

Lesson 3: Risks and Consequences of Substance Use

Introduction

This lesson focuses on the reasons for substance use and abuse among adolescents. It addresses the signs or behaviours to look for when suspecting substance use, and the potential risks and consequences of substance use and abuse. Students also explore situations and behaviours that may make them more resistant to the risks of becoming involved in substance misuse.

AFM's educational resources emphasize that, regardless of what drug is being used or abused, "a drug is a drug is a drug," and alcohol is a drug. No specific drug is "safer" for adolescents to use than another. All drugs are potentially hazardous for youth. It is important to examine the risks of harmful use of all substances, whether they are legal or illegal.

According to the Canadian Centre on Substance Abuse, "alcohol is by far the most common substance used by youth and binge drinking is common. Cannabis is the second most common substance – and the first among illicit drugs – used by Canadian youth. Cannabis use is now more common than cigarette smoking among students" (7). Teachers are encouraged to address these issues as part of the lesson.

REFERENCES



For additional information, refer to the following resources:

Addictions Foundation of Manitoba. "Youth." *Services*.

<www.afm.mb.ca/Services/youth.htm>.

The Canadian Centre on Substance Abuse (CCSA). *Substance Abuse in Canada: Youth in Focus*. Ottawa, ON: CCSA, September 2007. Available online at

<[www.ccsa.ca/CCSA/EN/Research/Substance Abuse in Canada/SubstanceAbuseinCanada.htm](http://www.ccsa.ca/CCSA/EN/Research/Substance%20Abuse%20in%20Canada/SubstanceAbuseinCanada.htm)>.

For website updates, please visit Websites to Support the Grades 11 and 12 Curriculum at <www.edu.gov.mb.ca/k12/cur/physhlth/>.



Specific Learning Outcomes

- 11.SU.3 Examine factors that influence decisions regarding substance use and abuse.
- 11.SU.4 Use reliable information in making healthy decisions for helping self and/or others regarding substance use and abuse.



Key Understandings

- Adolescents may use substances for different reasons.
 - Risk and protective factors influence whether an adolescent becomes involved in or avoids harmful use and abuse of substances.
 - There are consequences to using any kind of drug. No specific drug is “safer” for adolescents to use than another.
 - Abstinence and harm reduction are both important messages in substance prevention programs.
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Essential Questions

1. What are some of the reasons people use drugs?
 2. What are the risk factors and protective factors associated with someone becoming involved in or avoiding harmful use and abuse of substances?
 3. How can a decision-making model be used to determine the risks and consequences related to different case scenarios involving substance use and/or abuse?
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Background Information

Why Young People Use Substances

Some teenagers begin to use alcohol and other drugs for a variety of reasons, and some are more at risk than others of becoming frequent users or abusers of substances. The message to students should always be that no specific drug is “safer” for adolescents to use than another. Abstinence should always be the goal; however, to reduce harm to self or others, there may be a need to provide information or programming that targets risky patterns of drug use.



Suggestion for Instruction / Assessment

Why Do Teenagers Use Alcohol or Other Drugs?

DISCUSSION QUESTIONS

- Why do you think some adolescents choose to use alcohol or other drugs?
- Why do some students choose not to use alcohol or other drugs?
- Why might some students choose to experiment with alcohol or other drugs?
- Why might some students go beyond experimentation?
- What are some positive aspects of drug use?
- What are some negative aspects of drug use?
- If people know there are negative health effects, why do they continue to use and abuse substances?

Have students write down answers on a sheet of paper.

Students may suggest a variety of reasons why young people choose to use substances. For example, young people may want to use alcohol or other drugs to

- experiment or satisfy curiosity
- celebrate
- oppose authority
- experience pleasurable effects
- feel a sense of belonging or social acceptance and avoid rejection
- boost confidence and/or loss of inhibitions
- relieve pain
- relieve or cope with emotional problems (e.g., anger, stress, anxiety, boredom, depression)
- rebel against or express alienation from mainstream society
- follow someone's example
- emulate media portrayals (e.g., drugs may be glamorized and normalized)
- take advantage of ease of availability

REFERENCES



For background information and current statistics on alcohol and other drug involvement to support discussions, refer to the following organizations and resources:

Addictions Foundation of Manitoba. *Services*. <www.afm.mb.ca/Services/youth.htm>.

