

"من لقاء دكتور منير في المملكة عن الخطة لأزمة السرطان في الأردن"

<https://www.ammonnews.net/article/893054>




# Nicotine addiction and replacement therapies

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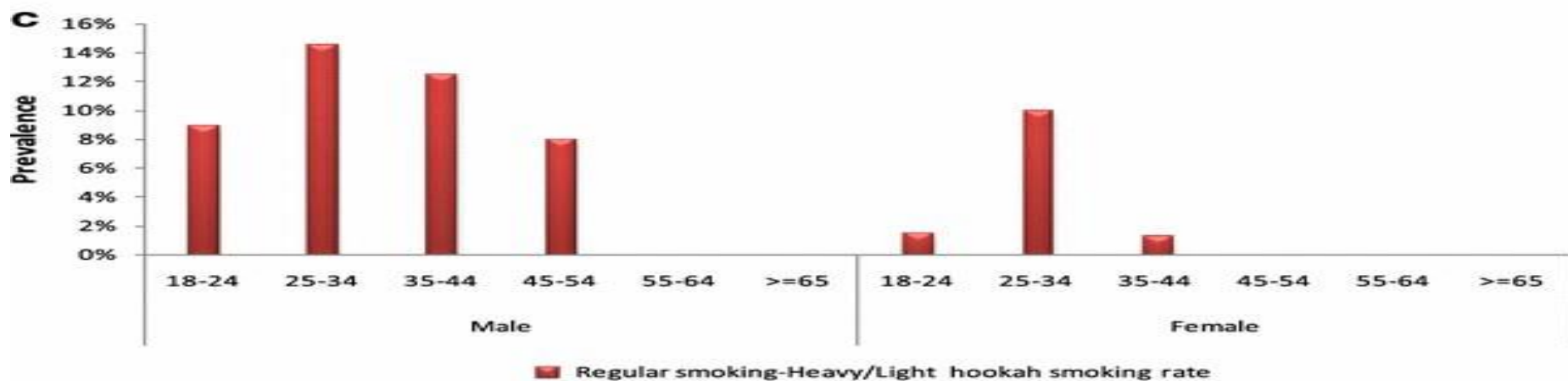
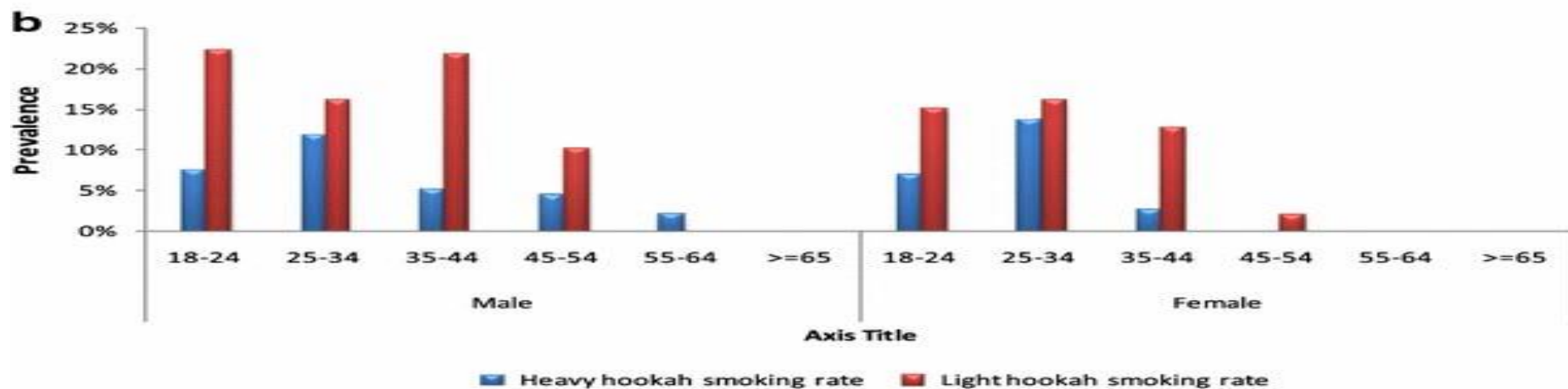
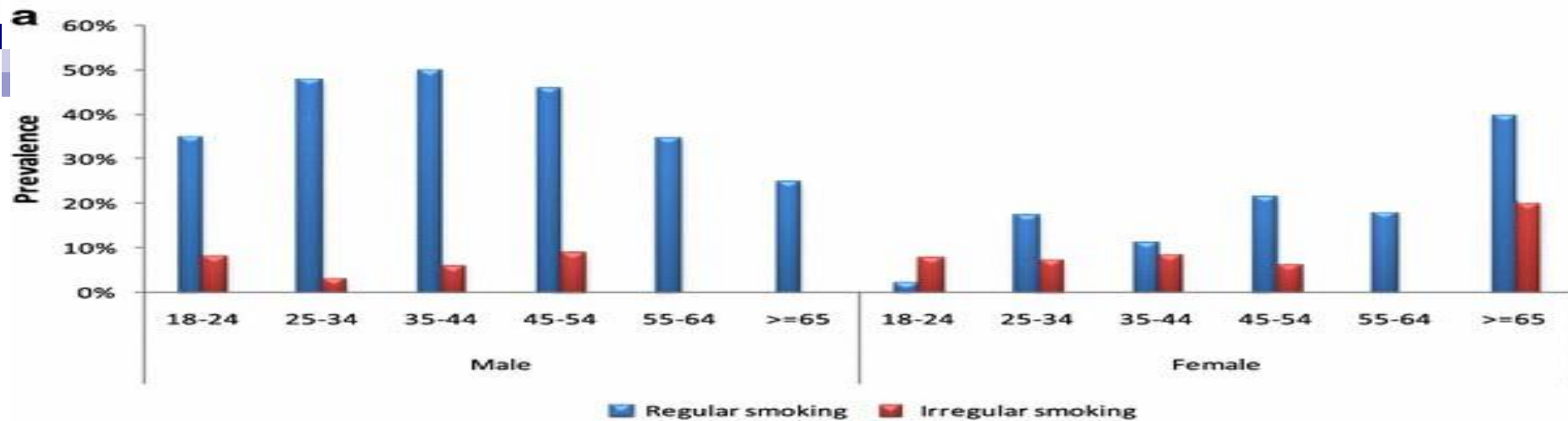
**Important notes are in red boxes.**

- 
- **Know addiction scores: mild, moderate & high for cigarettes, water pipe and vape.**
  - **Know how to treat each patient based on addiction score.**
  - **Difference between contraindications and precautions.**
  - **Know contraindicated cases and how best to deal with each case.**

**Ex. pregnant lady, behavioral is better approach.**

# National Smoking epidemiology study

- This cross-sectional study was conducted in five regional governorates of Jordan through face-to-face interviews on a random sample of adult population aged 18–79 years.
- Data was collected using a piloted questionnaire based on the Global Adult Tobacco Questionnaire.
- A total of 874 participants with mean age of  $33.9 \pm 13.3$
- The prevalence of regular cigarette smoking was 51.9 % amongst males and 14.1 % amongst females, while the prevalence of irregular cigarette smoking was 7.2 % amongst males and 9.2 % amongst females.



## Frequency and reasons for smoking cigarettes or waterpipe

| Question                            | Category                                 | Cigarette smokers |         |           |         | Waterpipe smokers |         |       |         |
|-------------------------------------|--|-------------------|---------|-----------|---------|-------------------|---------|-------|---------|
|                                     |  | Daily             | Percent | Irregular | Percent | Heavy             | Percent | Light | Percent |
| Mean duration of smoking            | Mean                                     | <b>15.59</b>      |         | 7.85      |         | 8.10              |         | 6.00  |         |
|                                     | SD                                       | 10.95             |         | 8.38      |         | 7.80              |         | 7.27  |         |
| Mean age at smoking initiation      | Mean                                     | <b>19.78</b>      |         | 22.44     |         | 20.71             |         | 22.71 |         |
|                                     | SD                                       | 6.76              |         | 10.16     |         | 8.32              |         | 7.94  |         |
|                                     |  |                   |         |           |         |                   |         |       |         |
|                                     |  |                   |         |           |         |                   |         |       |         |
| Mean cost of smoking per month      | Mean                                     | 66.78             |         | 19.18     |         | 32.48             |         | 16.70 |         |
|                                     | SD                                       | 48.08             |         | 21.84     |         | 26.81             |         | 19.67 |         |
| Reason for smoking                  | Expression of masculinity and femininity | 6                 | 2.6 %   | 0         | 0.0 %   | 1                 | 1.7 %   | 1     | 0.8 %   |
|                                     | Imitation                                | 75                | 33.0 %  | 10        | 30.3 %  | 45                | 77.6 %  | 102   | 80.3 %  |
|                                     | Leisure                                  | 125               | 55.1 %  | 22        | 66.7 %  | 5                 | 8.6 %   | 14    | 11.0 %  |
|                                     | Other                                    | 21                | 9.3 %   | 1         | 3.0 %   | 7                 | 12.1 %  | 10    | 7.9 %   |
| Time to start smoking after wake-up | 31–60 min                                | 54                | 21.8 %  | 1         | 3.3 %   |                   |         |       |         |
|                                     | 6–30 min                                 | 69                | 27.8 %  | 3         | 10.0 %  |                   |         |       |         |
|                                     | In 5 min                                 | 70                | 28.2 %  | 2         | 6.7 %   |                   |         |       |         |
|                                     | More than 60 min                         | 49                | 19.8 %  | 21        | 70.0 %  |                   |         |       |         |
|                                     | No answer                                | 6                 | 2.4 %   | 3         | 10.0 %  |                   |         |       |         |



