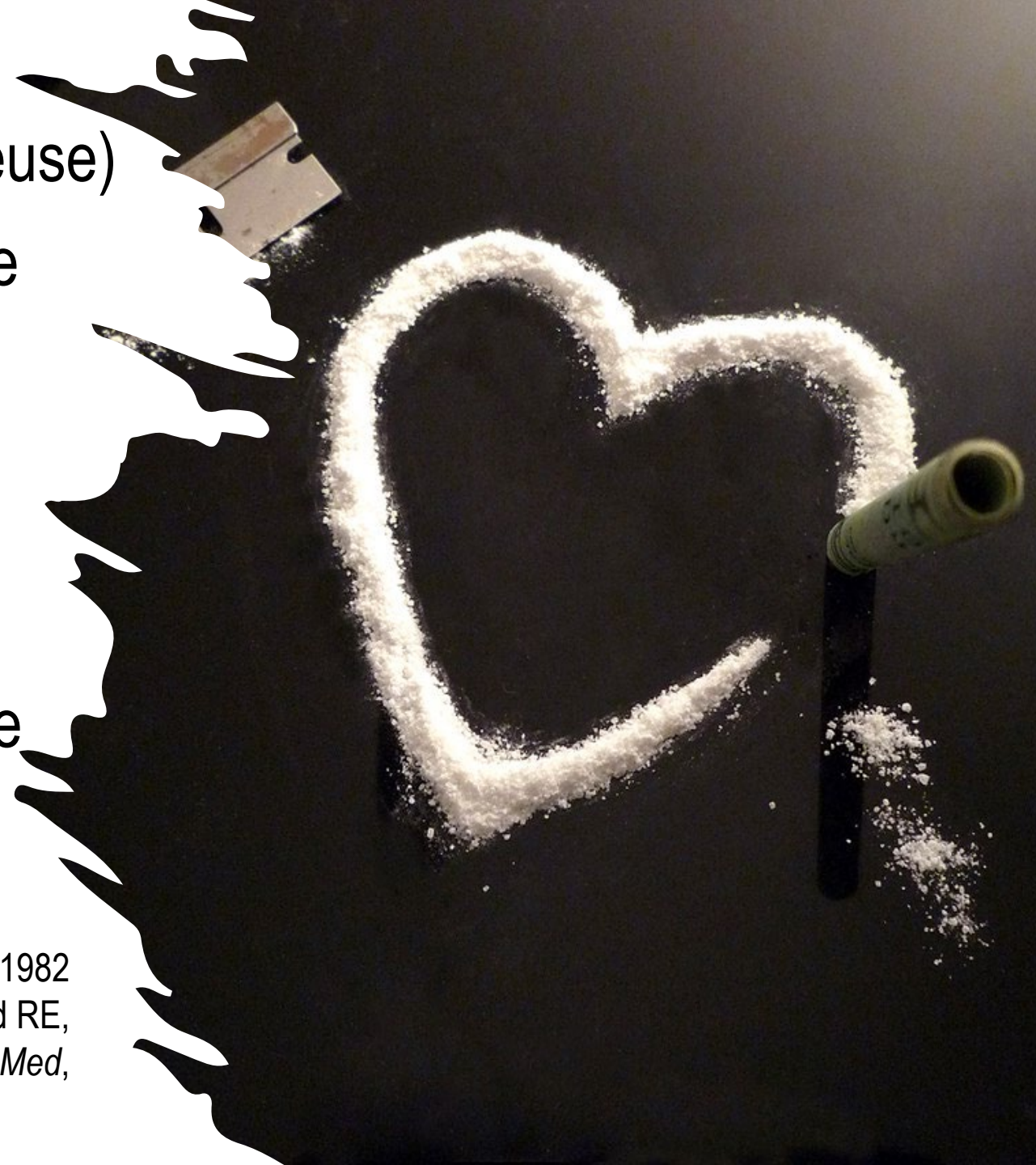
Wilkinson, *Clin Pharmac Therap*, 1980 ; Coleman, *West J Med*, 1982 ; Kossowsky, *Chest*, 1984 ; Cregler, *Am J Cardiol*, 1985 ; Howard RE, *JAMA*, 1985 ; Lange, *New Engl J Med*, 1989; Lange, *Ann Intern Med*, 1990 ; Amin, *Am J Cardiol*, 1990 ; Dressler, *Am J Cardiol*, 1990



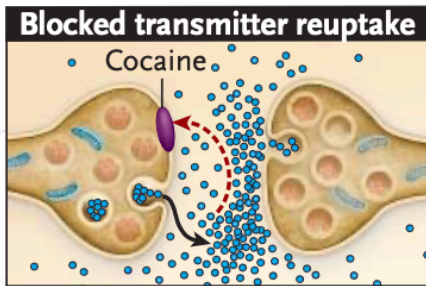
- Vasoconstriction artérielle (et veineuse)
- Tachycardie, hypertension artérielle
- Augmentation travail myocardique, consommation  $O_2$
- Diminution apports  $O_2$

Athérome et agrégabilité plaquettaire

Wilkinson, *Clin Pharmac Therap*, 1980 ; Coleman, *West J Med*, 1982 ; Kossowsky, *Chest*, 1984 ; Cregler, *Am J Cardiol*, 1985 ; Howard RE, *JAMA*, 1985 ; Lange, *New Engl J Med*, 1989; Lange, *Ann Intern Med*, 1990 ; Amin, *Am J Cardiol*, 1990 ; Dressler, *Am J Cardiol*, 1990



