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Session 4:

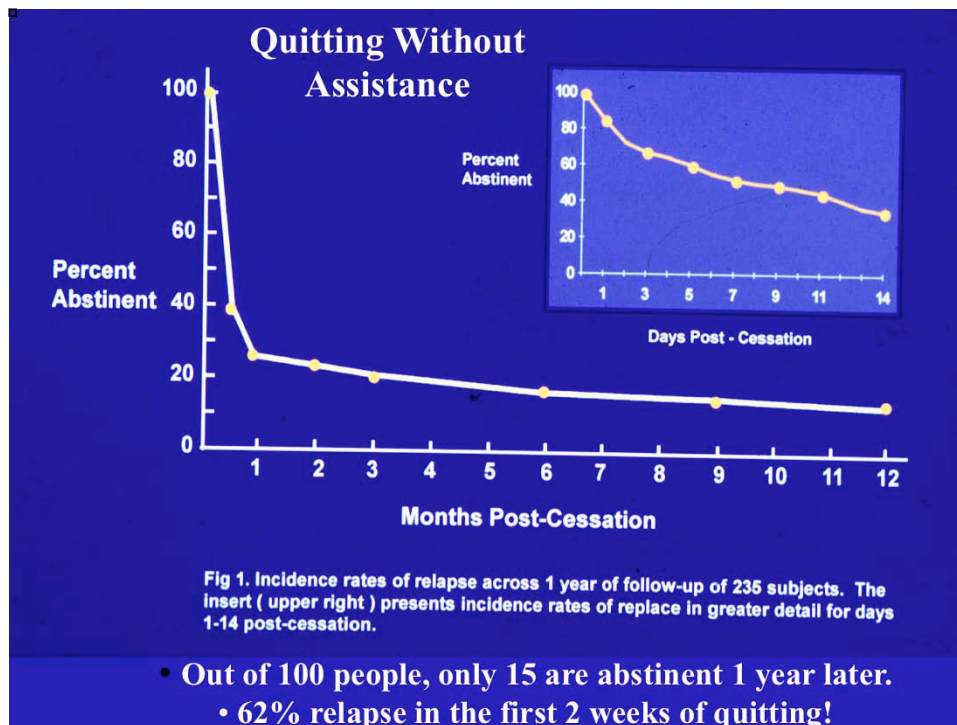
Cue Conditioning

Reinforce: that nicotine is a highly dependence producing drug.

Reinforce: that nicotine's psycho active (cognition, mood, reward and behaviour) effects makes it a very powerful reinforcer.

State: it is this powerful effect of nicotine that contributes to smoking relapse.

State: today we are going to discuss the factors which can increase the risk of you relapsing to smoking.



Explain: this is a graph of abstinence rates vs. time for people attempting to quit smoking with no assistance.

Explain: the y axis

Explain: the x axis

Focus: on the fact that out of 100 individuals who attempted to quit smoking on their own, only about 15 were still not smoking 1 year later.

State: the relapse rates with tobacco dependence are very high.

Point: to the section on the graph which shows the first 2 weeks.

Advise: most people relapse within the first 2 weeks of quitting smoking.

Emphasize: the fact that 62% of patients have relapsed within the first 2 weeks of quitting.

Pose: question to patient: Why do you think that most people relapse to smoking within the first 2 weeks of quitting?

Answer: Nicotine withdrawal is often the most intense during this time.

WHAT TRIGGERS RELAPSE? In the Short Term:



State: Nicotine withdrawal is the most common cause of relapse to smoking within the first 6-8 weeks of quitting.

Re-emphasize: symptoms of nicotine withdrawal with the patient using a handout.

Assess: the patient for nicotine withdrawal by asking: “Are you experiencing any of these symptoms?”. If the patient is more than 6-8 weeks abstinent, ask if they did experience any of these symptoms.

Advise: to avoid relapsing in the first 6-8 weeks of quitting smoking, it is vital that the patient takes the combination medications for the treatment of tobacco dependence as advised by the GP/Clinician.

Advise: the patient that in the first 6-8 weeks of quitting, they must use pulsatile therapeutic nicotine and lidium and they must not ration it.

WHAT TRIGGERS RELAPSE? In the Longer Term:



Reiterate: that in the short term (first 0-6 weeks), nicotine withdrawal most commonly triggers relapse.

In the longer term, the most common causes of relapse to smoking are *cues*.

Explain: what is meant by a smoking cue:

A cue is any entity such as a place, person, situation, context, circumstance or activity which has been strongly associated with cigarette smoking.

Explain: in the absence of inhaled nicotine, a cue can trigger the desire to smoke.

State: that there are 2 types of cues:

1. Chemical
2. Environmental

1. Chemical Cues



State: one of the biggest causes of relapse to smoking is *passive smoke* exposure.