Table 2: Health advice and support to smokers:

| Question                   | Category                                  | Cigarette Smokers |         |           |         | Waterpipe Smokers |         |       |         |
|----------------------------|---|-------------------|---------|-----------|---------|-------------------|---------|-------|---------|
|                            |   | Daily             | Percent | Irregular | Percent | Heavy             | Percent | Light | Percent |
| Medical advice, counseling | No  | 147               | 91.9%   | 17        | 89.5%   | 35                | 92.1%   | 90    | 91.8%   |
|                            | No answer                                 | 1                 | 0.6%    | 0         | 0.0%    | 2                 | 5.3%    | 0     | 0.0%    |
|                            | Yes                                       | 12                | 7.5%    | 2         | 10.5%   | 1                 | 2.6%    | 8     | 8.2%    |
| Nicotine alternative       | No  | 131               | 83.4%   | 16        | 80.0%   | 33                | 89.2%   | 86    | 90.5%   |
|                            | No answer                                 | 2                 | 1.3%    | 0         | 0.0%    | 2                 | 5.4%    | 1     | 1.1%    |
|                            | Yes                                       | 24                | 15.3%   | 4         | 20.0%   | 2                 | 5.4%    | 8     | 8.4%    |
| Other prescribed drugs     | No  | 149               | 96.8%   | 18        | 100.0%  | 31                | 91.2%   | 87    | 94.6%   |
|                            | No answer                                 | 2                 | 1.3%    | 0         | 0.0%    | 2                 | 5.9%    | 3     | 3.3%    |
|                            | Yes                                       | 3                 | 1.9%    | 0         | 0.0%    | 1                 | 2.9%    | 2     | 2.2%    |
| Anything else              | No  | 132               | 87.4%   | 16        | 84.2%   | 27                | 90.0%   | 84    | 94.4%   |
|                            | No answer                                 | 1                 | 0.7%    | 0         | 0.0%    | 2                 | 6.7%    | 2     | 2.2%    |
|                            | Yes                                       | 18                | 11.9%   | 3         | 15.8%   | 1                 | 3.3%    | 3     | 3.4%    |
| Aware of quitting centers  | No  | 130               | 53.1%   | 11        | 33.3%   | 27                | 54.0%   | 71    | 58.7%   |
|                            | Yes                                       | 115               | 46.9%   | 22        | 66.7%   | 23                | 46.0%   | 50    | 41.3%   |
| If yes, will you go?       | No  | 136               | 56.9%   | 26        | 78.8%   | 38                | 79.2%   | 81    | 68.1%   |
|                            | Yes                                       | 103               | 43.1%   | 7         | 21.2%   | 10                | 20.8%   | 38    | 31.9%   |
| Know medications to quit   | No  | 180               | 73.9%   | 29        | 96.7%   |                   |         |       |         |
|                            | Yes                                       | 63                | 26.1%   | 1         | 3.3%    |                   |         |       |         |
| Mention medications        | Champex                                   | 3                 | 6.1%    | 0         | 0.0%    |                   |         |       |         |
|                            | Electronic Cigarette                      | 20                | 45.1%   | 1         | 100.0%  |                   |         |       |         |
|                            | Gum                                       | 23                | 30.4%   | 0         | 0.0%    |                   |         |       |         |
|                            | Nicotine patches                          | 5                 | 10.1%   | 0         | 0.0%    |                   |         |       |         |
|                            | No I do not know the names of these drugs | 4                 | 8.2%    | 0         | 0.0%    |                   |         |       |         |
| Did you use it             | No  | 50                | 75.8%   | 3         | 100.0%  |                   |         |       |         |
|                            | Yes                                       | 16                | 24.2%   | 0         | 0.0%    |                   |         |       |         |
| Got medical advice         | No  | 144               | 62.3%   | 19        | 57.6%   |                   |         |       |         |
|                            | Yes                                       | 87                | 37.7%   | 14        | 42.4%   |                   |         |       |         |
| If yes, for how long       | <2 min                                    | 19                | 21.1%   | 4         | 26.7%   |                   |         |       |         |
|                            | >10 min                                   | 22                | 24.4%   | 2         | 13.3%   |                   |         |       |         |
|                            | 2-5 min                                   | 35                | 38.9%   | 8         | 53.3%   |                   |         |       |         |
|                            | 6-10 min                                  | 14                | 15.6%   | 1         | 6.7%    |                   |         |       |         |
| Smoking quit line          | No  | 154               | 97.5%   | 19        | 95.0%   | 27                | 79.4%   | 89    | 97.8%   |
|                            | No answer                                 | 1                 | 0.6%    | 0         | 0.0%    | 2                 | 5.9%    | 1     | 1.1%    |
|                            | Yes                                       | 3                 | 1.9%    | 1         | 5.0%    | 5                 | 14.7%   | 1     | 1.1%    |



# What is next:

- National Smoking epidemiology study targeting all Jordanians 15+
- Smoking epidemiology at University students in Jordan
- Smoking epidemiology and disease control for patients with chronic cardiac and pulmonary diseases
- Hopefully a clinical trial for cigarettes, waterpipe and vape.

