

*HSS1101D: Determinants of Health*

**Behavioural Determinants of  
Health Part 1: Behaviour Change  
Theories and Managing  
Potentially Harmful Habits**

**February 29, 2012**

**\*NOTE:** Information is taken from sources as indicated at the bottom of or within the slides.

Université d'Ottawa | University of Ottawa



uOttawa

L'Université canadienne  
Canada's university

**Professor:  
Dr. Sonia Gulati**



uOttawa.ca

# Topics to be Covered

- Health Interventions and Prevention
- Behaviour Change Mechanisms
  
- Drugs
- Smoking
- Alcohol
- Caffeine
- *Guest lecture:* Fitness, Nutrition and Weight



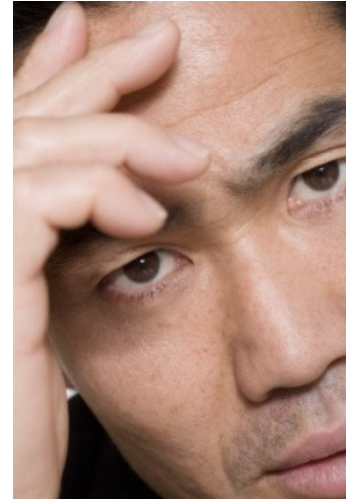
# Health Behaviours and Lifestyle

- **Health behaviours** – The actions people undertake that influence their health status. Actions are influenced by the combination of understanding, insight, beliefs, and practices. May influence health in a positive or negative way.
- **Lifestyle** – The behaviour pattern, customs, and habits of persons or groups, generally considered in the context of consequences for health, and including nature and amount of exercise, dietary habits, and use of tobacco, alcohol, coffee, tea, stimulant and sedative substances (licit or illicit), and recreational time.

# ***What are some examples of risky health behaviours?***



## Why do people engage in unhealthy behaviours and lifestyles?



- To cope with stress
- A lack of support and sense of rejection and detachment from others
- Lack of resources (e.g., income, education, built environment factors)
- Cultural factors (e.g., acceptance of smoking, drinking, sports, etc)

# Health Promotion

- Creating **optimal conditions** for successful **behaviour change** through:
  - Educational supports
  - Organizational supports
  - Environmental supports
  - Financial supports



# Health Interventions

- **Intervention:** A general term covering any and all actions taken by “health professionals” aimed at preventing, curing, or relieving a health problem
  - “health professional” → broaden to: any person, organization, or institution that can influence health
- **Intervention strategy:** A formally designed plan of action to deal with a health problem, usually at the community or population level.

## Health Interventions

- In addition to treatments, health interventions may also include prevention, curative activities, and actions that may not cure a person but would help to relieve the burden of disease.
- May also include systems or population level policies, including health care system reform.
- May also include activities that deal with downstream determinants of health

# Prevention: The Key to Future Health

- **Primary prevention** – actions designed to stop health problems before they start
- **Secondary prevention** – intervention early in the development of a health problem to reduce symptoms or to halt its progression
- **Tertiary prevention** – treatment or rehabilitation efforts aimed at limiting the effects of a disease



# ***What are the benefits of achieving optimal health?***



# Making Healthy Decisions

## To help lengthen life:

- get a good night's sleep
- maintain health eating habits and weight
- participate regularly in physical activities
- brush and floss teeth regularly
- practice safe sex
- avoid tobacco products
- limit intake of alcohol
- keep up with regular self-exams and medical check-ups