Canadian Centre on Substance Abuse (CCSA). <www.ccsa.ca/ccsa/>.

Manitoba Addictions Awareness Week (MAAW) Committee. "High on Life: Everybody Wins!" *Manitoba Addictions Awareness Week: Resource Kit*. Winnipeg, MB: MAAW Committee, October 2007. Published annually. The kit is available online at <www.afm.mb.ca/maaw/Resource_Kit/resource_kit.html>.

For website updates, please visit Websites to Support the Grades 11 and 12 Curriculum at <www.edu.gov.mb.ca/k12/cur/physhlth/>.



Background Information

Risk and Protective Factors

When trying to understand why adolescents do or don't become involved in substance use, it is helpful to be knowledgeable of the factors that may present risks for or protection from the harmful use and abuse of substances. The Alberta Alcohol and Drug Abuse Commission, in its report entitled *An Overview of Risk and Protective Factors: The Alberta Youth Experience Survey 2002* (George, Dyer, and Leven), outlines risk and protective factors related to substance misuse under the following five domains or categories: individual/personality, family, peers, school, and community/environmental.

It is impossible to predict categorically the development of substance misuse. In general, however, research suggests that individuals who experience multiple risk factors and consequently few protective factors are at greater risk of substance misuse than are those who experience few risk factors.

REFERENCE



For additional information, refer to the following report:

George, Sheena, Art Dyer, and Phyllis Leven. *An Overview of Risk and Protective Factors: The Alberta Youth Experience Survey 2002*. Edmonton, AB: Alberta Alcohol and Drug Abuse Commission (AADAC), 2003. Available online at <www.aadac.com/documents/TAYES_overview.pdf>. See "Chapter Two: Risk Factors" and "Chapter Three: Protective Factors."

For website updates, please visit Websites to Support the Grades 11 and 12 Curriculum at <www.edu.gov.mb.ca/k12/cur/physhlth/>.



Suggestion for Instruction / Assessment

Risk and Protective Factors Related to Substance Misuse

The chart provided in RM 5–SU illustrates factors that may predict risk of and protection from initial drug misuse and its subsequent escalation. Have students suggest risk factors and protective (resilience) factors in the blank columns of the chart provided. Discuss the suggestions as a class, and have students continue to fill in their own charts with the suggestions provided by classmates. Finally, add any factors that are missing from the student suggestions to complete the chart.



Refer to RM 5–SU: Risk and Protective Factors Related to Substance Misuse.



Suggestion for Instruction / Assessment

Risk Perception

Provide students with an opportunity to assess their own risk perception for specific behaviours and to learn that their actions can have both short- and long-term consequences. After discussing the concept of risk related to health topics, have students examine risk perception and risk behaviour by viewing specific behaviours or scenarios on a risk continuum ranging from **not at all risky** to **very risky**, as described in RM 6–SU.



Refer to RM 6–SU: Techniques for Challenging Individual Risk Perception.

* Source: Gast, Julie, and Sarah Hodson. "Teaching Techniques for Challenging Individual Risk Perception." *Journal of Health Education* 31.4 (July/Aug. 2000): 244–46. Adapted with permission. Permission is granted by the American Association for Health Education/American Alliance for Health, Physical Education, Recreation and Dance which owns and publishes the *American Journal of Health Education*.



Background Information

Health Risks and Consequences of Substance Abuse

All the decisions we make have consequences, both positive and negative. In some cases the risks or consequences are greater than in others. The DECIDE Model, which students have used in previous grades, promotes looking at the pros and cons of different choices

and solutions and basing decisions on current and relevant health information and family/cultural values.

The process of using the DECIDE Model to make decisions involves six steps:

- D Define the topic or problem/issue.
- E Explore the alternatives or options. (What are your choices?)
- C Check alternatives. (List pros and cons for each alternative/option.)
- I Identify possible solutions. (Pick the best choices.)
- D Decide and take action. (Make the best choice.)
- E Evaluate and revise.

REFERENCE



For more information on consequences or harmful effects of drugs, refer to the following website:

Health Canada. "What Are the Harmful Consequences of Drug Use?" *Straight Facts about Drugs and Drug Abuse*. Ottawa, ON: Minister of Public Works and Government Services Canada, 2000. Available online at <www.hc-sc.gc.ca/hl-vs/pubs/adp-apd/straight_facts-faits_mefaits/index_e.html>.