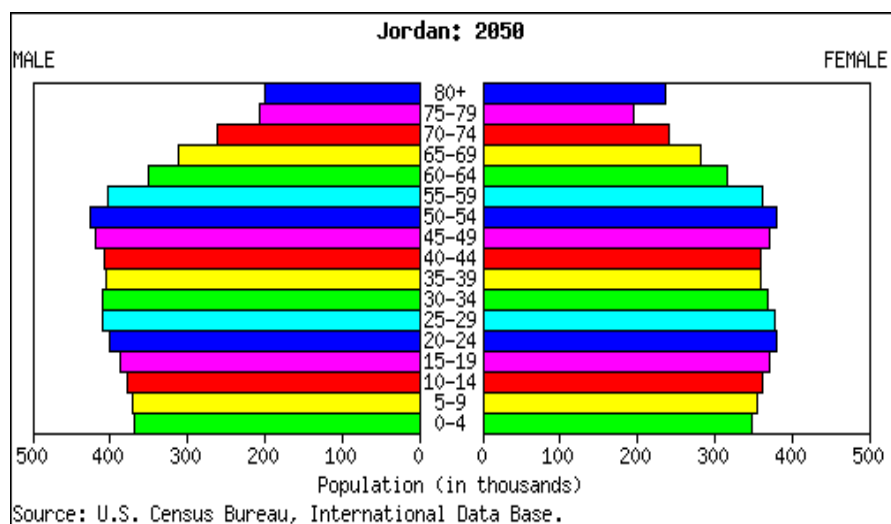
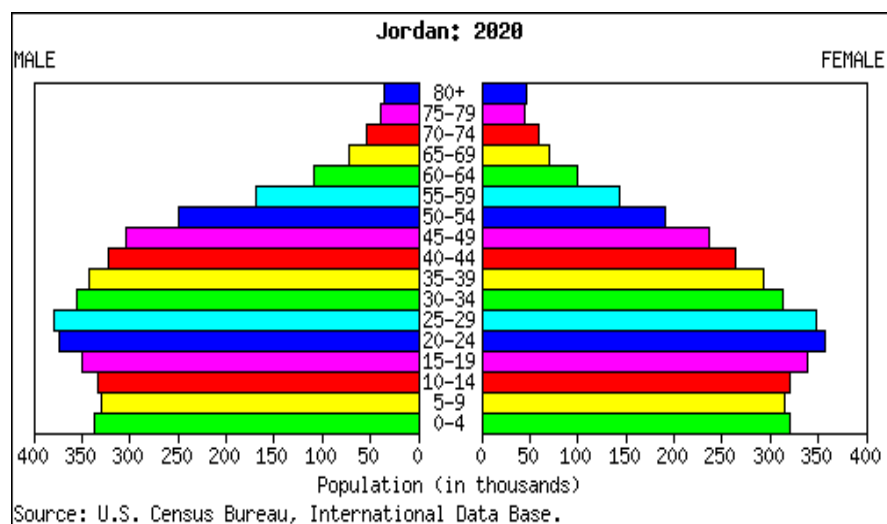
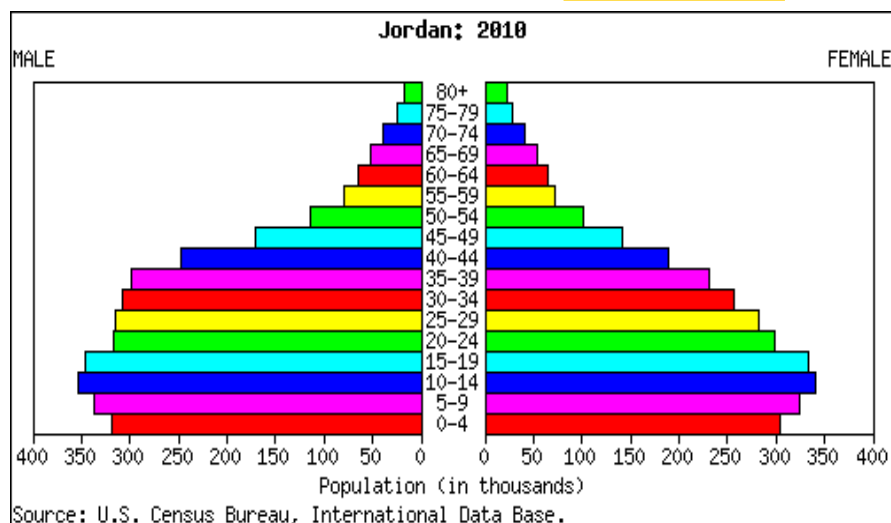
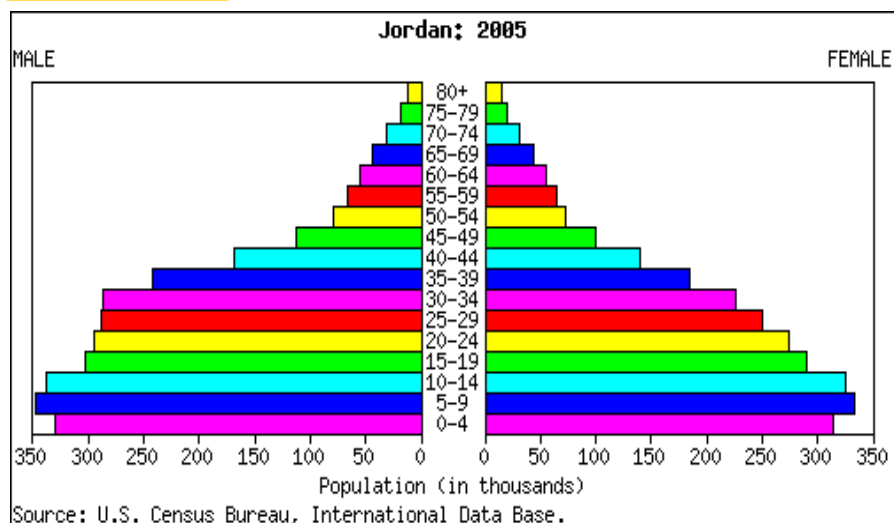
## Ten most common cancers among Jordanians, Males, 2017.

| No | Site                    | Freq | %    |
|----|-------------------------|------|------|
| 1  | Colorectal              | 371  | 12.4 |
| 2  | Trachea, Bronchus, Lung | 366  | 12.2 |
| 3  | Prostate                | 236  | 7.9  |
| 4  | Bladder                 | 215  | 7.2  |
| 5  | Non-Hodgkin lymphoma    | 159  | 5.3  |
| 6  | Leukemia                | 158  | 5.3  |
| 7  | Stomach                 | 127  | 4.2  |
| 8  | Kidney                  | 117  | 3.9  |
| 9  | Brain, Nervous system   | 102  | 3.4  |
| 10 | Hodgkin disease         | 97   | 3.2  |

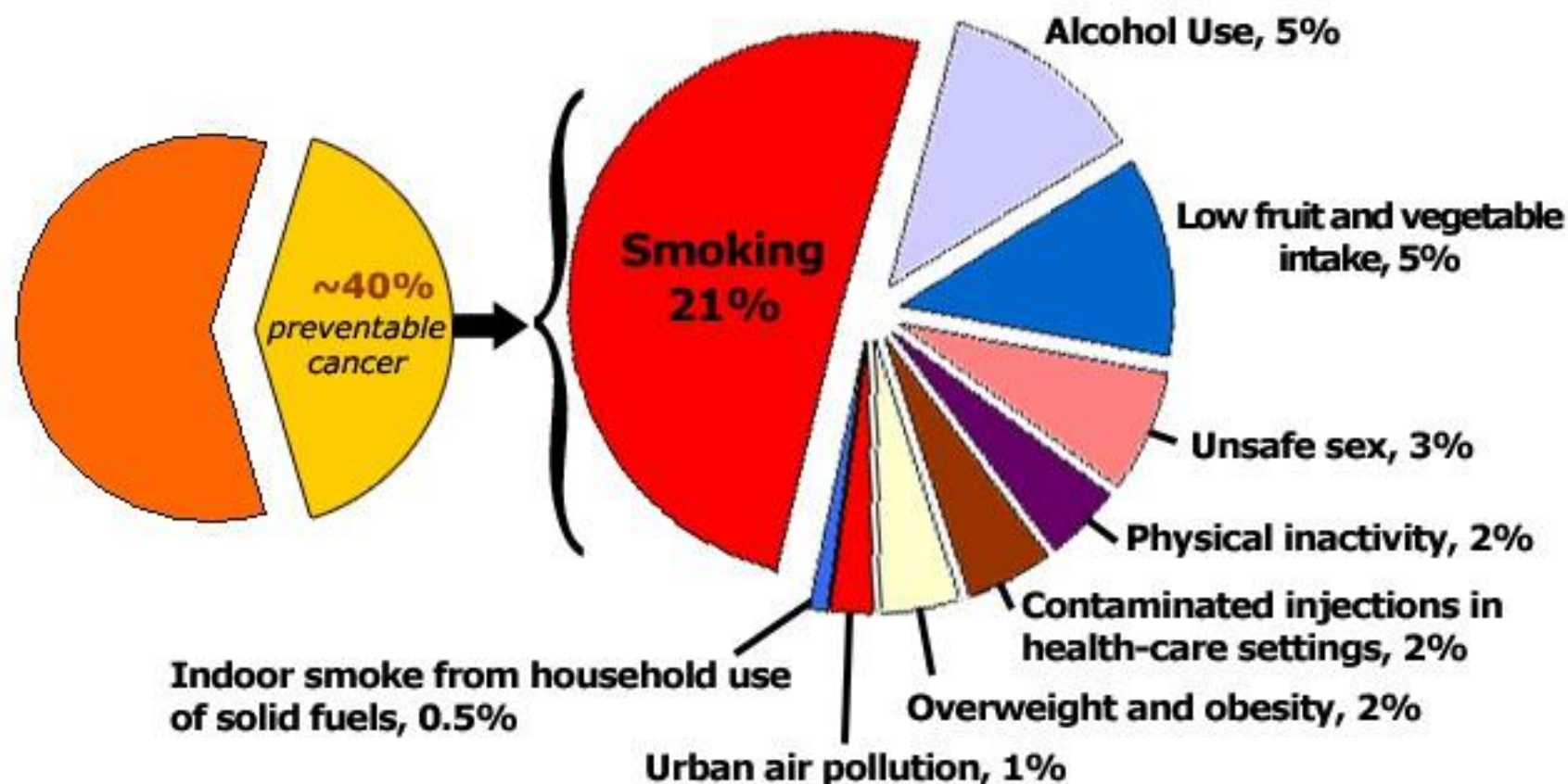
## Ten most common cancers among Jordanian Females, 2017.

| No | Site                    | Freq | %    |
|----|-------------------------|------|------|
| 1  | Breast                  | 1292 | 38.4 |
| 2  | Colorectal              | 307  | 9.1  |
| 3  | Thyroid                 | 223  | 6.6  |
| 4  | Corpus Uteri            | 148  | 4.4  |
| 5  | Non-Hodgkin lymphoma    | 136  | 4.0  |
| 6  | Ovary                   | 109  | 3.2  |
| 7  | Trachea, Bronchus, Lung | 107  | 3.2  |
| 8  | Hodgkin disease         | 93   | 2.8  |
| 9  | Brain, Nervous system   | 84   | 2.5  |
| 10 | Stomach                 | 83   | 2.5  |