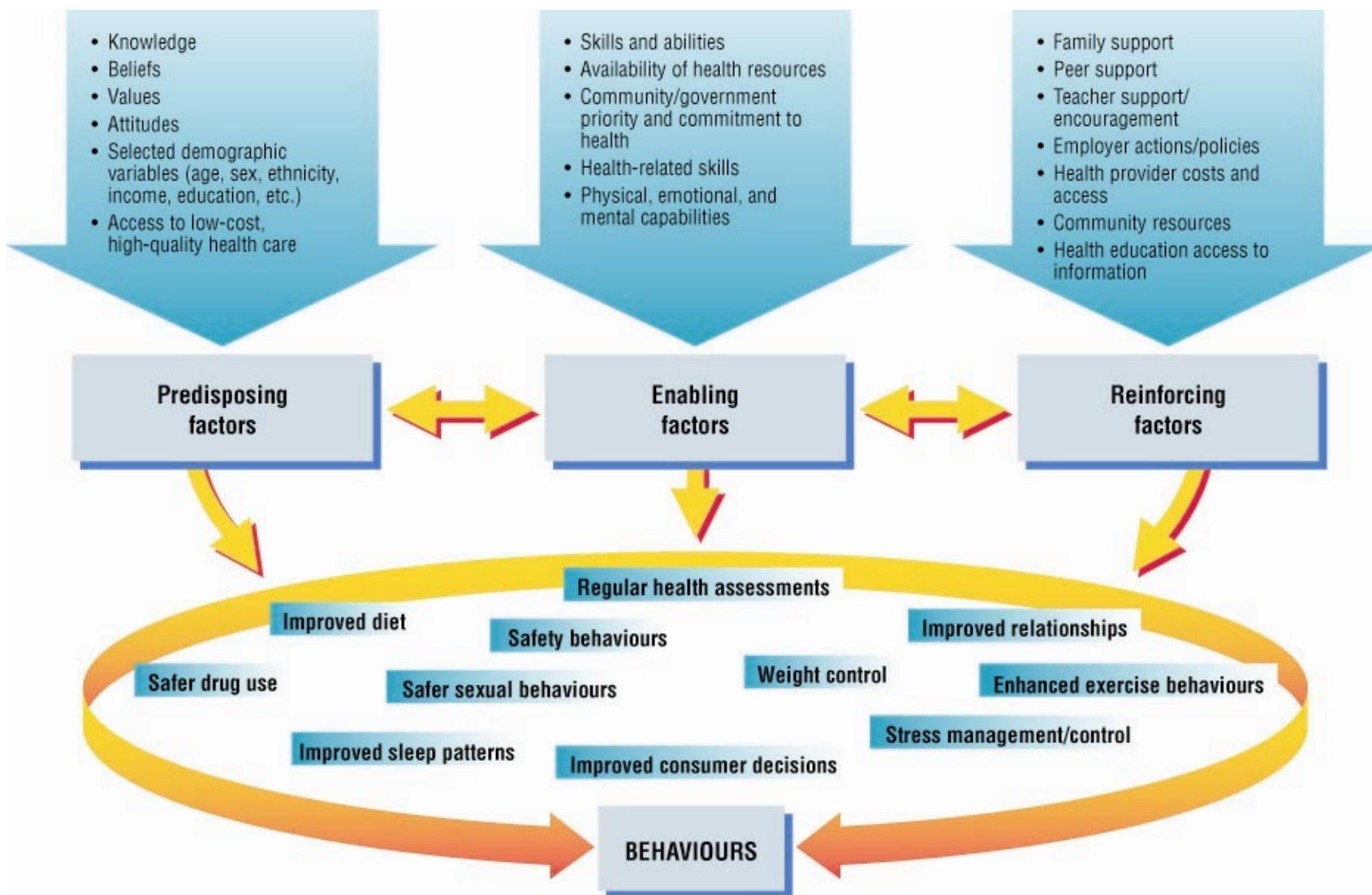
## To improve quality of life:

- control stress
- maintain meaningful relationships
- make time for yourself
- participate in at least one fun activity each day
- respect the environment and people in it
- consider alternatives when making decisions
- value each day and making the best of opportunities
- view mistakes as opportunities to learn and grow
- understand the health care system and use it wisely