State: There are 2 forms of passive smoke:

1. Exhaled mainstream - is the smoke that is exhaled through the mouth and nose.

2. Side stream - is the smoke which comes out the burning end of a cigarette.

Explain: side stream smoke is particularly dangerous from a relapse perspective because it contains a very high concentration of nicotine.

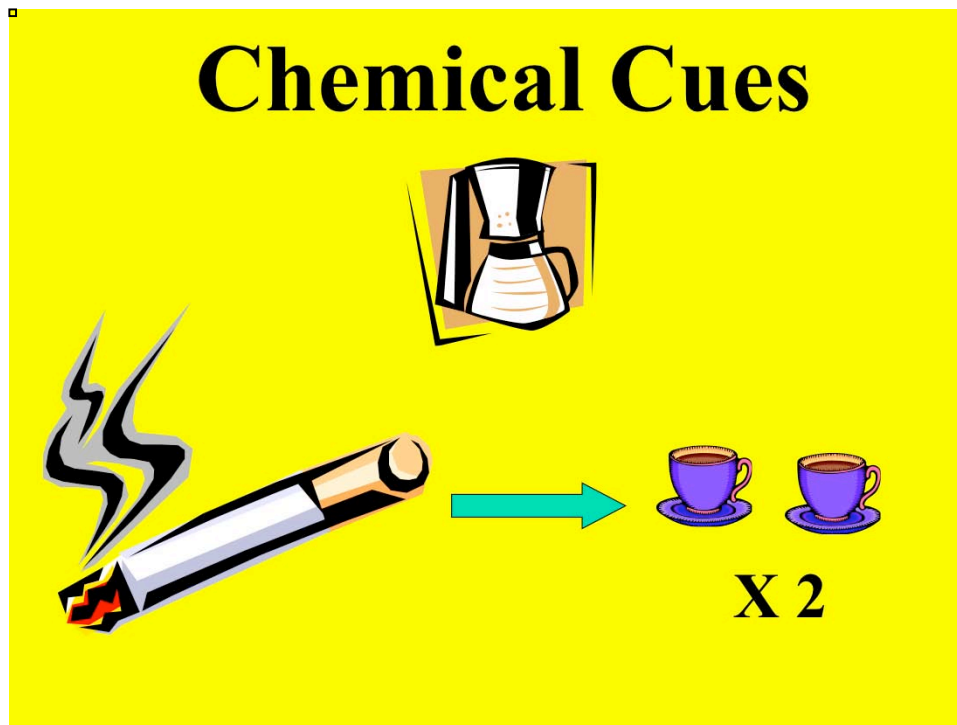
Emphasize: that breathing in other people's cigarette smoke is breathing in nicotine.

Reiterate: that inhaling nicotine (whether actively or passively) triggers the brain to want nicotine again.

Compare: this to slow delivery nicotine.

Use: the analogy of having an "allergy" to *inhaled* nicotine where the allergic response is craving, nicotine withdrawal or rationalising smoking eg. "One won't hurt".

Strongly Emphasize: that passive smoke exposure can have a delayed effect. This means that the patient may not have the desire to smoke at the time of exposure but may experience craving or withdrawal up to one week later as brain receptors have been directly stimulated by nicotine.



State: there is a chemical relationship between tobacco smoking and *caffeine*.

Explain: the concept of metabolism.

Advise: when you smoke, you metabolise caffeine twice as quickly. This means you need to drink twice as much coffee.

Advise: this also applies to cola drinks and chocolate.

Pose: question to the patient: If you quit smoking, and drink the same amount of coffee, what would happen to the amount of caffeine in your blood stream?

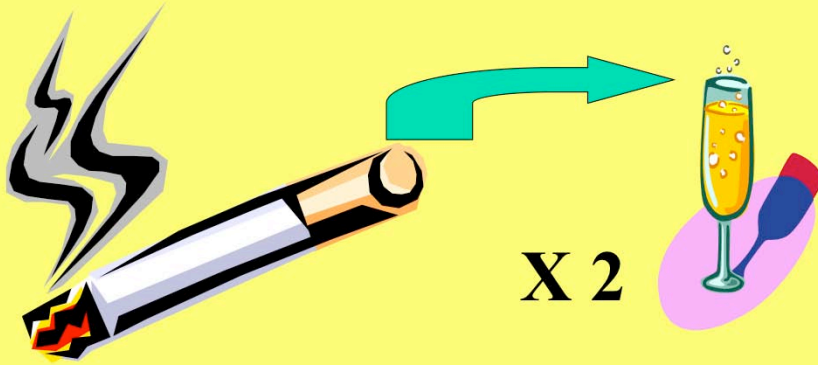
Answer: The caffeine level in your blood stream would double.

Advise: you might have *caffeine toxicity*.

List: some symptoms of caffeine toxicity: insomnia, gastrointestinal disturbances, tachycardia, flushing, agitation, nervousness.

Draw: attention to some of these symptoms overlapping with symptoms of nicotine withdrawal.