For website updates, please visit Websites to Support the Grades 11 and 12 Curriculum at <www.edu.gov.mb.ca/k12/cur/physlth/>.



Suggestion for Instruction / Assessment

Consequences

Encourage students to think about different consequences related to drinking and driving by having them participate in the role-play scenario presented in RM 7-SU. The scenario is intended to allow students to “experience” the consequences of one person’s decision to drink and drive, to identify the many decisions that lead to the “fatal” outcome, and to recognize how changing one decision could lead to a different consequence.

When posing questions at the end of the role play, ask students to present their comments using the steps of the DECIDE Model, where applicable. Using the DECIDE Model can challenge students to think about the consequences or alternatives related to the risk behaviour of drinking and driving (by listing pros and cons for **each** alternative/option in step “C”). It can help them to “see” the alternatives or consequences of the decision and to recognize other options and their more favourable outcomes.



Refer to RM 7-SU: Consequences.

REFERENCE



For a blackline master (BLM) of the DECIDE Model, refer to BLM G-5 DECIDE Model in the following curriculum document:

Manitoba Education, Citizenship and Youth. *Senior 1 and Senior 2 Physical Education/Health Education: A Foundation for Implementation*. Winnipeg, MB: Manitoba Education, Citizenship and Youth, 2004. BLM G-5: DECIDE Model is available online at www.edu.gov.mb.ca/k12/cur/physhlth/foundation_s1-2/blms-rms/.



Suggestion for Instruction / Assessment

Unintended Consequences

The death of Elvis Presley in 1977 at the age of 42 illustrates the harmful consequences of prescription drug use. Have students consider the risks and consequences of drug combinations by problem-solving a case study based on Elvis Presley, as presented in RM 8-SU. Through this problem-solving activity, students can develop inferential skills and draw logical conclusions regarding drug use and abuse.



Refer to RM 8-SU: Unintended Consequences.



Suggestion for Instruction / Assessment

Sam’s Story

Have students read and analyze Sam’s Story, a teen’s story of addiction and escape provided in RM 9-SU, and think about the serious consequences of the choices or decisions that were made.

After students have read Sam’s Story, ask them to respond to the following questions:

NOTE TO STUDENT

Although Sam’s Story focuses on crystal meth, teachers are reminded to balance this discussion with information on the drugs that are causing the most problems for youth: alcohol and marijuana.

1. Why do you think Sam started using substances?
2. Why do you think Sam’s drug use escalated?
3. What were the indications that Sam was having trouble with drugs?
4. Why did it take so long for Sam to get help?
5. Why do you think Sam was relapsing?
6. Were there other underlying reasons for Sam’s drug use?
7. What did Stephanie and Mike do to help Sam?
8. Do you think Sam’s home life was normal? Why or why not?
9. What realizations did Sam come to in the end?
10. What do you think Sam meant by the following statement?
 “Adulthood means I’ve got to be responsible now, do stuff for me my parents can’t.”



Refer to RM 9–SU: Sam’s Story.

REFERENCE



Sam’s Story is available on the following website:

Heredia, Christopher. “Sam’s Story: Walnut Creek Teen’s Road from Meth.” *San Francisco Chronicle* 6 May 2003: A–1. Available on the SFGate.com website at www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2003/05/06/MN202176.DTL.

For website updates, please visit Websites to Support the Grades 11 and 12 Curriculum at www.edu.gov.mb.ca/k12/cur/physhlth/.

RM 5–SU: Risk and Protective Factors Related to Substance Misuse

Domains and Factors of Risk and Protection		
Domain	Risk Factors	Protective Factors
Individual/ Personality	▪	▪

Family	▪	▪
Peers	▪	▪
School	▪	▪
Community/ Environmental	▪	▪

Continued

**RM 5–SU: Risk and Protective Factors Related to Substance Misuse
(Continued) (Answer Key)**

Domains and Factors of Risk and Protection*		
Domain	Risk Factors	Protective Factors
Individual/ Personality	<ul style="list-style-type: none"> ▪ physical trauma ▪ temperament ▪ early aggressive behaviour ▪ early initiation of substance use ▪ past trauma or abuse ▪ lack of commitment to societal values or norms ▪ poor self-concept 	<ul style="list-style-type: none"> ▪ strong personal social skills/esteem ▪ resilience