# Behaviour Change

## Factors influencing behaviour change:

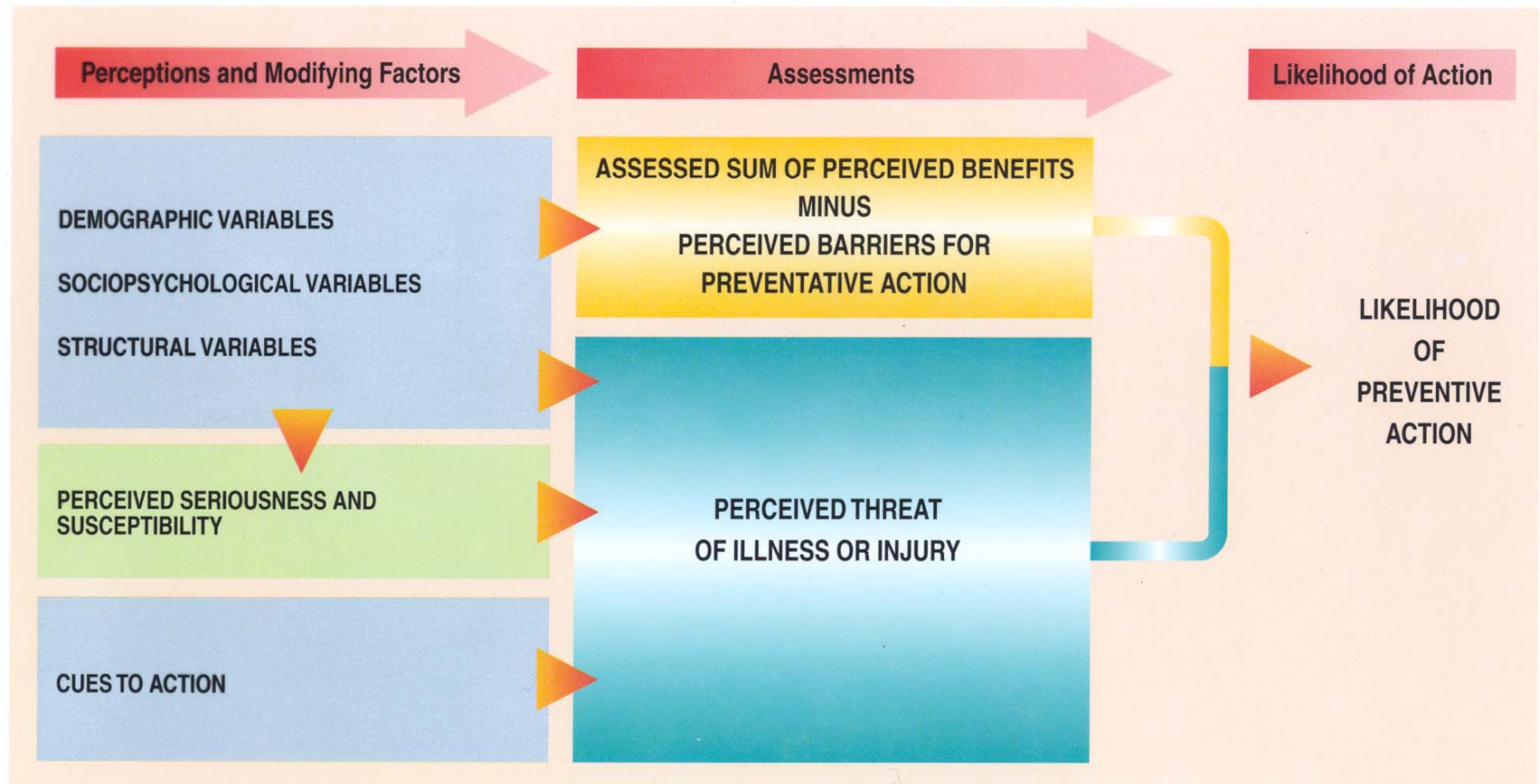
- **Predisposing factors:**
  - Factors that are likely to lead to a particular behaviour
  - e.g., sex, race, income, family, education
- **Enabling factors:**
  - Skills, abilities, physical, emotional, and mental capabilities, and resources and accessible facilities that make health decision more convenient or difficult
- **Reinforcing factors**
  - The support and encouragement or discouragement that come from significant others or situations in life that enable a particular behaviour



# Individual Beliefs and Attitudes

- **Belief:** An appraisal of the relationship between some object, action, or idea and some attribute of that object, action, or idea
- **Attitude:** A relatively stable set of beliefs, feelings, and behavioural tendencies in relation to something or someone
- **RECALL: Health Belief Model (HBM):** Explains how beliefs may or may not influence behaviours

# RECALL: Health Belief Model (HBM):



# Intentions to Change

- **Theory of Reasoned Action:**
  - Behaviours result from our intentions to perform actions
- **Significant Others as Change Agents**
  - Your family and the influence of others
- **Theory of Planned Behaviour reasons for action:**
  - Our attitudes toward the behaviour
  - Our level of perceived behavioural control
  - Our subjective norms