## Acute Effects of Cocaine



### $\alpha$ - and/or $\beta$ -Adrenergic effect

Increased blood pressure    Increased heart rate

**Increased oxygen demand**

### $\alpha$ -Adrenergic effect

Coronary spasm

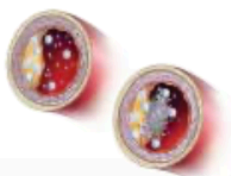
**Decreased oxygen delivery**

Ischemia, infarction, arrhythmia

## Chronic Effects of Cocaine



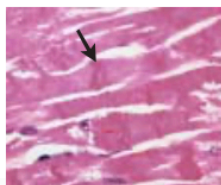
Dilated or hypertrophic cardiomyopathy



Accelerated atherosclerosis



Myocarditis



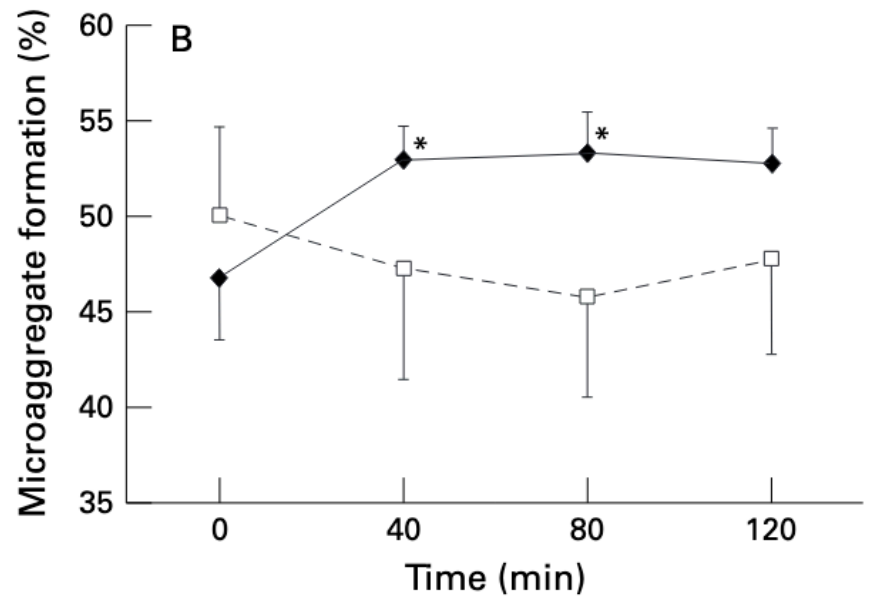
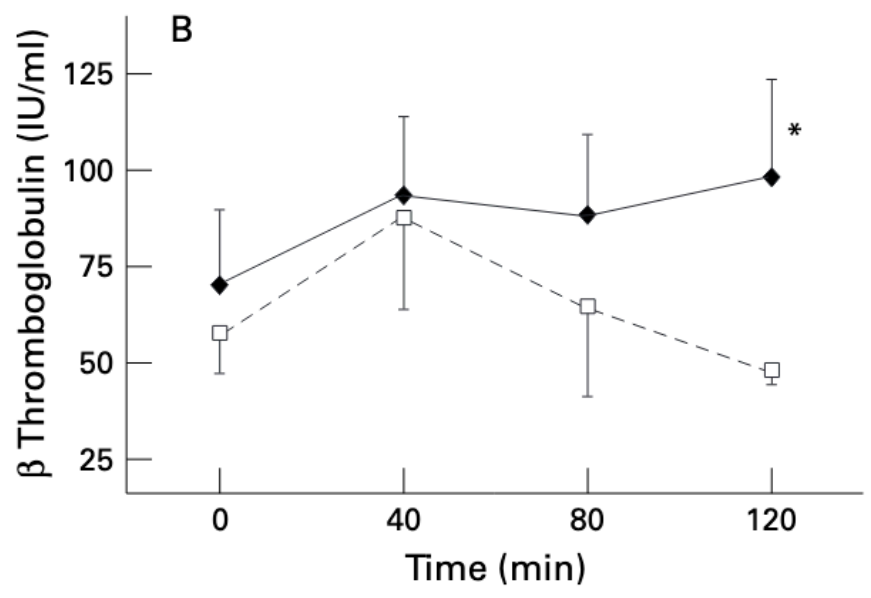
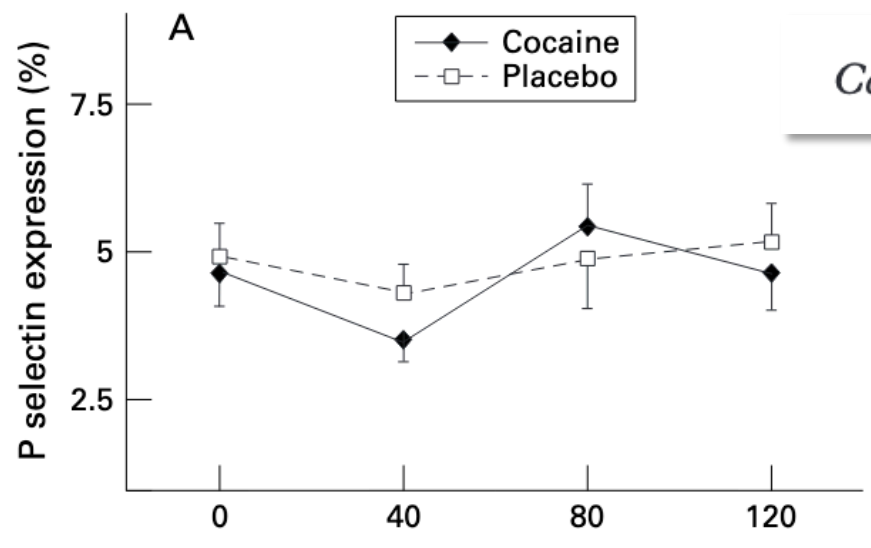
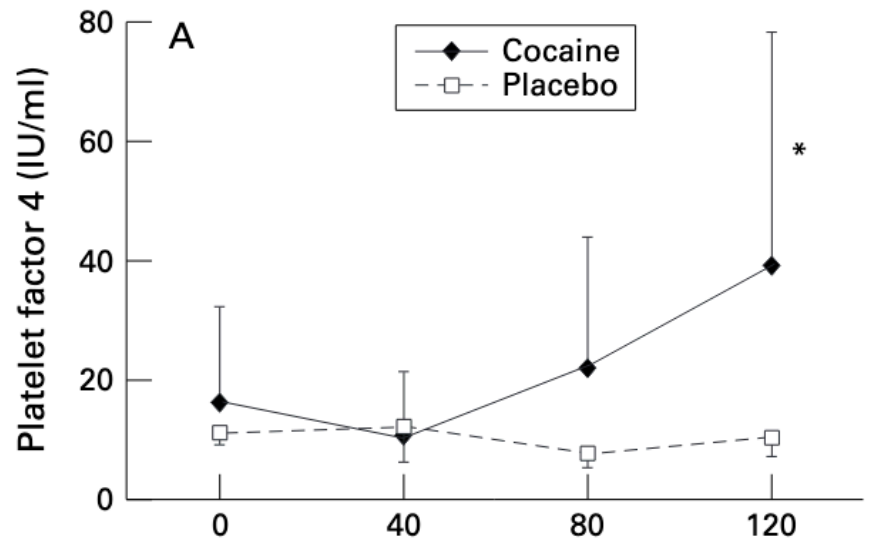
Contraction-band necrosis