Family	<ul style="list-style-type: none"> ▪ living arrangements ▪ poor parental monitoring and supervision ▪ poor attachments ▪ poor communication about rules and expectations ▪ family conflict ▪ favourable attitudes toward teen alcohol, other drug use, and gambling ▪ parental alcoholism and drug use 	<ul style="list-style-type: none"> ▪ parental monitoring and supervision ▪ emotional support ▪ presentation of clear, pro-social normative expectations ▪ positive bonding
Peers	<ul style="list-style-type: none"> ▪ favourable peer attitudes toward drugs and gambling ▪ peer substance use ▪ peer pressure/rejection 	<ul style="list-style-type: none"> ▪ affiliation of close friends who are not drug users ▪ positive bonding
School	<ul style="list-style-type: none"> ▪ academic failure ▪ lack of commitment to school 	<ul style="list-style-type: none"> ▪ participation in extracurricular activities ▪ social support networks ▪ high social and academic expectations ▪ positive bonding
Community/ Environmental	<ul style="list-style-type: none"> ▪ characteristics of the community ▪ availability of substances ▪ community laws/norms favourable to drug use and gambling 	<ul style="list-style-type: none"> ▪ community sponsored activities ▪ activities based on religion ▪ positive bonding

* Source: George, Sheena, Art Dyer, and Phyllis Leven. *An Overview of Risk and Protective Factors: The Alberta Youth Experience Survey 2002*. Edmonton, AB: Alberta Alcohol and Drug Abuse Commission (AADAC), 2003. 18, 22–23. <www.aadac.com/documents/TAYES_overview.pdf>. Used with permission of the Alberta Alcohol and Drug Abuse Commission (www.aadac.com) 2008.

RM 6–SU: Techniques for Challenging Individual Risk Perception*

The purpose of this learning strategy is to allow students to assess their own risk perception for specific behaviours and to learn that their actions can have both short- and long-term consequences.

Risk Continua

Risk continua can be used for a variety of content areas in the classroom. For this learning experience, students can use the risk continuum to discuss risks associated with alcohol use, tobacco use, prescription drug use, and illegal drug use, consumer health, violence, and so on (see Content Areas and Risk Continuum).

Content Areas and Risk Continuum		
Alcohol use	Abstainer	Binge drinking
Tobacco use	Abstainer	Frequent smoker
Prescription drug use	Abstainer	Abuser/addict
Illegal drug use	Abstainer	Addict/criminal
Violence	Conflict resolution	Abusive behaviour
Consumer health	Listening to a health educator	TV talk show

Types of Risk

Before introducing the risk continuum, discuss the concepts of relative risk and risk taking.

- Ask students to think of examples of **helpful risks** and **harmful risks**. Write all the helpful risks on one side of the whiteboard and all the risks viewed as potentially harmful on the other side of the whiteboard (see Types of Risk). This can help students see that there are always risks in life, and that while some risks are health promoting, others are health prohibiting.
- At this time, discuss whether risk can vary, depending on whether the behaviour occurs only once or whether it is habitual. For example, does binge drinking lead to the negative health consequences associated with long-term bingeing? Is smoking occasionally a risk factor for respiratory problems?

Continued

* Source: Gast, Julie, and Sarah Hodson. "Teaching Techniques for Challenging Individual Risk Perception." *Journal of Health Education* 31.4 (July/Aug. 2000): 244–46. Adapted with permission. Permission is granted by the American Association for Health Education/American Alliance for Health, Physical Education, Recreation and Dance which owns and publishes the *American Journal of Health Education*.

RM 6–SU: Techniques for Challenging Individual Risk Perception (Continued)

Types of Risk	
Helpful Risks	Harmful Risks
Starting a relationship	Trying drugs
Learning to ski	Smoking cigarettes
Starting a new job	Selling drugs
Participating in class	Drinking and driving
Beginning to exercise	Unhealthy relationships
Declining to participate in a harmful risk	Becoming part of a questionable peer group

- Next, ask students to assess the various types of consequences for risk taking. These include physical risks, social risks, emotional risks, and legal risks (see Risks Associated with Drinking Alcohol). Also tell students that health-related behaviours can have both short- and long-term consequences. With drug use, for example, the physical risks may include increased anxiety, sleepiness, abnormal vital signs, and irritability, which would be classified as long-term physical risks. Social risks may include social alienation and loss of friends. Emotional risks may include fighting with parents or friends about drug use. Legal risks may include problems associated with theft or trafficking.