*\*Developing new behaviours in small steps: Start slowly, keep steps small and achievable, be flexible, refuse to skip steps, reward yourself for meeting short- and long-term goals*

# Behaviour Change Techniques

- **Visualization:** practising a skill or positive behaviour through mental imagery
- **Modeling:** learning specific behaviours by observing others
- **Controlling the situation:** situational inducement (attempt to influence a behaviour by using situations structured to exert control over that behaviour)
- **Reinforcement:** types of positive reinforcers to reward behaviour – consumable, enjoyable activity, manipulative incentives, possessional, and social reinforcers
- **Changing Self-Talk:** [Rational-Emotive Therapy](#) - close connection between what people say to themselves and how they feel; [Meichenbaum's Self-Instructional Methods](#) - self instructions and positive affirmations; [Blocking or Thought Stopping](#) - purposely stopping negative thoughts to help concentrate on positive steps to behaviour change

# Making Behaviour Change

## Making Choices for Change: **DECIDE**

- **D**ecide in advance what the problem is.
- **E**xplore the alternatives.
- **C**onsider the consequences.
- **I**dentify your values.
- **D**ecide and take action.
- **E**valuate the consequences.

## Goal Setting and Behaviour Change: **SuPeR SMART**

- **S**elf-controllable
- **P**ublic
- **R**ewards
- **S**pecific
- **M**easurable
- **A**adjustable
- **R**realistic
- **T**ime-based



# DRUGS, SMOKING, ALCOHOL AND CAFFEINE



# Addiction

- Persistent compulsive dependence on a behaviour or substance
- Excessive use of a substance or behaviour
- Persistent desire to cut down or control use
- Frequent incapacitation due to use
- Use of the substance or behaviour to avoid withdrawal symptoms
- Physiological & psychological dependence are intertwined
- **Signs of Addiction:** compulsion, loss of control, negative consequences, denial

# Types of Drugs

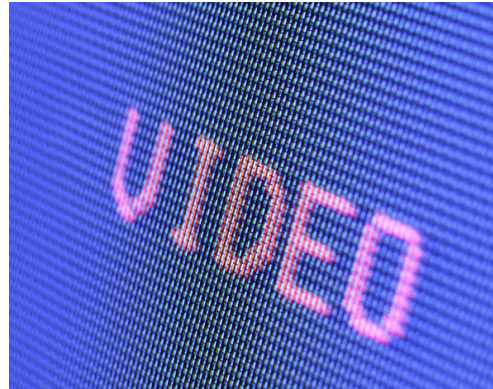
- Each **category** includes drugs that stimulate, depress, produce hallucinations, or alter mood (psychoactive drugs):
  - Prescription drugs
  - Recreational drugs
  - Over-the-counter drugs
  - Herbal preparations
  - Illicit (illegal) drugs
  - Commercial preparations



***Do you think marijuana  
should be legalized for  
recreational use?***



# Video: Impact of Drugs



- Crack Babies – USA (10:45)  
<http://www.youtube.com/watch?v=v6e5ethjp1o>
- Crystal meth (2:41)  
<http://www.youtube.com/watch?v=LsHBcQEe4iE&feature=fvwrel>

INDEPTH: DRUGS

## Point for point: Canada's needle exchange programs

CBC News Online | Oct. 27, 2004

**Needle exchange programs exist** to provide clean needles and syringes for injection drug users. Health experts say hypodermic needles can harbour more than 20 blood-borne diseases, including HIV, and hepatitis B and C. Almost half of the country's new HIV infections were among injection drug users. It's estimated an injection drug user will inject about 1,000 times a year.

The first official needle exchange program in Canada began in 1989 in Vancouver. Within a few months, similar programs sprouted up in Montreal and Toronto. Over the years, community health groups, helped by provincial and federal funding, have created more than 100 exchange programs in the country. Ontario has the most comprehensive network of programs with 16.

Critics of such programs say they encourage people to use illegal drugs and result in more needles being dumped in public places.

According to the Centre for Addiction and Mental Health (CAMH), which looked at several surveys, needle exchange programs (NEPs):

- Reduce the transmission of disease in drug users.
- Do not increase injection drug use.
- Do not increase the number of needles discarded (NEPs collect more needles than they give out).