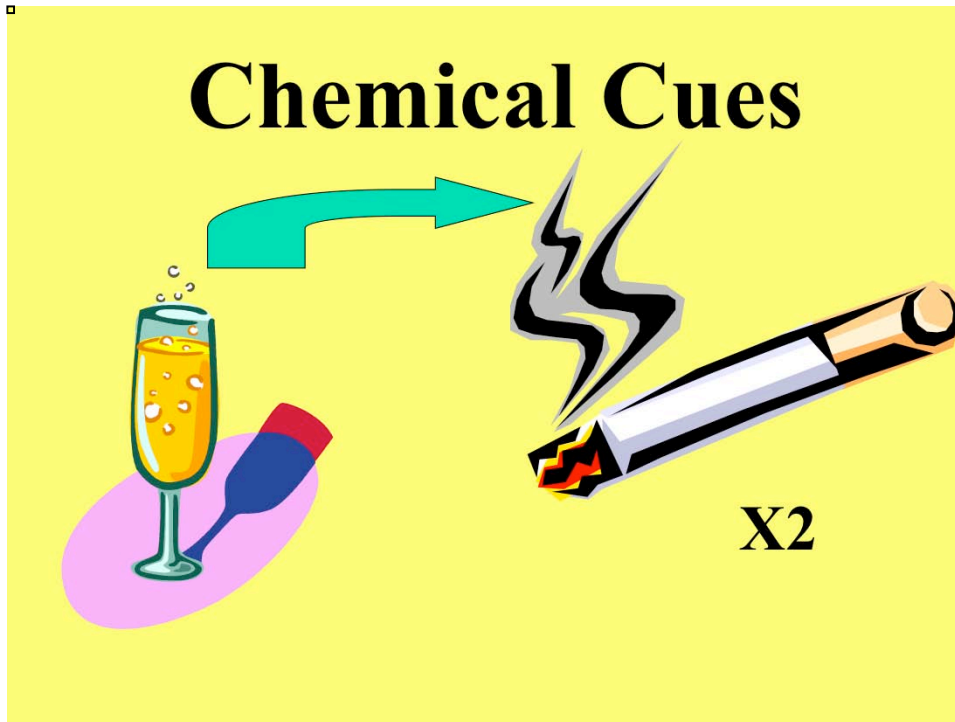
Chemical Cues



State: there is also a chemical relationship between tobacco smoking and *alcohol*.

Explain: chemicals in tobacco smoke impact the liver and cause you to metabolise alcohol *twice* as quickly.

Advise: Therefore when you are smoking, you can drink twice as much alcohol.



Advise: Alcohol and nicotine have a *synergistic* chemical relationship.

Define: synergistic - where the combined action of the two drugs is greater than the sum of each acting separately.

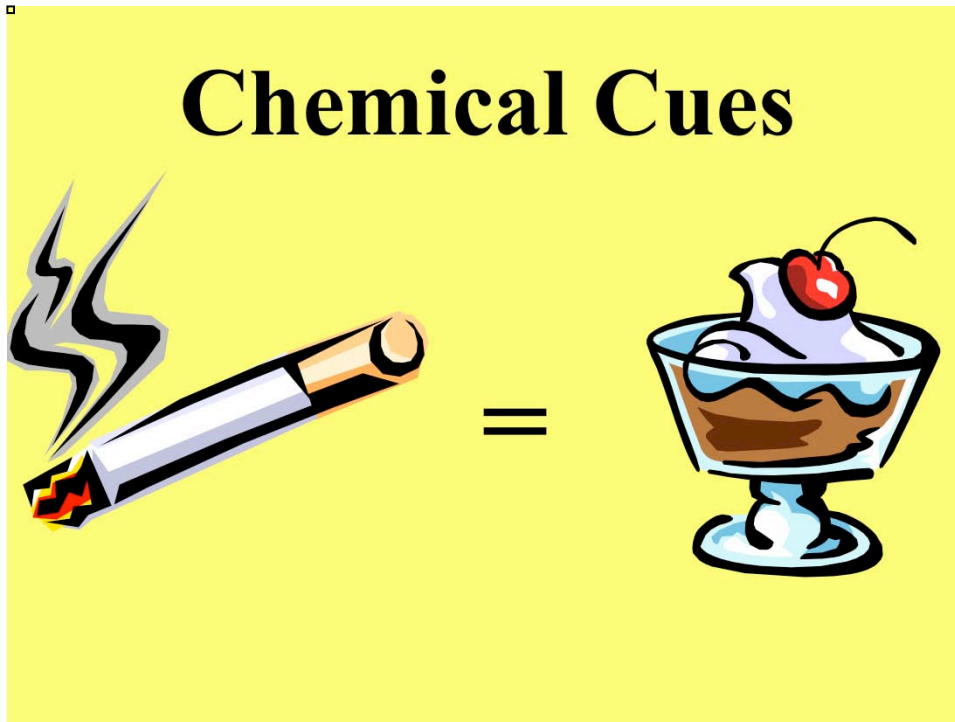
Explain: nicotine and alcohol *potentiate* each other. This means:

State: when you drink alcohol, you need to smoke *twice* as much as it causes you to burn up nicotine faster,

Advise: Alcohol *chemically* increases your need for nicotine.