Risks Associated with Drinking Alcohol		
Physical risk	Cirrhosis	Long-term risk
Social risk	Impaired judgement	Short-term risk
Emotional risk	Increased depression/ violence	Short- or long-term risk
Legal risk	Driving while intoxicated	Short- or long-term risk

Risk Perception

After discussing the concept of risk related to health topics, have students examine risk perception and risk behaviour by viewing specific behaviours or scenarios on a risk continuum ranging from **not at all risky** to **very risky**.

Continued

RM 6–SU: Techniques for Challenging Individual Risk Perception (Continued)

1. Divide the class into two or three groups, depending on class size. Give each group a set of identical index cards with specific health behaviours written on each card. The behaviours should vary in degree of risk from not at all risky to very risky. Each card will have a different health behaviour written on it. Provide each student in each group with a card so that everyone can participate. It is also good to generate discussion by adding behaviours that may be ambiguous in terms of risk. (For example, when using a risk continuum on drug use behaviours, one card may read “drinking while on a date.” Although the example may not be an obvious risk factor, it typically results in a good discussion of how drinking may impair reasoning ability related to risky sexual behaviours.) Next, instruct each group of students to form a line from least risky to most risky behaviour, without allowing the other groups to see what order they have developed. Finally, have the groups stand across from each other so that they can easily compare the order of their cards. Discuss the rationale and any differences in order among the groups.
2. Have students form groups and supply them with index cards. Provide groups with health-related topics already addressed in class, and have them find sources of information for their assigned topics. Ask each group to create its own risk continuum by writing a source of health information on each blank index card provided. Again, remind students that they should have sources of information that vary from not risky at all to very risky. An example of a risky source of information may be television talk shows or advertisements, whereas a safe source may be a health educator or a health professional. Ask students to include some controversial or debatable sources of information, such as family members. When this is completed, have groups present their risk continua to the class and discuss whether the students agree with the order of the cards, and explain why or why not.

The benefit of having students create their own cards is that the teacher is able to assess learning by examining the accuracy of the content and whether risk perception is being demonstrated accurately. Additionally, students may come up with risk behaviours or scenarios that the teacher would likely miss. Risk continua also enable the teacher to correct misperceptions in risk perception, regardless of who creates them.

RM 7–SU: Consequences . . . To Drive or Not to Drive, That Is the Decision*

“Consequences” is a role-play scenario about a “Drunk Person,” his or her friends, a party, alcohol, and the decision to drive after drinking. The entire class participates, including the instructor. To minimize student apprehension about participating in the role-play scenario, the instructor plays the role of the “Drunk Person.”

Materials

- six small pieces of paper for each student/participant
- one small paper bag or basket
- the following signs (computer generated or hand printed on letter-size paper):
 - one sign: “Drunk Person”
 - five signs: “Drunk Person’s Friend”
 - one sign: “Host”
 - three signs: “Friend’s Sober Ride”
 - one sign: “Driver of Other Car”
 - five signs: “Passenger in Other Car”
 - three signs: “Coma”
 - two signs: “Dead”

Procedure

Give each student six small pieces of paper (or one large piece and have them tear it into six pieces). Instruct them to put their name on each piece of paper. Collect one of the six name papers from each student and put the papers in a bag or basket. Have students exchange their five remaining name papers with five different people in the class. This results in each student having five different name papers.

Tell the following story by reading the *italicized* text to the class. Follow the instructions. (The instructions are for a class size of 35 to 45 students. For smaller classes, substitute the “five” with “three”).

Continued

* Source: Hayden, Joanna. “Consequences . . . To Drive or Not to Drive, That Is the Decision.” *Journal of Health Education* 31.3 (May/June 2000): 175–76. Adapted with permission. Permission is granted by the American Association for Health Education/American Alliance for Health, Physical Education, Recreation and Dance which owns and publishes the *American Journal of Health Education*.

RM 7–SU: Consequences . . .
To Drive or Not to Drive, That Is the Decision (*Continued*)

The Story

It's Friday night. I'm going to a party and I'm getting wasted!