# *What do you think about needle exchange programs?*



<http://www.cbc.ca/news/background/drugs/needleexchange.html>



uOttawa

## Solutions for Drug Abuse

- Upward trend in overall rate of drug offences
- Multimodal approach is best – teach about use, misuse, and abuse
- Often scare tactics and moralizing are unsuccessful
- Teach people to control drugs and about the influence of set and setting, and reinforce self-esteem
- Drug use has been around for thousands of years and is unlikely to disappear in the near future

# Tobacco Smoking

- Smoking is the most important cause of preventable illness, disability and premature death
- **Nicotine:** stimulant chemical in tobacco products
- Smoking is the most common form of tobacco use delivers strong dose of nicotine plus 5,000 chemicals
- Canadians are smoking less – Since 1966, down from 54% men and 28% of women TO 20% of men and 16% of women





# Smoking

- Smoking causes chemicals to condense on lungs to form tar; and heat from tobacco smoke harms body tissues
- Carbon monoxide in tobacco smoke is 800 times higher than safe levels
- Stimulates central nervous system and adrenal glands
- Reduces appetite, increases heart rate and respiratory rate, and constricts blood vessels leading to increased blood pressure and risk of blood clots
- Smokers have a higher risk of developing: coronary heart disease, peripheral vascular disease (circulatory problems), aneurysm, high cholesterol (LDL), lung cancer, cancer of the mouth/throat/voice box, cancer of pancreas, chronic obstructive pulmonary disease (COPD)

## Smoking – A learned behaviour

- Begins with perception that smoking is a normal behaviour
- Transition from trying smoking to smoking every day takes approximately 2 to 3 years
- 85% of smokers start before age of 16 years
- Tobacco advertising aimed at youth, especially young women, try to convey it is okay to smoke, increase the rate of smoking, and hinder quitting

# Environmental Tobacco Smoke (ETS)

- **Two types:** 1) mainstream smoke and 2) second-hand smoke (poses significant risk)
- **Passive smokers:** people who breathe smoke from someone else's smoking
- Estimated to cause the most deaths of all environmental pollutants
- Exposed children have greater risk of developing respiratory problems
- Smoking is now illegal in many public places (public health policy)

# Quitting – Smoking

- **Breaking the Nicotine Addiction**

- One of the toughest addictions to overcome
- Nicotine withdrawal may include: nausea, headaches, irritability, restlessness, and intense cravings for tobacco
- Nicotine replacement products may help some people
- Aversion therapy (anti-smoking therapy)

- **Benefits of Quitting**

- The body begins to repair immediately and many ex-smokers report more energy and better sleep
- After 1 year, risk for lung cancer and stroke decrease and other risks are reduced with time

# Alcohol Consumption

- 79.3% of Canadians consume alcohol → Beer is most popular
- Alcohol use or abuse, and alcoholism is related to a wide variety of negative health outcomes including morbidity, mortality, and disability
- 10% of people report harming themselves due to drinking and 32.7% report being harmed by someone else's drinking in the past year
- **Drinking guidelines (per week)**
  - Men: maximum 14 standard-sized drinks. 30% report they exceed the guidelines.
  - Women: maximum 9 standard-sized drinks. 15% report they exceed the guidelines
  - Maximum 2 drinks per day (men and women)
- ❖ *Absorption is affected by the amount consumed in a given time; size, sex, body build, and metabolism; type and amount of food in the stomach; mood; % body fat*

# Behavioural Effects – Alcohol

- Effects vary with the setting and with the individual
- **Blood Alcohol Concentration (BAC):** the ratio of alcohol to total blood volume
- Some people develop a learned behavioural tolerance to alcohol (when drinkers modify their behaviour to appear sober despite a high BAC)

# Drinks	BAC	Psychological / Physiological Effects
1	0.02-0.03%	No overt effects, slight mood elevation
2	0.05-0.06%	Feeling of relaxation, warmth; slight decrease in reaction time and in fine-muscle coordination
3	0.08-0.09%	Balance, speech, vision, and hearing slightly impaired; feelings of euphoria, increased confidence; loss of motor coordination
10	0.30%	Severe intoxication; minimum conscious control of mind and body

