

PHARMACOLOGICAL AND PSYCHOLOGICAL CONSIDERATIONS IN SMOKING CESSATION

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Tobacco

Nicotine, an alkaloid derived from the leaves of tobacco plants (*Nicotiana tabacum* and *Nicotiana rustica*) is the primary addictive agent in tobacco products.



- many medical conditions are associated with or aggravated by smoking
- cigarette smoking is the leading preventable cause of mortality worldwide

Common adverse effects of
Tobacco smoking

Larynx cancer

Oral cavity cancer

Esophagus cancer

**Myocardial
infarction**

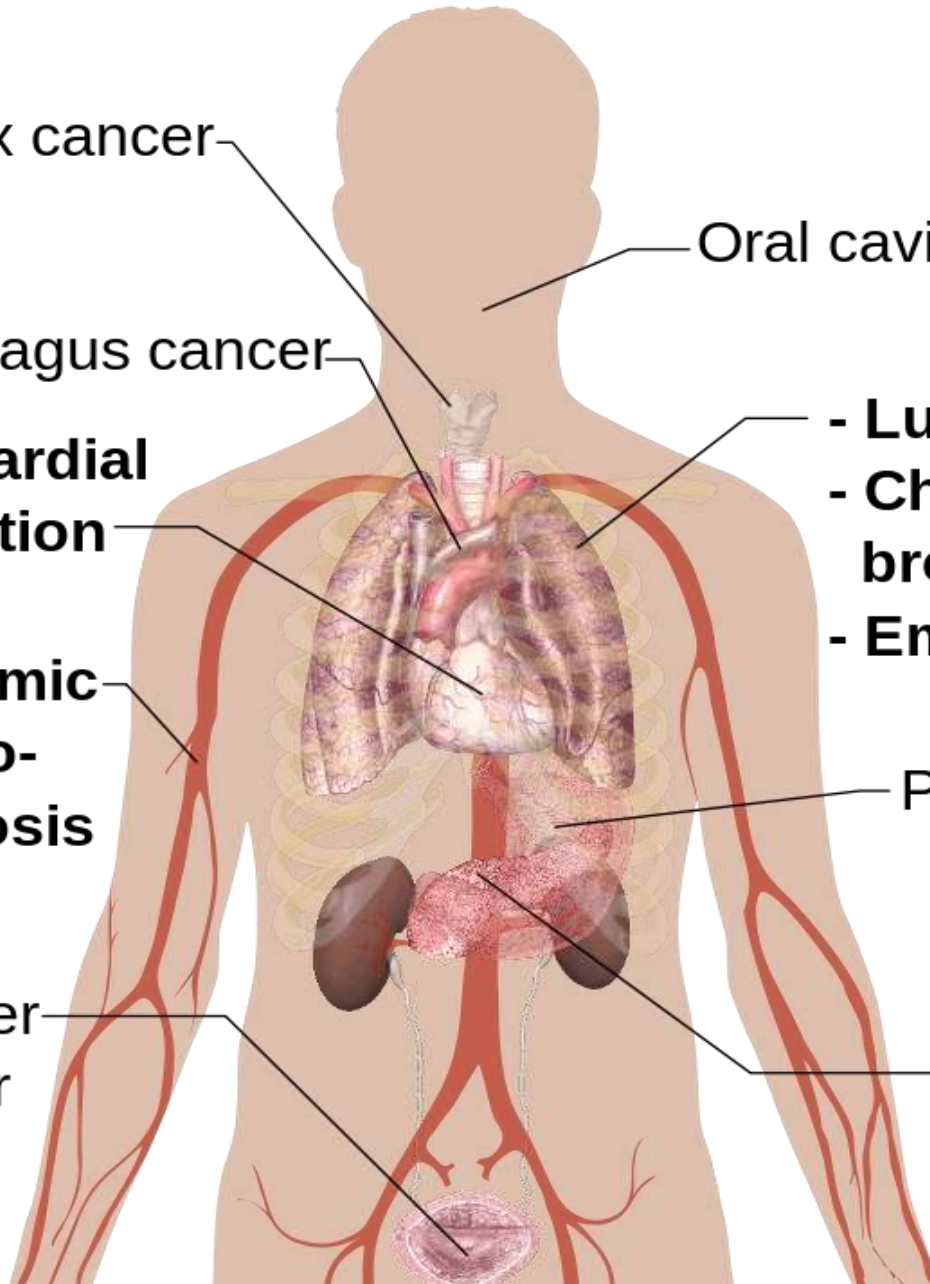
- **Lung cancer**
- **Chronic
bronchitis**
- **Emphysema**