Tape the "Drunk Person" sign to your chest.

I'm taking five friends with me to the party.

Pick five names from the bag. As these students join you at the front of the classroom, give each a "Drunk Person's Friend" sign to hold. Ask them to give all their name papers to students who remain seated.

When we get to the party, the host meets us at the door with a bottle of beer.

Pick one name from the bag. This student joins the group at the front of the classroom and is given the "Host" sign to hold. This student gives all his or her name papers to students who remain seated.

The host informs everyone that there is plenty of booze and snacks (potato chips, pretzels, cheese, crackers), and encourages us to eat, drink, and be merry! So we eat and drink, and drink, and drink . . . , and now it's time to go home. Two of my friends refuse to get into the car with me. They call other friends, who did not come to the party, for rides home.

Choose which two of the friends need rides, and then ask which of the students still sitting have the name papers of these two students. Usually more than one student does, so pick one "Friend's Sober Ride" sign for each "Drunk Person's Friend" who needs a ride. Have these two students join you at the front of the room, and give them the "Friend's Sober Ride" signs.

My three friends and I are finally on our way home. It's late, and I'm really wasted. But I've been wasted like this before. Actually, I think I drive pretty okay when I'm drunk, which is often. Besides, I go real "slow."

At the same time that the "Drunk Person" and the "Drunk Person's Friends" are on their way home from the party, another group of people are on their way home from a wedding.

Pick one name from the bag and have this student join the others at the front of the room and hold the sign "Driver of Other Car." Pick five more names and have these students join the rest at the front of the room, holding the "Passenger in Other Car" signs.

I know these roads really well. The entrance ramp for the highway is right here. What's that in front of me with those bright lights?

Continued

RM 7–SU: Consequences...
To Drive or Not to Drive, That Is the Decision (*Continued*)

CRASH!!!!!!!!!!!!

From among the “Passengers in Other Car” and the “Drunk Person’s Friends,” give three people “Coma” signs and two people “Dead” signs. Ask all the students still sitting in the classroom and holding name papers for any of the crash victims to join the group at the front of the room.

All those who were just asked to join the group are the fathers, mothers, sisters, brothers, cousins, friends, and neighbours of the crash victims. Look around. How many people are still sitting?

(Short pause.)

Not many.

(Usually very few and sometimes none.)

How many people were affected by MY decision to drink and drive?

Wait a few moments. Let the students look around at all the empty chairs. There is usually silence in the room at this point; the effect is eerie. With the students still standing at the front of the room, ask the following questions. Have students answer the questions and explain their responses using the steps of the DECIDE Model.

Ask the Host:

What other decisions could you have made that would have changed the consequences?

Ask the Friends:

What other decisions could you have made that would have changed the consequences?

Finally:

What other decisions could the “Drunk Person” have made that would have changed the consequences?

Have students return to their seats. Begin discussion of risks and consequences of substance use.

RM 8–SU: Unintended Consequences: A Case Study of Elvis Presley*

Background Information

The official autopsy of Elvis Presley found eight different prescription drugs in his body with no trace of any illegal drugs such as heroin, cocaine, or hashish often found in overdose cases. Thomas Noguchi, a Los Angeles coroner, believes that Elvis's death was accidental – he simply did not realize the effect of drugs combined in the body.

According to Noguchi, Elvis died with the following drugs in his system:

- antihistamine (prescription)
- codeine (prescription for pain)
- Demerol (prescription narcotic used as a sedative)
- tranquilizers (prescription including Valium)
- a sedative-hypnotic prescription for insomnia

Not one prescription drug was at a toxic level. Medications found were within the therapeutic range and individually did not constitute an overdose.

Prescription drugs even at non-toxic levels can be fatal. Dr. Cyril Wecht, a respected pathologist, said Elvis “was a walking drugstore” and death was caused by “polypharmacy” – the combined reaction of several prescription drugs. The combination of prescription drugs depressed Elvis's central nervous system: the brain, followed by the heart, and finally the lungs (Noguchi).

The prescribing physician, George Nichopoulos, testified before the Tennessee Board of Examiners on charges of misconduct in his treatment of Elvis. He said Elvis gobbled drugs “from the time he woke up in the morning until the time he went to sleep at night” (Noguchi). He testified that Elvis was a psychological addict treated in hospitals in 1973 and 1974 for detoxification from Demerol (painkiller) and other drugs, and that Elvis travelled with three suitcases filled with drugs for himself and his entourage.