# Effects of Alcohol

- **Immediate effects**
  - Central nervous system depressant
  - Diuretic (increases urinary output, but body retains water in the muscles and cerebral tissues)
  - Water pulled from cerebrospinal fluid (fluid within the brain and spinal cord) leads to dehydration of the mitochondria
  - Irritant to gastrointestinal system (e.g., indigestion, heartburn)
  - Hangover, including symptoms such as headache, upset stomach, thirst, diarrhea
  - Drug interactions (e.g., with prescription or other drugs)
- **Long-Term Effects**
  - Effects on the nervous / cardiovascular system, liver disease, cancer
  - Other Effects (e.g., inflammation of pancreas, decreased nutrient absorption)

## Alcohol and Risk Factors

- Excessive alcohol use is a known risk factor for several cancers: mouth, larynx, esophagus and liver.
- Alcohol is an identified risk factor for breast cancer – with each 10 g (about 1 drink) of alcohol per day, the risk of breast cancer increases by about 7% (Aronson, 2003).
- Impaired driving is also a primary cause of avoidable injuries and death. In 2006, it was estimated that 3,122 people were killed in motor vehicle crashes in Canada. (MADD Canada, 2009)

Global burden of disease and injury (Rehm et al., 2009)

Alcohol: a recently identified risk (Aronson, 2003)

Estimating the presence of alcohol (MADD Canada, 2009)

***Why does Professor Gulati drink an ice cap from Tim Hortons daily?!?***



# Caffeine

- Most widely consumed drug in Canada
- May cause wakefulness, irregular heartbeat, insomnia, dizziness, nausea, indigestion
- Caffeine levels vary with product
- **Caffeine Addiction:** To avoid let down after consuming coffee, people may drink more and develop a dependency
  - **Caffeinism** – caffeine intoxication brought on by excessive use → symptoms include chronic insomnia, irritability, anxiety, muscle twitches, and headaches



Ask a health expert

## How much caffeine is it okay to consume in a day?

Leslie Beck

Published Wednesday, Nov. 16, 2011 12:01AM EST

Last updated Wednesday, Nov. 16, 2011 10:07AM EST

### The question

How much caffeine is it okay to consume in a day?

### The answer

Health Canada contends that a maximum intake of 400 milligrams of caffeine per day is safe for healthy adults – an amount found in about three small (8 ounce) cups of coffee.

Women of childbearing age should limit caffeine intake to 300 milligrams per day as some evidence suggest that heavy caffeine intakes increase the risk of miscarriage.

During pregnancy, I advise women to consume no more than 200 milligrams of caffeine per day.

Children should not consume more than 45 milligrams (4 to 6 years), 62.5 milligrams (7 to 9 years) and 85 milligrams (10 to 12 years) of caffeine per day.

Caffeine may have some health benefits. The caffeine in coffee helps treat asthma symptoms, enhances physical performance and boosts mental alertness. Coffee's protective effects against gallstones and Parkinson's disease are also attributed to caffeine.

But caffeine is not for everyone. Studies suggest that excess caffeine can boost blood pressure and heart rate, a concern for people with high blood pressure and heart disease.

In postmenopausal women who don't get enough calcium, consuming more than 400 milligrams of caffeine per day has been linked with having a lower bone density. (Caffeine increases the amount of calcium your kidneys excrete in the urine.)

And because individual caffeine tolerance varies widely, even a small amount can cause sleep disruptions, headaches and anxiety in some people.

If you need to cut back on caffeine, start by avoiding caffeine in the afternoon. Choose caffeine-free or decaffeinated beverages like herbal tea, mineral water, fruit and vegetable juice or decaffeinated coffee.

Reduce your caffeine intake gradually over a period of two to three weeks to help prevent withdrawal symptoms such as headache and muscle soreness.

<http://www.theglobeandmail.com/life/health/ask-a-health-expert/ask-a-dietitian/how-much-caffeine-is-it-okay-to-consume-in-a-day/article2232148/>



uOttawa

# Health Consequences of Long-Term Caffeine Use

- No strong evidence to suggest moderate intake (less than 3 cups of coffee or 300mg per day) is harmful
- People with certain health conditions need to be careful (e.g., those with irregular heartbeat, stomach ulcers, etc)