**Systemic
athero-
sclerosis**

Peptic ulcer

Bladder
cancer

Pancreas
cancer



Smoking and CVD risk

smoking cessation has been associated with:

- 36% risk reduction of all cause mortality after an MI (RR 0.64) (95%CI 0.58-0.71))
- 21% risk reduction of all cause mortality in heart failure patients (RR 0.79) (95%CI 0.63-0.98)

Smoking and CVD risk

smoking cessation

After one year, the excess risk of coronary heart disease caused by smoking is reduced by 50 %.

Why not stop ?

Smoke a **FRESH** cigarette"

If the cigarette you have been smoking stings or burns your throat, switch to Camels and see the difference.

It's the peppery dust left in tobacco by inefficient cleaning methods that makes you cough.

It's the unkindly but smoke of harsh, dried-out tobacco that burns and irritates your throat.

There is no peppery dust in Camels—that's whisked away by a special vacuum-cleaning process.

There are no stale, crumbly, parched tobaccos—the fine Turkish and mild Domestic tobaccos of which Camels are blended come to you in prime, factory-fresh condition, thanks to the Humidor Pack.

This scientific germ-safe wrapping—not plain ordinary Cellophane, but moisture-

proof Cellophane which costs nearly twice as much—seals in all the natural aroma and freshness, seals it so tightly that wet weather cannot make Camels damp, nor drought weather make them dry.

Camels are milder and more throat-friendly because they are dust-free and fresh.

Give your throat a vacation, switch to Camels for just one day. Then leave them—if you can.

Look for CAMEL GREATER BUCK including Maltin, Honey and Tare Wine — Liquid Menthol, Menthol, Japanese Blend — Sublimated Menthol — every night except Sunday