# Population pyramids- Jordan



## Estimated proportion of preventable cancer associated with 9 leading modifiable risk factors



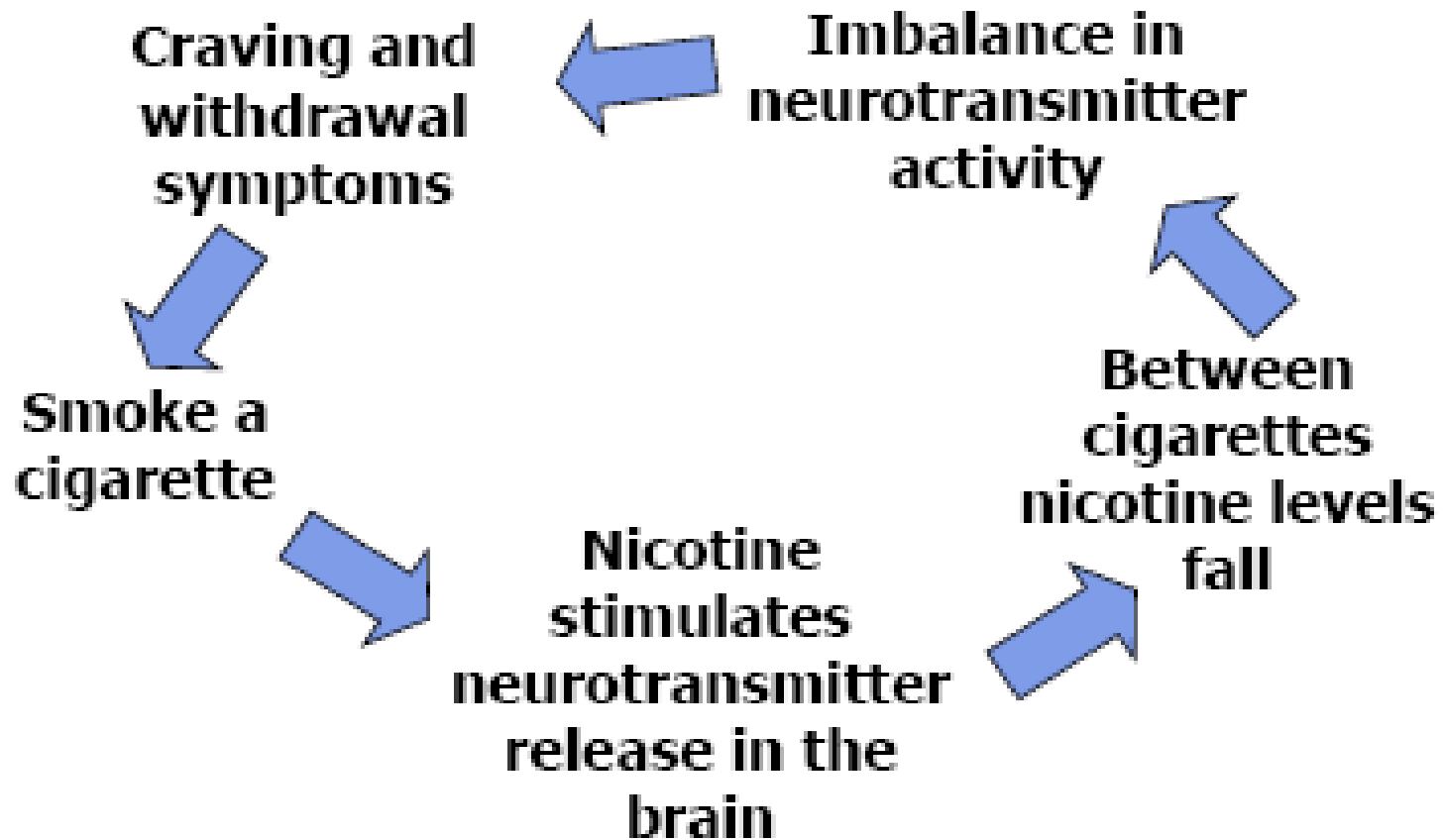
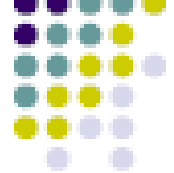
Danaei G, Vander Hoorn S, Lopez AD, Murray CJ, Ezzati M. Causes of cancer in the world: comparative risk assessment of nine behavioural and environmental risk factors *The Lancet*, 2005, 366:1784-1793



# Addiction to nicotine

- An understanding of how nicotine produces addiction and influences smoking behavior provides a necessary basis for smoking cessation therapies.
- Chronic nicotine exposure results in neuroadaptation, that is, the development of tolerance.
- Neuroadaptation is associated with an increased number of brain nicotinic cholinergic receptors.
- Chronic exposure to nicotine also results in changes in gene expression and neural plasticity; which is defined as “ability of the brain to reorganize neural pathways based on new experiences”

# Nicotine Addiction



# BIOLOGY of NICOTINE ADDICTION: ROLE of DOPAMINE

Nicotine  
stimulates  
dopamine release

Pleasurable feelings

Repeat administration

Tolerance develops

Nicotine addiction  
is **not** just a bad habit.

Discontinuation leads to  
withdrawal symptoms.