**Selected Acute and Chronic Effects of Cocaine on the Heart.**



*Cocaine activates platelets in vivo*

Heesch, *Heart*, 2000



# Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION

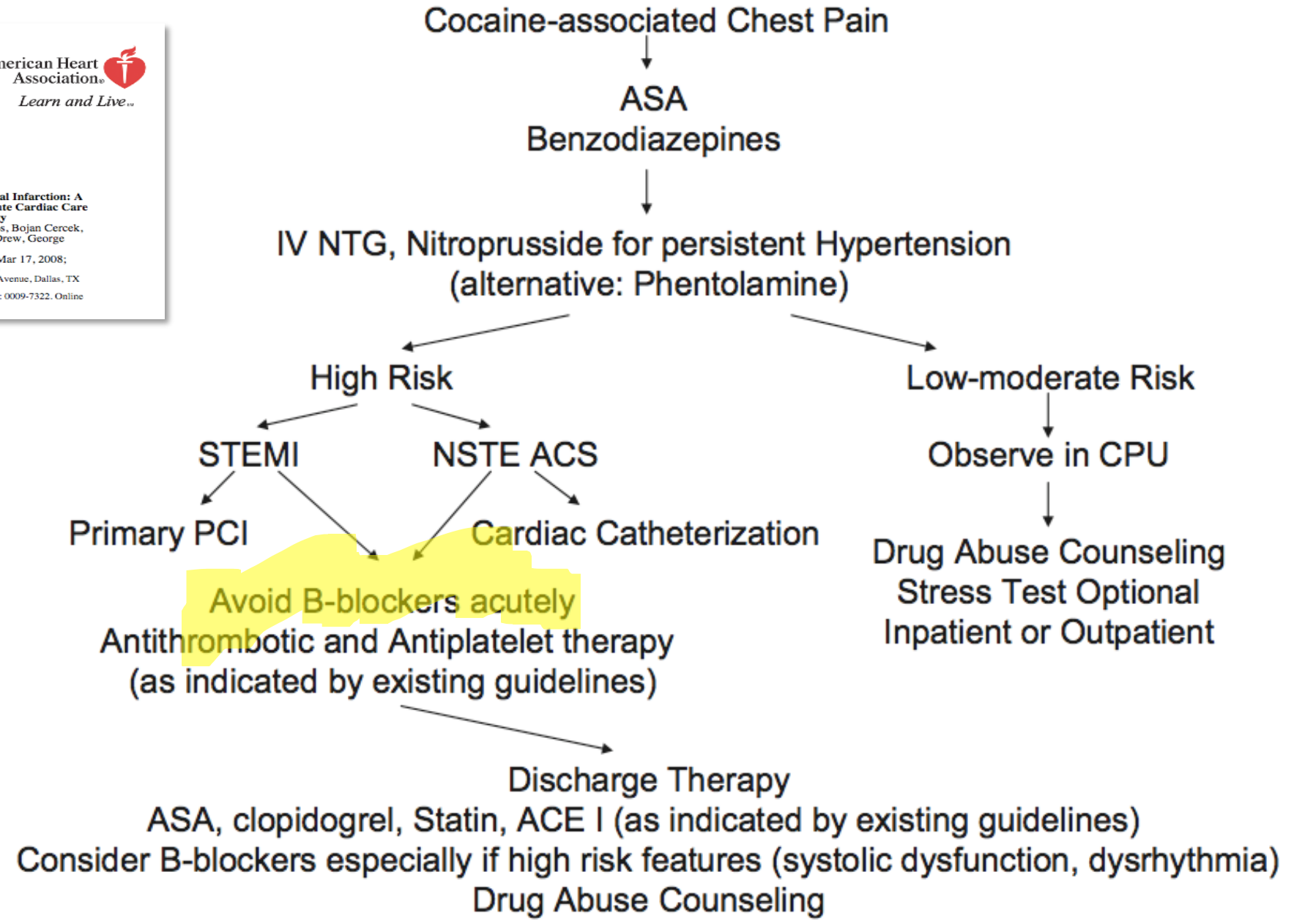
American Heart  
Association   
*Learn and Live...*