If you drink alcohol, it will increase your desire for a cigarette.

•If you smoke a cigarette, it will increase your desire for alcohol.



State: there is a chemical relationship between nicotine and what you eat.

Explain: what glucose is, where it is derived and its function in the body.

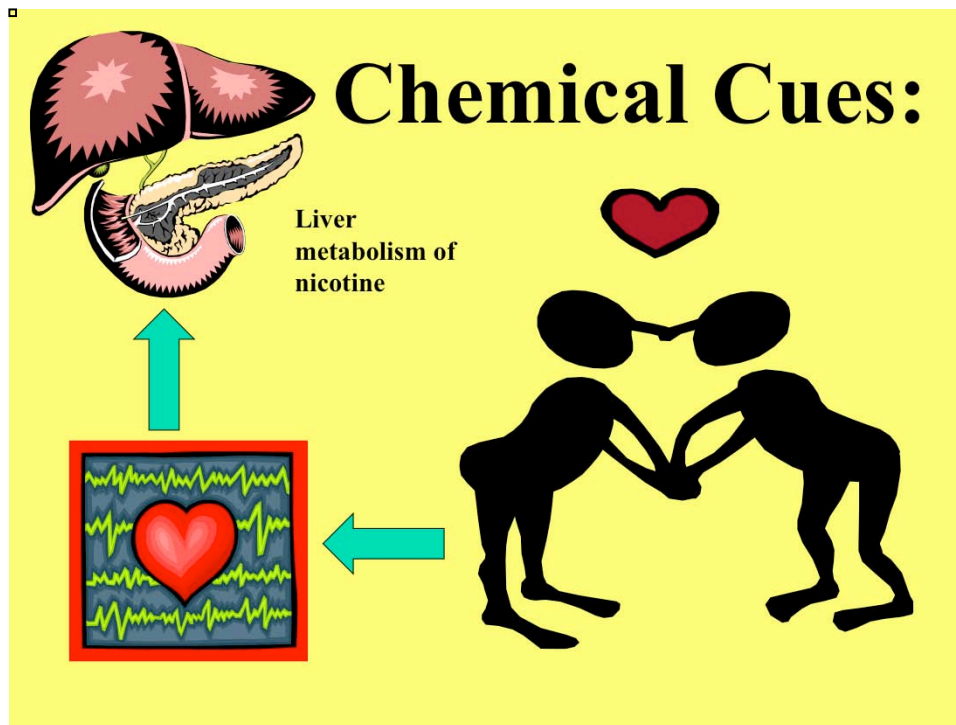
Advise: nicotine increases blood sugar levels.

Explain: having a cigarette is a bit like having a snack.

Cite: many smokers have a cigarette and coffee for breakfast.

Explain: nicotine therefore reduces the desire for food, particularly sweet foods.

Explain: conversely, if you have not eaten for several hours and your blood sugar level is low, it will increase your desire for a cigarette.



Explain: another chemical cue to smoke is engaging in *sustained exercise* eg. jogging, 1 hour of aerobics, swimming etc.

Advise: that exercise which increases your heart rate for a sustained period can increase your desire to smoke.

Explain: An increase in heart rate causes you to burn up nicotine faster. It is very common that at the end of a gym class or other activity such as having sex, the desire for a cigarette is very strong.

Explain: Smoking re establishes nicotine blood and brain levels. It becomes very strongly associated with the strenuous activity.

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What Can Cause Relapse?

- Incorrect use of combination medications for tobacco dependence (nicotine withdrawal).
- Being around other people's cigarette smoke
- Not reducing caffeine drinks (caffeine toxicity).
- Drinking too much alcohol.
- Missing meals (low blood sugar levels).
- Sustained exercise (increase in metabolism).

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How You Can Prevent Relapse:

- Combination medications for smoking cessation high priority.
- Avoid alcohol in first 2 weeks of quitting.
- Avoid passive smoke.
- Halve caffeine consumption.
- Eat regular meals.
- Short sharp bursts of exercise.

Advise: it is very important that the patient uses all medications to treat tobacco dependence as prescribed by the General Practitioner.

Encourage: the patient to use the combination therapeutic nicotine liberally.

Advise: the patient that they must use pulsatile therapeutic nicotine for any nicotine withdrawal symptom.

Advise: that patients with good prognosis are typically those who attend all their sessions.

Recommend: that patients avoid alcohol in the first 2 weeks of quitting. Then, re introduce alcohol gradually, where there is no passive smoke.

Explain: that avoiding passive smoke is for life. It is like they are allergic to inhaled nicotine where the allergic response is craving.