# DOPAMINE REWARD PATHWAY

Prefrontal  
cortex

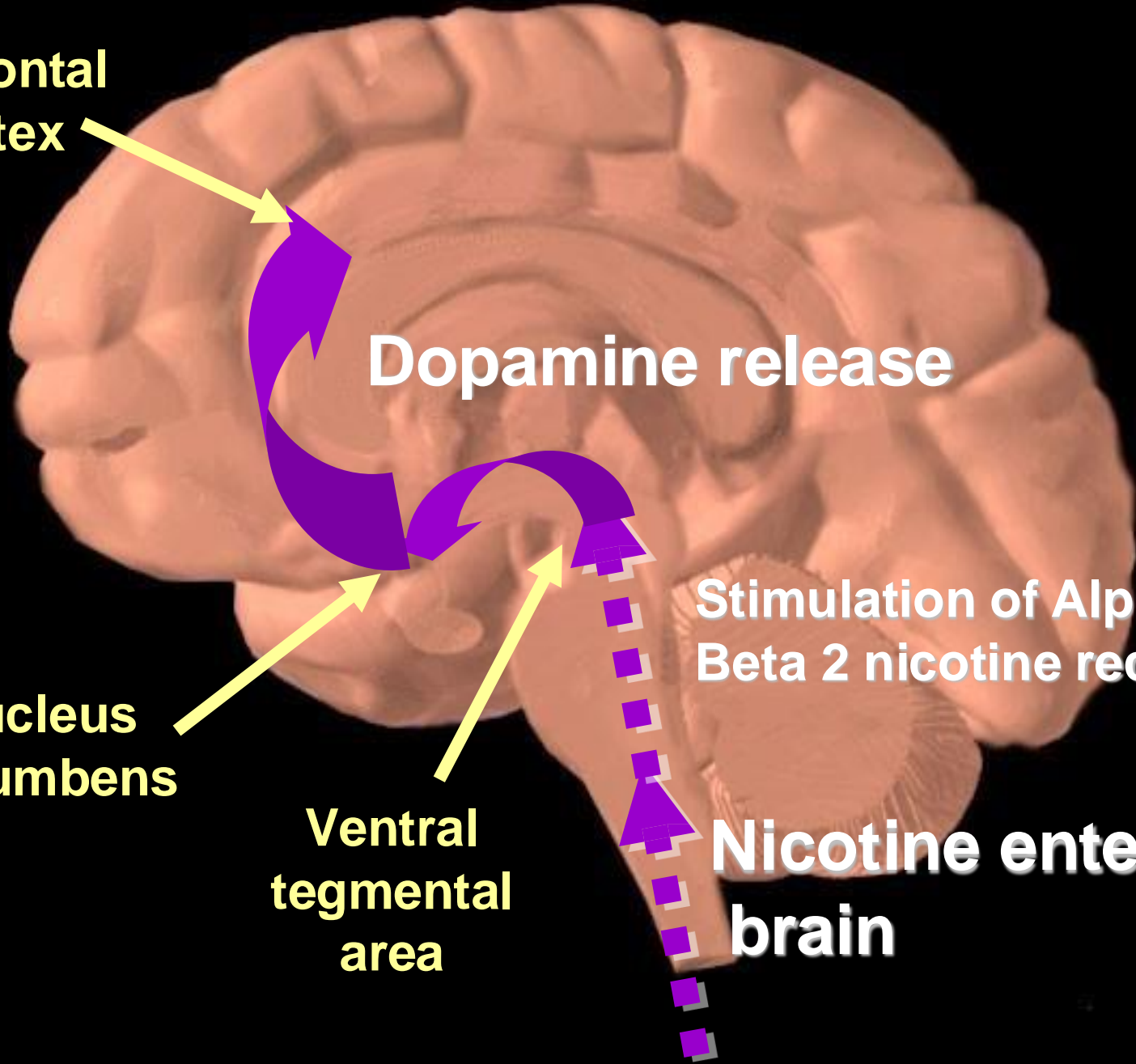
Dopamine release

Nucleus  
accumbens

Ventral  
tegmental  
area

Stimulation of Alpha 4  
Beta 2 nicotine receptors

Nicotine enters  
brain



# Dopamine

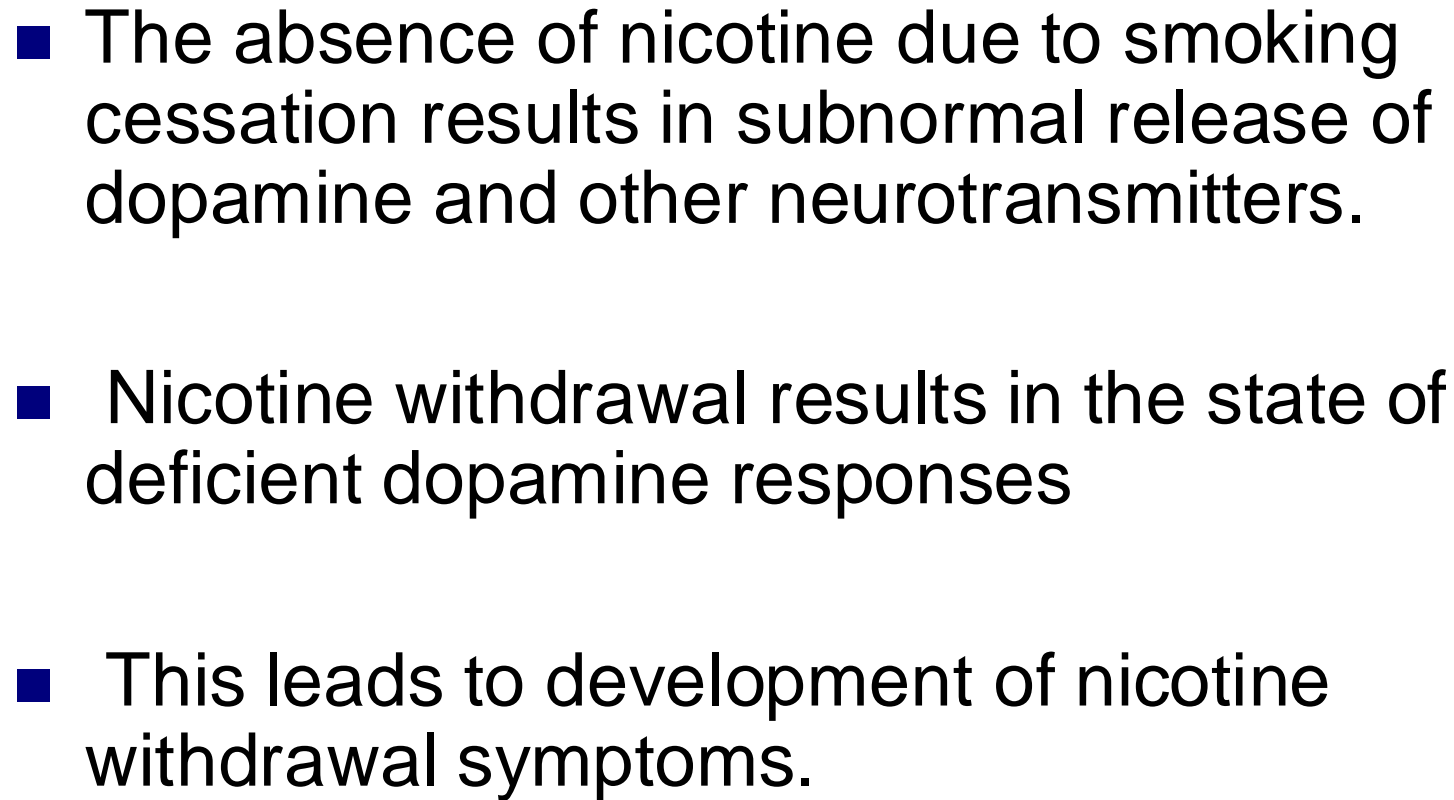
- **Dopamine induces feelings of euphoria and pleasure and is responsible for activating the dopamine reward pathway**
- The dopamine reward pathway, as depicted in this simplified diagram, is a network of nervous tissue in the middle of the brain that elicits feelings of pleasure in response to certain stimuli.

# Addiction to nicotine

- **Addiction to tobacco is multifactorial:**
- It includes a desire for the direct pharmacologic actions of nicotine, relief of withdrawal symptoms, and learned associations.
- Smokers usually provide different reasons for smoking that could include pleasure, arousal, enhanced vigilance, improved performance, relief of anxiety or depression, reduced hunger, and control of body weight



# Addiction to nicotine

- The absence of nicotine due to smoking cessation results in subnormal release of dopamine and other neurotransmitters.
  - Nicotine withdrawal results in the state of deficient dopamine responses
  - This leads to development of nicotine withdrawal symptoms.
- 

# NICOTINE PHARMACODYNAMICS: WITHDRAWAL EFFECTS

- Depression
- Insomnia
- Irritability/frustration/anger
- Anxiety
- Difficulty concentrating
- Restlessness
- Increased appetite/weight gain
- Decreased heart rate
- Cravings\*

Most symptoms  
peak 24–48 hr  
after quitting and  
subside within 2–  
4 weeks.

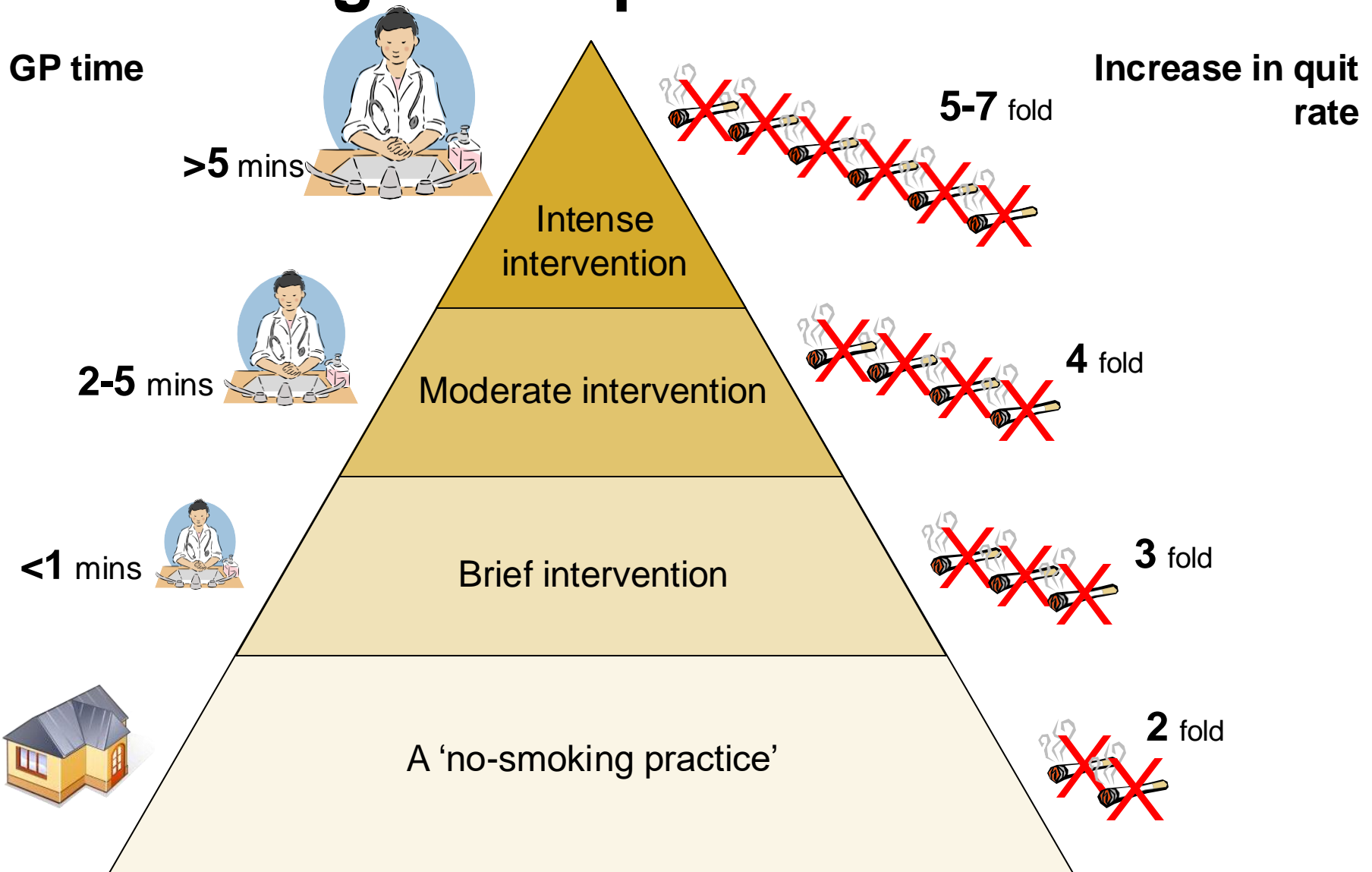
# **What are the benefits of stopping smoking?**

- **It is never too late to stop smoking to gain health benefits.**
- **For example if the smoker already has a COPD or a heart disease, there would be great improvement in prognosis upon giving up smoking.**
- **Smoking cessation for smokers with history of ischaemic heart disease is expected to reduce risk of a subsequent fatal heart attack by 25 per cent.**

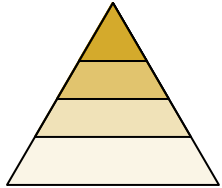
## Timeline of health benefits after stopping smoking

| Time line<br>(After ...) | Health Benefit  |
|--------------------------|---|
| 8 hours                  | Nicotine and CO in blood drop by 50%  |
| After 24 hours           | Lung starts to clear debris   |
| After 48 hours           | Smell and taste improve   |
| 72 hours                 | Breathing becomes easier. Bronchial tubes begin to relax and energy levels increase.      |
| 1 month                  | Skin appearance improves, owing to improved skin perfusion.                               |
| 3-9 months               | Cough, wheezing, and breathing problems improve and lung function increases by up to 10%. |
| 1 year                   | Risk of a heart attack falls to about half that of a smoker.                              |
| 10 years                 | Risk of lung cancer falls to about half that of a smoker.                                 |
| 15 years                 | Risk of heart attack falls to the same level as someone who has never smoked.             |

# A smoking aware practice



# A smoking aware practice



Intense intervention ....