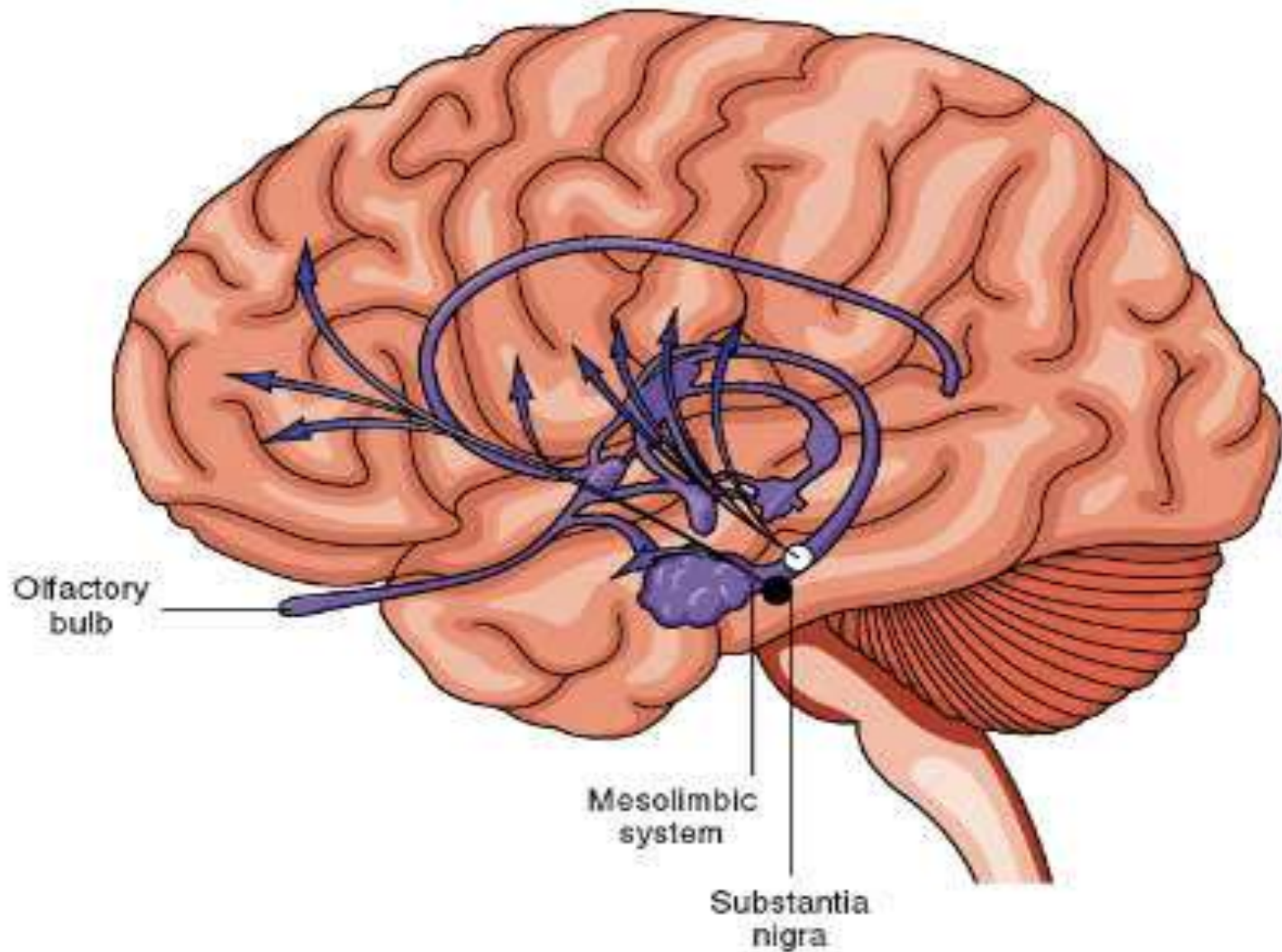


Don't remove the moisture-proof wrapping from

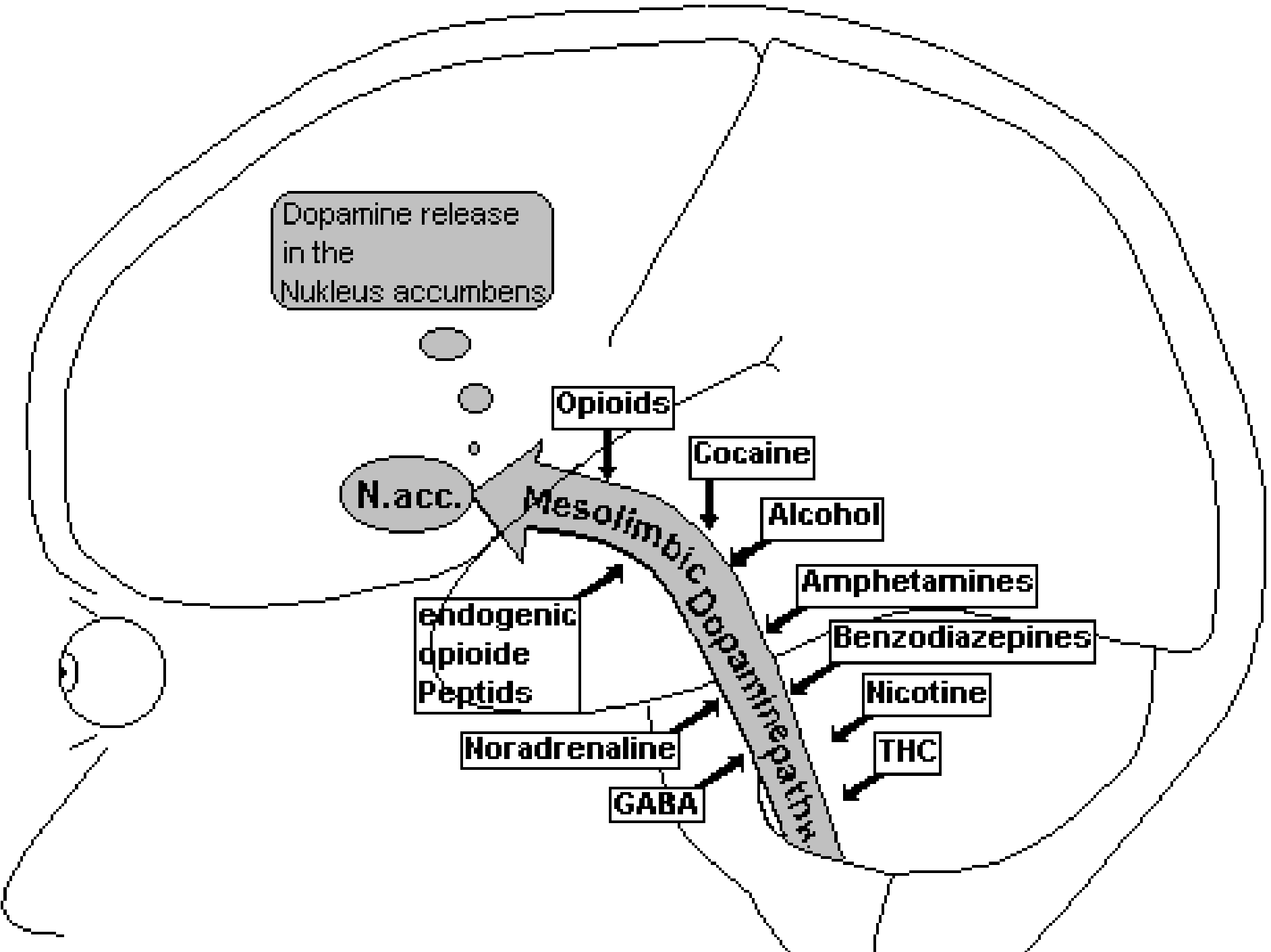
Habit ,Compulsion & Addiction

- Habit vs Addiction
- View chronic smoking as an addiction

The Mesolimbic Dopamine System



The mesolimbic dopamine system may be the "reward center" of the brain where pleasure and displeasure arising from many sources (including psychoactive drugs) is registered.