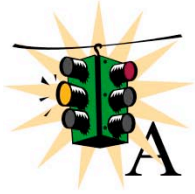
Advise: not halving caffeine consumption can result in caffeine toxicity which some people mistake for nicotine withdrawal.

Explain: it is important the patient does not miss meals. Many smokers do not eat breakfast which sets them up physiologically to have the first cigarette

Advise: if the patient does engage in a prolonged period of exercise, it is very important that they use some 4mg pulsatile therapeutic nicotine immediately on

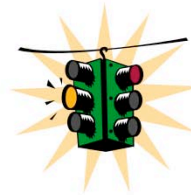
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What Happens if I Have “Just One?”



A lapse (just one) is a **relapse** (back to full on smoking)

95% of the time.



Advise: having a single puff of a cigarette is *very serious* as it dramatically increases the likelihood of going full on back to smoking.

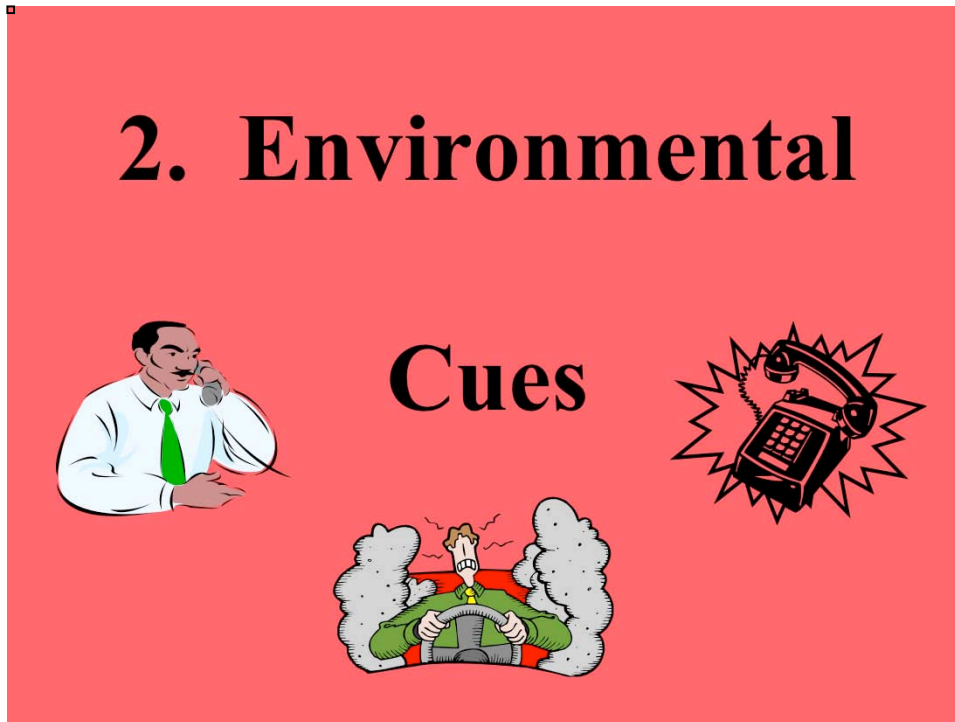
Explain: this is because a single puff is *inhaled* nicotine (allergy analogy).

Reiterate: that inhaled nicotine directly (chemically) stimulates the brain cells.

Advise: to avoid this happening, it is vital to follow the treatment management advice of the previous slide.

Advise: once the patient has 24 hours abstinence from inhaled nicotine, maintaining abstinence via medication compliance and avoiding passive smoke, the sooner loss of interest in smoking occurs. Having occasional puffs sustains craving and nicotine withdrawal.

2. Environmental



Explain: the second type of cues which can trigger relapse to smoking are those which you find in the environment.

Explain: these might be people, situations, tasks, objects or activities which you associate with smoking.

Ask: the patient to describe environmental factors which they associate with smoking.

Explain: that nicotine is a very short acting drug and therefore needs to be replaced frequently, right throughout the day. For many smokers, this might be around 25-30 times per day.

Explain: that with this frequency of re administering nicotine, it follows that smoking becomes associated with many different environmental cues.

Advise: On smoking cessation, smoking may well be absent but the environmental cues are ever present.