- Ask about smoking status at all opportunities
- Assess desire to quit, dependence and barriers to quitting,
- Discuss high risk situations, explore confidence
- Advise on strategies to overcome barriers.
- Address dependence, habit, triggers, negative emotions.
- Brainstorm solutions and develop a quit plan.
- Assist by offering pharmacotherapy
- Arrange follow-up consultation



... five times the quit rate





**Modified Fagerstorm Scoring:**

1. How soon after you wake up do you smoke your first cigarette?  
Within 5 minutes (3 points)  
5 to 30 minutes (2 points)  
31 to 60 minutes (1 point)  
After 60 minutes (0 points)
2. Do you find it difficult not to smoke in places where you shouldn't, such as in church or school, in a movie, at the library, on a bus, in court or in a hospital?  
Yes (1 point)  
No (0 points)
3. Which cigarette would you most hate to give up; which cigarette do you treasure the most?  
The first one in the morning (1 point)  
Any other one (0 points)
4. 4. How many cigarettes do you smoke each day?  
10 or fewer (0 points)  
11 to 20 (1 point)  
21 to 30 (2 points)  
31 or more (3 points)
5. 5. Do you smoke more during the first few hours after waking up than during the rest of the day?  
Yes (1 point)  
No (0 points)
6. 6. Do you still smoke if you are so sick that you are in bed most of the day or if you have a cold or the flu and have trouble breathing?  
Yes (1 point)  
No (0 points)

**Scoring:** 7–10 points = highly dependent; 4–6 points = moderately dependent; less than 4 points = minimally dependent.

## Waterpipe Tolerance Questionnaire (WTQ)

| Question   | Response                          | Scoring |
|--|-----------------------------------|---------|
| How many times a day (if at all) do you smoke waterpipe?   | less than ½ head or none          | 0       |
|  | Half head to one head/day         | 1       |
|  | More than one head /day           | 2       |
| If you smoke waterpipe, do you inhale when you smoke?  | Never                             | 0       |
|  | Seldom or quite often             | 1       |
|  | Always                            | 2       |
| How soon after you wake up do you smoke your first waterpipe?  | More than 30 minutes after waking | 0       |
|  | Within the first 30 minutes       | 1       |
| Do you find it difficult to refrain from using tobacco in places where it is forbidden (e.g. Mosque, Church, library, school, movies)? | No                                | 0       |
|  | Yes                               | 1       |
| Do you use tobacco more frequently during the first hours after waking up than you do during the rest of the day?                      | No                                | 0       |
|  | Yes                               | 1       |
| Do you use tobacco more during the first 2 hours after waking up than during the rest of the day?                                      | No                                | 0       |
|  | Yes                               | 1       |

low (score 0-1), moderate (score 2-3) and high (score 4-8) dependence levels

## The E-cigarette Fagerström Test of Cigarette Dependence

Tool taken from: Piper, M.E., Baker, T.B., Benowitz, N.L., Smith, S.S., & Jorenby, D.E. (2020).

**1. How many times per day do you usually use your electronic cigarette? (Assume that one “time” consists of around 15 puffs or lasts around 10 minutes.)**

- ☐ 0-4 times/day (0)
- ☐ 5-9 (0)
- ☐ 10-14 (1)
- ☐ 15-19 (1)
- ☐ 20-29 (2)
- ☐ 30+ (3)

**2. Do you find it difficult to refrain from vaping in places where it is forbidden (e.g. in church, at the library, in the cinema)?**

- ☐ Yes (1)
- ☐ No (0)

**3. When would you hate most to give up e-cigarette use?**

- ☐ In the morning (1)
- ☐ During or after meals (0)
- ☐ During or after stressful situations (0)
- ☐ None of the above (0)

**4. On days that you can use your electronic cigarette freely, how soon after you wake up do you first use your electronic cigarette?**

- ☐ 0-5 mins (3)
- ☐ 6-15 (2)
- ☐ 16-30 (2)
- ☐ 31-60 (1)
- ☐ 61-120 (0)
- ☐ 121+ (0)

**5. Do you use your e-cigarette more frequently during the first two hours of the day than during the rest of the day?**

- ☐ Yes (1)
- ☐ No (0)

**6. Do you use your e-cigarette when you are so ill that you are in bed most of the day?**

- ☐ Yes (1)
- ☐ No (0)

Scoring eFTND: Sum the items. Total score: 0-2 = low dependence, 3-4 = low to moderate dependence, 5-7 = moderate dependence, 8+ = high dependence

# Pack-Year

- A pack-year is a clinical quantification of cigarette smoking used to measure a person's exposure to tobacco.
- Used for risk assessment
- Definition
- The pack-year is a unit for measuring the amount a person has smoked over a long period of time. It is calculated by multiplying the number of packs of cigarettes smoked per day by the number of years the person has smoked.
- For example, 1 pack-year is equal to smoking 20 cigarettes (1 pack) per day for 1 year
- One pack-year is the equivalent of 365 packs of cigarettes or 7,300 cigarettes, in a year as smoker.

# Pack-Year

## Calculation

- Number of pack-years = (packs smoked per day)  $\times$  (years as a smoker)
- or
- Number of pack-years = (number of cigarettes smoked per day/20)  $\times$  number of years smoked. (1 pack has 20 cigarettes in some countries)
- Note that despite the unit being called a "pack-year," the actual unit is simply a number of packs (as noted above).
- 1 pack-year = 1 packday  $\cdot$  1 year = 1 packday  $\cdot$  365 days = 365 packs = 365 packs  $\cdot$  20 cigarettes/pack = 7,300 cigarettes

# Pack-Year Calculations

- One pack-year is smoking 20 cigarettes a day for one year.
- A person who has smoked 15 cigarettes a day for 40 years has a  $(15/20) \times 40 = 30$  pack-year smoking history.
- If someone has smoked 10 cigarettes a day for 6 years they would have a 3 pack-year history.
- Someone who has smoked 40 cigarettes (2 packs) daily for 20 years has a 40 pack-year history.



# Pack-Year

- Quantification of pack-years smoked is important in clinical care, where degree of tobacco exposure is correlated to risk of disease such as lung cancer and heart disease.
- Lung cancer: Using multivariate model controlling for age and sex, the hazard ratio (relative to never smokers) was
  - 29.9 (95% CI = 23.8 to 37.7) for current smokers with 30+ pack-years,
  - 17.8 (95% CI = 12.2 to 26.0) for current smokers with 20 to 29 pack-years.