**Management of Cocaine-Associated Chest Pain and Myocardial Infarction: A  
Scientific Statement From the American Heart Association Acute Cardiac Care  
Committee of the Council on Clinical Cardiology**

James McCord, Hani Jneid, Judd E. Hollander, James A. de Lemos, Bojan Cercek,  
Priscilla Hsue, W. Brian Gibler, E. Magnus Ohman, Barbara Drew, George  
Philippides and L. Kristin Newby

*Circulation* 2008;117;1897-1907; originally published online Mar 17, 2008;  
DOI: 10.1161/CIRCULATIONAHA.107.188950

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*Circulation* 2008;117:1897-1907; originally published online Mar 17, 2008;  
DOI: 10.1161/CIRCULATIONAHA.107.188950  
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75214  
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The Potential

**Risks**

and **Dangers**

of **BETA BLOCKERS**



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Traitement logique : référence des années 80

Rappolt, *Lancet*, 1976

# The Potential Risks



Catravas, <i>NEJM</i> , 1977	Dose	Décès
Témoins (N=10)	-	100% en 41'
<b>Propranolol</b> (prétraitement) (N=5)	6-10 mg/kg	<b>100% en 38'</b>
Chlorpromazine (prétraitement) (N=6)	12 mg	0%



# The Potential

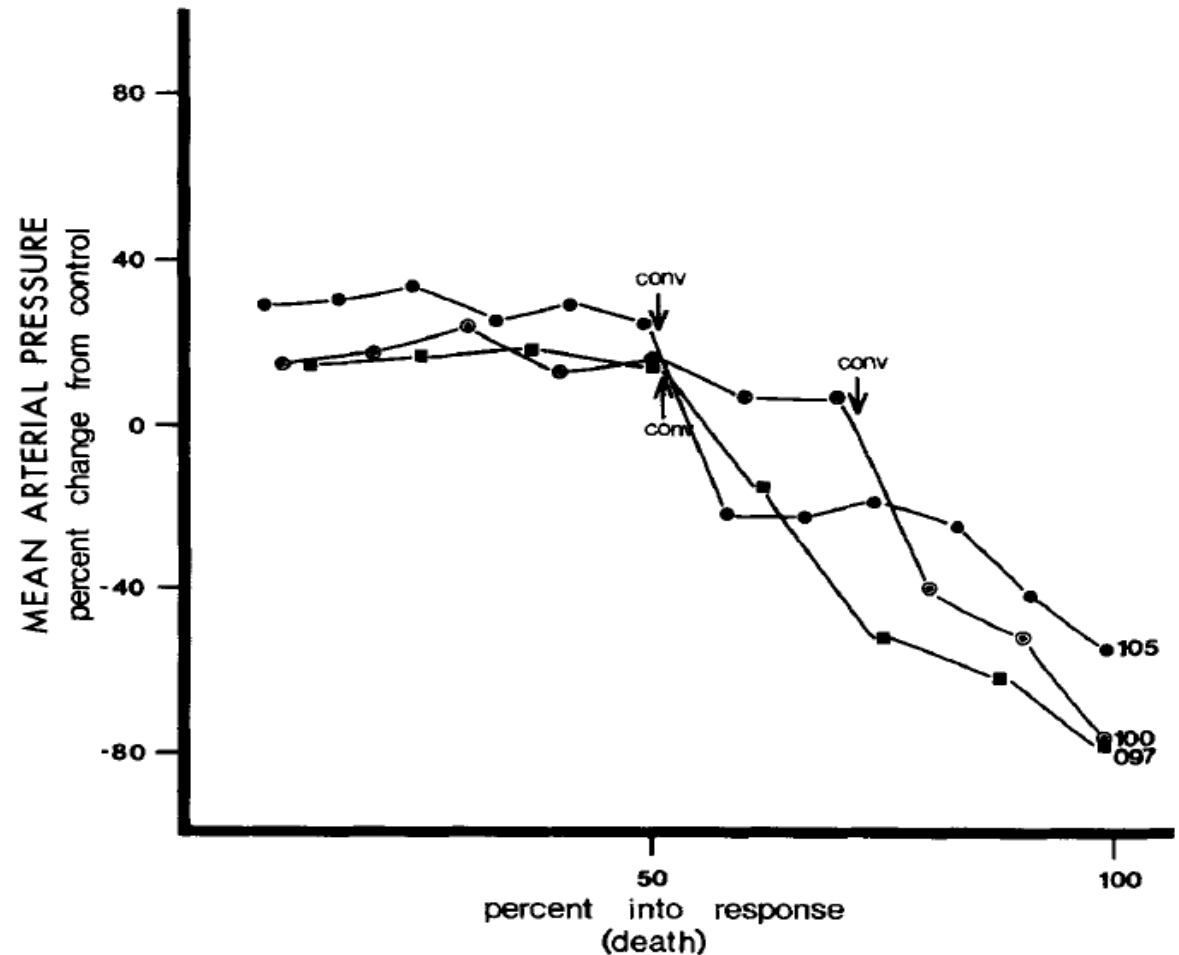
Guinn, *Clin Toxicol*, 1980

Témoins

**Propranolol**

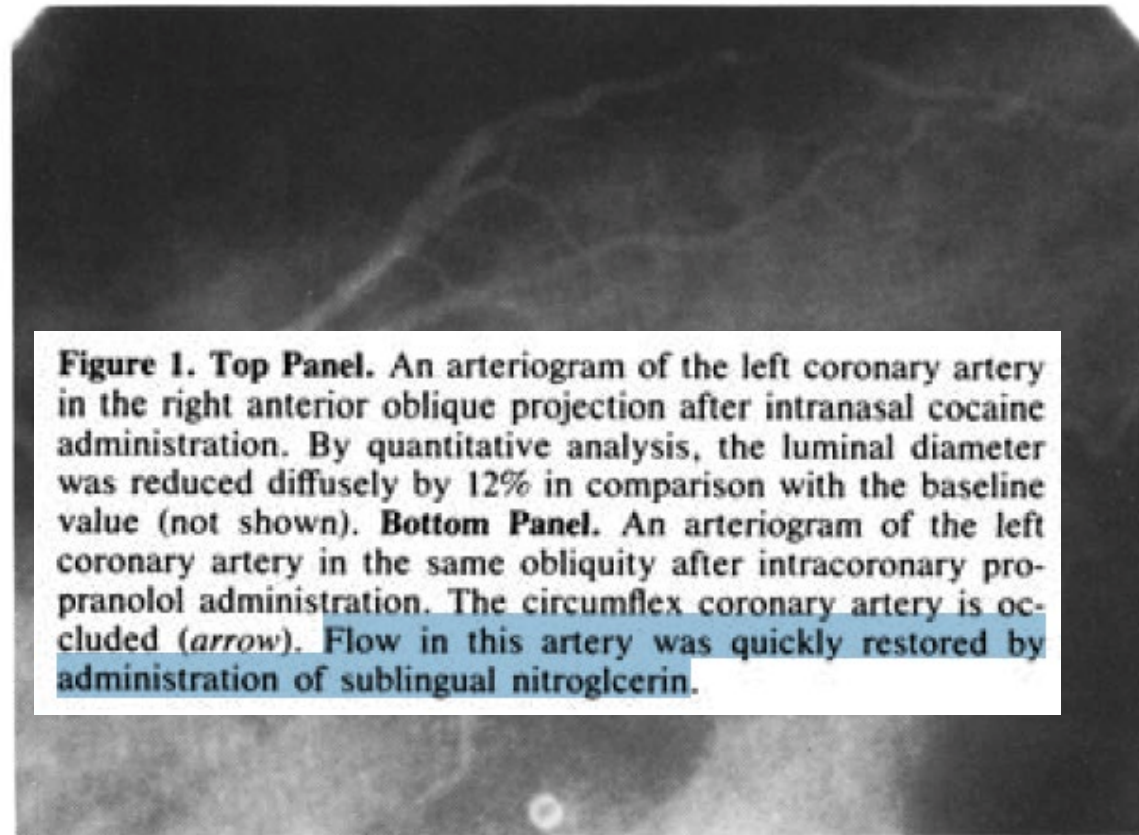
Diazepam

Chlorpromazine