Dopamine release
in the
Nucleus accumbens

N. acc.

Opioids

Cocaine

Alcohol

Amphetamines

Benzodiazepines

Nicotine

THC

endogenic
opioide
Peptids

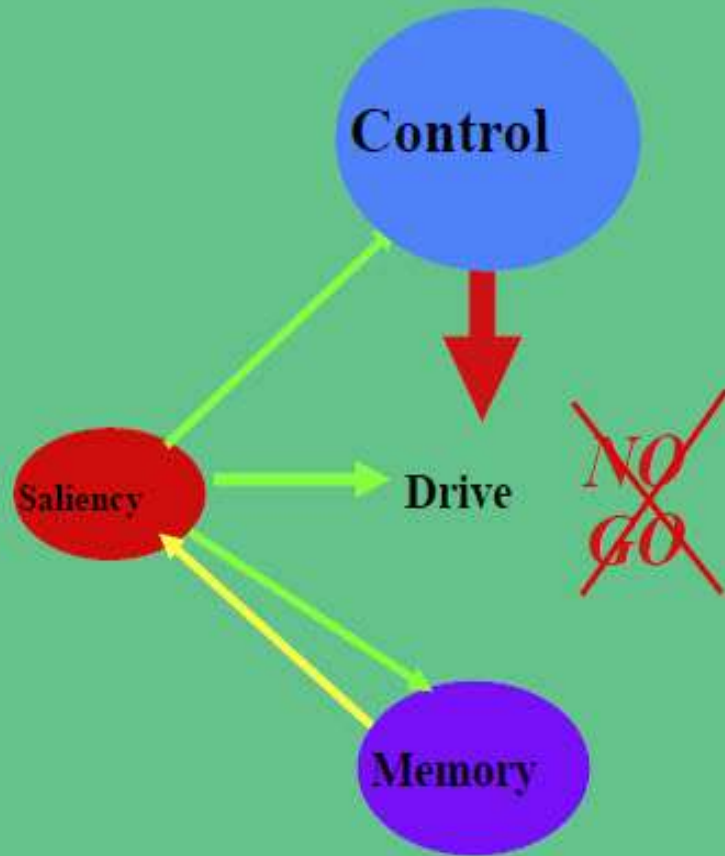
Noradrenaline

GABA

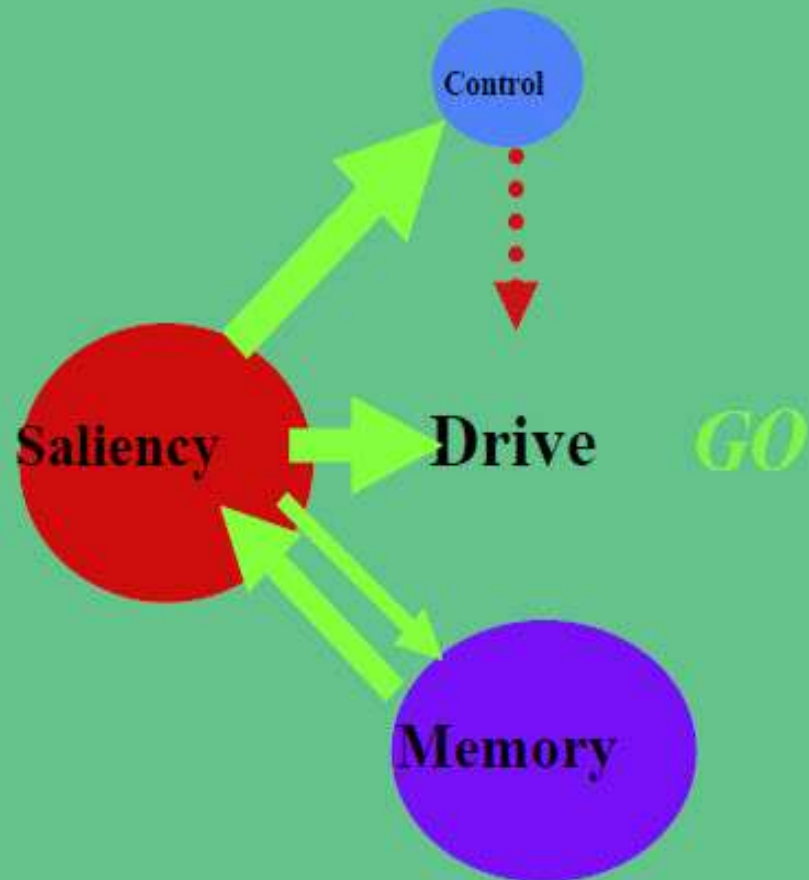
Mesolimbic Dopamine pathway

Why Can't Addicts Just Quit?

Non-Addicted Brain



Addicted Brain



Because Addiction Changes Brain Circuits

Nicotine addiction

- Nicotine causes physical dependence and tolerance
- The addictive property of nicotine is the primary barrier for smoking cessation
- In the absence of nicotine, a smoker develops cravings for cigarettes and symptoms of the nicotine withdrawal syndrome

Nicotine withdrawal symptoms

- changes in mood (dysphoria or depression)
- insomnia
- irritability
- anxiety
- increased appetite and weight gain
- difficulty concentrating
- restlessness

- Approximately 70 % of smokers say that they want to quit
- 50 % of smokers report that they tried to quit in the past year
- Only 3 to 6 % of smokers who make an unaided quit attempt are still abstinent one year later.