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DEFINITIONS

additive effect

The sum or cumulative effects of two or more pharmaceutical substances mixed together.

synergistic effect

Any hyper-additive effect produced by a combination of two or more drugs, which may double or triple the effect of another.

Reference: Noguchi, Thomas. *Coroner at Large*. New York, NY: Simon & Schuster, Inc., 1985.

* Source: Janowiak, John. “Unintended Consequences: A Case Study of Elvis Presley.” *Journal of Health Education* 30.6 (Nov./Dec. 1999): 364–66. Adapted with permission. Permission is granted by the American Association for Health Education/American Alliance for Health, Physical Education, Recreation and Dance which owns and publishes the *American Journal of Health Education*.

RM 8–SU: Unintended Consequences: A Case Study of Elvis Presley (*Continued*)

One week before a concert was scheduled, Nichopoulos prescribed a protocol program of strong doses of amphetamines, depressants, and painkillers (consisting of 680 pills, 20 cubic centimetres of liquid central nervous system depressants, stimulants, and painkillers). Placebos were often substituted for prescribed drugs; Elvis obtained the drugs from other sources. The jury found Nichopoulos innocent—as he could not control Elvis’s drug use.

The diagnosis: Elvis died of a heart attack caused by a combination of drugs causing a fatal irregular heartbeat.

Learning Activity

The following problem-solving activity, based on the poly-drug use of Elvis Presley, illustrates the risks and consequences of drug use. Prior to the problem-solving, ask students to list some of the OTC drugs commonly found in homes. Have students determine the general drug classifications of these OTC medications. Inform them that responsible drug use occurs in a controlled manner in order to treat pain or other symptoms as prescribed, whereas drug abuse is the deliberate use of a chemical for other than the intended medical purposes. Students can also compile a list of five positive reasons and five negative reasons for taking prescription drugs.

This learning activity will take approximately one class period (45 minutes to 1 hour).

Purpose

This learning activity is designed to determine the risks and consequences of drug combinations. Through problem-solving the case of Elvis Presley, students can develop inferential skills, make judgments, and draw logical conclusions regarding drug use and abuse.

Important Concepts

1. Street drugs and prescription drugs are more potent and have more serious potential side effects than OTC drugs. Overuse of street/prescription drugs frequently creates new health problems as side effects.
2. The combined reaction to several drugs even at non-toxic levels can be fatal.

Continued

RM 8–SU: Unintended Consequences: A Case Study of Elvis Presley (*Continued*)

Method

Have students take turns reading to the class one paragraph from the following narrative.

Imagine that you have an overweight middle-aged male relative who takes the following prescription drugs:

- an antihistamine for allergies
- codeine and Dilaudid for pain
- Demerol as a sedative
- tranquilizers, including Valium
- a sedative-hypnotic for insomnia
- amphetamines for weight loss

Like so many people, he obsessively worries about his body. He started using amphetamines as appetite depressants to lose weight quickly for a role in a local play. By the time he made his first dramatic appearance, he was not only taking amphetamines, but was also wearing five-pound weights on his wrists and ankles during long, active rehearsals.

He currently suffers from insomnia due to problems at the office. His solution includes taking more sedatives, causing him to sleep longer, followed by amphetamines to stay on his feet and be alert at work. Consequently, his conversations with co-workers have become lengthy rambling monologues.

The amphetamines he takes each day also make him very talkative. His use of prescription drugs causes him to miss several days of work each month and seems to be radically affecting his job performance. A more serious problem recently showed itself in the results of a liver biopsy recommended by his doctor.

There was severe damage to the organ, and his liver was three times the normal size. In the past he was diagnosed with blood clots in his legs, hypoglycemia, an enlarged heart, and glaucoma. He was also susceptible to respiratory ailments and had a history of mild hypertension and some coronary artery disease. Over the years a wide variety of drugs had been prescribed for these disorders.

Continued

RM 8–SU: Unintended Consequences: A Case Study of Elvis Presley (*Continued*)

Because of his interest in pharmacology he often carried around a manual, describing all prescription drugs, their chemical makeup, recommended dosage, and side effects. Sometimes he would share his prescription drugs with others if their problems matched his.