Pavlov's Dogs



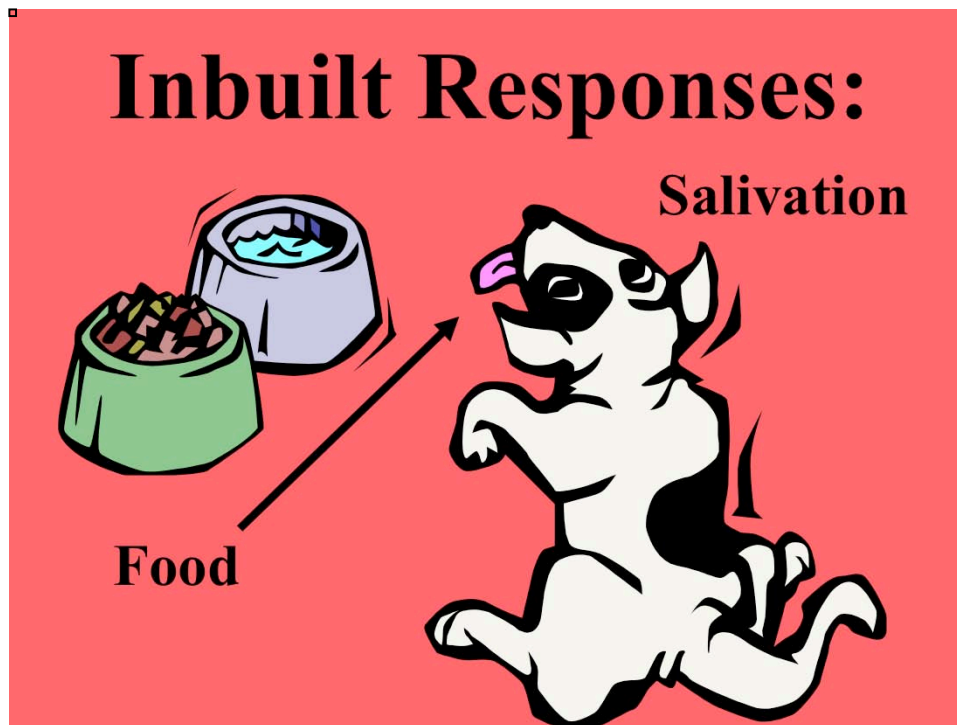
Explain: to understand how you learn to associate environmental factors with your smoking, we need to look at a very famous piece of research conducted many years ago by *Ivan Pavlov*.

Explain: Ivan Pavlov was a gastroenterologist (explain) who was conducting research on the digestive system of dogs.

Explain: While performing his experiments, Pavlov noticed some very interesting dog behaviour which he thought might have direct relevance to human *learning and behaviour*.

Explain: Pavlov decided to conduct some formal experiments into what he was observing and consequently became very famous for his experiments on “*Cue Conditioning*”.

Advise: Cue conditioning has direct relevance to tobacco dependence and relapse prevention.



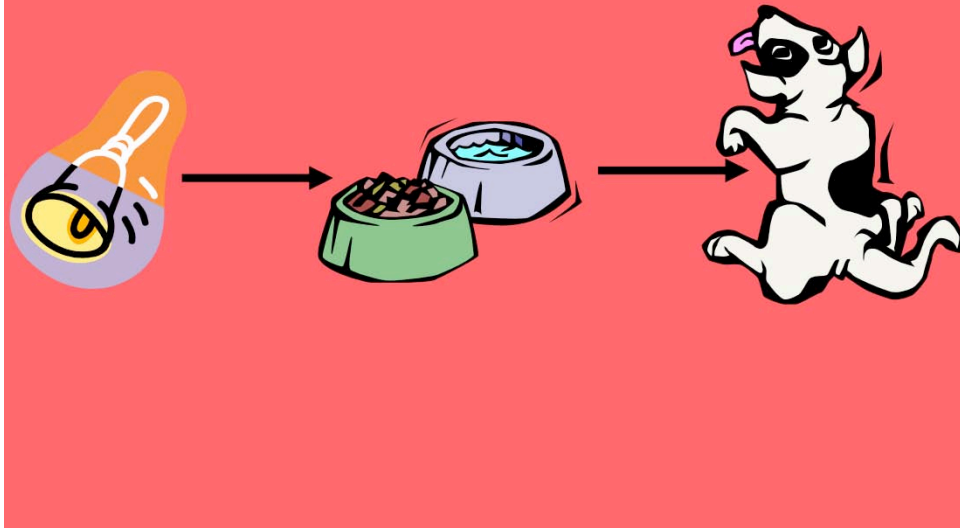
Explain: Dogs have an *inbuilt* mechanism where if you present food, they began to salivate. The food is a *stimulus* or *trigger* for the dog to *naturally* salivate. It is like an *automatic* response. The dog has *not* learned to salivate, salivation is a *reflex* response.

Explain: The person responsible for feeding the dogs in Pavlov's laboratory, was a lab technician who always wore a white coat. Each time he presented the food, the dogs would immediately salivate.

Explain: After some time, Pavlov noticed that the dogs began to salivate at the site of the lab technician, *before* any food was even presented. He realised that the dogs were salivating in *anticipation* of food being presented. He realised that the dogs had *learned* that the visual cue of the lab attendant signified food was on its way.

Explain: Pavlov developed his "*Laws of Association*". He concluded that the dogs *learnt* to *associate* the lab technician with the presentation of food.