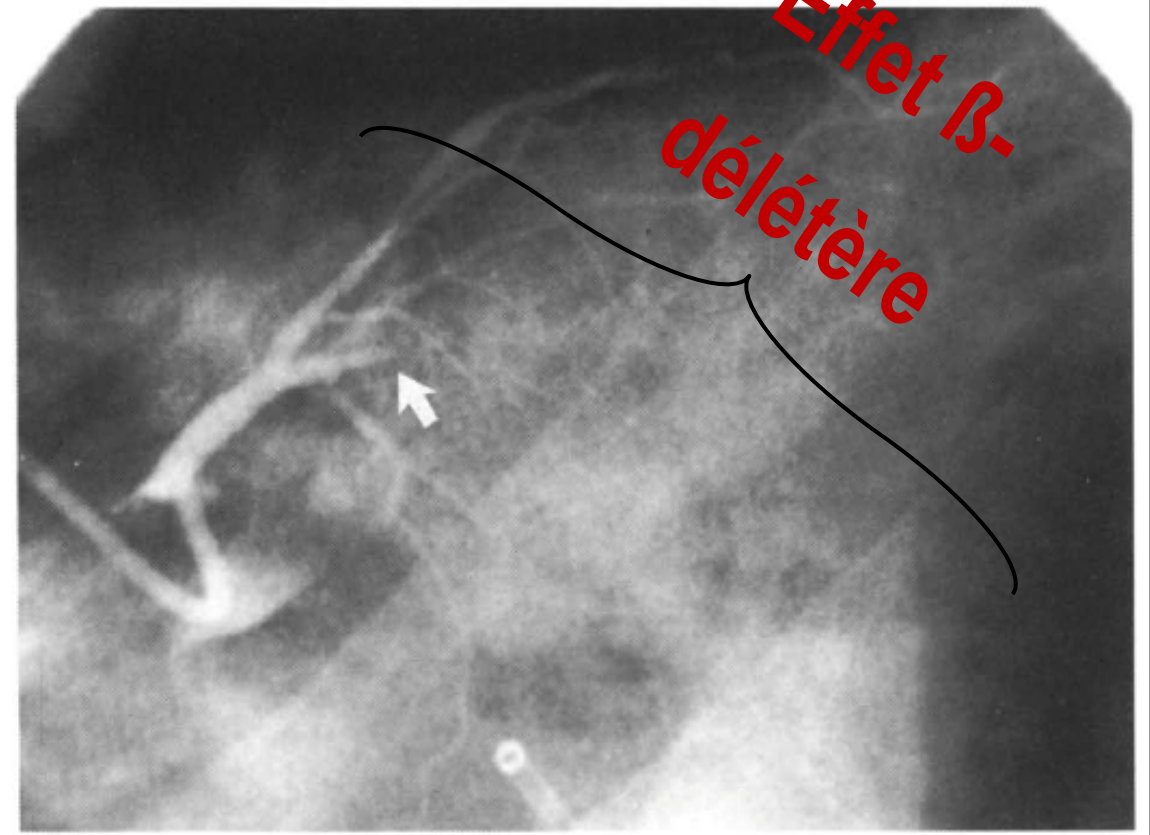


# The Potential

30 volontaires sains devant subir

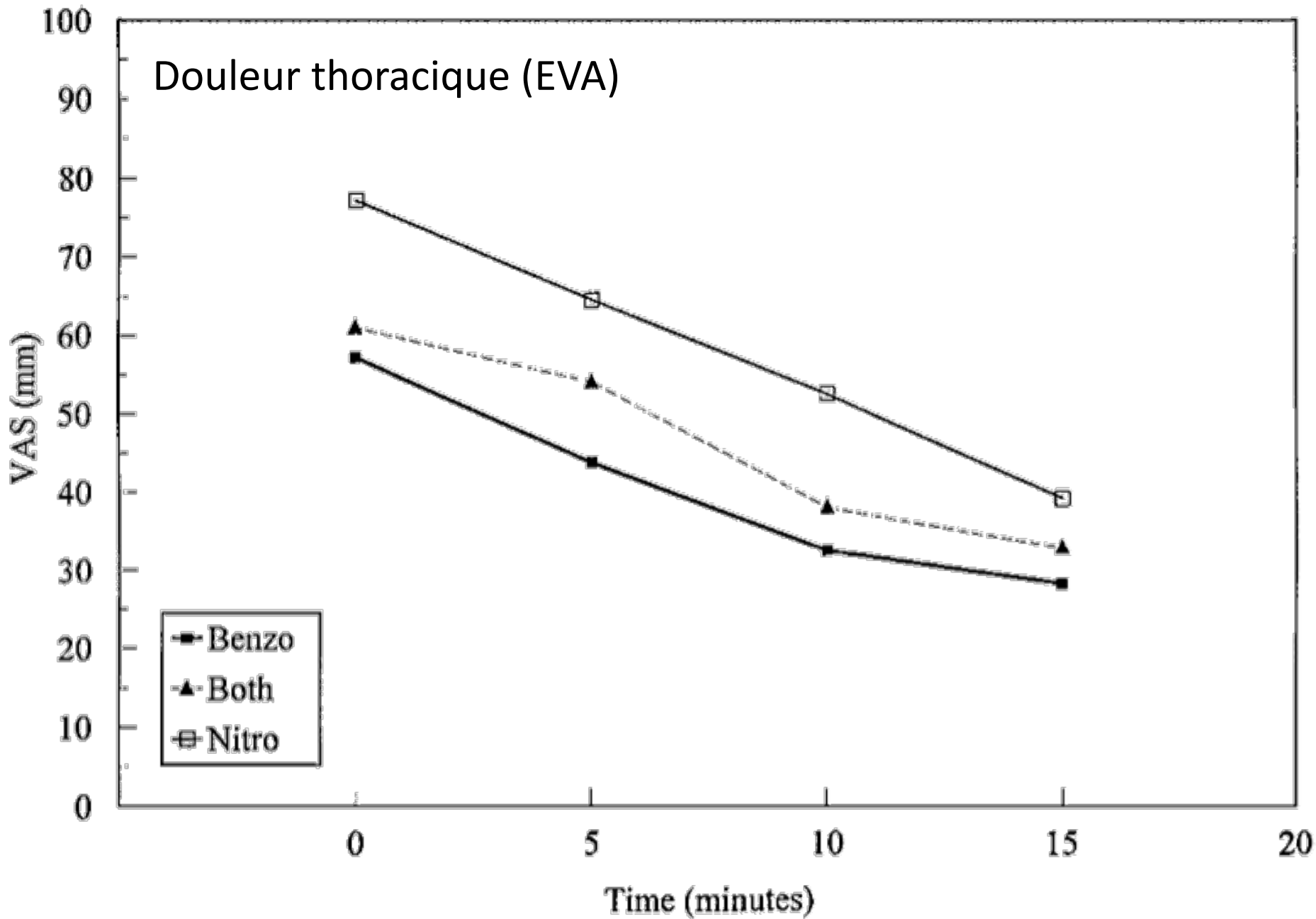


**Figure 1. Top Panel.** An arteriogram of the left coronary artery in the right anterior oblique projection after intranasal cocaine administration. By quantitative analysis, the luminal diameter was reduced diffusely by 12% in comparison with the baseline value (not shown). **Bottom Panel.** An arteriogram of the left coronary artery in the same obliquity after intracoronary propranolol administration. The circumflex coronary artery is occluded (*arrow*). Flow in this artery was quickly restored by administration of sublingual nitroglycerin.