Meta-analyses of clinical trials

Strong evidence of efficacy for

- behavioural counselling
- pharmacotherapy

the combination of the two methods produces the best results

Effectiveness of methods used to treat tobacco dependence

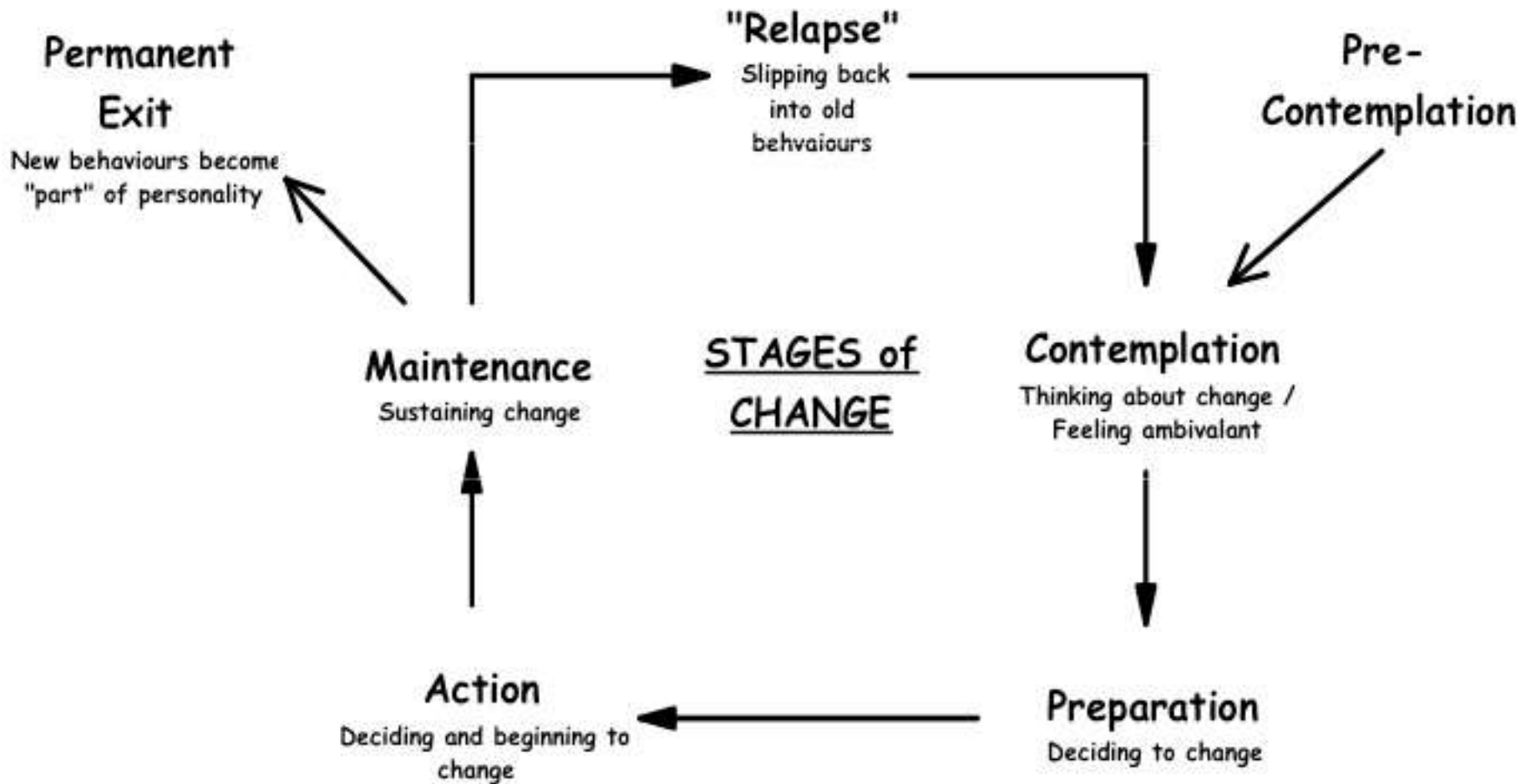
Pharmacological methods	
Method (number of trials)	Versus placebo unless otherwise noted Risk ratio (95% CI)
First line pharmacotherapies*	
Nicotine replacement	
Combination [versus individual products] (9)	1.34 (1.18-1.51)
Patch (43)	1.64 (1.52-1.78)
Gum (56)	1.49 (1.40-1.60)
Lozenge (7)	1.95 (1.61-2.36)
Inhaler (4)	1.90 (1.36-2.67)
Nasal spray (4)	2.02 (1.49-2.73)
Varenicline (14)	2.27 (2.02-2.55)
Bupropion SR (36)	1.69 (1.53-1.85)

Non-pharmacological methods

Method (number of trials)	Versus minimal or usual care unless otherwise noted Risk ratio (95% CI)
Behavioural counselling	
Individual counselling (22)	1.39 (1.24-1.57)
Group counselling (13)	1.98 (1.60-2.46)
Telephone quit line counselling (9)	1.37 (1.26-1.50)
Physician counselling	
<i>Brief advice (17)</i>	<i>1.66 (1.42-1.94)</i>
<i>Brief counselling (11)</i>	<i>1.86 (1.60-2.15)</i>
Brief counselling [versus brief advice] (15)	1.37 (1.20-1.56)

Trans theoretical model of change

**A patient centred approach
increases the chances of success**



Adapted from Prochaska & DiClemente (1986)

Behavioural approaches - **CONTEMPLATION**

- Assess readiness to change
 - Readiness = importance x confidence
- What is the patient's motivation?
- Why now ?
- What are the barriers ?