Pavlov's Experiment:

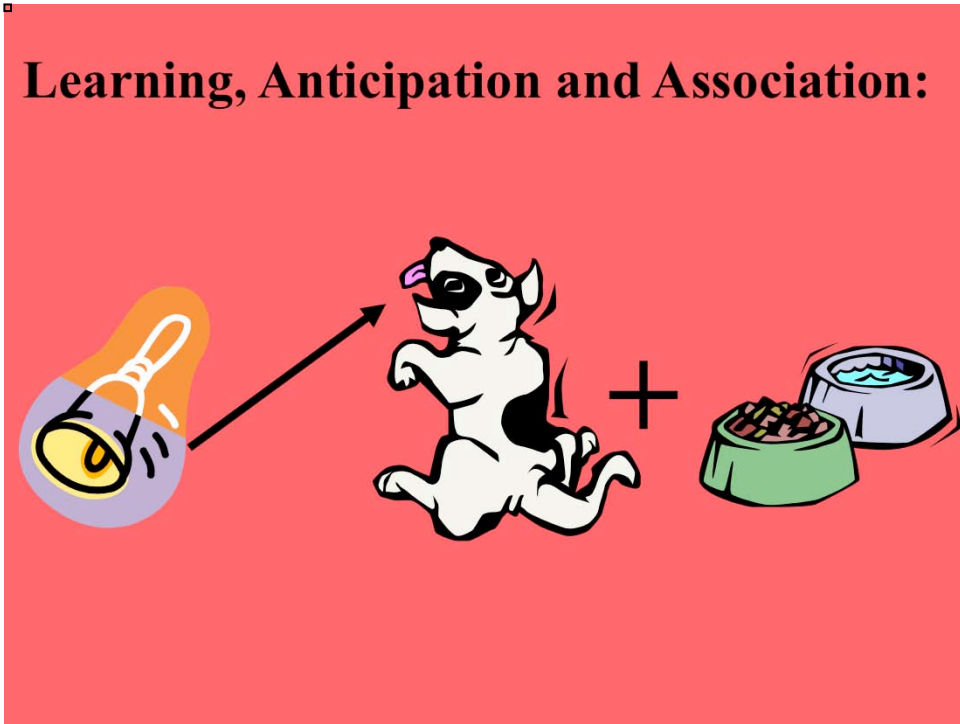


State: Pavlov decided to test his Laws of Association by performing a formal experiment.

Explain: He knew that the presentation of food caused the dogs to salivate (inbuilt mechanism).

Describe Pavlov's Experiment: In his experiment, Pavlov decided to *pair* the cue of a bell ringing just before the presentation of food to the dogs. He rang the bell, the food was presented and then the dogs salivated.

Learning, Anticipation and Association:



Explain: Pavlov repeated this process many, many times.

Explain: After some time, he noticed that the dogs began to salivate immediately on the sound of the bell, *before* the food was presented.

Explain: Pavlov concluded that to the dogs, the bell signified the ensuing presentation of food. They salivated on hearing the bell in *anticipation* that food would soon be presented. The dogs had *learned to associate* the sound of the bell with the soon to follow presentation of food.

Removing the Food.....



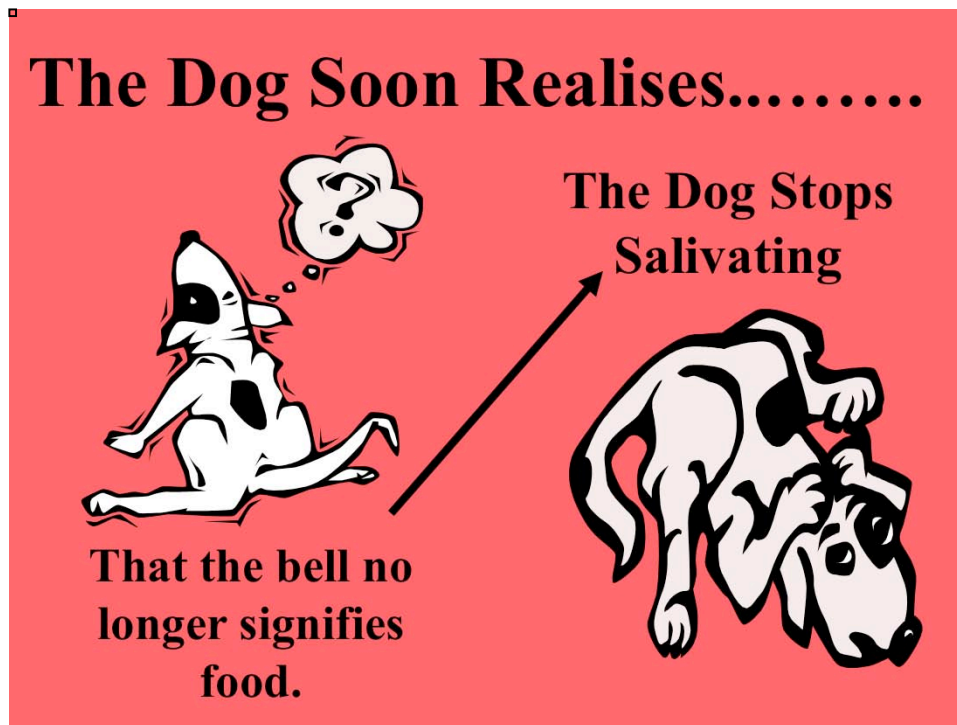
Explain: after repeating the sequence of bell, food presentations numerous times, Pavlov decided to see what would happen to the dog's response if the food was removed from the sequence. He therefore rang the bell numerous times without following it with the presentation of food.