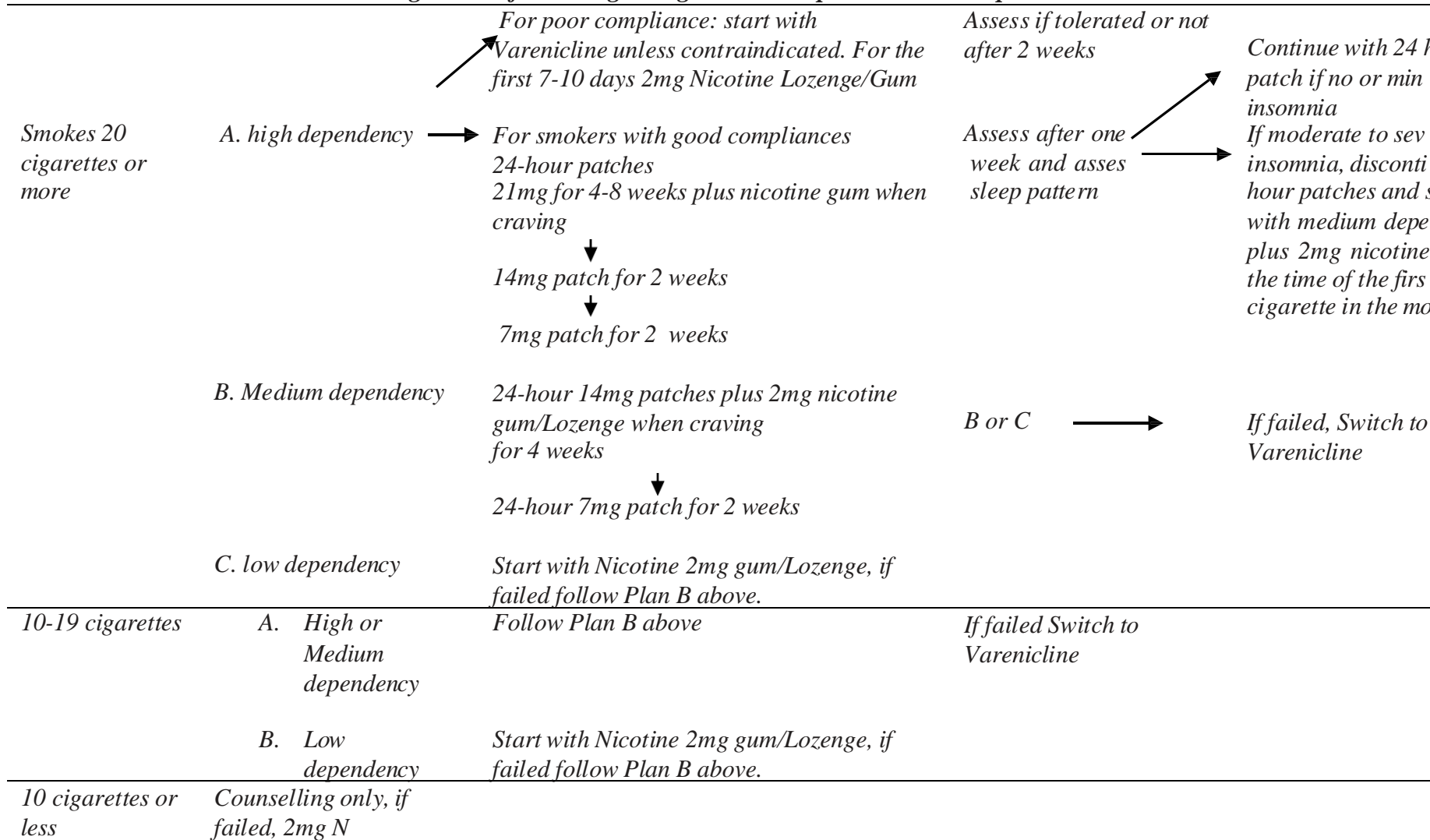
# Management plan:

- In the first visit:
- Medical and drug history, smoking pattern and history, nicotine dependence using Fagerstrom Tolerance Questionnaire.
- Counselling on smoking: Motivational interviewing strategies and the “5R’s” for enhancing motivation approaches will be used.
- The first approach is based on the following components: express empathy, develop discrepancy, roll with resistance, support self-efficacy. While the “5R’s” for enhancing motivation includes: Relevance, Risks, Rewards, Roadblocks, Repetition.
- Smokers, who are willing to receive smoking cessation medical therapy, would receive further assessment in order to determine the treatment of choice for their particular condition and to exclude any contraindications for the selected treatments.

# Selected Medication Options: Monotherapy and Combination Therapy

| Medication                              | Number of arms | Estimated odds ratio (95% C.I.) | Estimated abstinence rate (95% C.I.) |
|---|----------------|---------------------------------|--------------------------------------|
| Nicotine Patch                          | 32             | 1.9<br>(1.7 - 2.2)              | 23.4%<br>(21.3 – 25.8)               |
| Bupropion SR                            | 26             | 2.0<br>(1.8 – 2.2)              | 24.2%<br>(22.2 – 26.4)               |
| Varenicline                             | 5              | 3.1<br>(2.5 – 3.8)              | 33.2%<br>(28.9 - 37.8)               |
| Patch (>14 wks)<br>+ NRT (gum or spray) | 3              | 3.6<br>(2.5 – 5.2)              | 36.5%<br>(28.6 – 45.3)               |
| Patch + Bupropion SR                    | 3              | 2.5<br>(1.9 – 3.4)              | 28.9%<br>(23.5 – 35.1)               |

## Guideline: management of smoking using nicotine replacement therapies





# Nicotine replacement therapy (NRT)

- Provides smoker with nicotine without using tobacco, thereby relieving nicotine withdrawal symptoms.
- NRT products differ in the route of delivering nicotine to the circulation.
- Nicotine is absorbed transdermally with the nicotine skin patch, through the nasal mucosa by the nasal spray, or through the oral mucosa with the nicotine chewing gum, nicotine lozenge, or nicotine inhaler.
- Nicotine patches are more tolerated than nasal spray and provides the most continuous delivery of nicotine of nicotine replacement therapies.



# Nicotine replacement therapy (NRT)

## ■ Principle:

Many of the difficulties in smoking cessation stems from problems posed by nicotine withdrawal.



# Nicotine Replacement Therapy (NRT)

- Reliably attenuates severity of withdrawal, making it easier for would-be ex-smokers to cope with abstinence while unlearning the deeply ingrained habit elements of smoking

# Nicotine Replacement Therapy

- First-line pharmacotherapy for smoking cessation
- Indicated for all smokers trying to quit, except in the presence of special circumstances (those with medical contraindications, pregnant and adolescent smokers)



## NRT - Therapeutic Effect

- The primary therapeutic effect of NRT is to reduce the severity of symptoms associated with smoking cessation.
- NRT provides steady levels of nicotine and may reduce the pleasurable effects of tobacco desired by smokers.
- NRT makes it easier to cope in difficult situations.

# Nicotine patches

- Transdermal patch (waterproof)
- Nicotine Replacement Therapy (NRT)
- To overcome withdrawal symptoms
- 24-hour patch to deliver constant nicotine levels
- 12 week weaning program that reduces and eliminates body's dependence for nicotine
- Clinically-proven to be better than willpower alone
- 2-4 times the success rate of placebo patches

Hajek P, West R, Foulds J, Nilsson F, Burrows S, Meadow A. Randomized comparative trial of nicotine polacrilex, a transdermal patch, nasal spray, and an inhaler. *Arch Intern Med.* 1999;159:2033-2038.

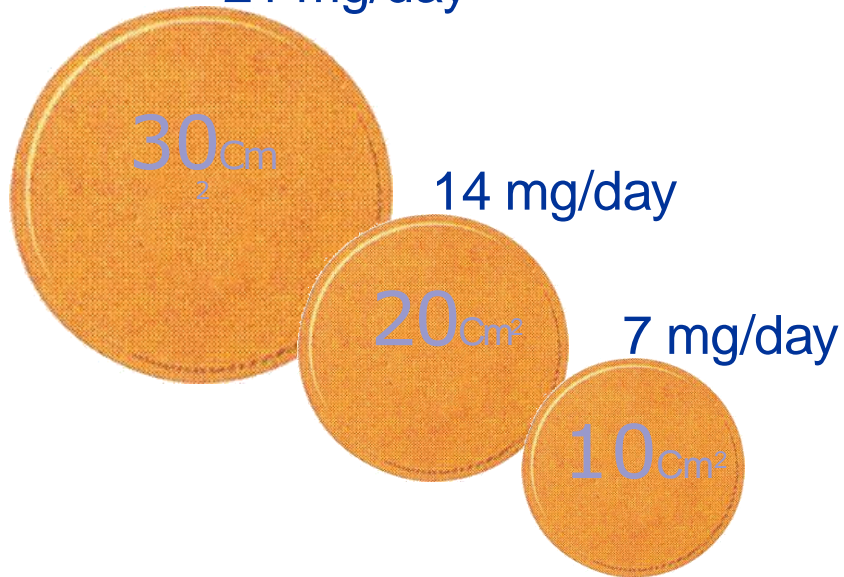
# Nicotine patches

21 or 24mg/24hrs, 14mg/24hrs, 7mg/24hrs

21 or 24mg/16hrs, 14mg/16hrs, 7mg/16hrs

15mg/24hrs, 10mg/24hrs, 5mg/24hrs

21 mg/day



# Precautions

- ❑ women who are pregnant or breast feeding
- ❑ smokers with cardiovascular conditions

Doctors should weigh risks/vs benefits when prescribing NRT to pregnant women or smokers with cardiovascular conditions.