History

- Current smoking habit – light, moderate, heavy
- Past smoking habit – pack year history
- Previous attempts to stop smoking
- How many attempts
- Longest period of abstinence



Behavioural approaches - **CONTEMPLATION**

- Task is more difficult if
- Dependency is greater
 - Number of cigarettes smoked daily
 - Number of years smoking
- Not very motivated to quit

Behavioural approaches - **PREPARATION**

- Clinician counselling — For many patients, behavioral counselling will be only brief clinician counselling in the office.
- Warn of potential withdrawal symptoms
- Advice on coping

Behavioural approaches - **PREPARATION**

- Identifying triggers — The smoker anticipating quitting should be encouraged to identify situations, internal states, or activities that may increase the risk of smoking or relapse
- ACE: Avoid, Change, or Escape
- Reinforce the benefits of stopping smoking
- Set a target stop date

Behavioural approaches - ACTION

- Self-help materials, including pamphlets, audiotapes, or videotapes, have been found to be slightly more effective than no treatment intervention
- Group support
- Website resources
- Phone apps
- Begin an exercise routine





Choosing pharmacotherapy

- Varenicline - Chantix
- Bupropion - Zyban
- Nasal spray
- Nicotine lozenges
- Nicotine inhaler
- Nicotine patch
- Nicotine gum

- In randomized trials, individual NRT products were found to be superior to placebo, increasing quit rates approximately two-fold
- Few trials have directly compared one product with another.
- One randomised trial found no difference in efficacy between the patch, gum, inhaler, and nasal spray .

In practice

Choice...

- Depends on the patient
- Availability of NRT

The nicotine patch is the simplest NRT product for a smoker to use and provides the most continuous nicotine delivery of all NRT products.