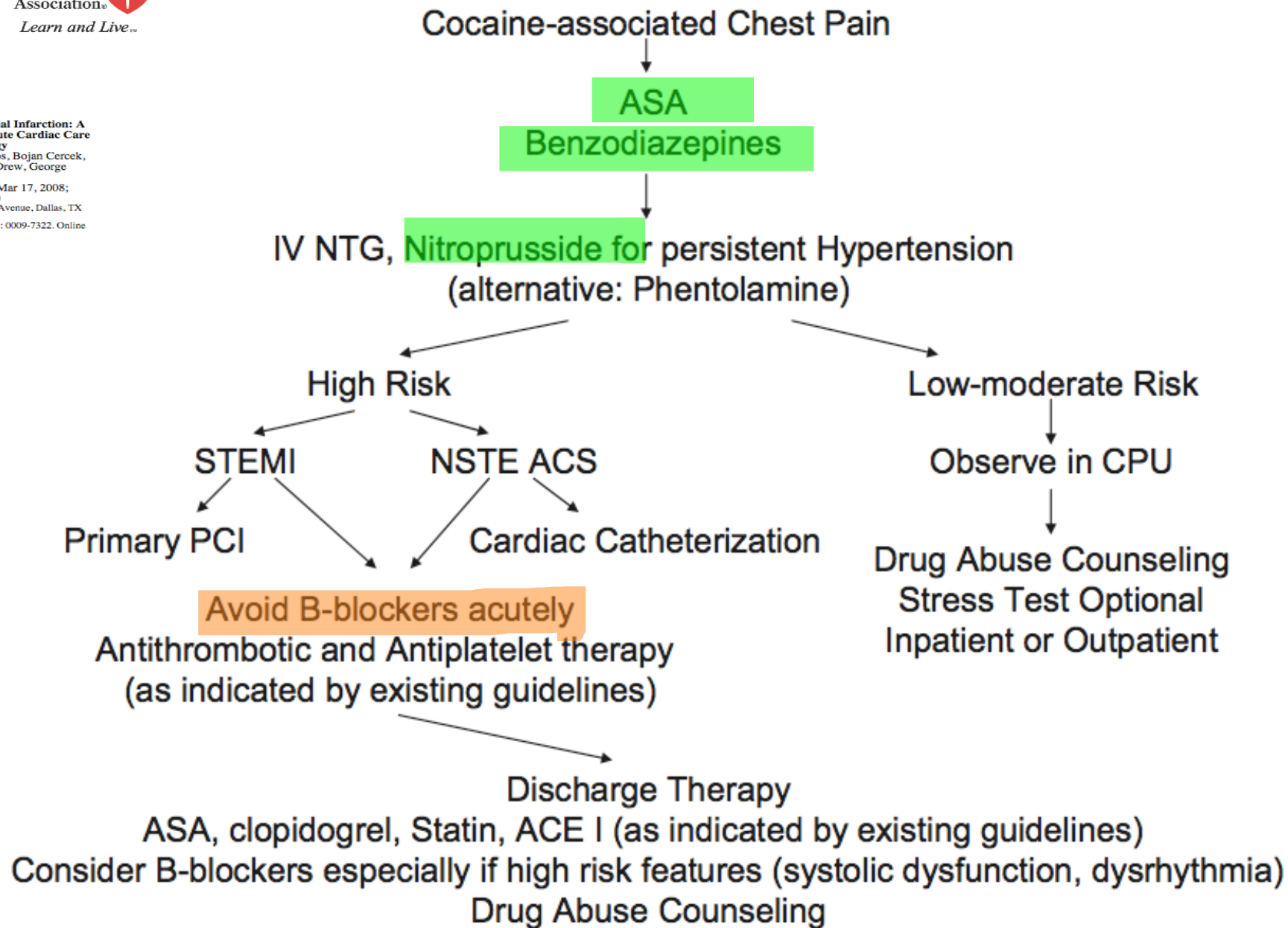
ST+)