- ❑ smokers using other nicotine replacement products
- ❑ children
- ❑ non-smokers
- ❑ smokers of fewer than 10 cigarettes a day

# Nicotine patches– Application

- ❑ Apply to non-hairy, clean, dry skin
- Rotate between sites (this helps to reduce the risk of skin irritation)
- Choose a flat surface
- Avoid joints or skin folds
- Replace the same time everyday



**DO NOT SMOKE WHILE  
USING THE PATCH**

# Why a 24-hour patch ?

- ▮ Many of the dependent smokers
    - Either smoke just before to go to bed,
    - Or wake up at night for smoking
    - Or wake up early in the morning to have a cigarette
- Night smoking is a criteria for strong addiction to nicotine*

Aubin, H. J. Comparison of the effects of a 24-hour nicotine patch and a 16-hour nicotine patch on smoking urges and sleep. *Nicotine.Tob.Res.* 8.2 (2006): 193-201.



# Success rates of nicotine patches as a first line monotherapy

- **Success rate of nicotine patch**  
Many studies have been completed on the success rate of nicotine patches.
- **These have found that six weeks after initiating treatment between 23% and 61% of smokers were successful in quitting, while one year after quitting rates ranged from 17%-24 for monotherapy to 28%-34% for combination therapy**
- **The difference in success rates depends largely on the level of motivation and dependency level.**

# Nicotine Lozenges

- Nicotine Lozenges are new products that have similar efficacy to nicotine gum but it is easier to use and does not require special technique for optimal use.
- It also delivers more nicotine than equivalent dose of the gum.
- Unlike nicotine gum, smokers with dentures or poor dentition can use Lozenges.



# High level of smoking addiction

Combination of behavioural therapy with  
nicotine patches and nicotine lozenges  
(used for cravings)

Or

Combination of varenicline with behavioural  
therapy



# **For patients with ischaemic heart disease with moderate or high level of addiction:**

The best approach is to start with  
**behavioural therapy**

If failed, you can start with nicotine patches



# Varenicline (Champix, Chantix)

- a partial agonist at the  $\alpha 4 \beta 2$  subunit of the nicotinic acetylcholine receptor.
- This drug binds to nicotinic receptors leading to reduction of withdrawal symptoms and decrease rate of cigarettes' nicotine binding to these receptors.

# Varenicline (Champix, Chantix)

- This medication has shown a good abstinence rate when compared to nicotine patches, but the difference is small when compared to combined nicotine patches with gum or lozenges.

**Given if compliance is low**

# Varenicline (Champix, Chantix)

- Week 1: Starting dose: 0.5mg once daily for three days, then 0.5mg twice daily for four days.

Smokers have to decide on quit day during this week.

- Then  
1mg twice daily for 8-12 weeks.

# Contraindications


**Illegal to give a contraindicated treatment.**

- Varenicline has not been studied in children and should not be taken by young people who are under 18 years of age.
- Breast feeding. Varenicline may pass into breast milk.

Either use an alternative therapy or follow other ways of feeding the baby may be appropriate if she is currently taking the



## Precautions for varenicline use

- kidney problems or on dialysis.
  - Pregnancy. The effects of Varenicline on the foetus are not known and it would be better to initiate an alternative therapy if behavioural intervention is not successful.
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## **Precautions for varenicline use**

- Depression or any psychiatric illnesses



# Varenicline: Side effects

- Vomiting and nausea
- Headaches
- Sleep disturbances and atypical dreams
- Gas (wind)
- Changes in the way food tastes  
(Dysgeusia)
- Constipation
- Suicidal thoughts

# Bupropion (Zyban)

**Weaker than other treatments**

- Available as an antidepressant in the United States since 1989, is believed to act by enhancing central nervous system noradrenergic and dopaminergic release.
- A sustained-release formulation of the drug is licensed as an aid to smoking cessation (Zyban); it is identical to the antidepressant Wellbutrin SR and is available as a generic drug.



# Bupropion (Zyban)

- A meta-analysis of 31 randomized trials of bupropion monotherapy concluded that bupropion SR doubles the likelihood of smoking cessation



# Bupropion (Zyban)

- As an example, one multicenter, randomized, double blind trial of 615 patients compared sustained-release [bupropion](#) (150 mg twice daily) with placebo among patients who wished to stop smoking.
- The rates of smoking cessation (confirmed by exhaled carbon monoxide measurements) were significantly greater at the end of a seven-week course of treatment among patients who received bupropion (44 versus 19 percent).

# Bupropion (Zyban)

- **Safety** — The most common side effects of [bupropion](#) are insomnia, agitation, dry mouth, and headache.
- A more serious side effect is seizure, which can occur because bupropion reduces the seizure threshold.
- In clinical trials, the risk of seizure was 0.1 percent, and **the drug is contraindicated in patients with a seizure disorder or predisposition to seizure.**



# Elements of a Counseling Intervention

- Discuss previous quit experiences
- Anticipate challenges
- Assess patient's household environment
- Provide patient with options for dealing with nicotine withdrawal
- Suggest abstaining from alcohol during quit attempt

# Strategies to Cope with Nicotine Withdrawal

| Symptom        | Strategy   |
|----------------|--|
| Cravings/Urges | <ul style="list-style-type: none"><li>• Distract self</li><li>• Postpone cigarette</li><li>• Breathe deeply</li><li>• Call supportive person</li></ul> |
| Irritability   | <ul style="list-style-type: none"><li>• Engage in pleasurable activity</li><li>• Take hot bath</li><li>• Breathe deeply</li></ul>                      |
| Hunger         | <ul style="list-style-type: none"><li>• Select oral substitute</li><li>• Drink water or low-calorie drinks</li></ul>                                   |

# Coping with Nicotine Withdrawal (cont)

| Symptom                         | Strategy   |
|---------------------------------|--|
| <b>Difficulty concentrating</b> | <ul style="list-style-type: none"><li>• Take brisk walk</li><li>• Simplify schedule</li><li>• Take a break</li></ul>   |
| <b>Depression</b>               | <ul style="list-style-type: none"><li>• Schedule pleasurable events</li><li>• Talk to supportive friend/family</li><li>• Get ample rest</li><li>• Reward self for working hard to quit</li></ul> |
| <b>Sleep disturbance</b>        | <ul style="list-style-type: none"><li>• Pace self</li><li>• Ask for help</li></ul>   |

## ■ **HOW TO OVERCOME WITHDRAWAL SYMPTOMS**

### ■ **Wake up Cigarette**

- ❖ Drink glass of fruit juice immediately on waking—try orange juice—many people find that smoke and orange juice do not mix well.
- ❖ Brush teeth with mint-flavored toothpaste
- ❖ Arrange for a morning paper and read it.
- ❖ Try something special for breakfast

### ■ **Coffee Cigarette**

- ❖ Switch to juice
- ❖ Try flavoring coffee a different way (Mocha)
- ❖ Nibble on a low-cal treat that appeals to you.

### ■ **After Breakfast Cigarette**

- ❖ Try reading, shave, a short walk etc



- **Driver's Cigarette**

- Sing with the car radio
- See non-smoking riders
- Chew mint gum or eat hard candy
- Remove cigarette lighter
- Remove ashtray

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- **Waiting Cigarette (e.g., standing in line)**

- Read a paperback
- Watch people, notice hairstyles, clothes, shoes, etc.
- Eat hard candy or gum

- **Midmorning Cigarette**

- Take a brief walk
- Deep breathing exercises
- Drink a glass of juice or water
- Call a friend
- A low caloric snack

- **Telephone Cigarette**

- ❖ Doodle
- ❖ Change your normal telephoning position
- ❖ Find a toy

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- **Before Lunch Cigarette**

- Change lunch routines
- Drink glass of water or juice
- Talk with friend

- **After Lunch Cigarette**

- ❖ Alter routine
- ❖ Eat slower
- ❖ Take a brief walk
- ❖ Visit someone in another department
- ❖ Read
- ❖ Deep breathing exercises

- **The Pause-to-think cigarette**

- ❖ Look out window
- ❖ Doodle
- ❖ Get a drink of water or juice

- **Mid-afternoon Cigarette**

- Drink a glass of juice or diet soda
- Eat a carrot or celery stick
- Stand up and stretch—breathe deeply



## ■ **After Dinner Cigarette**

- ❖ Leave table promptly
- ❖ Wash dishes by hand
- ❖ Get a hobby
- ❖ Read a newspaper or book
- ❖ Go to a movie
- ❖ Go for a walk—take the dog



## ■ **Nightcap Cigarette**

- Brush your teeth with mint-flavored toothpaste and use mouthwash
- Do your evening reading in bed (not in chair) when you feel drowsy, go to sleep

# Smoking cessation programs

- Include other types of smoking such as Narjeela in calculation of tobacco smoking rates
- Evaluate current and past programs
- Focus on:
  1. Prevention of smoking amongst teenagers
  2. Increase taxes on tobacco products and use the money for prevention programs
  3. Providing free smoking cessation services : medical and behavioural interventions
  4. Free helplines for smokers
  5. Your team should be well-trained
  6. Compare respondents with non-respondents, Success Vs failed

# Community medicine:

- Register your attendance with your university number
- Make sure that the settings of your phone allow tracking location

Go to settings > privacy> location> services> make sure that location services is ON





Thank you!