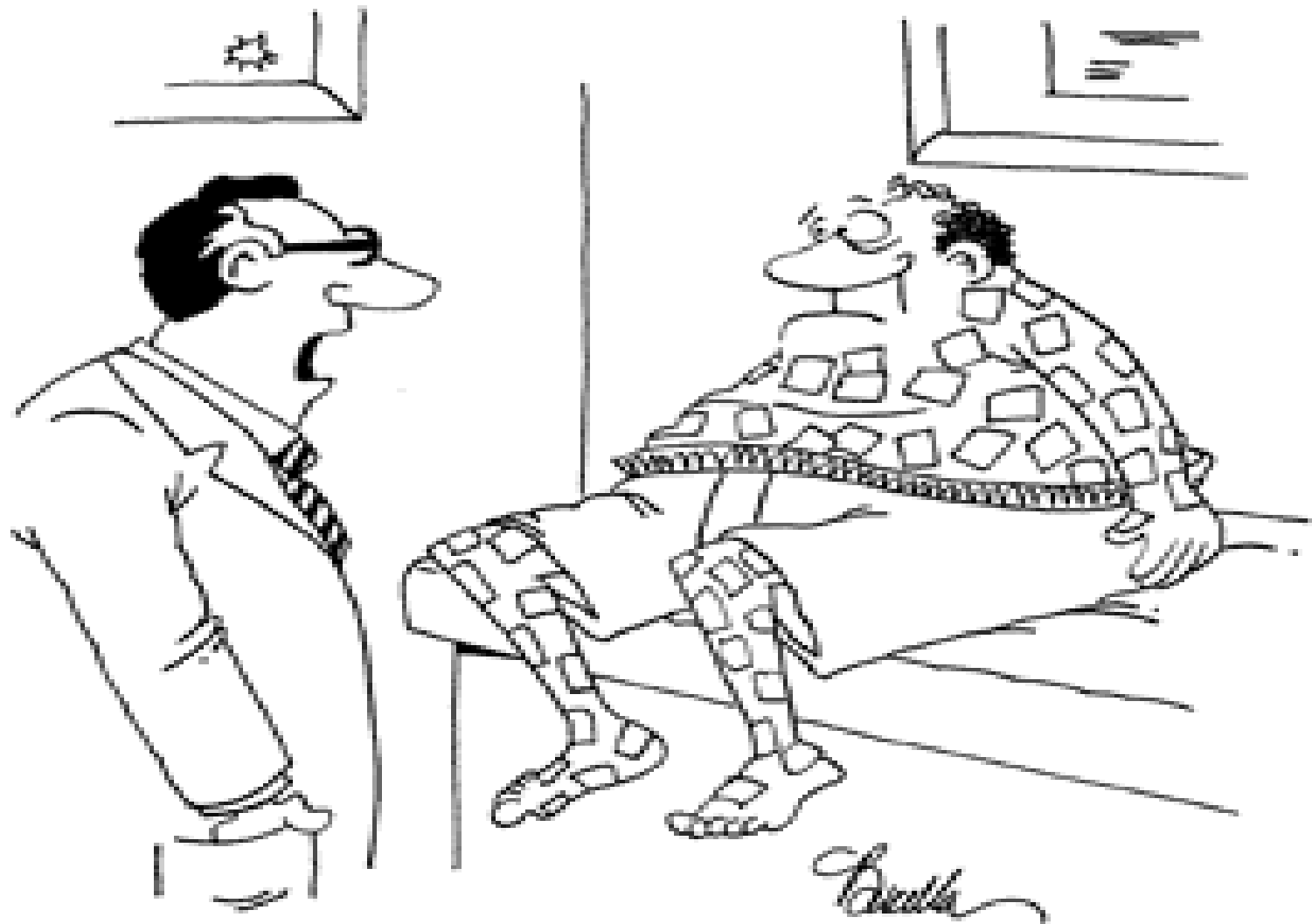


“I’m prescribing a patch to help you quit smoking. Wear it over your mouth.”



NICODERM
CQ

Cigarettes per day (cpd)	NRT Patch*	NRT Gum*
If patient smokes <10 cpd OR If patient weighs <45 kg	7 mg	2mg one piece q1-2h prn (max: 15 pieces/day)
If patient smokes 10 – 20 cpd	14 mg	If using as monotherapy: 2mg one piece q1-2h prn (max: 20 pieces/day)
If patient smokes 21-30 cpd	21 mg	If using as adjunct to patch:
If patient smokes 31-40 cpd	28 mg (21 mg + 7 mg patch)	2mg one piece q1-2h prn (max: 15 pieces/day)
If patient smokes >40 cpd	42 mg (21 mg patch x2)	If using as monotherapy: 4mg one piece q1-2h prn (max: 20 pieces/day)



"I'm glad to see you're applying a new nicotine patch each day. By the way, they're disposable."

Behavioural approaches - **MAINTENANCE**

- Schedule follow-up after quit date
- monitor response to smoking cessation therapy
- monitor for adverse or side effects of pharmacotherapy
- provide reinforcement and encouragement

CAN YOU RECOMMEND
SOMETHING TO CURE MY
DEPENDENCY ON THESE
NICOTINE PATCHES?

TRY
THESE...



SMOKIN'!

WHAMND 10-19

Success – small steps getting bigger

- Management of a chronic condition
- 4 weeks
- 12 weeks
- 1 year

Smoking prevalence 2012

COUNTRY	MALE	FEMALE
BARBADOS	13	1
JAMAICA	30	6
JAPAN	36	11
UNITED KINGDOM	22	20
UNITED STATES	21	16
LATVIA	51	24

In concluding...

- There are significant health benefits from smoking cessation
- Physicians can play an important role in helping to achieve lasting smoking abstinence
- A patient-centred approach is helpful
- A combination of behavioural and pharmacological interventions obtains the best results

Remember to

- **ASK** and record smoking status
- **ADVISE** the patient of the personal health benefits of quitting
- **ACT** on the patient's response and if appropriate
 - set target quit date
 - monitor withdrawal and prescribe pharmacotherapy accordingly
 - review and provide support







Thank you