# Douleur thoracique (EVA)



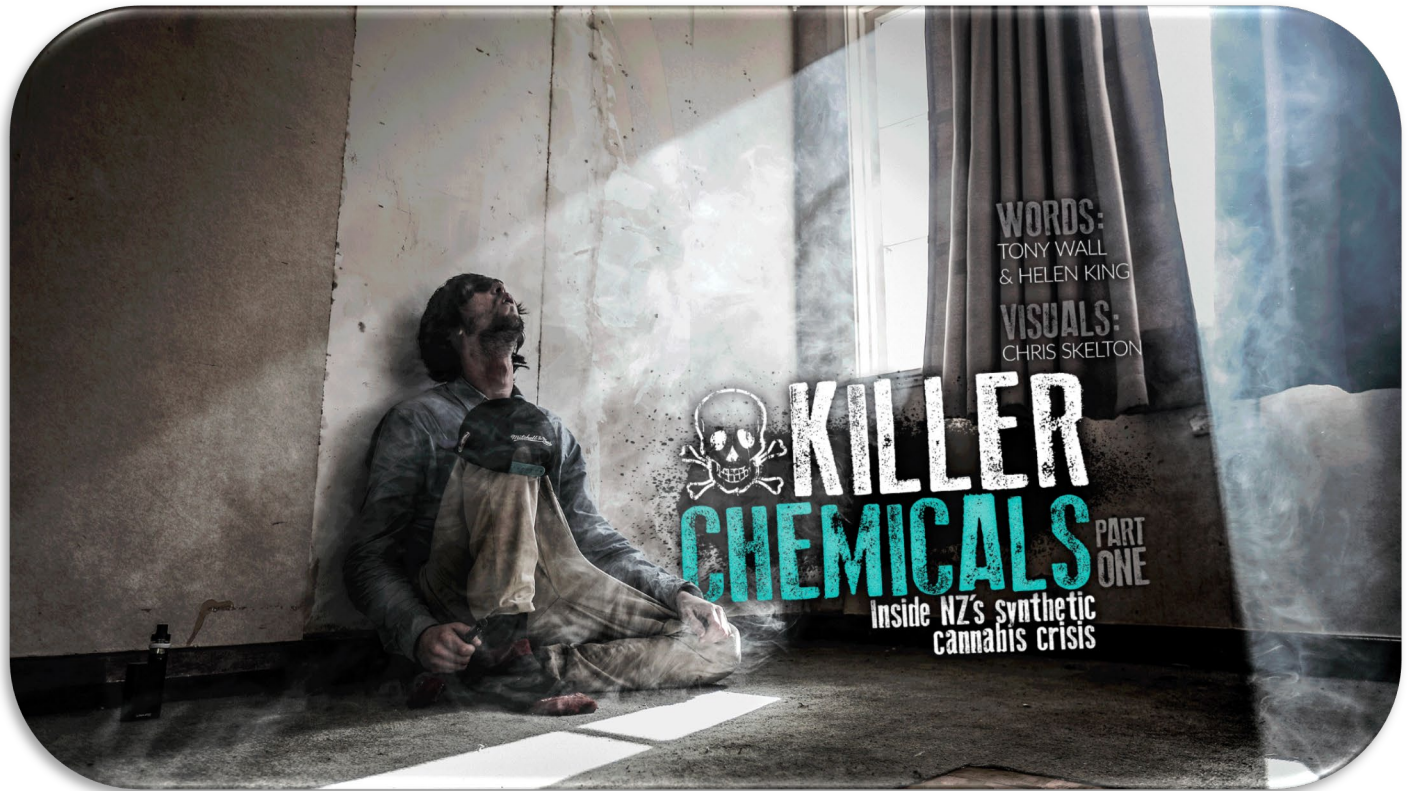
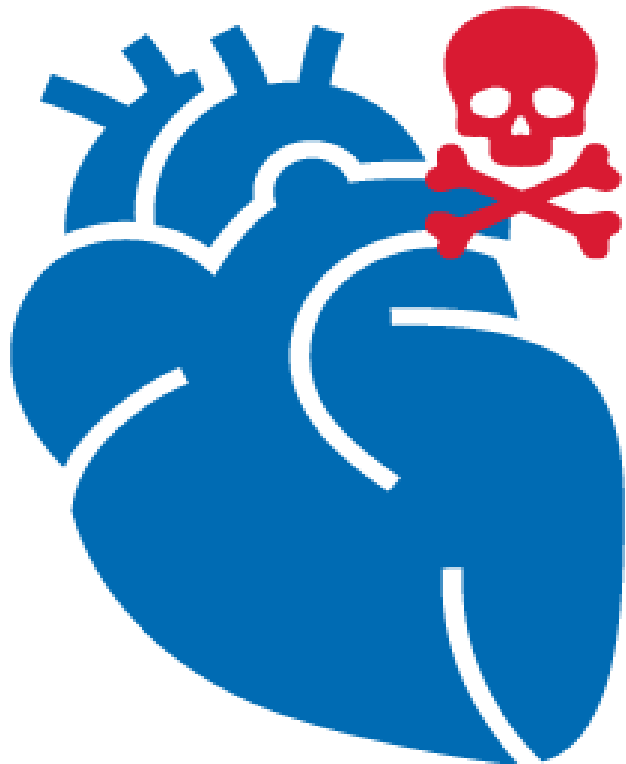
Baumann,  
*Acad Emerg Med*, 2000

Management of Cocaine-Associated Chest Pain and Myocardial Infarction: A Scientific Statement From the American Heart Association Acute Cardiac Care Committee of the Council on Clinical Cardiology  
James McCord, Hani Jneid, Judd E. Hollander, James A. de Lemos, Bojan Cercek, Priscilla Hsue, W. Brian Gibler, E. Magnus Ohman, Barbara Drew, George Philippides and L. Kristin Newby  
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**NEW  
PARADIGM  
AHEAD**



# The Toxicology of Bath Salts: A Review of Synthetic Cathinones

Prosser,  
*J Med Toxicol*, 2012

**Table 2** User reported clinical effects of synthetic cathinones [17, 25, 28, 30, 62]

Cardiovascular	Palpitations, shortness of breath, chest pain
ENT	Dry mouth, epistaxis, nasal pain, “nose burns”, oropharyngeal pain, tinnitus
Gastrointestinal	Abdominal pain, anorexia, nausea, vomiting
Genitourinary	Anorgasmia, erectile dysfunction, increased libido
Musculoskeletal	Arthralgias, extremity changes—coldness, discoloration, numbness, tingling, muscular tension and cramping
Neurologic	Aggressiveness, bruxism, dizziness, headache, lightheadness, memory loss, tremor, seizures
Ophthalmologic	Blurred vision, mydriasis, nystagmus
Pulmonary	Shortness of breath
Psychological	Anger, anxiety, auditory and visual hallucinations, depression, dysphoria, empathy, euphoria, fatigue, formication, increased energy, increased and decreased concentration, loquaciousness, panic, paranoia, perceptual distortions, restlessness
Other	Body odor “mephedrone stink”, diaphoresis, fever, insomnia, nightmares, skin rash

**Table 4** Medical provider (including emergency department and poison center data) reported effects associated with use of synthetic cathinones [1, 13, 30, 35, 38, 70–72]

Cardiovascular	Chest pain, hypertension, palpitations, myocarditis, tachycardia
ENT	Epistaxis, oral and pharyngeal effects, tongue disorder
Gastrointestinal	Abdominal pain, abnormal liver function tests, nausea, liver failure
Musculoskeletal	Elevated creatinine kinase, peripheral vasoconstriction, rhabdomyolysis
Neurologic	Agitation, aggression, altered mental status, collapse, confusion, dizziness, drowsiness, dystonia, headache, hyperreflexia, myoclonus, paraesthesias, seizures, tremor
Ophthalmologic	Abnormal vision, mydriasis
Pulmonary	Shortness of breath, tachypnea
Psychological	Anxiety, confusion, delusions, hallucinations, paranoia, psychosis
Renal	Abnormal renal function, acute renal failure
Other	Diaphoresis, fever, hyponatremia, rash



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