He regularly checked dosages and side effects while mixing drugs the way bartenders mix drinks or the way chefs prepare an exotic dish. But drugs are different from alcohol and foods. One drug affected perception and that, in turn, sometimes determined through confusion how much of a second drug was taken, and so on, while the side effects overlapped and contradicted each other.

The combination of drugs did things that the drugs individually did not do. It was almost as if the drugs were acting in conspiracy against the taker. Nonetheless, he regarded his many prescriptions as medicine.

He had real problems – pain, insomnia, a tendency to obesity – and he had real medicine to take care of those problems. He also knew that these drugs made him feel good in ways that were hard to explain.

Knowing about your relative’s chaotic drug use, you are not surprised to hear that he recently died of a heart attack. The medical examiner said his death was due to “cardiac arrhythmia, an erratic heartbeat and severe cardiovascular disease.” His report stated that “these two diseases may be responsible for cardiac arrhythmia, but the precise cause was not determined and may never be discovered.”

The coroner’s autopsy report also stated that there were several different prescription drugs in the body but not one prescription drug in the body was at a toxic level. Medications found were in the therapeutic range and individually did not constitute an overdose.

Continued

RM 8–SU: Unintended Consequences: A Case Study of Elvis Presley (*Continued*)

Display a transparency of the Discussion Example (see following page). Divide the class into six groups. Ask each group to discuss and respond to one of the following questions:

1. What are the body's reactions to a combination of several prescription drugs taken simultaneously?
2. How can prescription drugs taken at non-toxic levels result in death?
3. In what ways could a combination of drugs have an adverse effect on the body?
4. What signs or symptoms would have indicated a problem drug use? Who should have helped the relative?
5. What drug-free alternatives could you have suggested to the relative to deal with the stated problems?
6. Would you ask the coroner to pursue the investigation into your relative's death for any reason(s)?

Inform the class that the problem-solving case study is based on the actual life of Elvis Presley, who died in 1977 at the age of 42. The reason given for his death was a cardiac arrhythmia suspected to be due to an interaction of an antihistamine, codeine, and Demerol (a painkiller), as well as Valium and several other tranquilizers. Prescription drug use sometimes results in fatal reactions.

Show a music video clip of one of Elvis's performances.

Explain that most OTC and prescribed drug treatments often mask symptoms or control health problems, or in some way alter the way organ systems work. Overuse of prescription drugs frequently creates new health problems as side effects. People need to understand that their headaches are not due to Aspirin deficiency. The lesson is that seemingly safe prescription drugs can be as fatal as illegal drugs if taken in combination. Persons taking more than one drug should monitor themselves carefully, in cooperation with a physician.

Continued

RM 8-SU: Unintended Consequences: A Case Study of Elvis Presley (*Continued*)

Discussion Example

A middle-aged relative takes the following prescription drugs:

- antihistamine (prescription)
- codeine (prescription for pain)
- Demerol (prescription narcotic used as sedative)
- tranquilizers (prescriptions including Valium)
- sedative-hypnotic (prescription for insomnia)

The coroner's autopsy report states that death was due to

- cardiac arrhythmia (irregular heartbeat)
- severe cardiovascular disease

The coroner's autopsy report also states:

- There were eight different prescription drugs in the body.
- Not one prescription drug was at a toxic level. Medications found were in the therapeutic range and individually did not constitute an overdose.
- There was no evidence that the drugs present in the body caused or made any significant contribution to the death.

Discussion Questions

(Use information from previous sections to help answer the following questions.)

1. What are the body's reactions to a combination of several prescription drugs taken simultaneously?
2. How can prescription drugs taken at non-toxic levels result in death?
3. In what ways could the combining of drugs have an adverse effect on the body?
4. What signs or symptoms would have indicated a problem drug use? Who should have helped the relative?
5. What drug-free alternatives could you have suggested to the relative to deal with the stated problems?
6. Would you ask the coroner to pursue the investigation into your relative's death for any reason(s)?

**RM 9–SU: Sam’s Story:
Walnut Creek Teen’s Road from Meth***

* This story is available at the following website:
Heredia, Christopher. "Sam’s Story: Walnut Creek Teen’s Road from Meth." *San Francisco Chronicle* 6 May 2003: A–1. Available on the SFGate.com website at <www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2003/05/06/MN202176.DTL>.