Explain: what Pavlov found was that the dog continued to salivate at the sound of the bell only even though food was not being followed up.

Explain: This might seem strange as dogs do not have an inbuilt mechanism of salivating to the sound of a bell ringing. They are not born with this as a natural mechanism.

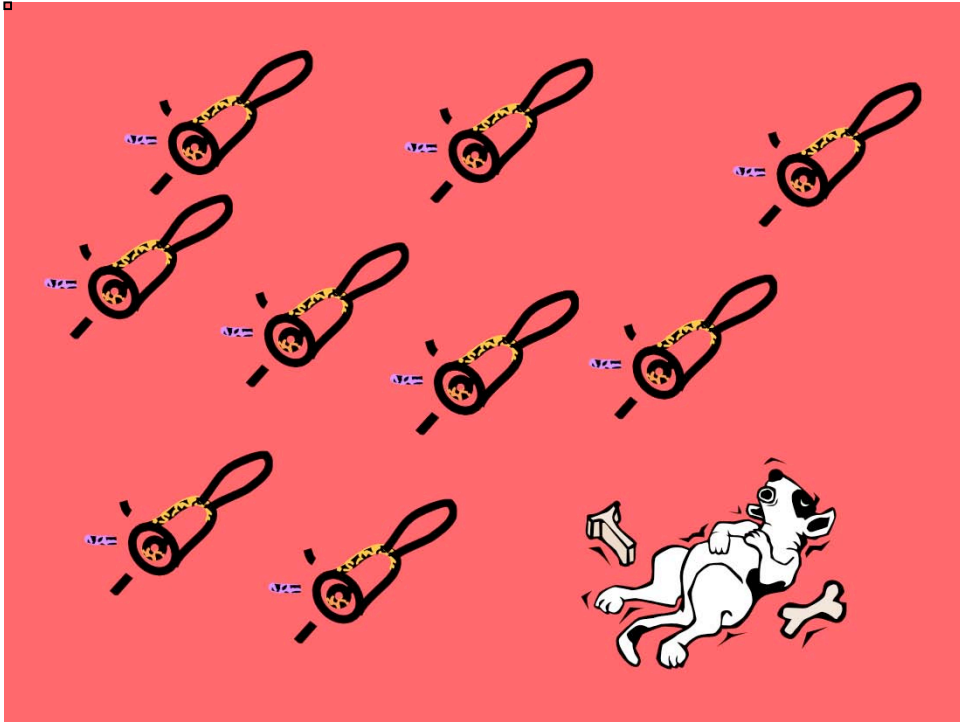
Explain: Pavlov termed this learned behaviour of salivating to the sound of a bell, a *conditioned* response.



Explain: after numerous ringing of the bell, without food presentation, the dog soon *learns* that food will *not* be presented.

Explain: the dog stops salivating to the sound of the bell.

Explain: this is called *deconditioning* of the learned behaviour.



Explain: the more the bell rings, the more the dog realises that food is not coming.

Explain: this means that the dog's response to the sound of the bell ringing is totally *neutral*. This is also known as *deconditioning* and *extinction* of the learned response.

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How Do Pavlov's Dogs Apply to Not Smoking?

Smokers have quite sophisticated cues:

- Finishing a meal
- Finishing a task
- Starting the car
- Answering the phone
- Sitting down to work



Smoking becomes intertwined with activities right throughout the day.



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When You Quit:

- The more exposure to your **environmental** cues the better.
- Initially, dose up on pulsatile therapeutic nicotine before, during and immediately after exposure.
- The more exposure to your environmental cues, without smoking, the sooner the associations and desire to smoke goes away.
- Pavlov's principles **do not** apply to chemical cues eg. passive smoke, alcohol.

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Conclusion:

- The relapse rates with tobacco dependence are **very high**.
- In the short term, the most common cause of relapse is **nicotine withdrawal**.
- It is therefore very important that you take your combination medications as advised by your clinician.
- In the longer term, the most common cause of relapse is **cue exposure**.

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Conclusion:

- Smoking cues can be **chemical** or **environmental**.
- Some **chemical** cues require readjustment. Others require total avoidance.
- The **more** exposure to **environmental** cues, the better.
- **One puff** of a cigarette results in a full relapse **95%** of the time.